Catalogue of Tools and Castings for Engineers.

1931

TOM SENIOR

Atlas Works
HIGHTOWN
LIVERSEDGE

YORKSHIRE ——— ENGLAND.

Specialities for Amateurs.

Price—Sixpence.

INTRODUCTION

I HAVE pleasure in submitting this Catalogue to your notice. Herewith is a very useful range of Machines and Attachments specially suitable for the Model Engineer, Experimental Engineer, Technical Schools, Garages, &c.

I make a speciality of supplying SETS OF CASTINGS for all the "Atlas" series of products and these castings are well known for their high quality. The Finished Tools produced in my works are accurate and very well finished.

I have not aimed to have my prices the lowest on the market but I can assure you my prices represent real good value for money.

I do my best to always create a good feeling with my customers and you can be assured of receiving my personal attention to all your needs. I trust that my products will appeal to you, that the prices are suitable, and I should be pleased to have your support.

Yours faithfully,

TOM SENIOR.

TERMS & CONDITIONS

All goods are priced for nett cash with order, and monthly credit accounts can only be opened with bona-fide traders furnishing satisfactory references.

All goods are carefully packed, and I cannot be held responsible for loss or damage after goods are handed to Post Office or to Railway Company.

All goods are sent carriage forward unless arranged otherwise and customers residing in the country will oblige by stating nearest Railway Station. Packing Cases charged cost price but allowed for if returned carriage paid.

Customers are advised to send sufficient cash to cover cost of postage on orders weighing under 11 lbs., surplus cash would be fully refunded.

FOREIGN ORDERS

To avoid delay customers are advised to send sufficient extra cash to cover cost of postage or freightage, any surplus would be returned in full, or customers could arrange payment through any reputable Shipping Company, but order must be sent direct to me.

TOM SENIOR

Atlas Works

HIGHTOWN

LIVERSEDGE

YORKS. Eng.

CATALOGUE *of*

Tools for Engineers

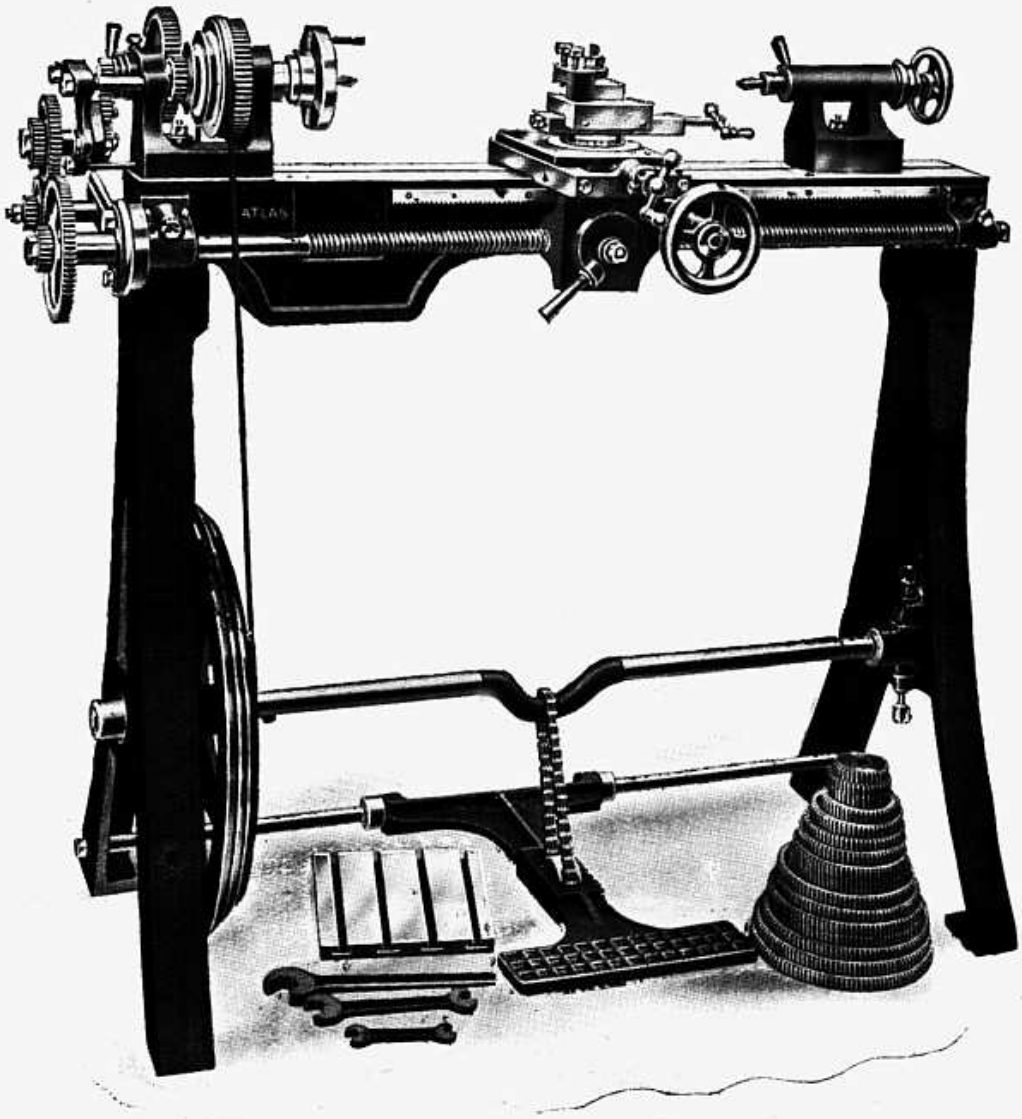
SPECIALITIES *for* AMATEURS

The "ATLAS" Special

Screw-Cutting, Back-Geared Lathes

3in. & 3½in. Centres, with Separate and Interchangeable Boring-Milling Table.

IN-THE-ROUGH, PARTLY-MACHINED and FINISHED COMPLETE.



WE offer the "Atlas" Special Series of Screw-Cuttting Back-Geared Lathes to meet the requirements of users of small machine tools who prefer to build their own Lathes at the absolute minimum of cost. The Specification will prove to intending purchasers that the design and dimensions afford really up-to-date practice having regard to accuracy of production, ease of manipulation and a total absence of any freak-design or compromise. The very best materials are used, the Castings in particular providing real pleasure in working, being cast from our well-known, soft, grey mixture. The Lathes are offered with the utmost confidence to the Model Maker, the Motor Engineer or the Commercial Engineer as production tools.

PRICES OF COMPLETE FINISHED LATHES, FULLY GUARANTEED:

3in. Centre on 30in. Cap Bed Treadle Type (as illustrated) £20 0s. 0d.; Bench Type, £17.

3½in. Centre on 36in. Cap Bed Treadle Type (as illustrated) £23 0s. 0d.; Bench Type, £20.

(Both with full set of 22 Change Wheels, Spanners, etc.)

Sole Maker of the "Atlas" UNIVERSAL MILLING ATTACHMENT.

The "Atlas" Special SCREW-CUTTING, BACK-GEARED LATHES

3in. & 3½in. Centres.

(continued)

SPECIFICATION

THE BED is of stout and rigid dimensions with Full Gap Piece, mounted on strong cast-iron Standards.

HEADSTOCKS are heavy type. Fast Head has conical gun-metal front bearings and parallel gun-metal back bearings. All gears, including reversing wheels are machine-cut. Loose Head has large dimensioned barrel and steel square thread screw.

SLIDE REST is fully compound and has swivelling cross slide accurately graduated and indexed to set-over to any angle for short taper turning, etc. It also is fitted with the "Atlas" Separate and Interchangeable Boring and Milling Table, having four **T** Slots cut from the solid, increasing the possibilities of usefulness by 100%. This Boring-Milling Table is interchangeable in a few minutes and operated by square thread screw of saddle The saddle has the usual **T** Slots cut in for ordinary bolting down jobs thus providing a unique combination.

LEADING SCREW is of best steel accurately cut square thread, 4 per inch pitch or to order.

THE NUT BOX, double clamp gun-metal nut.

CHANGE WHEELS are supplied with cast teeth moulded from machine-cut patterns and consist of 22 wheels, 14 pitch, one each 20 to 120 by 5 teeth with extra 40 wheel. A 127 teeth wheel can also be supplied for use in metric threads giving a greater degree of accuracy than is possible by any other manner. Machine-cut Wheels can be supplied at a slight extra cost.

FACE PLATE, CATCH PLATE, Centres and Spanners.

DIMENSIONS

3in. Centre Lathe on 30in. Gap Bed.

Full Gap Piece fitted, which is easily detachable.
Admits between Centres, 15½in.
Width of Bed, 3½in.
Swing in Gap, 10in.
No. 1 Morse Centres.
Spindle Screwed ¾in with ⅜in. hole through.
Boring-Milling Table, 7in. × 5in.
Leading Screw ⅜in. diam. × 4 threads per inch.

3½in. Centre Lathe on 36in. Gap Bed.

Full Gap Piece fitted, which is easily detachable.
Admits between Centres, 19½in.
Width of Bed, 3⅞in.
Swing in Gap, 12in.
No. 1 Morse Centres.
Spindle Screwed ⅞in. with $\frac{7}{16}$in. hole through.
Boring-Milling Table, 8in. × 6in.
Leading Screw ⅜in. diam. × 4 threads per inch.

PRICES OF CASTINGS

Sets of Castings, with Blue Prints, to construct 3in. Centre on 30in. Gap Bed Lathe and 3½in. Centre on 36in. Gap Bed Lathe, as follows:

	In-the-Rough.	Accurately Planed.
3in. Centre Lathe (Treadle Type)	85/-*	160/-
,, ,, (Bench Type)	65/-*	140/-
3½in. ,, (Treadle Type)	107/6	190/-
,, ,, (Bench Type)	89/6	170/-

* Prices include Change Wheel Casting.

Lathes with Overhead Motion same price as Treadle Drive Lathes.

Cone Pulleys are for Round Belt.

The "Atlas" Special SCREW-CUTTING, BACK-GEARED LATHES

3in. & 3½in. Centres.

(continued)

PRICES OF SEPARATE PARTS to construct these Lathes.

	3in. Lathe	3½in. Lathe
BED, Rough Casting, with Gap Piece	15/-	27/-
BED, if accurately Planed, and no Gap Piece	25/-	42/-
BED, accurately Planed, with Gap Piece	30/-	50/-
Extra for Surfacing and Frosting Bed	7/6	7/6
NUT BOX, finished complete, with Ball Handle and Pinion Shaft	40/-	40/-
NUT BOX, set of Rough Castings	5/-	7/-
NUT BOX, set of Planed Castings	10/6	12/6
LEG STANDARDS for Treadle Lathe as illustrated, Rough	18/-	28/-
Do. Planed	24/-	35/-
BENCH LEGS, Rough ..	3/6	6/-
Do. Planed	7/-	9/6
HAND REST	2/6	3/-
Do. Finished	7/6	9/-
HEADSTOCKS, finished complete with Machine-cut Gears, reversing wheels for Screw-cutting	100/-	107/6
Do. set of Rough Castings with Gear Blanks	15/-	19/-
Do. if with Bases Planed and Headstocks Bored	45/-	50/-
Extra for Turning and Cutting Gear Blanks including reversing wheels	15/-	20/-
COMPOUND SLIDE REST, Finished and Complete with Boring-Milling Table ...	70/-	80/-
Do. set of Rough Castings ..	17/6	22/6
Do. set of Planed Castings ...	32/6	37/6

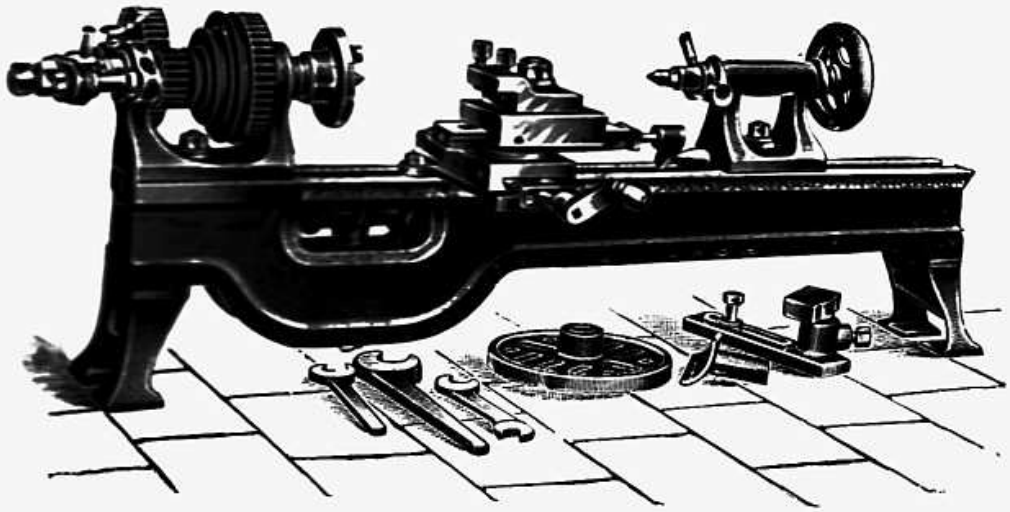
	3in. Lathe	3½in. Lathe
Set of SQUARE THREAD SCREWS and Finished Ball Handle for Slide Rest...	15/-	15/-
HOLLOW SPINDLE for Fast Head Finished	20/-	25/-
COUNTERSHAFT for Overhead Motion, Finished ..	40/-	40/-
Do. Rough Castings	15/-	15/-
GUN METAL NUT, Rough Casting	2/6	3/-
Do. Extra for Chasing to suit Leading Screw	5/-	7/-
LEADING SCREW, Finished	29/-	32/6
CRANK SHAFT, Rough Forging	10/6	10/6
Do. Finished	25/-	25/-
DRIVING WHEEL, Rough Casting	15/-	20/-
Do. Finished	40/-	50/-
TREADLE and ROLLER, Rough Casting	7/-	7/-
Do. Extra for Drilling ...	5/-	5/-
Leading Screw BRACKET and SWING ARM Casting ..	5/-	7/6
Do. if Bored, Turned and Planed...	15/-	20/-
RACK AND PINION, Rough Castings	4/-	4/-
Do. Planed Castings	5/6	5/6
CHANGE WHEELS, set of Rough Castings	20/-	20/-
Do. Extra Bored, Turned and Keywayed	15/-	20/-
Finished BALL HANDLE for Nut Box	3/6	3/6
Extra if MACHINE-CUT CHANGE WHEELS supplied in lieu of Castings	30/-	30/-
BLUE PRINT...	5/-	5/-

The "ATLAS"

Back-Geared Lathes

2½in to 5in. Centres.

IN-THE-ROUGH, PARTLY MACHINED AND FINISHED COMPLETE.



Sets in-the-Rough and Partly-Machined are offered to enable Amateurs to build their own Lathes at a minimum cost to themselves. This series of Back-Geared Lathes are designed for strength and rigidity when operating and are capable of accurate high-grade work and of taking heavy cuts without vibration.

THE BED is of substantial dimensions and of the Box pattern, well ribbed, and are also supplied with Full Gap Piece which is carefully and accurately fitted in the Partly-Machined and Finished Sets.

THE FAST HEAD is solidly constructed and carries ample weight of metal to withstand the shocks when in action.

FRONT BEARINGS are conical gun-metal; BACK BEARINGS parallel gun-metal, adjustable by steel bush and lock nuts.

THE LOOSE HEAD is of heavy design fitted with square thread steel screw and polished hand wheel.

THE SLIDE REST is fully compound type, with graduated and indexed swivelling slide for taper turning.

MANDRIL of Fast Head is of large diameter and bored hollow right through.

GEAR WHEELS in Finished Sets are machine-cut from the solid; Partly-Machined and Rough Sets supplied with Gear Blanks only.

All Machined Parts of Finished Lathes are carefully and accurately hand-scraped to surface plate and workmanship is fully guaranteed.

Height of Centre	2½	3	3	3½	4	4	4½	5	inches
Length of Bed	24	30	36	36	42	48	54	60	inches
Diameter of Mandril Nose	¾	¾	⅞	1	1	1¼	1¼	1¼	inches
Complete Lathe (as illustrated)	135/-	153/-	167/-	180/-	236/-	252/-	270 -	296/-	each
Set of Castings in-the-Rough	24/-	29/-	32/-	36/-	48/-	57/6	63 -	80/-	each
Set of Planed Castings	54/-	69/6	81/-	90/-	99/-	108/-	117 -	135/-	each
Set of Rough Castings with bed only planed...	41/-	47/6	49/6	63/-	72/-	81/-	95/-	112/-	each
Extra for Boring Headstocks in alignment ..	7/6	7/6	7/6	10/6	10/6	10/6	15/-	15/-	each
Extra for Planing Bases and ditto ..	12/6	15/-	15/-	17/6	17/6	17/6	20/-	20/-	each
Extra for Turning and Cutting Gear Blanks...	10/6	12/6	12/6	15/-	15/-	15/-	20/-	20/-	each

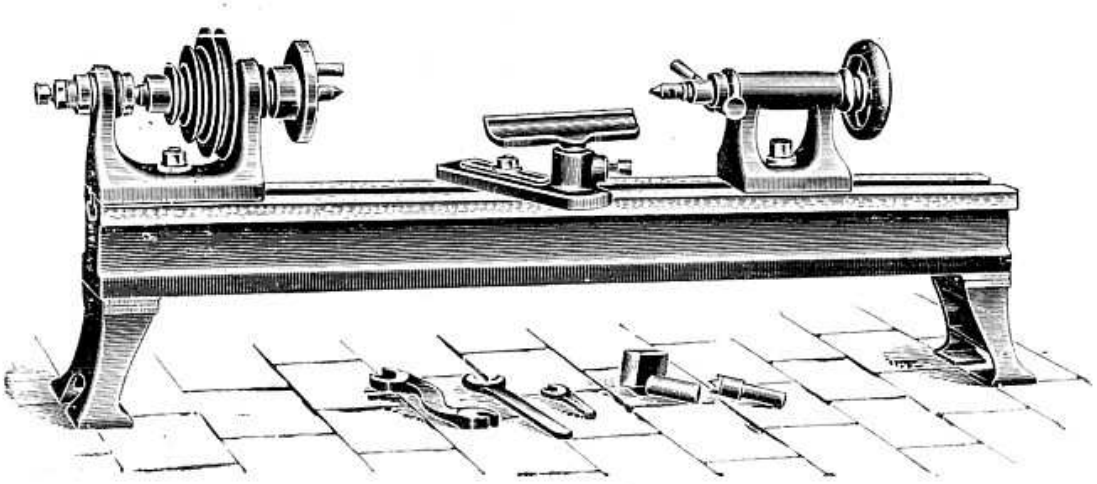
If no **Gap Piece** is supplied to any Gap Bed, deduct 7/- per Set from all finished prices. Cone Pulleys **up to and including** 3½in **are** made for Round Belt. 4in. can be had either for Round or Flat Belt, (Round **Belt always** sent unless otherwise ordered). 4½in. **and 5in. supplied** in Flat Belt only.

The "ATLAS"

Ungeared Lathes

2½in. to 5in. Centres.

IN-THE-ROUGH, PARTLY MACHINED AND FINISHED COMPLETE.



Offered as reliable and substantial Machine Tools, they are designed in accordance with best practice. Beds heavy section. Fast Head with conical gun-metal front bearings and parallel gun-metal back bearings for positive adjustment. All machined surfaces in Finished Sets are hand-scraped and dead true. All sold with the usual "Atlas" guarantee.

Height of Centre	2½	3	3	3½	inches
Length of Bed	24	30	36	36	inches
Diameter of Mandril Nose	¾	¾	⅞	1	inches
Complete Lathe (as illustrated)	67/6	81/-	100/-	108/-	each
Set of Castings in-the-Rough	20/-	26/-	29/-	32/-	each
Set of Planed Castings	37/-	47/-	54/-	63/-	each
Set of Rough Castings, with Bed only Planed	32/6	40/-	44/-	50/-	each
Extra for Boring Headstocks and Planing Bases	10/-	10/-	10/-	12/6	each

Height of Centre	4	4	4½	5	inches
Length of Bed	42	48	48	60	inches
Diameter of Mandril Nose	1	1¼	1¼	1¼	inches
Complete Lathe (as illustrated)	126/-	146/-	162/-	180/-	each
Set of Castings in-the-Rough	48/-	55/-	62/-	96/-	each
Set of Planed Castings	90/-	98/-	108/-	162/-	each
Set of Rough Castings, with Bed only Planed	67/6	79/-	86/-	130/-	each
Extra for Boring Headstocks and Planing Bases	12/6	12/6	15/-	15/-	each

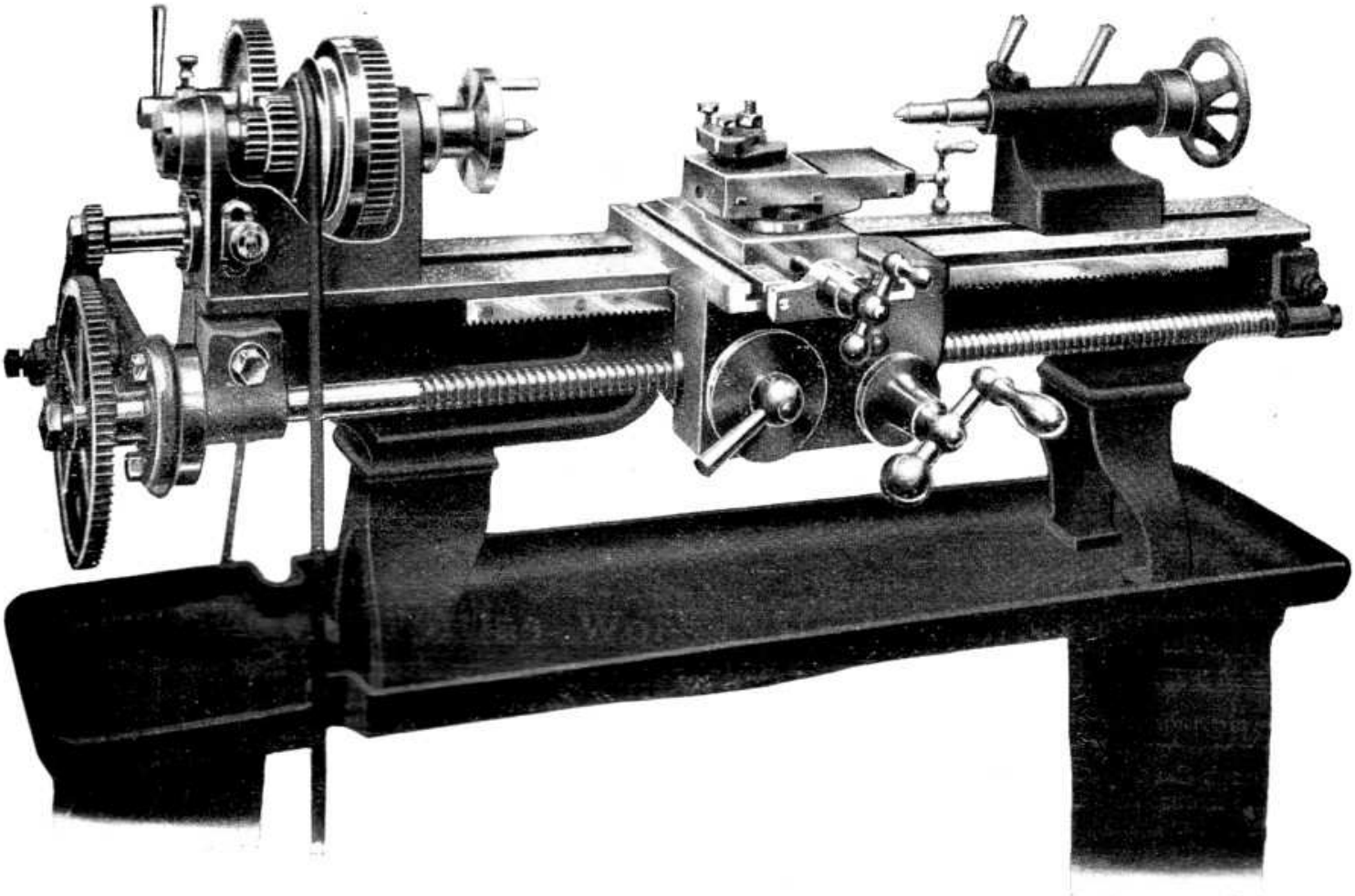
Cone Pulleys up to and including 3½in. are made for Round Belt; 4in. can be had for either Round or Flat Belt (Round Belt always supplied unless otherwise ordered); 4½in. and 5in. in Flat Belt only.

The "ATLAS" YANKEE

Self-Acting, Back-Geared, Screw-Cutting

Sliding & Boring Lathe

3in. or 3½ in. Centre on 30in. Gap Bed fitted with our Separate & Interchangeable Boring-Milling Table.



The "Atlas" Yankee Lathe has been re-designed and embodies many improvements making for greater efficiency and accuracy in operation, and also for easy and positive manipulation. The general design is after the most modern machine tool practice, resulting in a 3in. or 3½in. Centre Lathe which can be said to be "an exact facsimile of its full-sized brothers" an exact reproduction in every detail of a large high-class production machine tool.

Special features of all "Atlas" Lathes are as follows and must be remembered when comparing with other productions: Beds have **V** edges both back and front; Rack-and-pinion feed is fitted to Slide Rests; Separate and interchangeable Boring-Milling Tables are fitted to Slide Rests resulting in a really rigid Boring Table and also a really fully compound and rigid Slide Rest; Steel, machine-cut, reversing wheels for right and left hand-screwing as in all real Lathes, as distinct from stud or pin arrangement; Ball Thrust to Headstock and hollow Spindle of large dimensions.

Maker of the "Atlas" Shaping and Milling Attachments.

The "Atlas" Yankee Sliding & Boring Lathe

(Self-Acting, Back-Geared, Screw-Cutting)

3in. or 3½in. CENTRE on 30in. GAP BED.

(continued)

ABBRIDGED SPECIFICATION

THE BED is of very heavy box section with full Gap Piece accurately fitted, well ribbed internally, has broad "surfaceways" and is planed to the usual 90 degrees, **V** edges back and front. The design of this Bed ensures perfect rigidity and absolute freedom from vibration whilst operating at any point along its full length.

THE HEADSTOCK is of the self-contained box pattern, back-geared type, with eccentric Back Shaft, the design ensuring permanent accurate alignment, also easy manipulation and running. Reverse Gear Apparatus is fitted inside the Headstock, the Speed Cone and Spindle Gear being quickly operated by Spring Clutch and Plunger. The Spindle is hollow throughout and is bored $\frac{9}{16}$in. diameter. Front Bearing is gun-metal, conical type, of large dimensions for adjustment against wear. Rear Bearing is gun-metal of the parallel type. The Main Thrust is taken on Ball Thrust Washer fitted against Back Bearing. Three-speed Cone Pulley for §in. Round Belt is fitted. In harmony with its rigid design the Headstock is firmly secured to Bed.

THE TAILSTOCK is a stiff box casting, designed to withstand any thrust that can be set against it. The Barrel projects through Hand Wheel, thus giving full length bearing in all positions. The method of locking the Tailstock by Eccentric Handle ensures positive alignment, and in no way distorts the Bed, also gives a very large weight taking and resisting area. Set-Over Base is fitted for use when turning heavy taper work.

THE SADDLE, which is Boring Carriage Type, is fitted with quick Hand Traverse along Bed by Steel Rack and Double Gear Pinions in apron, giving easy and sensitive movement **T** Slots are cut from solid for bolting down work and attachments. Unusually long bearing surfaces are provided, giving accuracy and firmness in operation. We also fit our separate and interchangeable Boring-Milling Table to this Lathe, increasing the usefulness of the Slide Rest by 100%. This separate table is interchangeable in a few moments and has 4 **T** Slots cut from the solid.

THE SLIDE REST is fully Compound. Swivel Slide is graduated and indexed for angle work. The Cross Slide Screw has micrometer collar fitted in gun-metal nuts.

THE LEAD SCREW is accurately cut in the Lathe with square thread and fitted with Double Clamp Nut. Quickly and positively operated by lever handle.

THE FLY-WHEEL is of extra heavy design and has three steps with small extra pulley for operating special countershaft when desired.

The Lathe is mounted on HEAVY STANDARDS and also has CHIP TRAY.

THE RACK, ALL GEARS and CHANGE WHEELS have teeth cut from the solid.

PRICES OF SEPARATE PARTS to construct these Lathes.

Rough Casting of Bed, with Gap Piece, 20/-
Bed accurately planed and Gap Piece fitted, 40/-
Extra for surfacing and frosting Bed, 10/-
Bench Legs, Rough 4/- pair, Planed 6/- pair
Leg Standards and Tray, Rough 35/-, Planed 45/-
Treadle Casting, Rough 10/-, Drilled 14/-
Fly-wheel Casting, Rough 25/-, Finished 45/-
Rack Casting, Rough 2/6, Planed 4/-
Machine Cut Steel Rack, 32/-
Nut Box Castings, Rough 7/- set, Planed 15/-
Finished Nut Box, ready for fixing to Saddle and including Machine-cut Gearing, 50/-
Finished Ball Handle for Nut Box, 5/-
Gunmetal Lead Screw Nut, Rough 2/6, Chased 6/6
Leading Screw Brackets and Swing Arm Castings, Rough 4/- set, Bored, Turned and Planed, 15/-
Headstock, finished set complete and ready for fixing into Lathe Bed and with machine-cut steel reversing wheels, 160/-
Headstock, Rongh 25/-
Change Wheel Plate, 1/6
Headstock, Planed and Bored, and Gear Wheels Turned and Cut, including steel reversing wheels, 80/-
Hollow Spindle for Fast Head, finished and bored through, 25/-
Finished Leading Screw, 35/-
Set of 22 Change Wheels, 16 Pitch, 45/-
Slide Rest, finished complete, including separate and interchangeable Boring-Milling Table, 100/-
Ditto. Rough Castings, 20/-
Ditto. Planed Castings, including four **T** Slots cut in separate Boring-Milling Table, 45/-
Square Thread Screws with suitable Finished Ball Handle, including tapping gunmetal nuts, 30/-
Overhead Motion Rough Castings, 20/- set and ditto Finished, 50/-
Set of Bright Steel, including all necessary Nuts, Cheesehead Screws, Hex. Head Screws, Bolts and Washers, 12/6
Blue Print, 5/-

The "Atlas" Yankee Sliding & Boring Lathe

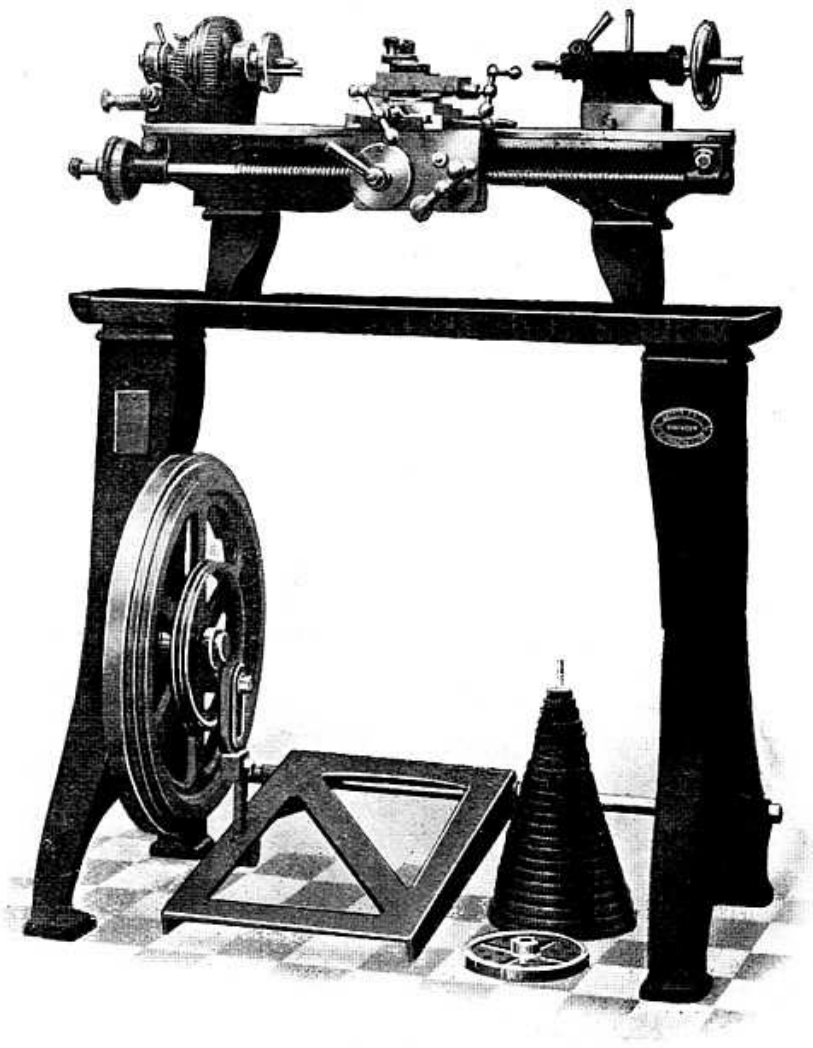
(Self-Acting, Back-Geared, Screw-Cutting)

3in. or 3½in. CENTRE on 30in. GAP BED.

(continued)

DIMENSIONS

Height of Centre, 3in. or 3½in.
Length of Bed, 30in.
Width on Face of Bed, 3¾in.
Maximum Length between Centres, 15½in.
Maximum Swing over Saddle, 4in.
Diameter of Hole through Mandril, $\frac{9}{16}$in.
Size of Centre Holes in Headstocks, No. 1 Morse.
Diameter of Mandril Nose, ¾in. Whit. × ⅝in. long.
Weight of Fly-wheel, 72 lbs.
Length overall, 3ft.
Breadth overall, 1 ft. 9 ins.
Height overall, 3ft. 9in. (Treadle)
Height overall, 1ft. 4in. (Bench)
Change Wheels, 16 Pitch, Set of 22 wheels, consisting of 1 wheel 20 to 120 advancing by 5 teeth with extra 40 wheel and having machine-cut teeth.
Distance from Face Plate to edge of Gap of Bed when Gap Piece is taken out, 2½in.
Distance from Point of Centre, as above, $1\frac{7}{16}$in.
Dimensions of Boring Carriage Saddle, 7½in. long, 6½in. wide with two **T** Slots for $\frac{5}{16}$in. Bolts.
Diameter of Boring-Milling Table, 8in. × 5in. with four **T** Slots cut from the solid.
Diameter of Steps in 3-speed Cone Pulley, $4\frac{7}{16}$in., $3\frac{11}{16}$in., and $2\frac{15}{16}$in.



Diameter of Lead Screw, ¾in. × 4 T.P.I. Diameter of Steps in Fly-wheel, 19⅛in., 18¾in., and 18in. Tray is 35in × 8in. Weight of Lathes complete with 22 Change Wheels: Bench, 120 lbs.; Treadle, 308 lbs.

PRICES OF LATHES (either 3in. or 3½ Centre)

BENCH TYPE LATHE (without Countershaft) - - £25 0s. 0d.

TREADLE TYPE LATHE or with Countershaft - £28 0s. 0d.

(Countershaft for Bench Type Lathe, **£3**.)

SHIPPING PARTICULARS

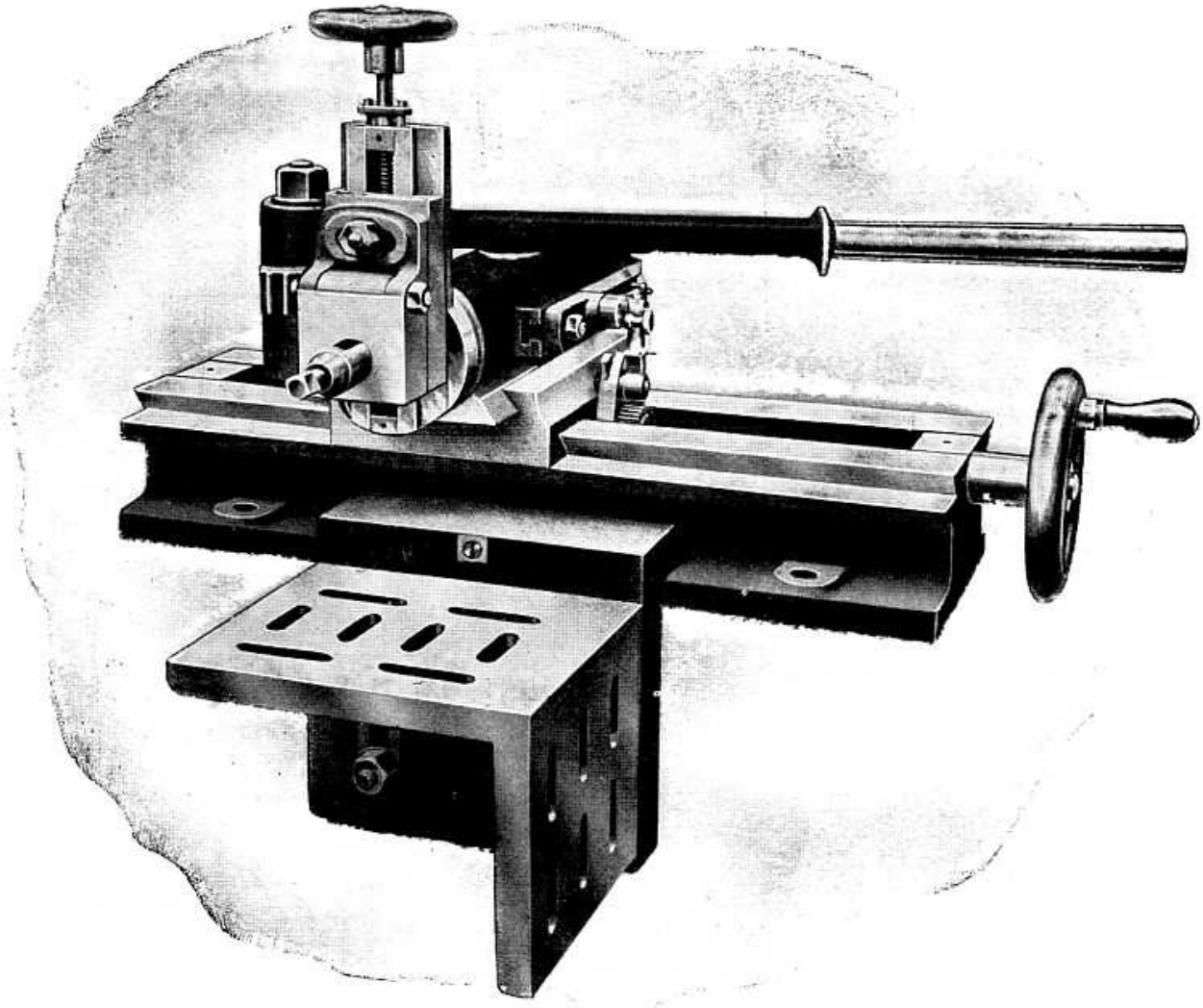
	Case Dimensions	Gross Weight	Nett Weight
BENCH TYPE LATHE ..	36in. × 22in. × 18in. ..	200 lbs. ..	120 lbs.
TREADLE TYPE LATHE ..	36in. × 22in. × 22in. ...	500 lbs. ..	308 lbs.

The "Atlas" Yankee Lathe is also made in 4in. to 4½in. Centres.

The "ATLAS" No. 1 Extra Strong, Self-Acting

Hand Shaping Machine

(Offered in Bench or Pillar Type)



This handy machine is identical in design with the "Atlas" No. 2 Hand Shaper, with the exception that a Box Angle type table is fitted, adjustable in height by bolts passing through slots in knee bracket of bed and table.

SPECIFICATION :	Bench Type	Pillar Type
Gross Weight ...	290 lbs.	.. 490 lbs.
Nett Weight ...	190 lbs.	.. 360 lbs.
Dimensions ...	24in. × 24in. × 18in.	... 24in. × 48in. × 20in.

Stroke, 8in. Head Traverse, 12½in. Size of Table, 8in. × 7in. × 6½in. Vertical adjustment of Table, 4in.

PRICE OF SHAPER

BENCH TYPE (complete with Spanners) ... £12 0s. 0d.

Extra for Pillar Stand, as shewn fitted to the "Atlas" No. 2 Hand Shaper, **70/-**

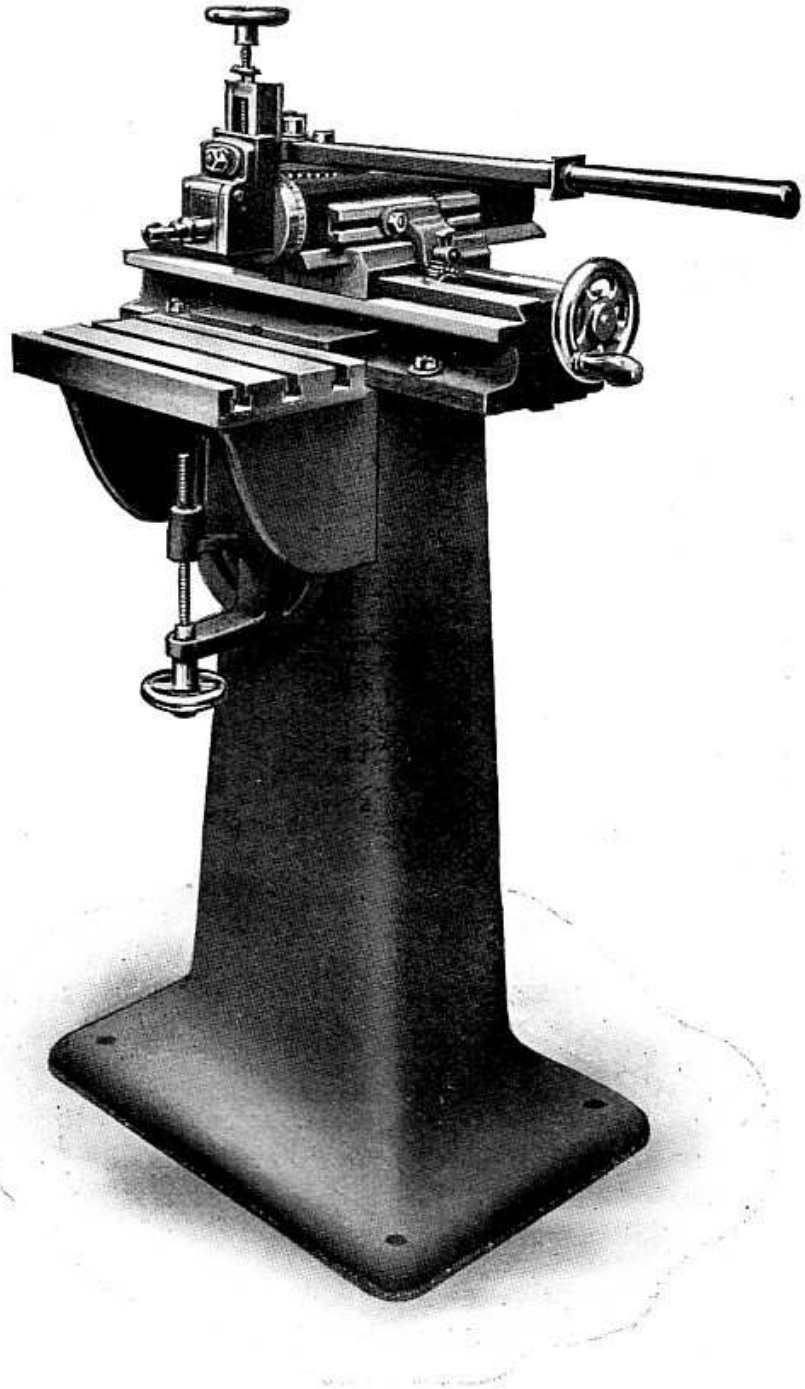
Suitable Machine Vice, **40/-** Set of 11 Shaper Tools in best cast steel, $\frac{7}{16}$in. square, **15/-**

CASTINGS including Set of Blue Prints

In-the-Rough ... £4 per Set. **Accurately Planed ... £6.**

Extra for turning end of Ram, graduating and indexing for angle work, **15/-** nett. Extra for accurately cut Traversing Screw and Screw for Tool Box, with gunmetal nuts tapped, all with square threads, **17/6** Extra for machine-cut Pinion for Self-Acting Traverse, **7/6.** Machine Vice Castings, Rough **7/6**, Planed **20/-**

The "Atlas" No. 2 Extra Strong Self-Acting HAND Shaping Machine



The design is exceptionally good a very special feature being the Rack and Quadrant drive, peculiar to our Shapers, resulting in a perfectly positive and continuously persistent motion for full length of stroke.

The Body has a 2in. diam. hole cored through when cutting keyways, enabling a keyway to be cut in any position of shaft. The design is Box type, heavy section, with strong ribs inside.

The Table, hand wheel and screw fitment are all detachable from the machine in a few minutes, disclosing a machined slotted face to which special and inconvenient work can be bolted.

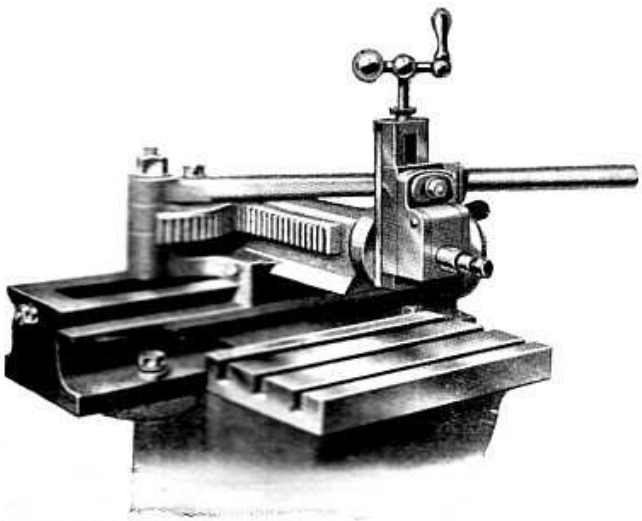
PRICE OF SHAPER, Bench Type, £14

Extra for Pillar Stand, as illustrated, 70/-

Each Machine complete with Spanners.

Suitable Machine Vice (our continuous screw type) can be supplied, 3in. Jaw x 1¾in. deep, opening 6½in., **45/-**.

Set of 11 Shaper Tools in best quality cast steel, $\frac{7}{16}$in. square section, **15/-**.



The small illustration shows the unapproachable Rack and Quadrant Drive to Ram through Lever Handle.

SPECIFICATION & SHIPPING PARTICULARS :

Stroke, 8in. Size of Table, 12in. x 7in.

Head Traverse, 12½in. Vertical Traverse of Table, 3½in.

Gross Weight :
Bench Type, 290 lbs. Pillar Type, 490 lbs.

Nett Weight :
Bench Type, 196 lbs. Pillar Type, 380 lbs.

Case Dimensions :
Bench, 24in. x 24in. x 18in. Pillar, 24in. x 48in. x 18in.

The "Atlas" Improved

SELF-ACTING, 7in. STROKE, BENCH

Power Shaping Machine

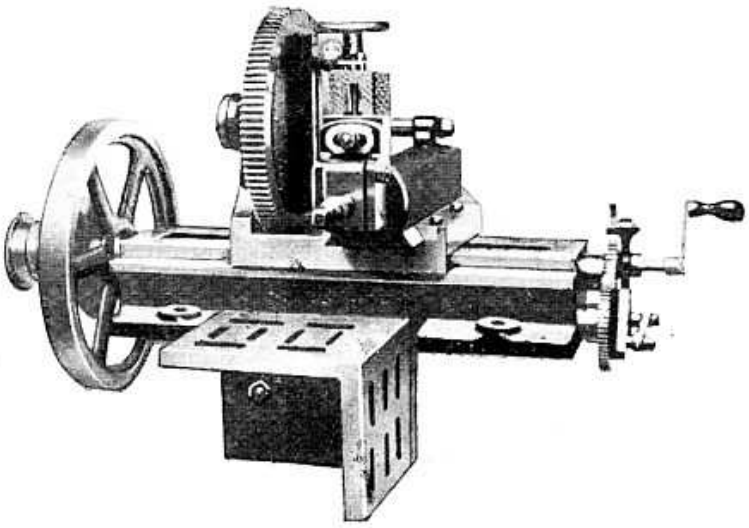
This Machine has a Stroke of 7 inches and a Traverse of 10½ inches by self-acting feed in the horizontal cut either way.

All the Gears have machine-cut teeth and the **T** Slots in Driving Plate, etc., are machine-cut.

The Cone has three speeds for flat belt, and the Driving Wheel is strong and heavy.

The Table has Slots on the side as well as on the top, as shewn in the illustration.

Approximate Weight of Machine is about 2 cwts.



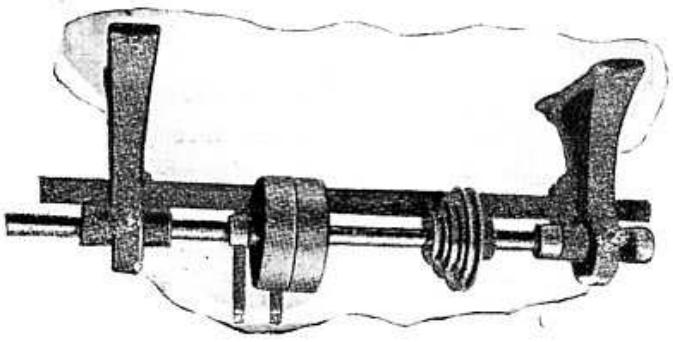
Price, complete as illustrated £16 0s. 0d.

Sets of Castings and Drawings :

In-the-Rough - £4 0s. 0d. Planed - £8 0s. 0d.

Overhead Motion suitable for this machine : Finished, **45/-** ; Rough Castings, **18/9**
Suitable Vice, 3in. jaw opens 5in. : Finished, **36/9** ; Planed Castings, **20/3** ; Rough Castings, **5/3**.
Extra for Turning and Cutting the Four Gear Blanks, **30/-**.
Turning end of Ram and graduating and indexing same for angle work, **6/9** extra.

This Power Shaping Machine can also be had mounted on Special Stand with rising and falling table, the table being raised by hand wheel and square thread screw. Price, finished complete, **£6 15. 0d.** extra. This Stand and Table weighs about 2½ cwts.



Countershafts

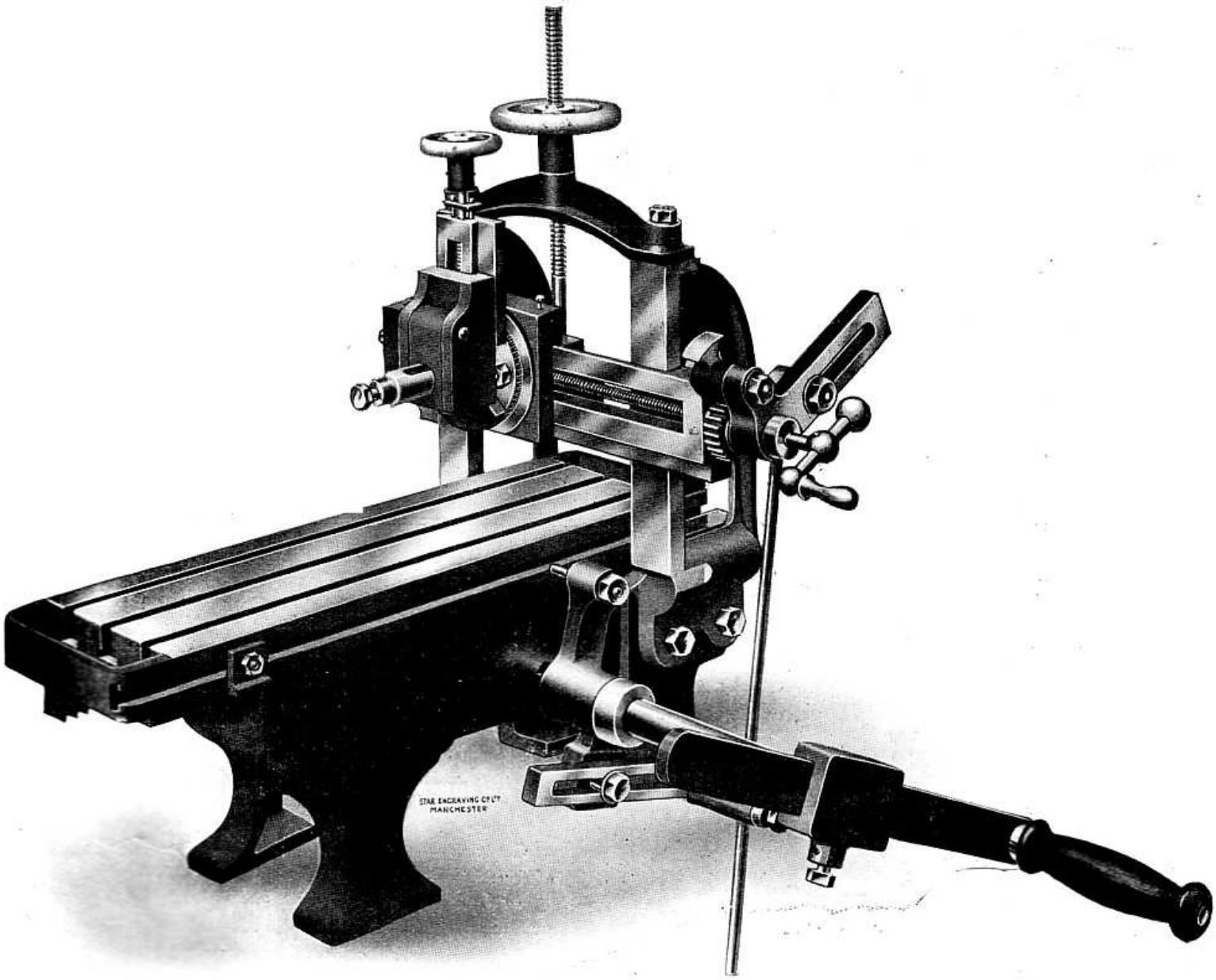
Swivelling Type Bearings

	Finished Overhead Motion	Sets of Rough Castings	Hangers only each	
			Rough	Finished
	£ s. d.	s. d.	s. d.	s. d.
No. 1 for Light Lathes up to about 4in. centres Diam. of Shaft, ¾in. × 2ft. long	2 0 0	16 0	3 0	3 6
No. 2 for Light Lathes, 4½in. and 5in. centres, Diam. of Shaft, 1in. × 2ft. 3in. long ...	2 8 0	20 0	3 8	6 0
No. 3 for Lathes 5½in. and Light 8in. centres, Diam. of Shaft, 1⅛in. × 2ft. 6in. long ...	3 2 0	24 0	4 6	6 10
No. 4 for Lathes 6in. and 7in. centres, Diam. of Shaft, 1½in. × 3ft. long	4 7 6	40 0	8 0	14 0

THE "ATLAS" SPECIAL

Bench Hand Planing Machine

(Made in Four Sizes)



These Machines have been designed to meet the requirements of Amateurs, etc., for real good small size Hand Planers at a low cost. They are built in our own works by practical men, and workmanship is of the very best. The illustration has been taken from a photograph of No. 2 size machine and is exact as shewn.

THE "ATLAS" SPECIAL

Bench Hand Planing Machine

(continued)

SPECIFICATION :

The Cross Slide is truly level with the table top and the Tool Box swivels right round and is accurately graduated and indexed for angle work. The Table has three machine-cut T Slots, as shown, and is held down by adjustable strip and cannot lift under the cut. The Table is also driven by machine-cut rack and pinion, which gives a smooth cutting power. The Cross Slide, Tool Box and Raising Screws are all of the best steel and have accurately cut square threads. All the Slides are carefully hand scraped and are adjustable and nicely frosted after being bedded on. Each Machine is complete with Spanners, etc.

PRICES OF No. 2 SIZE :

Finished Machine, ready for use - £15 0s. 0d.

Complete Set of Planed Castings and Drawings ... **£6 10s. 0d.**

Complete Set of Rough Castings and Drawings ... **£2 10s. 0d.**

Suitable Finished Vice, 3in. jaw opens 5in., 35/-. Rough Castings, 6/-. Planed Castings, 17/6.

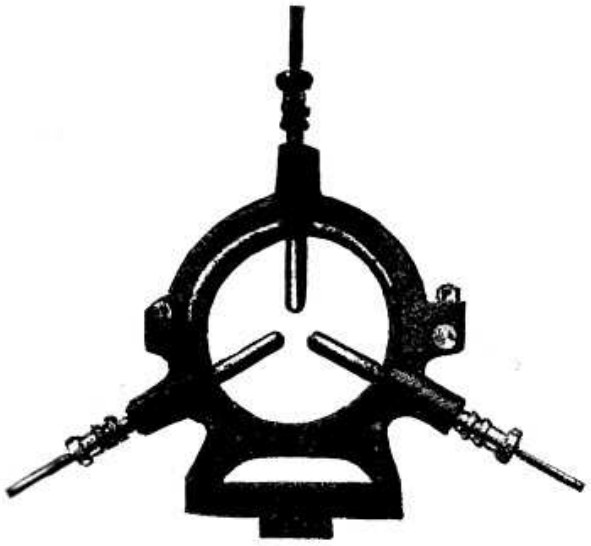
Extras for Machine Work in addition to Planed Castings :

Boring Hole for Driving Shaft and Facing Bosses, 8/6. Turning Swivel Slide out for T Bolts and Graduating and Indexing same, 7/6 ; Three Square Thread Screws and Gunmetal Nuts, 20/- ; Complete Set of Bright Nuts, Screws, Washers, and Spanners, 8/- ; Fitting Uprights into position accurately square up and sideways, and fitting top cross bar, 15/- ; Cutting Rack and Pinion, 16/-.

NOTE.—No. 2 size Finished Machine can be had with extra long Table to plane 24in. long for 17/6 extra. Sets of Castings with extra long Table : Planed, 10/- extra ; Rough, 7/6 extra.

Prices of other sizes may be had on application.

Three Die Steady Rests



These are the latest pattern Fixed Steady Rest. The Jaws are of hard brass, so that they will not mark steel or iron revolving in them.

SIZES & PRICES :

To suit Centre Lathe	Set of Rough Castings and Drawings	Postage per set
3, 3½, or 4in. ..	7/6 ...	1/3
4½ or 5in.	12/6 ..	Rail
5½ or 6in.	15/- ...	Rail

NOTE.—3½in. size can be had to suit 3½in. Drummond Lathe with special base.

Rough Castings and Drawings, 9/- per set.

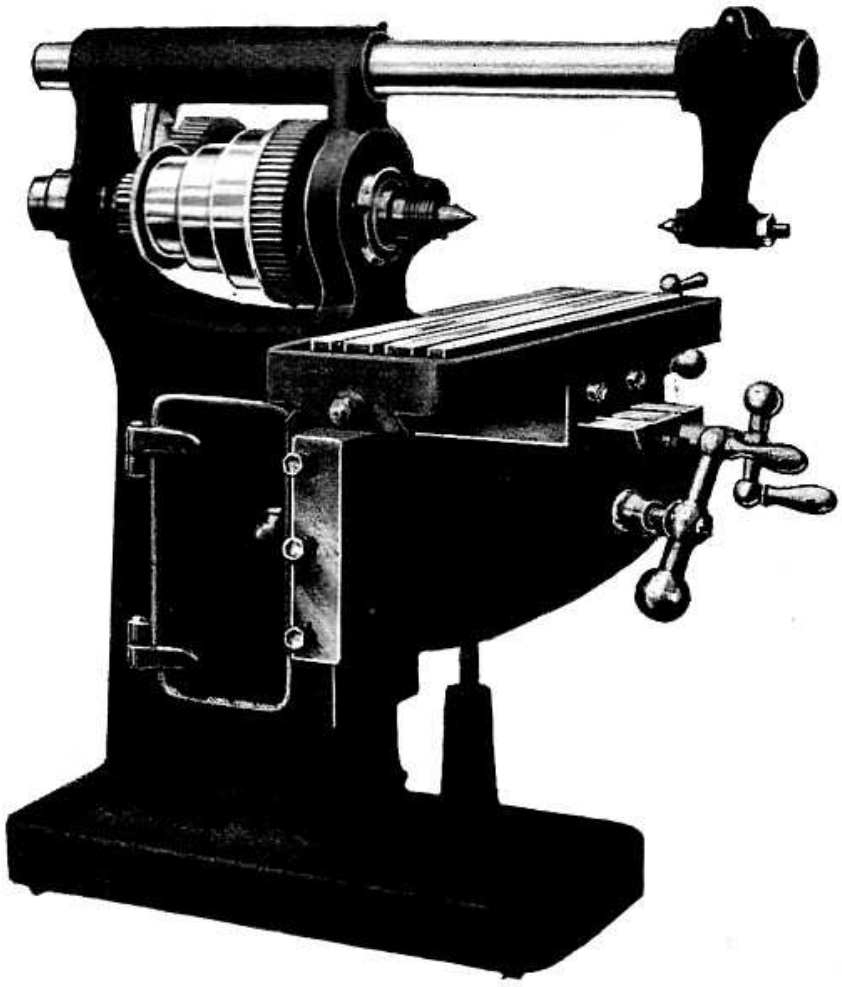
When ordering for 3½in. Drummond Lathe send Template of Bed or full size Drawing of end section of Bed.

The "Atlas" IMPROVED BACK-GEARED

Horizontal Milling Machine

(Made in Two Sizes)

The "Atlas" Improved Back-Geared Miller has been designed in accordance with latest Machine Tool Practice, and on similar lines to large machines. It is offered either as a Bench or Pillar Type Machine, and has a real manufacturing proposition.



SPECIFICATION:

The Body is of the Box Column type, having broad base which also acts as a tray, preventing any oil, etc., reaching the bench or floor; a cupboard is provided for carrying cutters and other accessories. The Knee Bracket has a broad face and is of ample strength to ensure rigidity under heavy cuts; the telescopic rise and fall screw has accurately cut square thread working in gunmetal nut in bottle standard.

The Spindle is of best steel and is fitted with two ball thrust washers one at each end of back bearing, thus taking thrust either way of cutting. It is bored right through for draw-in bolt.

The Table has three T slots cut from the solid, and has oil channels along each side and ends, and has carefully fitted slides of large face dimensions.

All Gear Wheels are machine-cut from the solid and Feed Screws accurately cut with square threads, whilst all bearing surfaces are hand-scraped to true surface plates.

Countershaft is included complete and suitable Spanners.

Automatic Feed can be fitted to horizontal traverse of Table if desired.

Prices of Machines, complete with Countershaft:

Bench Type, No. 1, £25 0s. 0d.; No. 0, £20 0s. 0d.

Pillar Type, No. 1, £28 10s. 0d.; No. 0, £22 0s. 0d.

Extra if fitted with Automatic Feed to Horizontal Traverse, £5.

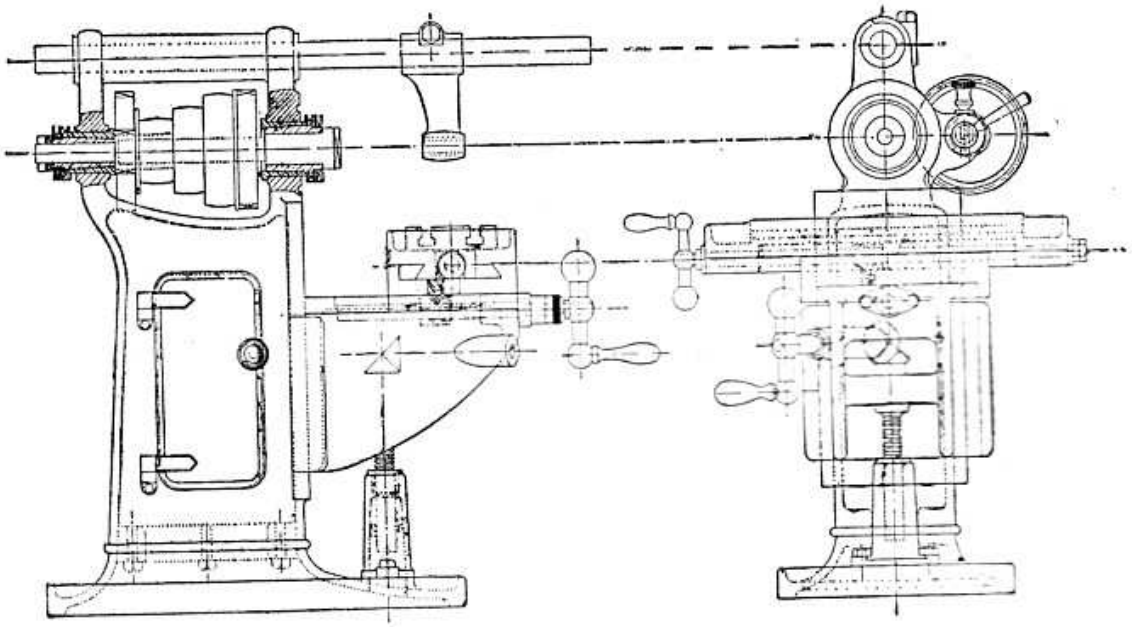
SHIPPING PARTICULARS:

	Gross weight	Nett weight	Size of Case
Bench Type, No. 1	460 lbs.	340 lbs.	30in. x 33in. x 33in.
Bench Type, No. 0	226 lbs.	170 lbs.	24in. x 24in. x 30in.
Pillar Type, No. 1	640 lbs.	520 lbs.	30in. x 33in. x 58in.
Pillar Type, No. 0	330 lbs.	269 lbs.	24in. x 24in. x 48in.

Horizontal Milling Machine—*continued*

SPECIFICATION :

	Size No. 1	Size No. 0
Working Surface of Table	$18\frac{3}{8}$in. x $4\frac{5}{16}$in.	$15\frac{1}{2}$in. x 4in.
Three T Slots	$\frac{3}{8}$in. wide	$\frac{5}{16}$in. wide
Longitudinal Feed of Table ...	17in.	$12\frac{1}{2}$in.
Cross Feed of Table...	$4\frac{3}{4}$in.	4in.
Vertical Feed of Table	6in.	5in.
Maximum distance centre of Spindle to Table	$6\frac{1}{8}$in.	6in.
Size of hole through hollow Spindle	$\frac{9}{16}$in. x No. 3 Morse Taper	$\frac{13}{32}$in. x No. 1 M.T. at Mandril end
Spindle Nose is screwed	$1\frac{1}{2}$in. Standard Whit.	To suit requirements
Length of Cutter Mandril can be admitted between Centres ...	10in.	9in.
Cone Pulley dimensions	$5\frac{1}{2}$in. x $4\frac{1}{2}$in. x $3\frac{1}{2}$in.	4in. x 3in. x 2in.
Flat Belt size...	$1\frac{1}{2}$in.	1in.
Pan-shaped Base of Bench type ...	20in. x 10in.	14in. x 8in.
Weight of Bench type machine, complete with countershaft...	340 lbs.	196 lbs.
Weight of Pillar Stand only ...	190 lbs.	100 lbs.
Overall dimensions of Bench type...	28" x 30" back to front 29" high	20in. x 20in. x 21in.
Overall dimensions of Pillar type ...	28" x 30" back to front 56" high	20in. x 20in. x 39in.



For those who prefer to build their own machines, we offer the "Atlas" Improved Milling Machine in sets of Castings, in-the-rough or partly-machined, and we also quote for machining certain parts and supply full set of three Blue Prints for use in erecting.

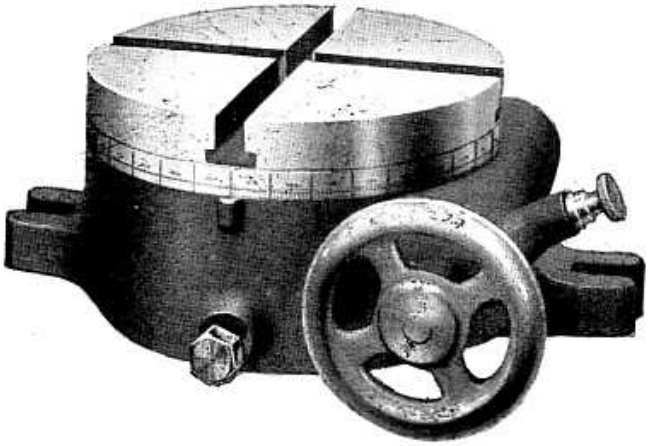
Prices of Complete Sets of Castings, including three Blue Prints and Countershaft Set :

IN-THE-ROUGH, Bench Type No. 1, £6. ; No. 0, £4.

PLANED-ONLY, Pillar Type No. 1, £10 ; No. 0, £7.

EXTRAS as follows : Turning and cutting blanks for back Gear, No. 1 **60/-**, No. 0 **40/-** : Finished hollow Spindle complete with phospher bronze bushings, No. 1 **60 -**, No. 0 **40/-**; Set of three finished square thread Screws and gunmetal Nuts fitted, No. 1 **40/-**, No. 0 **25/-** ; Boring holes for Driving Shaft, Overhanging Arm, and back Gear holes; No. 1 **50/-**, No. 0 **30/-** ; Finished Vertical Milling Attachment, No. 1 **120/-**, No 0 **90 -** ; Rough Castings and Drawings for Vertical Attachment, No. 1 **18/6**, No. 0 **15/-** ; Set of 5in. Swing or 2½in. Centre Dividing Heads complete, No. 1 **160/-**, No. 0 **110/-** ; Set of Rough Castings and Drawings for Dividing Heads, No. 1 **21/-**, No. 0 **15/-** ; Pillar Stand Rough Casting, No. 1 **60/-**, No. 0 **30/-** ; Pillar Stand Machined, No. 1 **70/-**, No. 0 **40/-**.

Circular Milling Tables



These Circular Milling Tables are most useful in conjunction with Vertical Attachments for Milling circles, circular slots and combinations of circles and straight lines or tangents.

The Table revolves by hand through worm and wheel. The worm can be instantly thrown out of mesh and the table at once put to any position.

The rims of the Table are graduated and indexed right round in degrees, and the table may be firmly clamped for regular straight Milling.

The Slots are machine-cut from the solid.

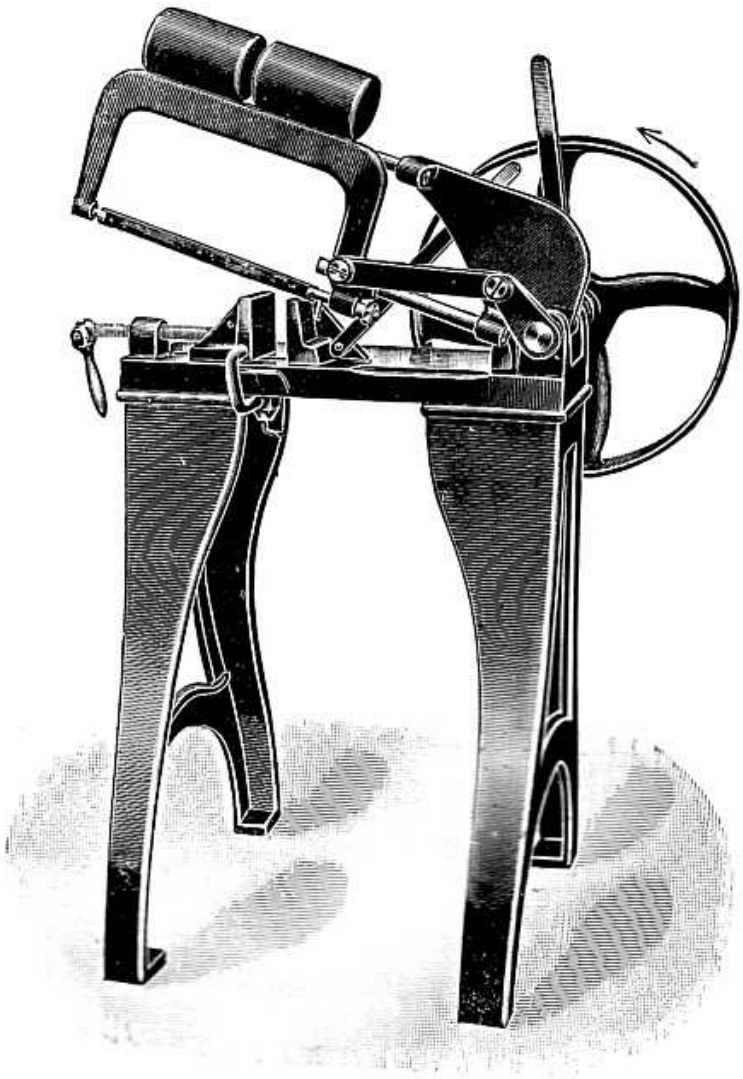
Diameter of Table, 8ins. Height of Table, 4½ins. Weight, about 60 lbs.

Price, Complete - - £8 0s. 0d.

Set of Rough Castings and Drawings, 25/-

Smaller or larger sizes, prices on application.

The Square-Cut Saw



This Machine has been specially designed to meet the demand for a first-class machine at the lowest possible price.

It is guaranteed to cut square and true and is invaluable in the small workshop.

This Machine will cut up to 4¼in. round or square and is fitted with a 10in. blade.

Diameter of Pulley, 12in.

Approximate Nett Weight, 120 lbs.

Price, Finished Complete :

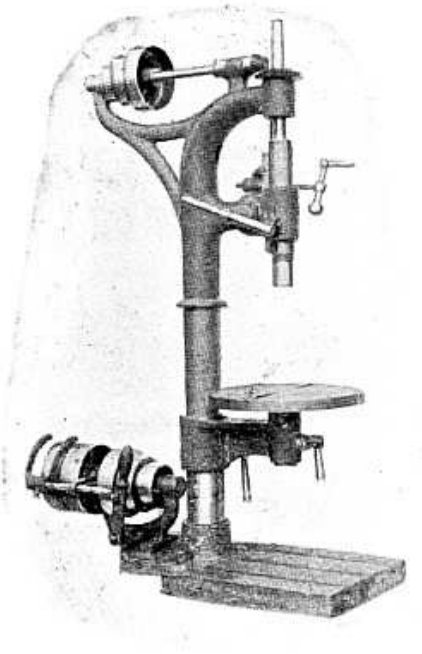
£3 19s. 6d.

This Machine can be used equally well by hand. For this purpose, a detachable handle which is fitted through the pulley, can be supplied at an extra charge of 2/6.

Complete Set of Rough Castings and Materials, 35 -

The "Atlas" Sensitive Bench

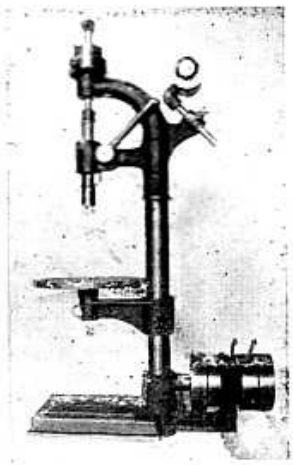
Drilling Machine



No. 2

These Machines are built for accurate and rapid drilling, and are offered as high grade production tools. The design and workmanship are in accordance with the best modern Machine Tool Practice, and to afford a big range of usefulness and adaptability in operation.

The Spindles are fitted with ball thrust washers, reducing friction to the minimum. The Base Plate has three T Slots for bolting work to, and is accurately planed on face dead square to Pillar. The Circular Table is well slotted, and is easily adjustable for height and also swings out of centre when not in use.



No. 0 & 1

Machines No. 0, 1 and 3 are fitted with flat belt Driving Pulleys to Drill Spindles, which can be adjusted to tighten belt as required. Machine No. 2 is fitted with machine cut Bevel Gear Drive to Spindle. Price of the machine cut Mitre Wheels 25/- nett. Machine No. 3 is a new size, and is submitted as something exceptional in design from the point of view of capacity. All machines are supplied Finished Complete, Partly Machined or In-the-Rough. Gunmetal Rack and Pinion Castings cast from machine cut patterns and Blue Prints for erecting are included in Sets of Castings.

Principal Dimensions & Prices :

Machine Size Number	0	1	2	3
Capacity up to	$\frac{3}{8}$in.	$\frac{1}{2}$in.	$\frac{5}{8}$in.	$\frac{3}{4}$in.
Will Drill to centre of	6in.	8in.	10in.	12in.
Spindle Feed	3in.	3½in.	4½in.	4½in.
Maximum distance from Spindle to face of Base Plate	12in.	15in.	17in.	20in.
Diameter of Circular Table	6in.	8in.	10in.	8in.
Rise and Fall of Circular Table	9in.	11in.	12½in.	10in.
Diameter of Pillar	1½in.	2in.	2¼in.	2½in.
Size of Face of Base Plate, ins.	5 x 5½	6 x 7	7½ x 9	8½ x 10½
Dia. of Fast and Loose Pulleys, ins.	3½ x ¾	4 x 1	5 x 1¼	4½ x 1½
Total Height	24in.	30in.	33in.	36in.
Floor Space required, ins.	12 x 5	17 x 7	21 x 8	20 x 12
Approximate Weight of Machine	40 lbs.	67 lbs.	122 lbs.	142 lbs.
Ditto when Packed	100 lbs.	120 lbs.	220 lbs.	240 lbs.
Outside Case Dimensions, inches	24 x 12 x 12	33 x 12 x 12	36 x 18 x 12	42 x 18 x 12
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Price Finished Complete	**5 15 0**	**6 17 6**	**8 10 0**	**8 10 0**
Complete Set of Rough Castings (including Bright Steel & Prints)	**1 10 0**	**2 0 0**	**3 0 0**	**3 10 0**
Extra for Machining Pillar and Boring for Spindles	1 0 0	1 0 0	1 10 0	1 10 0
Extra for Planing Base and Drilling for Pillar	0 15 0	0 15 0	1 1 0	1 1 0
Extra for Planing only to Base	0 7 6	0 7 6	0 10 6	0 10 6

THE "ATLAS"

Light Drilling Attachments

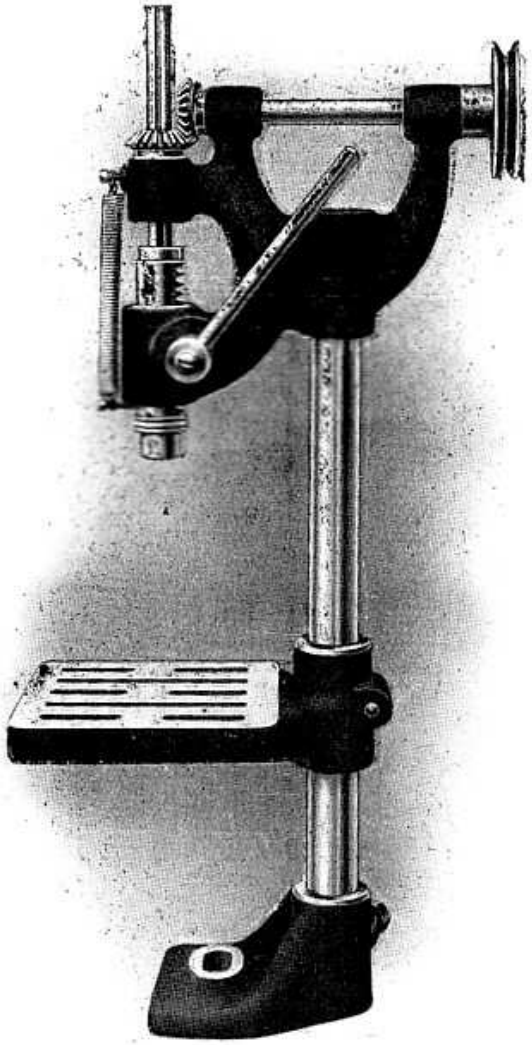


Fig. 1

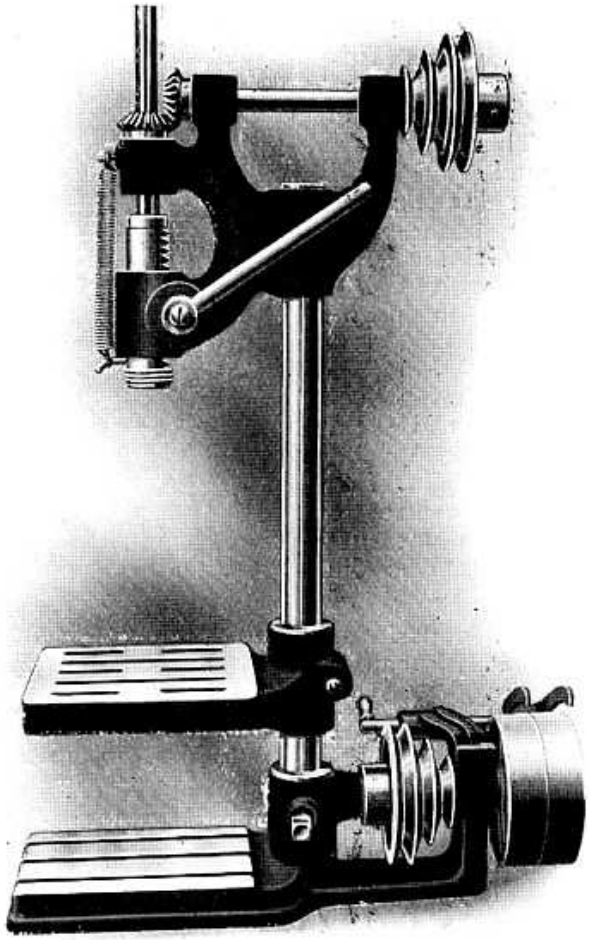


Fig. 2

SPECIFICATION :

Diametrical capacity.....6in.

Size of Table ..... 6in. square

Takes up to.....$\frac{5}{16}$in. Drills

These Light Drilling Attachments, as illustrated in Fig. 1, are supplied in Sets of Rough Castings, Material and Blue Print, including Machine-cut Bevel Gears, **19/6.**

These Attachments are also offered in the form of Light Drilling Machines with Slotted Base as illustration Fig. 2. Sets of Castings, all Material, Blue Print and Machine-cut Gears, **25/-.**

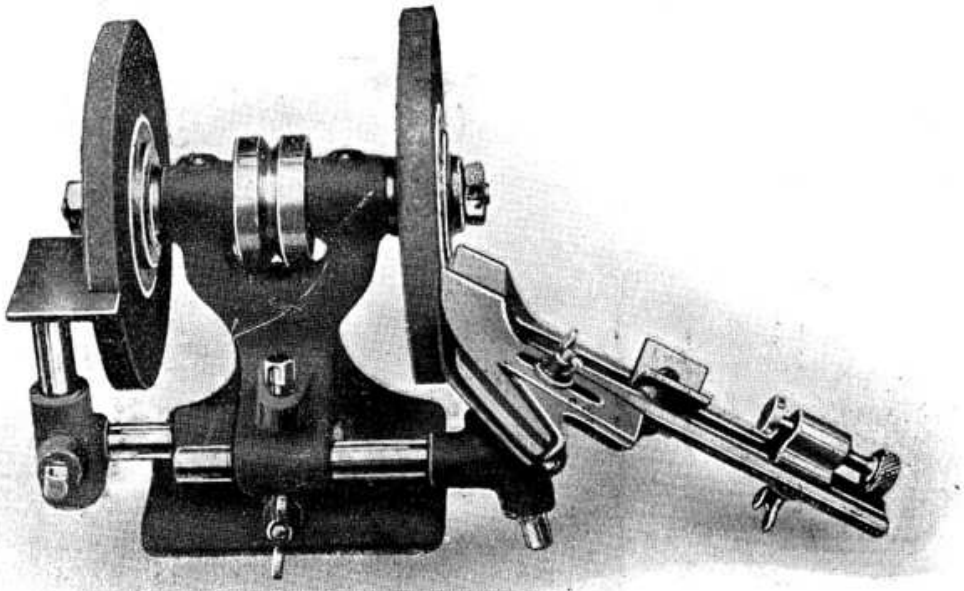
Finished Prices of the above machines on application.

No. 0 IMPROVED

Twist Drill Grinder

Owing to receiving numerous enquiries for a smaller size Twist Drill Grinder, I can now offer the No. 0 size, which has been designed for Jobbers' Drills $\frac{1}{16}$ in. to $\frac{1}{2}$ in. diam. This machine is well made and will give every satisfaction.

The Grinding Arm is fitted with lip to hold drills in proper position as in the larger machines. The Machine takes wheels 6in. diameter by $\frac{3}{8}$in. or $\frac{1}{2}$in. wide, and has a height of $5\frac{1}{2}$in. from base to centre of spindle, the measurement of base is 5in. by 4in.

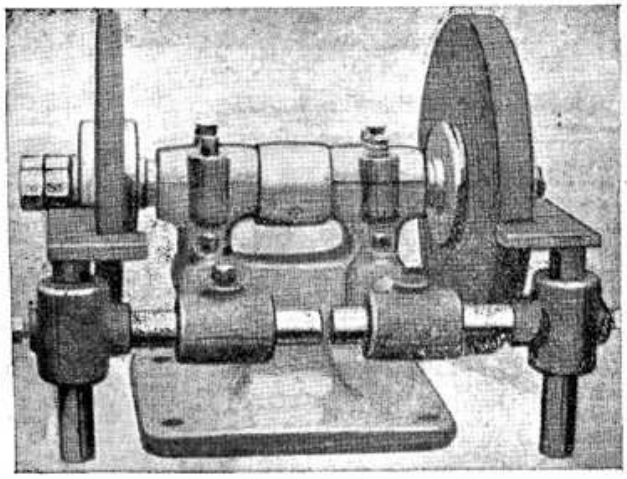


The opposite side to the Arm is fitted with adjustable Tool Rest for small grinding. The Driving Pulley can be used for either gut band or flat belt drive. The Bearings are fitted with oil covers.

PRICE, complete as illustrated, £3 10s. 0d.
(with Two 6in. × $\frac{1}{2}$in. Corundum Wheels fitted).

Price of Complete Set of Rough Castings and full size Drawings, **12/6.**
Suitable Corundum Wheels: 6in × $\frac{3}{8}$in., **6/-** each; 6in. × $\frac{1}{2}$in., **6/6** each.

SMALL TOOL GRINDER



These are the handiest machines for both amateur workshop and general shop use. They occupy little space on a bench.

SPECIFICATION

Size No. 0

Takes Wheels	6in. × $\frac{1}{2}$in. or 6in. × $\frac{3}{4}$in.
Size of Spindle	$\frac{1}{2}$in. diameter
Diameter of Flanges	$2\frac{1}{2}$in.
Size of Pulley	$1\frac{1}{2}$in. diam. $1\frac{1}{4}$in. broad
Size of Base	$5\frac{1}{2}$in. × $4\frac{1}{4}$in.
Height to Centre of Spindle	$4\frac{1}{2}$in.

Size No. 1

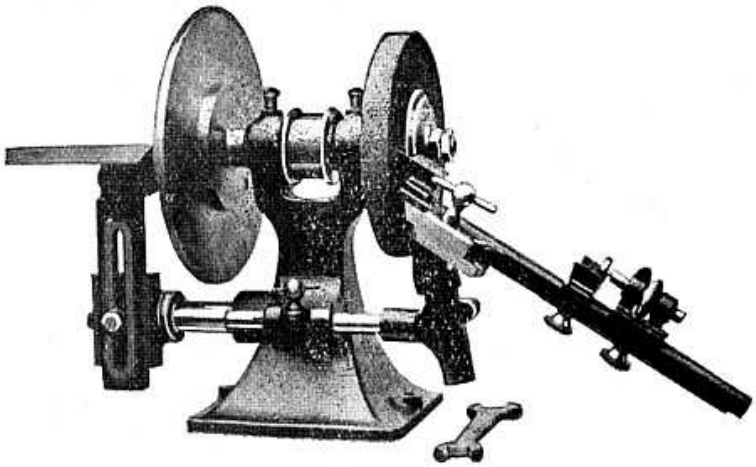
Takes Wheels	8in. × $\frac{3}{4}$in. or 8in. × 1in.
Size of Spindle	$\frac{5}{8}$in. diameter
Diameter of Flanges	$3\frac{1}{2}$in.
Size of Pulley	2in. diam. $1\frac{3}{4}$in. broad
Size of Base	7in. × 6in.
Height to Centre of Spindle	$5\frac{1}{2}$in.

Price of Complete Set of Rough Castings, Drawings and Materials, for Machine as illustrated, No. 0, **12/6**; No. 1, **15/6**. Extra for planing base, fitting caps, boring for shaft, etc. No. 0, **7/6**; No. 1, **10/6**.

THE No. 1 IMPROVED

Bench Twist Drill & Disc Grinder

This Grinder, as illustrated, is of neat design, and will grind drills from one inch downwards, either with straight or taper shanks. The base is strong and well proportioned, and has two holding down bolt holes for fastening to the bench. The Spindle is ⅞in. diameter, is made of best steel and runs in gun metal bushes. The flanges are let on to secure a firm hold, and are finally locked with fine thread nuts. The driving pulley is for 1¼in. wide flat belt, and the bearings are fitted with improved oil hole covers.



Complete Set of Rough Castings, with Bright Steel for Shaft and full size drawings, **25/-** per set.

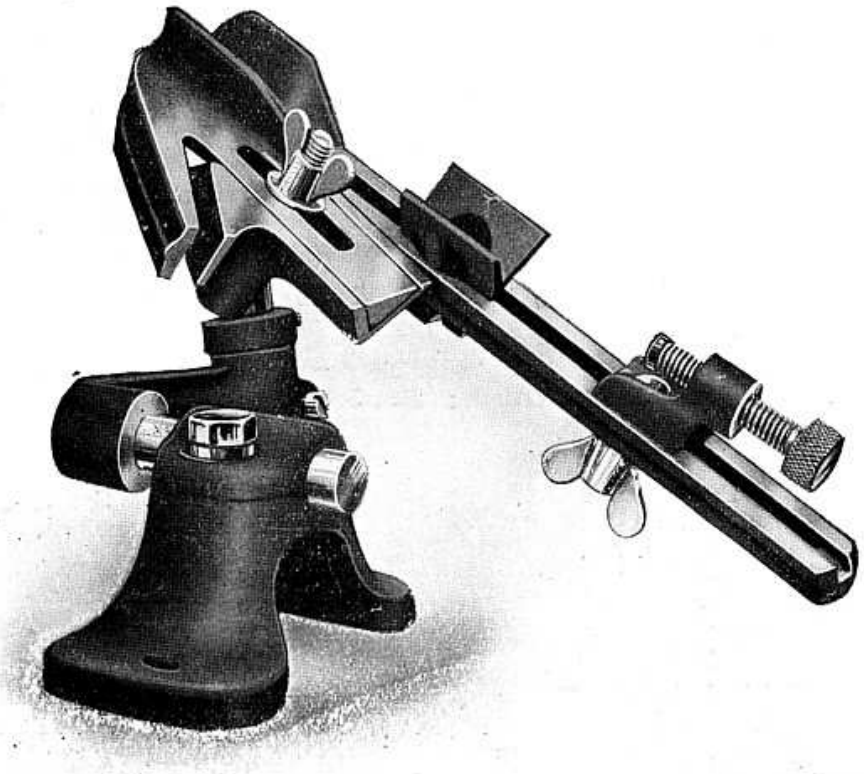
Extras for—Planing Base, **2/6**; Planing Arm Castings, etc. **15/-**; Boring Head, splitting Caps, fitting Screws, and boring for Arm, **10/6**.

Disc Grinder Attachment

The above Twist Drill Grinder can be had with the blank end fitted with Improved Steel Disc Plate 10in. diameter and Improved Swivelling Table or Rest, which can also be raised and lowered and will swivel at any angle. The size of the Table is 10in. by 6in. This Attachment is very handy and suitable for getting up all kinds of flat faces, and leaves a splendid finish on the faces.

Price of Complete Set of Rough Castings, including Steel Blank for Disc Plate and Three 10in. Emery Discs, **15/-** nett above price of Twist Drill Grinder Castings.

Extra for Planing Disc Grinder Castings, **12/6** per set.



TWIST DRILL

Grinding Jigs

These Grinding Attachments are made to bolt on to the frame or stand of any Grinding machine and the Drills must be ground on the sides of the wheels. They can also, if required, be used on the Lathe with the emery wheel running between the centres.

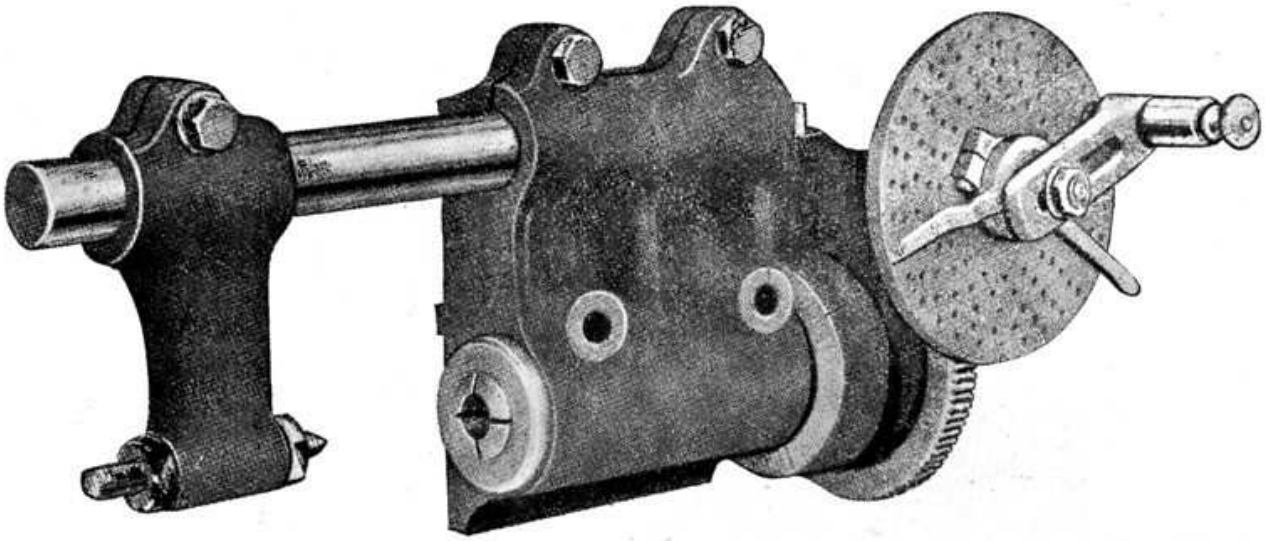
Made in Two Sizes :

No. 1, 5½in. high, grinding twist drills up to ½in. diam. Suitable for No. 1 Grinder. **27/-** complete. Set of Castings, **7/6**.

No. 2, 8in. high, grinding twist drills up to 1in. diam. Suitable for No. 2 Grinder. **40/-** complete. Set of Castings, **10/6**.

THE "ATLAS"

Gear Cutting Attachment



This Attachment, as will be seen from the illustration, is one of first-class design that has been wanted at a reasonable price for a long time. It is intended to be attached to the Vertical Slide by means of two bolts and is intended for cutting all kinds of wheels, fluting shafts, etc., within its capacity, the cutter being designed to run between the centres on an arbor.

The Body Casting is of best iron and is bored reamered holes, and the overhanging arm is bored at the same setting to ensure them being in correct line with each other.

The Spindle is of best steel and the front end is bored conical to receive the draw in spindle which is conical at the front end and split as shewn to form a draw in Chuck for holding the mandrils or arbors on which the wheels are held.

The Steel Worm is accurately cut and is fitted to the worm wheel which is accurately hobbed and has 90 teeth. The Worm is carried on an adjustable sleeve so that it can always be kept full in gear, which enables the user to obtain accurate dividing.

Two Division Plates are included with each finished attachment and have together eleven rows of holes, enabling nearly all numbers to be cut up to 50 and most of the numbers above 50. The dividing arrangement is fitted with fingers to the division plates which avoids counting for odd numbers.

This Attachment is also fitted with Overhanging Arm, as shewn in the illustration, and can be removed if not required.

This Attachment is made in Four Sizes: No. 0 being suitable for Lathes with 3in. centre; No. 1 for 3½in. and 4in. centre; No. 2 for 4½in. and 5in. centre; No. 3 for 5½in. and 6in. centre.

NOTE.—No. 0 size has Worm Wheel with **60** Teeth.

Size No.	Price Finished Complete £ s. d.	Price of Complete Set of Materials and Drawings. s. d.
0	4 15 0	15 0
1	5 10 0	20 0
2	6 15 0	28 6
3	7 10 0	37 6

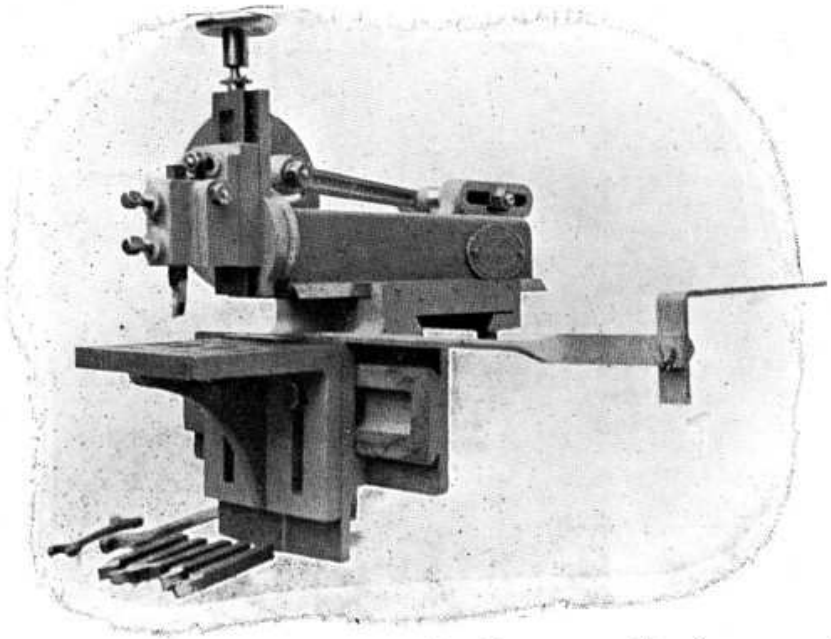
Finished Arbors, **5/-** each.

EXTRAS if required in addition to Sets of Rough Material: Cutting Worm and Hobbing Wheels, Nos. 0, 1, 2, or 3 Sizes, **15/-**; Set of Two Finished Division Plates, any size of Attachment, **15/-**.

THE "ATLAS"

Shaping Attachments

(For use on the Lathe)



These Attachments have been specially designed for Power Driven Lathes or could be conveniently used on Treadle Lathes, and are a most efficient accessory in the tool shop.

The Ram is driven by drop forged steel connecting rod which is fitted with gunmetal bushes, and is engaged by a **T** slotted crank plate which is bolted to lathe face plate, this also allows for adjustment of Stroke to any length within its capacity.

The Attachments have self-acting feed to the horizontal cuts, which is obtained by connecting a rod (shewn in illustration) to the lathe saddle, so that when the traverse of the saddle is put "in-gear" the self-acting feed will operate either way.

SIZE	No. 1	No. 2	No. 3	No. 4	No. 5
Stroke	5in.	6in.	8in.	9in.	10in.
Traverse	8in.	10in.	12in.	14in.	16in.
Suit Lathe Beds, ins. wide	3½ to 3⅞	4 to 4½	5 to 6½	7½ to 8	9in.
PRICE COMPLETE with Spanners ready for attaching to Lathe ...	£ s. d. **6 0 0**	£ s. d. **7 10 0**	£ s. d. **8 10 0**	£ s. d. **11 0 0**	£ s. d. **13 10 0**
EXTRA if Table is raised and lowered with Square Thread Screw and Hand Wheel	0 18 0	1 0 0	1 0 0	1 10 0	1 10 0
Complete Set of ROUGH Castings, including Drop Forged Steel Connecting Rod and full size Drawings ...	**1 15 0**	**2 2 0**	**2 15 0**	**4 15 0**	**6 10 0**
Complete Set of PLANED Castings, including Drop Forged Steel Connecting Rod and full size Drawings ..	**4 0 0**	**5 0 0**	**6 0 0**	**8 10 0**	**11 0 0**
EXTRAS.					
Set of 6 Tools, ordinary steel	0 6 0	0 6 0	0 7 0	0 8 0	0 9 0
Ditto but high-speed steel ..	0 12 0	0 12 0	0 14 0	0 16 0	0 18 0
All Screws, Bolts and Nuts, Bright Rod and finished Spanners	0 10 0	0 10 0	0 12 6	0 15 0	0 18 0
Turning, Indexing and Graduating end of Ram ..	0 10 0	0 10 0	0 12 6	0 15 0	0 18 0
Suitable Vice, Finished ...	1 10 0	1 10 0	1 10 0	2 0 0	2 0 0
Ditto, Rough Castings, set	0 7 6	0 7 6	0 7 6	0 10 6	0 10 6
Ditto, Planed Castings, set	1 0 0	1 0 0	1 0 0	1 7 6	1 7 6

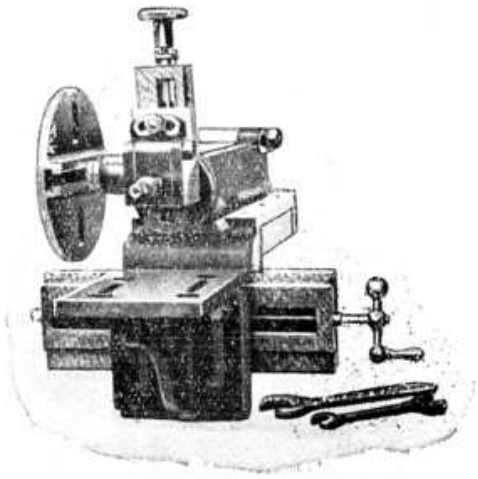
NOTE.—No. 1 Size is specially designed for Drummond 3½in. Lathe. When ordering for 3½in. Drummond Lathes a full size sketch of Lathe Bed Angles must be sent.

"Atlas" Shaping Attachment

Specially designed for Drummond 4in. Round Bed Lathe.

5in. Stroke. 7in. Traverse.

Weight complete, 34 lbs.

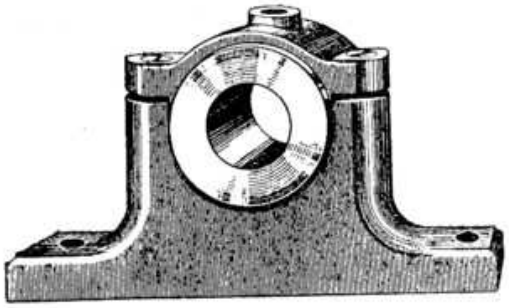


This Attachment has been specially designed to suit the noted Drummond 4in. Lathe. The table is 5in. × 4in. is well slotted and can be raised and lowered. The ram is strong and is driven by drop forged steel connecting rod which is fitted with gun metal bushes, and the other end is driven by special **T** slotted crank plate which bolts on to the lathe face plate, making the stroke adjustable to any length within its capacity. The ram is graduated and indexed for angle work and the tool box takes $\frac{5}{16}$in. square tools and has relief for tool as in large shaping machines. The fiddle is fitted with steel square thread screw and gunmetal nut, and the bed is fastened on to the lathe saddle with two steel bolts. This Attachment will give every satisfaction.

PRICE, complete with Spanners, ready for attaching to Lathe, £6 0s. 0d.

Complete sets of Castings, including Drop Forged Steel Connecting Rod Stamping and full size Drawings; In-the-Rough, **35/-**; Planed, **75/-**.

EXTRAS.—Set of Six Tools ordinary steel, **6/-**; Ditto but high-speed, **12/-**; all screws, bolts and nuts, bright rod and screw keys stamping in the rough, **8/6**; Turning, indexing and graduating end of ram, **8/6**. Finished Vice, **21/-**; Rough Castings, **2/6**; Planed, **10/6**.



Plummer Blocks

(with Top & Bottom Brass)

Diam. Shaft	Price each Rough Castings		Price of Finished Plummer Blocks	
	s.	d.	s.	d.
Suit $\frac{1}{2}$ inch	2	0	4	0
,, $\frac{5}{8}$,,	2	0	4	0
,, $\frac{3}{4}$,,	2	3	4	0
,, $\frac{7}{8}$,,	2	3	4	0
,, 1 ,,	3	0	4	6
,, $1\frac{1}{4}$,,	3	3	5	0
,, $1\frac{1}{2}$,,	3	9	6	0
,, $1\frac{3}{4}$,,	4	0	7	0
,, 2 ,,	5	0	8	0

Lathe Centres in BEST CAST STEEL

(Hardened and Tempered)

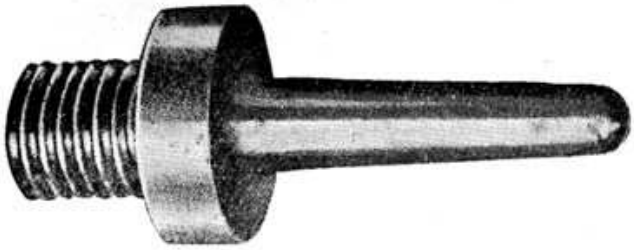
PLAIN

SQUARE

HOLLOW

No. Shape	Plain s. d.	Square s. d.	Hollow s. d.	Half-Plain s. d.	Half-Hollow s. d.	Two Prong for Wood s. d.	Postage extra each
1 Morse	1 9	2 6	1 9	2 0	2 0	3 4	3d.
2 ,,	2 6	4 6	2 6	3 0	3 0	6 9	4d.
3 ,,	4 6	6 0	4 6	5 0	5 0	10 0	6d.
4 ,,	6 0	8 6	6 0	7 0	7 0	11 6	1/-

Adapters



For converting Loose Headstock same as Mandril Nose so that Chucks, etc., can be used on same.

No. 1 Morse Taper Shank with Nose ⅜in. Whitworth Thread .. **4/3** each
No. 1 ditto with 1in. Whit. Thread .. **4/9** each
No. 2 Morse with 1in. Nose .. **6/6** each
Prices of other sizes on application.

BLANK END Mandrils

with Morse Taper Shanks

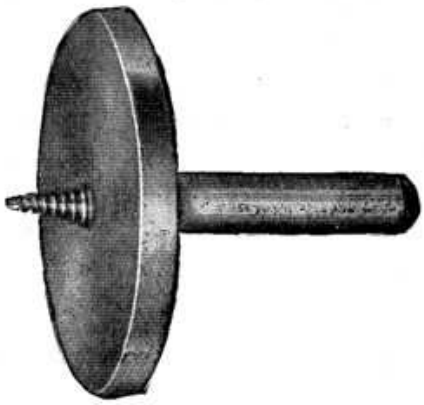
For fitting to Drill Chucks or other Tools.

Morse Taper No. 1. Diam. of Blank End, ⅜in.
Length of End, 1⅛in Price, **2**/- each
Morse Taper No. 2. Diam. of Blank End, 1in.
Length of End, 1⅜in. Price, **3**/- each
Morse Taper No. 3. Diam. of Blank End, 1⅝in.
Length of End, 1¾in. Price, **4**/- each

TAPER SCREW

Flange Chucks

For Wood

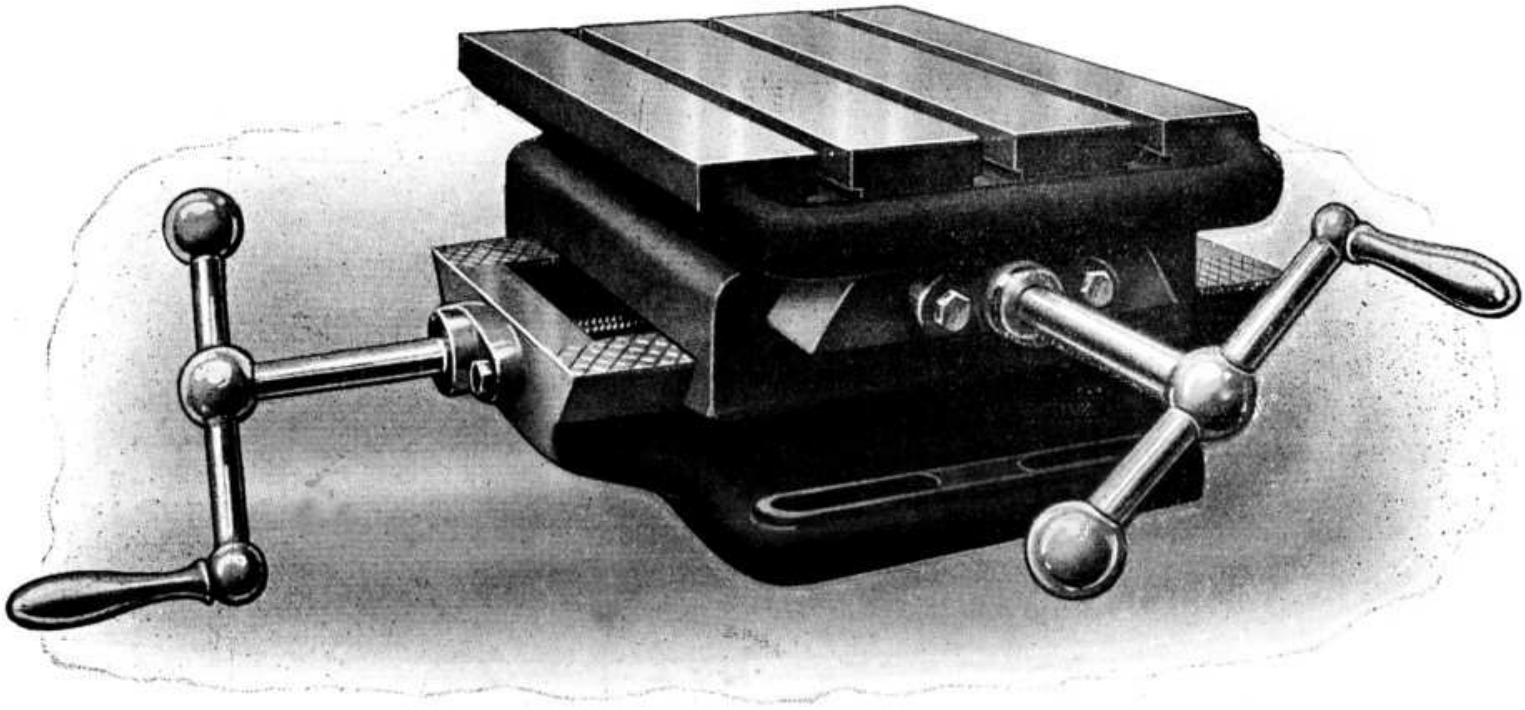


Fitted with No. 1 Morse Taper Shank as illustrated, **4**/- each.
Fitted with No. 2 Morse Taper Shank, **7/6**
Or with Boss or Back Chased either ⅝in., ¾in., ⅞in. or 1in. Whitworth Threads .. **7/6** each.

Drilling Pads

As illustrated, to fit on Poppit Spindle, ⅜in. diameter ... **3/6** each.
Larger sizes .. .. **5**/- each.

THE "ATLAS" Compound Tables



For use on Milling, Drilling, and other machines when Keyway Cutting, etc. New and improved design giving absolute rigidity when operating. All Surfaces are carefully hand-scraped to Surface Plate and fitted accurately. Loose Strips for adjusting wear and has Steel Square Thread Screws working in gunmetal nut.

Size Number..	No. 0	No. 1	No. 2	No. 3
Diam. of Table	5in. × 6in.	12in. × 8in.	14in. × 10in.	17in. × 14in.
Total Height	5in.	7½in.	8½in.	9½in.
Length of Traverse ..	8in.	11in.	13in.	16in.
Transverse Traverse ...	6in.	8in.	10in.	14in.
Approximate Weight ...	45lbs.	100lbs.	130lbs.	319lbs.
Price, Finished Complete	**£5 10s. 0d.**	**£8 10s. 0d.**	**£10 10s. 0d.**	**£14 10s. 0d.**

FINISHED LEADING SCREWS

(Made of Best Steel and guaranteed Accurately Cut.)

In Screw-cutting in a Lathe, most people know that if the Leading Screw is not true, the Screws which are being cut are therefore not true also. These Screws which we offer are guaranteed true, and are cut in a Lathe specially for this class of work and will give every satisfaction. The Screws are cut four threads per inch.

FOR LATHE BEDS:

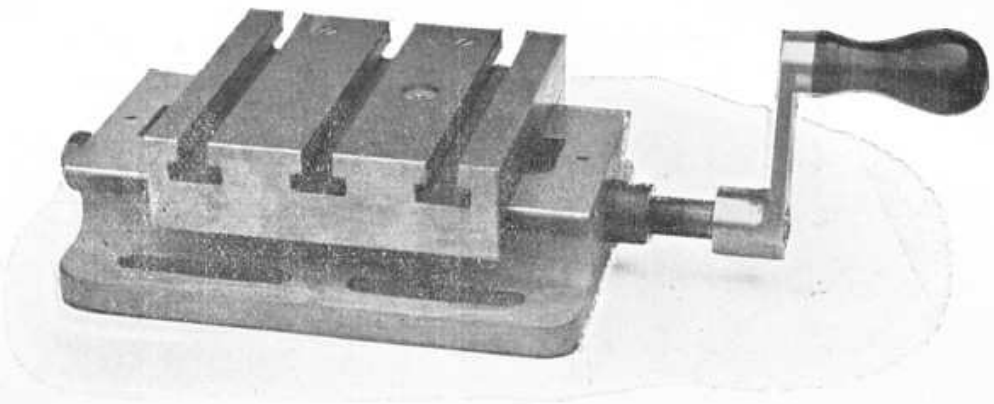
Inches long	24in.	30in.	36in.	42in.	48in.	54in.	60in.	72in.	84in.
PRICE ...	**15/6**	**17/6**	**21/6**	**27/6**	**30/-**	**35/6**	**40/-**	**50/-**	**55/-**

Prices of Longer or Special Screws on application.

The Ends of these Leading Screws can be had finished either to our own standard sizes or to customer's own dimensions.

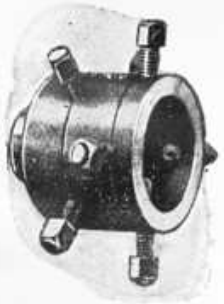
THE "ATLAS" IMPROVED

Slot Drilling Slide



This Slot Drilling Slide is for bolting on to Drilling Machine Tables. The work is bolted on to the square slide and the cutters revolve in the Drill Spindle or Chuck. The **T** Slots are machine-cut from the solid, and the Screw has Square Thread and is fitted with gunmetal nut.

Size Number...	No. 0	No. 1	No. 2	No. 3
Diam. of Table	4in. × 3in.	5¾in. × 4¾in.	5in. × 6in.	7½in. × 6in.
Height to top of Table	1⅝in.	2⅜in.	2¾in.	3¾in.
Travel of Slide	3½in.	4½in.	6in.	10in.
Overall Dimensions	4¾in. × 5⅜in.	5in. × 6¼in.	5¼in. × 8¾in.	6¾in. × 15in.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Price, Finished Complete	**2 0 0**	**2 5 0**	**2 10 0**	**3 5 0**
Rough Castings	**0 10 6**	**0 13 6**	**0 15 6**	**1 7 6**
Planed Castings	**1 5 0**	**1 8 6**	**1 12 6**	**2 5 0**
Carriage	0 1 3	0 1 6	0 2 0	0 3 0



BELL CHUCKS

These are very handy accessories to the Lathes for holding ends of Shafts, etc. They are fitted with eight hardened steel screws. Finished Chucks are supplied with solid Boss, or with plain hole bored or chased any thread to suit customer's Lathe Mandril.

The Castings are clean and soft. and of strong and neat design. Diameters given are inside measurements.

	No. 1	No. 2	No. 3	No. 4	No. 5
Diameter, inches...	1in.	1¼in.	1½in.	1¾in.	2in.
Casting only	**1/-**	**1/3**	**1/6**	**1/9**	**2/-**
Finished Bell Chuck	**10/-**	**12/6**	**13/-**	**14/-**	**16/-**
	No. 6	No. 7	No. 8	No. 9	No. 10
Diameter, inches..	2½in.	3in.	3½in.	4in.	5in.
Casting only	**3/-**	**4/9**	**6/-**	**7/6**	**10/6**
Finished Bell Chuck	**18/-**	**25/-**	**30/-**	**35/-**	**40/-**

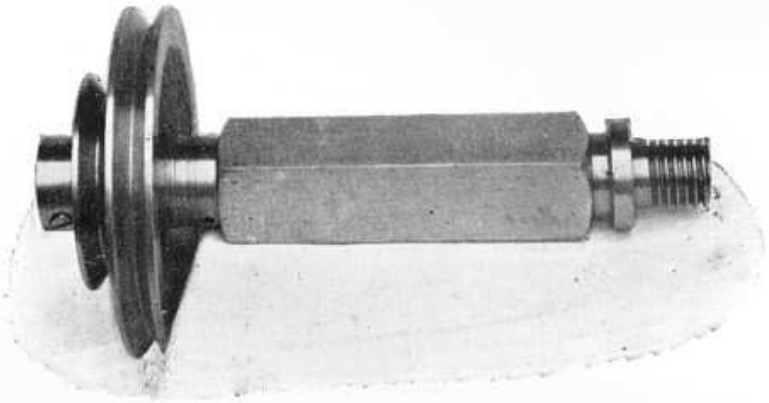
Finished Chucks include Eight Screws and cutting Thread in Boss.

THE "ATLAS"

Improved Drilling Spindles

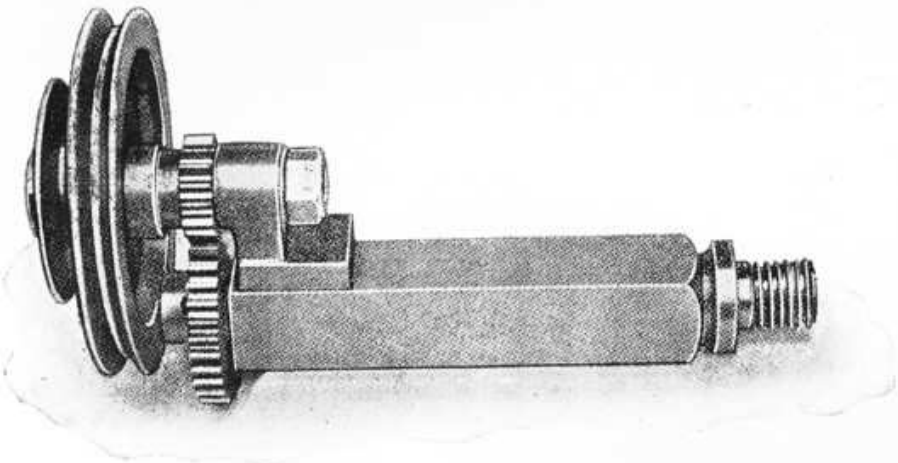
These Spindles are accurately made and finished in best style and the Body is of suitable steel carefully hardened. The Single Geared type, see illustration, are fitted with a Two-Speed Cone Pulley for gut band fitted direct on to Spindle. The Double Geared type are driven by a Two-Speed Cone Pulley for gut band operating through Machine Cut Gears, as illustrated.

SINGLE GEARED TYPE



PRICES OF SINGLE GEARED SPINDLES.

Size No.	Body square		long	Spindle Nose	Each s.	d.
1	¾in.	×	4in.	¾in.	36	0
2	⅞in.	×	4in.	¾in.	38	0
3	1 in.	×	4in.	¾in.	40	0
4	1¼in.	×	5in.	⅞in.	45	0
5	1½in.	×	6in.	1in.	50	0



DOUBLE GEARED TYPE

PRICES OF DOUBLE GEARED SPINDLES.

Size No.	Body square		long	Spindle Nose	Each s.	d.
6	¾in.	×	5in.	¾in.	50	0
7	⅞in.	×	5in.	¾in.	52	6
8	1 in.	×	5in.	¾in.	55	0
9	1¼in.	×	6in.	⅞in.	60	0
10	1½in.	×	7in.	1in.	65	0

Note.—Nos. 2 and 7 are the most suitable for use on 3½in. Drummond Lathe.

For **5**/- extra any Double Geared Spindle (Nos. 6 to 10) can be had fitted with Interchangeable Cone on Mandril, so that it can be used as a Single Geared Spindle for high-speed drilling at will.

Carriage extra on above Drilling Spindles—Nos. 1, 2, 3, 6, 7, 8, **1/6** each; Nos. 4, 5, 9 and 10, **2/6** each.

THE "ATLAS" UNIVERSAL

Milling Attachments

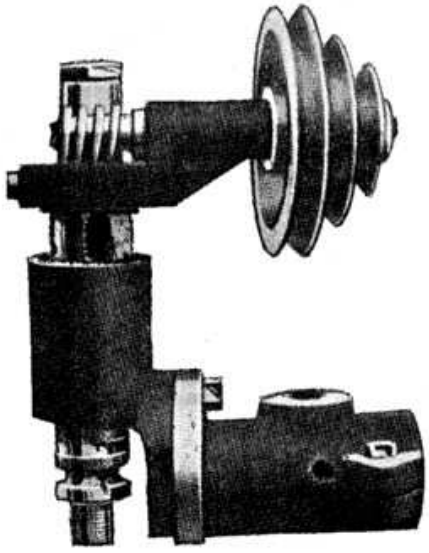
These Attachments have been designed to meet the demand for real good Milling Attachments for Lathe use at a reasonable cost. The illustrations below show the Tool in two positions both vertical and horizontal. The vertical attachment is suitable for cutting slots, etc., and fluting work, while the horizontal attachment is suitable for ordinary drilling, slot drilling, grinding, etc.

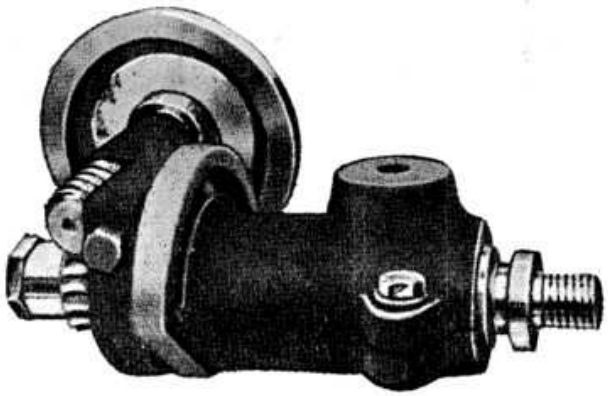
The Attachments are composed of three pieces—

The Spindle in its steel barrel, which is adjustable for wear by the milled nut shewn in the illustration.

The right angular Socket with shank and the clamping sleeve on post.

The three-speed Cone Pulley which drives a steel worm on the end of the Spindle which can be had hollow if required.





The Spindle is bored Morse Taper and has the nose cut Whitworth Standard Thread. It can also be had, if required, made to receive Milling Cutters (or large size Cutters if No. 2 or 3 size Attachments are ordered) or can be made to any special size to suit customer's requirements.

The Cone of the revolving spindle being round, it can be raised or lowered in its socket so as to get the tool or cutter exactly central with the work. It can also be turned to any position so as to get the Cone Pulley into line with the overhead motion.

The Worm is fixed on a bracket which may be moved round the centre top of the sleeve, so as to bring the worm the proper depth into the worm wheel.

For high speed work and grinding, the worm wheel and the bracket may be entirely removed and the cone pulley fixed direct on to the end of the spindle. The swivelling part is accurately graduated and indexed so that it may be put to any degree on ether side.

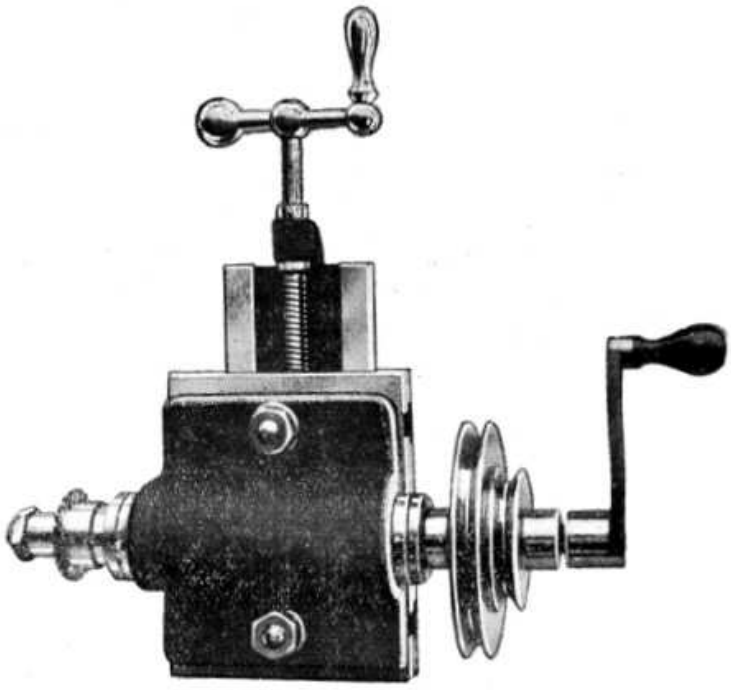
Body Casting in sizes 0 and 1 is in Best Malleable Metal.

Size No.	For Centre Lathes	Diam. of Spindle Nose Whit.	Set of Rough Materials & Blue Prints	Finished Set Complete	Carriage Extra	Extra for Finished Worm & Wheel
0	3in. and 3½in.	¾in.	**10/6**	**100/-**	**1/3**	**10/6**
1	4in.	¾in.	**15/6**	**130/-**	**2/-**	**15/-**
2	4½in. and 5in.	1in.	**24/6**	**150/-**	**3/-**	**17/6**
3	5½in. and 6in.	1in.	**32/6**	**170/-**	**4/-**	**19/6**

TOM SENIOR, Atlas Works, Hightown, Liversedge.

The "ATLAS" PLAIN

Milling Attachment



Offered for use in conjunction with Vertical Slides, the illustration shewing one of these Attachments bolted on to one of our New Type Vertical Slides exactly as when in operation. They are most useful for cutting keyways, fluting taps, etc., either by hand or power drive, the latter being by two-speed cone pulley for round belt, the cranked handle having square hole and can be easily detached. The Spindle has double conical adjustable bearings and runs in hard phosphor bronze bushes. The end receiving the cutters is made ½in. diam. to suit Milling Cutters shewn on other of our sheets, and is fitted with small key or pin to prevent cutter from revolving.

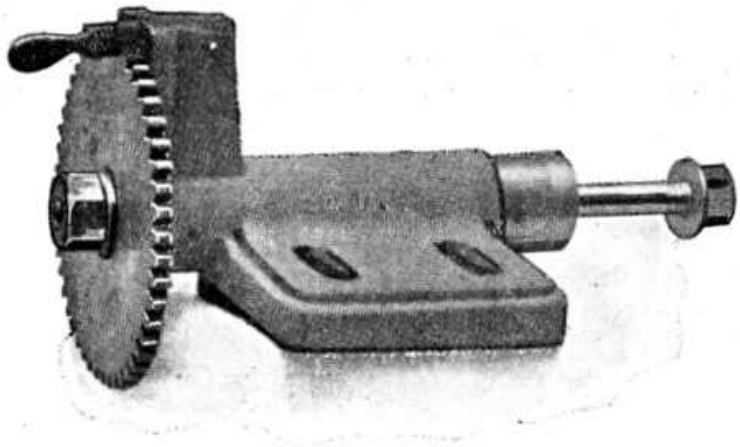
Four sizes are made as follows :

Size No.	For Centre Lathes	Set of Rough Material	Finished Set without Vertical Slide	Carriage extra	Finished Set with Vertical Slide	Carriage extra
0	2½in. and 3in.	**8/-**	**35/-**	**1/-**	**85/-**	**2/-**
1	3½in. ,, 4in.	**10/6**	**40/-**	**1/6**	**90/-**	**2/6**
2	4½in. ,, 5in.	**12/6**	**47/6**	**2/-**	**107/6**	**3/-**
3	5½in. ,, 6in.	**15/6**	**55/-**	**3/-**	**120/-**	**3/6**

The Vertical Slide included in above prices is the latest pattern Swivelling type.

The "ATLAS" IMPROVED

Wheel Cutting Attachment



This attachment is intended to be used in conjunction with our Vertical Slides by fastening to slotted table of same which is fixed at right angles to the lathe centres in which the cutters revolve. The division plates have machine cut teeth and are accurately divided. One Mandril and one Division Plate are included with each Attachment.

No.	Spindle diam.	Finished Set	Rough Set	Carriage
1	$\frac{5}{16}$in.	**20/-**	**5/-**	**1/3**
2	$\frac{3}{8}$in.	**22/-**	**5/-**	**1/6**
3	$\frac{1}{2}$in.	**25/-**	**6/-**	**1/9**

Each with Division Plate cut either 48, 60, or 72 teeth.

Extra Mandrils, any size of end .. .. No. 1 **6/-**, No. 2 **6/6**, No. 3 **7/-** each.
Extra Division Plates, 48, **4/6** ; 60, **5/-** ; 72, **5/6** ; 80, **6/-** ; 84, **6/6** each.

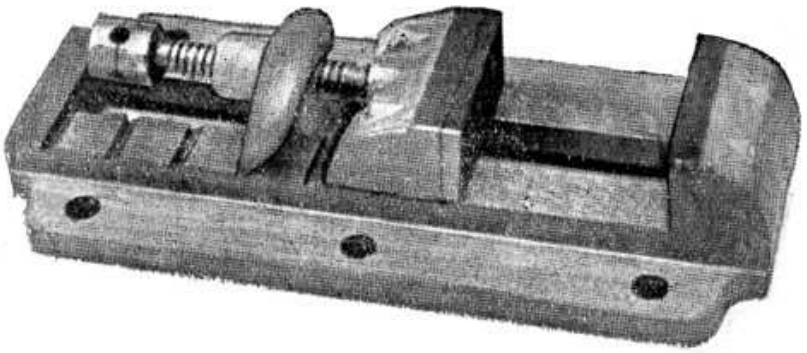
Maker of the "Atlas" POWER SHAPER, 7in. Stroke, Bench or Pillar Type

The "ATLAS"

Special Machine Vice

A popular type for use on Planing, Shaping, Milling and Drilling Machines, simple and effective. Nut is of special alloy steel and Screw is of best mild steel and has accurately cut square thread.

Jaws are machined and can be had with or without steel liners. State which pattern when ordering. All parts carefully fitted and surfaces planed and hand scraped and absolutely parallel.

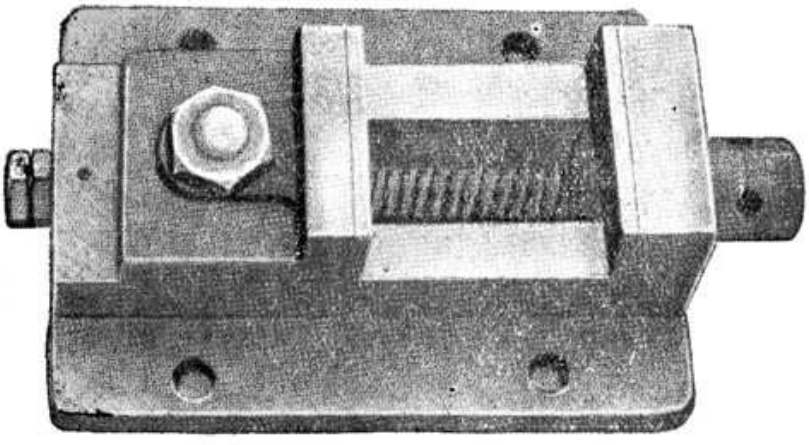


No.	Width of Jaw ins.	Depth of Jaw ins.	Opens ins.	Size of Base ins.	Weight lbs.	Rough Castings	Planed Castings	Finished complete
1	2	$\frac{7}{8}$	$4\frac{1}{4}$	$8\frac{3}{8}\times4\frac{1}{8}$	6	**6/6**	**15/-**	**26/-**
2	3	1	5	$9\frac{3}{4}\times5$	10	**9/6**	**20/-**	**32/6**
3	3	$1\frac{1}{4}$	7	$12\times7\frac{3}{4}$	25	**11/-**	**25/-**	**37/6**
4	4	$1\frac{3}{4}$	8	$15\times7\frac{3}{4}$	39	**15/-**	**35/-**	**45/-**

No. 1 is suitable for No. 1 and 2 Shaping Attachments also for No. 1 Hand Planer.

No. 2 is suitable for No. 3 Shaping Attachment, No. 2 Hand Planer, "Atlas" Hand Shaper and "Atlas" Milling Machine.

No. 3 is suitable for No. 3 Hand Planer, 10in. and 13in. Power Shaper and "Atlas" Hand Shaper.



The "Atlas" Improved

SWIVEL JAW Machine Vice

A high class and carefully made Vice, specially designed for use on small Shaper, Miller, Planer, etc. The Jaws can be had with or without steel liners, which must be specified when ordering, and the square thread screw is carefully cut. Nut is in steel alloy metal.

No.	Width of Jaw ins.	Depth of Jaw ins.	Opens ins.	Size of Base ins.	Weight lbs.	Rough Castings	Planed Castings	Finished complete
1	$1\frac{1}{2}$	$\frac{3}{4}$	$1\frac{3}{4}$	$3\frac{1}{2}\times4$	4	**4/-**	**10/-**	**17/6**
2	$1\frac{1}{2}$	$\frac{3}{4}$	$2\frac{1}{2}$	4×5	5	**4/6**	**10/6**	**18/6**
3	2	$\frac{7}{8}$	$1\frac{3}{4}$	$4\times4\frac{1}{4}$	5	**4/6**	**11/-**	**19/6**
4	2	$\frac{7}{8}$	$2\frac{3}{4}$	$4\times5\frac{1}{4}$	6	**5/-**	**11/6**	**21/6**
5	$2\frac{1}{2}$	1	2	$4\frac{3}{8}\times5\frac{1}{8}$	7	**5/6**	**13/6**	**23/6**
6	$2\frac{1}{2}$	1	3	$5\frac{1}{8}\times6$	8	**6/6**	**15/-**	**25/6**
7	3	1	$2\frac{1}{2}$	$5\frac{1}{8}\times6$	10	**7/-**	**17/6**	**30/-**
	3	$1\frac{3}{8}$	4	6×9	14	**8/6**	**20/-**	**35/-**

Compound Slide Rests

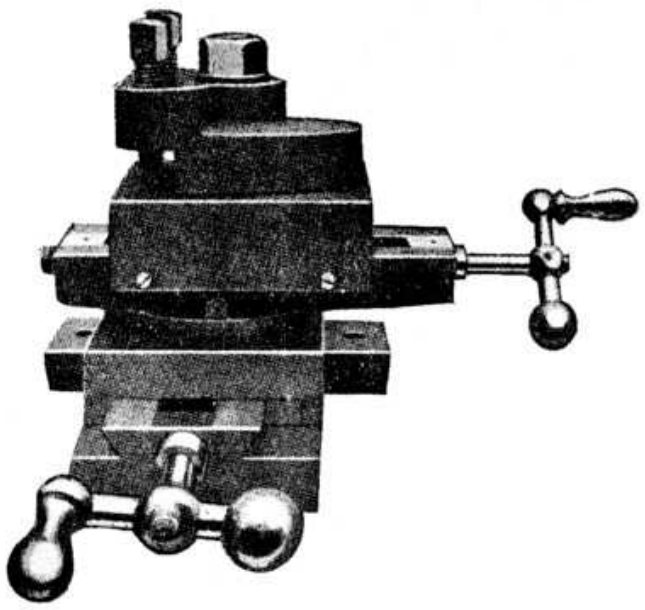
(SADDLES)

SCREW-CUTTING TYPE *for* SCREW-CUTTING LATHES.

FULLY Compound as illustration below, but with Bottom Saddle having **T** Slots cast in for holding down purposes, also with extended slides and adjustable strip to ensure accurate and smooth fit to Lathe Bed Faces. These Slide Rests can be used in conjunction with Nut Box Sets listed on other pages. The swivel slide is graduated and indexed for taper turning. NOTE. Sizes 3in., 3½in. and 4in. Screw-cutting Slide Rests can be supplied, if desired, with our Separate and Interchangeable Boring-Milling Table as shown on page illustrating the "Atlas" 4in. Screw-cutting Lathes. This separate table, which is interchangeable in a few seconds, increases the usefulness of the Slide Rest one hundred per cent. The four **T** Slots in the table are cut from the solid. When ordering Screw-cutting Slide Rests give sketch across faces of Lathe Bed or send Template.

	3in.	3½in.	4in.	4½in.	5in.
Suitable for Centre Lathe					
Rough Castings, per set	7/6	10/6	12/9	19/-	25/-
Planed Castings, per set	20/-	23/6	27/-	35/-	40/-
Extra for cutting Swivel Slide out for **T** Bolts ...	3/6	3/6	4/-	5/6	5/6
Square Thread Screws and Gun Metal Nuts ..	5/-	6/-	7/-	8/-	10/-
Finished Slide Rest	76/-	80/-	90/-	112/-	130/-
Carriage extra	1/9	2/3	3/-	3/6	4/-

Extra for Separate and Interchangeable Boring Table, 3in., 3½in. or 4in.
Rough Castings, **5/-** Planed Castings, **15/-** Finished Table, **17/6.**



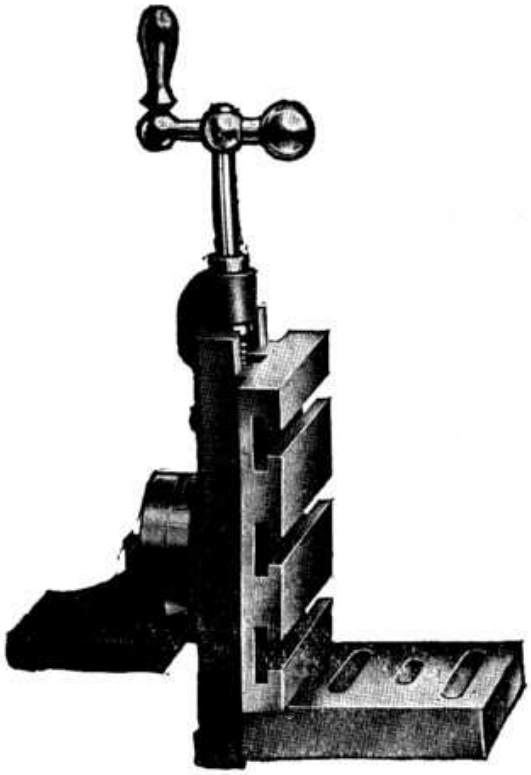
COMPOUND SLIDE RESTS

The illustration shews our regular fully Compound Slide Rest, fitting on to Lathe Bed and held rigid by "Tenor" planed to suit space between Shears. The design is quite up-to-date, well proportioned, and carries ample weight of metal to ensure really heavy productive results. The Castings are in our famous soft grey mixture, clean and soft, and easily workable. All surfaces are carefully hand-scraped, dead true, and finished in best style. The Swivel Slide is graduated and clearly indexed for turning and conical work to any angle. Screws are of best steel and have square threads working in gun metal nuts. American pattern Ball Handles are fitted. It is desirable when ordering to give width of "Tenor" part underneath, that fits in space between shears of bed.

	2½in.	3in.	3½in.	4in.	4½in.	5in.
Suitable for Centre Lathe						
Rough Castings, per set	4/6	6/6	8/-	10/-	15/6	22/6
Planed Castings, per set	10/6	12/6	15/6	18/6	25/-	30/-
Extra for cutting Swivel Slide out for **T** Bolts ..	3/6	3/6	3/6	4/-	5/6	5/6
Square Thread Screws and Gun Metal Nuts ..	5/-	5/-	6/-	7/-	8/-	10/-
Finished Slide Rest complete as illustrated ..	59/-	66/-	69/-	78/-	98/-	115/-
Carriage extra	1/6	1/6	2/-	2/-	3/-	4/-

Vertical Slides (TYPE NEW)

Designed Specially to suit Drummond 3½in. & 4in. Lathes.



New design and offered as a most reliable and accurate accessory. All working parts are carefully hand-scraped and surfaced, and the finished slides are fitted in the very best style. The body is fully graduated and indexed for Angle work. Best steel square thread screws working in gun metal nuts for raising and lowering table, the latter having **T** Slots cut from the solid. Adjustable strip is fitted to take up wear and micrometer collars fitted to shank to facilitate fine adjustment of work.

	Size No. 1 Table 5in. × 4in.	Size No. 2 Table 6in. × 5in.
To suit Lathes	3½in. & 4in.	4in. & 4½in.
Rough Castings per set... ...	**6/6**	**10/-**
Planed Castings per set... ...	**15/-**	**25/-**
Graduating and Indexing Swivel Slide	**7/6**	**7/6**
Square Thread Screws with gun metal nuts fitted	**6/-**	**7/-**
Finished Vertical Slide (without Angle Bracket Base) ...	**50/-**	**60/-**

ANGLE BRACKET BASE (as illustrated)
can be fitted and is easily detachable by 3 screws.

Rough Casting	**1/6**	**3/-**
Planed Casting	**3/-**	**5/-**
Fitted complete to Slide ..	**7/-**	**9/-**
Suitable Swivel Jaw Vice complete	**26/-**	**33/-**
Vice Jaws Wide X Opening ..	2in. × 2¾in.	2½in. × 3in.
Carriage extra	**2/-**	**3/-**

The "ATLAS"

Turret Tool Holder

SIX HOLE TYPE.

This attachment has a taper shank to fit the Tailstock spindle of an ordinary lathe, the turret revolves upon a large bearing surface on the body of the tool, and when locked cannot lift or spring during cutting. The locking device holds it in correct alignment and the turret cannot be moved unless the lever is depressed.

DIMENSIONS AND PRICES:

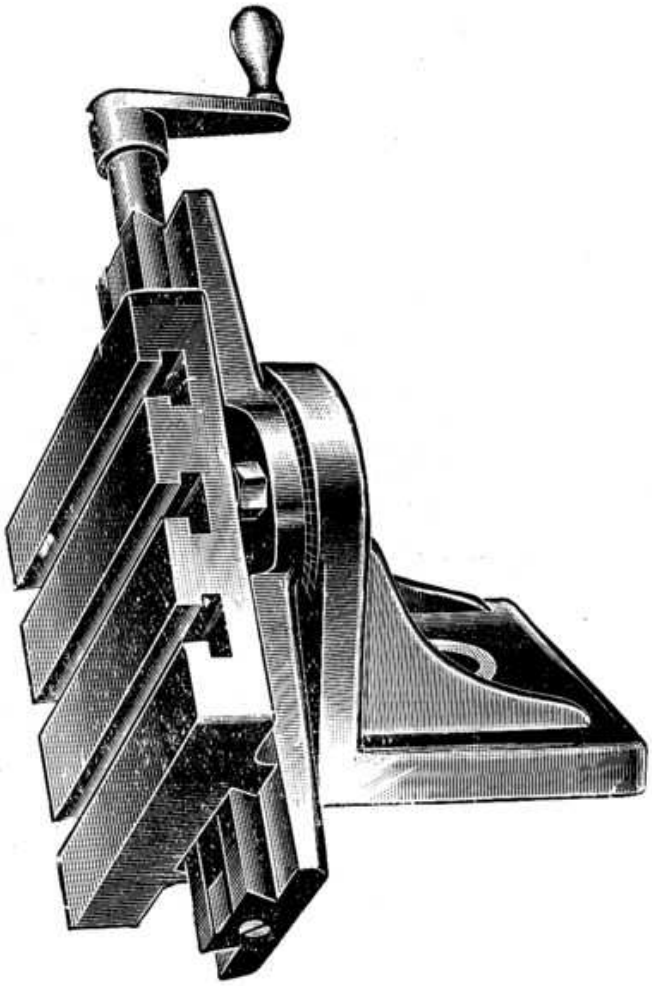
Size No.	1	2	3	4
Diameter ins.	3½in.	5½in.	7in.	8in.
Socket Holes, diam. × depth, ins.	½ × 1	⅝ × 1½	1¼ × 1¾	1½ × 2¼
Morse Taper Shank..	1 and 2	2 and 3	3 and 4	3 and 4
Weight in lbs.	3½	12	38	50
Price with Rough Shank	**20/-**	**40/-**	**90/-**	**125/-**
,, No. 1 Morse Taper Shank ..	**22/6**	—	—	—
,, No. 2 ,, ,, ...	**25/-**	**42/-**	—	—
,, No. 3 ,, ,, ..	—	**45/-**	**100/-**	**130/-**
,, No. 4 ,, ,, ...	—	**47/6**	**105/-**	**135/-**
Carriage extra	**1/6**	**3/-**	F.O.R.	F.O.R.

Tools, Drills and Chucks, as shewn in illustration, extra.

Vertical Slides (HEAVY TYPE)

For Milling, Boring, Slot Drilling, &c. on the Lathe.

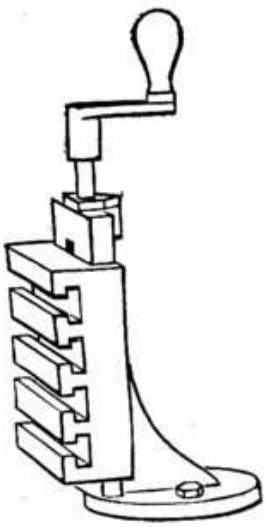
This pattern is offered for accurate and efficient work and for heavy duty. Finished in best style, all wearing surfaces hand-scraped and carefully fitted. Used by bolting on to the top slide of Slide Rest. The body is graduated and indexed for swivelling to any angle. The largest size is secured to bracket by **T** Bolt, but three smaller sizes are fastened by centre set screw of substantial dimensions. Micrometer adjustment collars are fitted to all sizes.



SIZES.

	2½in. or 3in.	3½in. or 4in.	4½in. or 5in.	5½in. or 6in.
Suitable for Centre Lathe				
Rough Castings, per set ...	**4/6**	**8/6**	**15/-**	**20/-**
Planed Castings, per set ..	**12/6**	**17/6**	**33/-**	**42/-**
Extra for Graduating and Indexing Swivel Slide..	**7/6**	**7/6**	**7/6**	**10/-**
Square Thread Screw with Gun Metal Nut fitted ..	**4/-**	**6/-**	**7/6**	**8/6**
Finished Vertical Slide ready for use	**50/-**	**57/6**	**70/-**	**95/-**
Carriage extra	**1/6**	**2/-**	**3/-**	**4/-**
Suitable Swivel Jaw Vice finished complete ..	—	**26/-**	**33/-**	**40/-**
Vice Jaws Wide X opening .. .. ins.	—	2×2¾	2½×3	3×2½

Extra for cutting Swivel Slide out for **T** Bolts in Planed Sets of 5½in. or 6in. Slides, **7/6** nett.



Vertical Slides

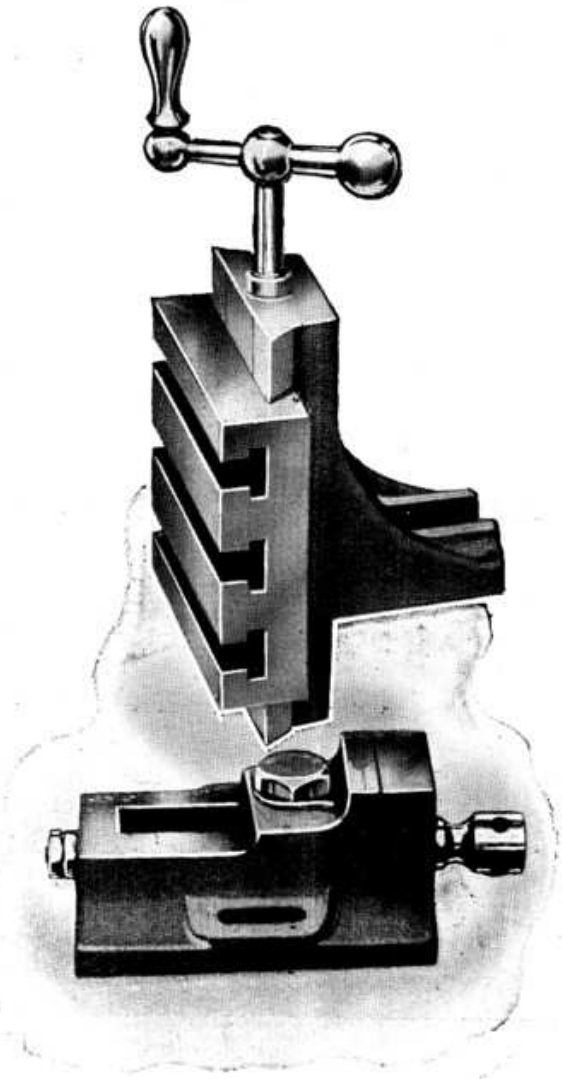
We can supply Heavier Pattern Vertical Slides for larger Lathes as per illustration. These Slides bolt down on to the cross slide of Saddle.

Prices on Application.

of the "Atlas" Universal Milling Attachment.

Vertical Slides

(NON SWIVELLING TYPE)



This pattern Vertical Slide is offered to meet the demand for an accurate and reliable slide for Milling, Boring, Slot Drilling, etc., at an inexpensive first cost. Finished as accurately and as carefully as the Swivelling Type. The Table has **T** Slots cut from the solid, which is raised and lowered by steel square thread screws working in gun metal nuts. All bearing surfaces hand-scraped, dead true, and loose strips fitted for taking up wear.

Slide No.	0	1	2	3	4
Size of Table ins.	$3\frac{1}{4}\times4\frac{1}{2}$	4×4	5×5	6×6	7×7
Price of Finished Slide	**27/-**	**29/-**	**34/-**	**45/-**	**52/6**
,, Planed Castings	**15/-**	**17/-**	**21/-**	**30/-**	**35/–**
,, Rough Castings	**5/6**	**6/9**	**9/-**	**15/-**	**19/–**
Carriage extra	**1/6**	**1/6**	**2/-**	**3/-**	**4/-**

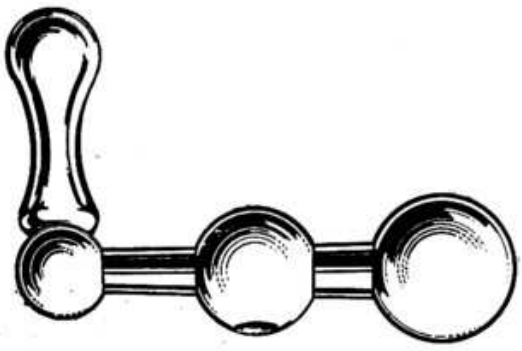
Size 0 suitable for $2\frac{1}{2}$in. or light 3in. Centre Lathe; 1 for 3in. or $3\frac{1}{2}$in.; 2 for 4in. or $4\frac{1}{2}$in.; 3 for 5in.; 4 for 6in.

Suitable Swivel Jaw Vice

(as illustrated).

For Slide No.	0	1	2	3	4
Vice No.	0	1	5	6	8
Jaws Wide X Opening ins.	$1\frac{1}{2}\times1\frac{1}{2}$	$1\frac{1}{2}\times1\frac{3}{4}$	$2\frac{1}{2}\times2$	$2\frac{1}{2}\times3$	3×4
Price Finished Vice	**24/-**	**24/-**	**30/-**	**33/-**	**42/-**

Note—No. 1 Slide is suitable for Drummond Lathe $3\frac{1}{2}$in. or 4in.



Steel Ball Handles

(AMERICAN PATTERN)

For Slide Rest Handles, Vertical Slides, etc.

Size No.	Length over all	Diameter of Centre Hole	Price each	Postage extra
1	2 in.	$\frac{1}{4}$in.	**2/-**	**3d.**
2	$2\frac{1}{2}$in.	$\frac{5}{16}$in.	**2/6**	**4d.**
3	$3\frac{1}{4}$in.	$\frac{3}{8}$in.	**3/3**	**4d.**
4	4 in.	$\frac{1}{2}$in.	**4/–**	**5d.**
5	$5\frac{1}{2}$in.	$\frac{5}{8}$in.	**5/6**	**9d.**

These are high-grade articles and will give satisfaction.

Lathe Change Wheel Castings

Cast from Machine-Cut Metal Patterns.

There are 23 Wheels to a Set, rising from 20 to 127, with extra 40 Wheel. These are extra fine Castings and compare very favourably with machine-cut gears.

16 Pitch, complete set of Rough Castings, **22/6**; Bored and Keywayed, **37/6**.
Separate Wheels charged at ½d. per tooth.

14 Pitch, complete set of Rough Castings, **28/6**; Bored and Keywayed, **44/6**.
Separate Wheels charged at ¾d. per tooth.

12 Pitch, complete set of Rough Castings, **39/6**; Bored and Keywayed, **59/6**.
Separate Wheels charged at 1d. per tooth.

Prices on application for Spiral, Bevel & Special Gears.

Prices for CUTTING TEETH

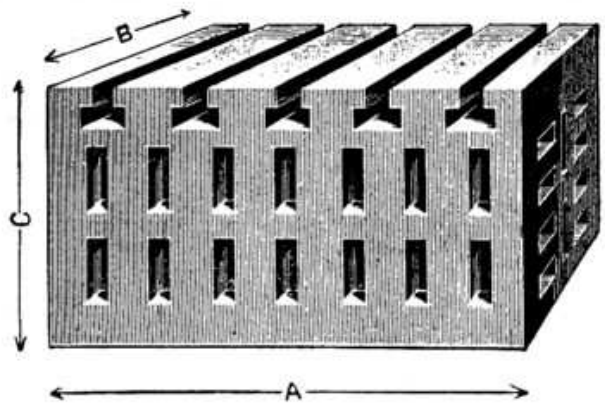
in Customers' Spur Wheel Blanks

(Blanks must be turned to correct diameter and carriage paid both ways)

Diametral Pitch	Price per Tooth in cast iron, brass or gunmetal	Width of Face cut at prices given
16	½d.	½in. face
14	¾d.	¾in. ,,
12	1 d.	⅞in. ,,
10	1¼d.	1 in. ,,
8	1½d.	1¼in. ,,
6	1½d.	1½in. ,,

Wheels with wider faces than given charged in proportion. Steel Wheels cutting are double prices given. Single Wheels charged slightly extra. Special quotation for cutting quantities of Teeth. The above charges are for cutting Teeth to Brown & Sharpes' Standard.

Box Angle Plates



By using these Plates they enable work to be drilled, planed or machined on five different faces at one setting if required, thus ensuring all the holes and surfaces being square or parallel with each other. The plate is made from best cast iron and is open at the bottom side only and the T Slots are cut from the solid.

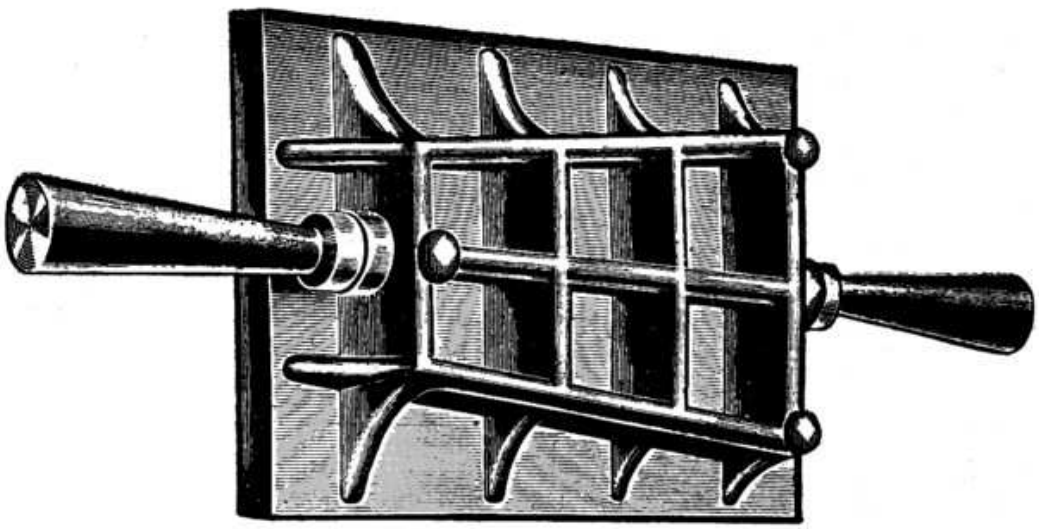
Sizes	No. 1	No. 2	No. 3	No. 4
Length A, ins... ...	6	8	10	12
Breadth B, ins. ...	5	6	8	9
Height C, ins... ...	4½	5	6	8
Prices :	s. d.	s. d.	s. d.	s. d.
Rough Castings only...	10 0	15 0	20 0	30 0
Finished complete ...	30 0	37 6	60 0	90 0

Tilting Tables

A most useful addition to any machine tool shop. When used on Milling Machines, saves in many cases expensive angle cutters. It is graduated to swivel either way, which enables work to be done at various angles. The T Slots are machine-cut from the solid.

	No. 1	No. 2	No. 3	No. 4	
Length A, inches	8	10	12	16	inches
Breadth B, inches	4	5	6	8	inches
Height C, inches	3¼	4	4½	5½	inches
Breadth of Base, D	4	5	6	7½	inches
Swivels each way	45	45	45	45	degrees
Price, each	60/-	80/-	120/-	150/-	each

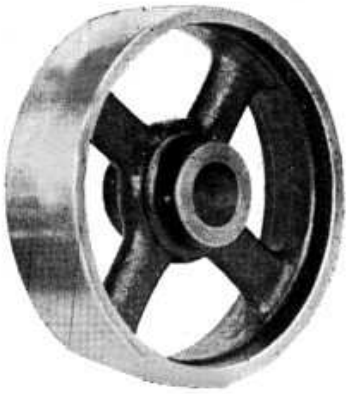
Surface Plates



These finished Plates are truly surfaced by means of Hand Scrapers. Each Plate is accurately made and well finished, they are planed square round the edges, and are fitted with turned and polished steel handles.

Length, ins.	4	5	6	7	8	10	10	12	12	14	16	18	24
Breadth, ins.	3	4	4	5	5	5	6	8	12	9	10	12	18
Prices :	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Finished ...	12 0	19 0	25 0	31 0	40 0	46 0	52 0	72 0	90 0	86 0	96 0	120 0	200 0
Planed ...	4 6	5 6	7 0	9 6	12 6	14 0	15 6	20 0	30 0	28 0	32 0	46 0	76 0
,, &Handled	6 6	8 0	10 6	13 0	16 6	18 0	20 0	26 0	38 0	34 0	42 0	64 0	86 0
Casting only	2 0	3 0	4 0	5 6	7 0	8 0	9 6	12 0	18 0	16 0	19 0	30 0	44 0

Light Cast Iron Pulleys



Diam. ins.	Wide on Face ins.	Rough Castings each.	Finished Pulley each.
3½	¾	10d.	4/-
3½	⅞	10d.	4/-
3½	1½	1/-	4/6
4	1	1/-	5/-
4	1½	1/6	5/6
5	1	1/6	5/6
5	1¼	1/8	5/6
5	1½	2/-	6/-
5	2	2/4	6/-
5	2½	2/6	6/6
6	1½	2/6	6/6
6	2	3/4	6/6
6	3	4/-	7/-
8	2	4/6	7/-
8	3	5/6	8/-
9	1½	4/6	8/6
9	2	5/-	9/-
10	3	7/-	12/-
12	2½	8/-	14/-

LIGHT FINISHED

Band or Rope

PULLEYS.

For Round Belts $\frac{3}{16}$in., $\frac{1}{4}$in., or $\frac{5}{16}$in. diam.

Bored any standard sizes, turned and polished and fitted with Set Screw or keywayed.

PRICES, Castings each :

Diam., ins.	1½in.	2in.	2½in.	3in.	3½in.
Finished	3/6	3/6	3/6	3/6	4/–
Rough..	9d.	9d.	9d.	1/-	1/-
Diam., ins.	4in.	4½in.	5in.	5½in.	6in.
Finished	4/-	5/-	5/-	5/-	5/-
Rough..	1/3	1/6	1/6	2/-	2/-
Diam., ins.	6½in.	7in.	7½in.	8in.	8½in.
Finished	5/6	6/-	6/6	7/-	7/6
Rough..	2/3	2/6	2/9	3/-	3/3
Diam., ins.	9in.	10in.	12in.	14in.	16in.
Finished	8/-	10/6	12/6	15/6	20/6
Rough	3/6	5/-	6/6	8/6	10/6

Finished Cone Pulleys

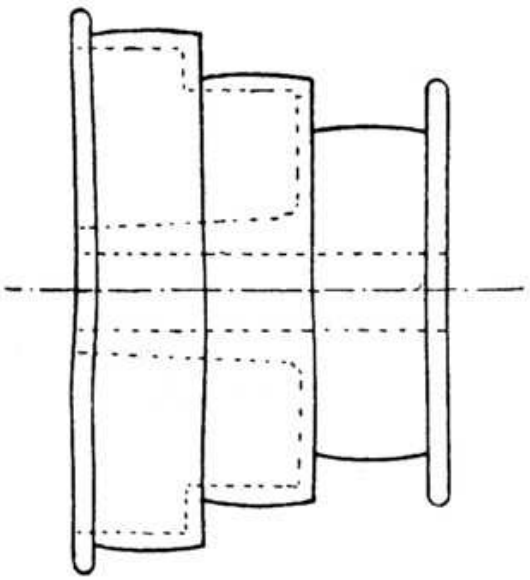
FOR GUT BANDS & ROUND BELTS

No.	Number of Speeds.	Diam. of Speeds in inches.	Price of Rough Castings each.	Price of Finished Pulleys each.
0	2	2½ and 1½	1/-	4/6
1	2	3 and 1½	1/6	5/-
2	2	3¾ and 2¼	1/9	5/6
3	3	3⅞, 2⅞, 1⅞	2/-	6/-
4	4	3⅞, 3⅛, 2⅜, 1⅝	2/-	7/-
5	3	4, 3¼, 2½	2/3	6/6
6	3	4½, 3½, 2½	2/6	7/-
7	3	5, 4, 3	3/-	8/-
8	3	6, 4½, 3	3/6	9/-
9	3	6, 5, 4	4/-	9/6
10	3	6⅝, 5⅛, 3¾	4/6	10/-
11	3	8, 6, 4	5/-	11/-

Finished Pulleys can be had for either $\frac{3}{16}$in., $\frac{1}{4}$in., or $\frac{5}{16}$in. diameter round Belts and can be fitted either with Set Screw or Keywayed.

Three Speed Cones

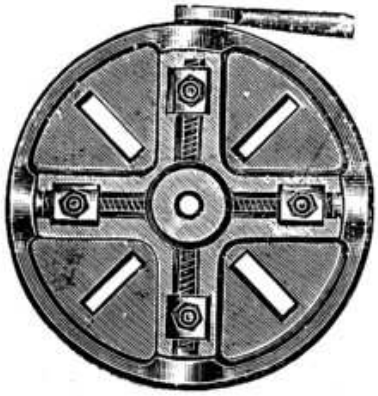
FOR FLAT BELTS



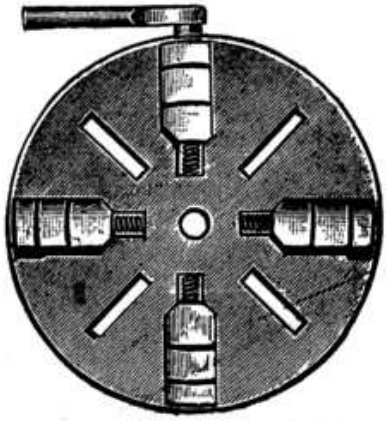
Size No.	Width of Speeds inch	Sizes of Cones ins.	ins.	ins.	Price of Rough Castings each s. d.	Price of Finished Cones each s. d.
1	⅞	4½	3½	2½	4 0	9 0
2	1	5	4	3	5 0	10 6
3	1¼	5⅛	4⅛	3⅛	5 6	11 0
4	1¼	5½	4½	3½	7 0	11 6
5	1¼	6	4½	3	6 6	12 0
6	1¼	6	5	4	7 0	13 6
7	1½	6	4½	3	8 0	14 6
8	1½	6¾	5¾	4¾	10 0	17 6
9	1½	6⅞	5⅜	3⅞	9 0	17 0
10	1¾	8	6½	5	13 0	22 0
11	2	6½	5¼	4	13 0	22 0

SETS OF MATERIAL TO CONSTRUCT

Independent Four Jaw Chucks



NOTE.—These five sizes of Independent Chuck Sets have been specially designed to meet the requirements of Amateurs, Engineers, etc., who desire to construct an Independent Chuck for Lathes, etc. We have had the dies for the jaws and box keys specially made at considerable expense, and have put the prices to rock bottom, therefore expecting to sell a large quantity. Each set is supplied with full size drawings without extra charge, so that no one should have any difficulty whatever in fitting up the Chuck. Note the largest size of Chuck will not chase out larger than $1\frac{3}{4}$in. Whitworth Thread.



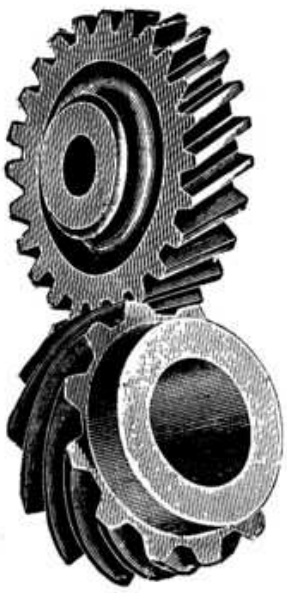
In ordering sets of material, whether rough or partly finished, give diameter and length of lathe spindle nose that it is required for. to ensure receiving a suitable set.

Complete Sets of Material consist of Improved Strong Cast Iron Chuck Plate Casting, Four Drop Forged Steel Jaw Stampings, Four Screw Blanks, Drop Forged Steel Box Key Stamping and Blue Print.

	No. 0	No. 1	No. 2	No. 3	No. 4
Sets suitable for Lathes, diam...	4in.	5in.	6in.	8in.	10in.
Maximum size Boss can be Screwed	$\frac{3}{4}$in.	1in.	1in.	$1\frac{1}{4}$in.	$1\frac{3}{4}$in.
Chuck Plate Rough Castings only	**2/6**	**3/6**	**4/6**	**7/-**	**9/-**
Forgings for Jaws, Key and Screw Blanks	**3/6**	**3/6**	**4 6**	**5/6**	**6/6**
Extra for Turning Chuck Plate all over and chasing to suit Spindle Nose any Whitworth Thread ...	**5/6**	**6/6**	**7 6**	**8/6**	**12/-**
Postage	9d.	1/-	1/3	carr. forward	carr. forward

NOTE.—The jaws are let into a recess not shewn in the illustration above; Extra for planing this recess for any size of Chuck Nos. 0, 1, 2, **2/-** each extra; Nos. 3 and 4, **3/-** each extra.

The following are extra charges for facing boss and chasing any rough chuck plate for the following Whitworth Threads; $\frac{1}{2}$in. **2/6**; $\frac{5}{8}$in. **3/-**; $\frac{3}{4}$in. **3/6**; $\frac{7}{8}$in. **4/-**; 1in. **4/6**; $1\frac{1}{8}$in. **4/6**; $1\frac{1}{4}$in. **5/-**: and Bastard Pitches, **1/6** extra. These prices include facing up back of chuck plate as well as boss and cutting the thread. **WE CANNOT OFFER FINISHED CHUCKS.**



Skew Gear Wheel Castings

CAST FROM MACHINE-CUT METAL PATTERNS.

Suitable for Gas Engines, &c.

NOTE.—Both wheels are the same diameter over the top of the teeth and one wheel has twice as many teeth in as the other.

Size No.	Diameter of Bosses inches.	Diameter of Wheels over top of Teeth inches.	Price per pair Castings.	Postage per pair.
00	$\frac{15}{16}$	$1\frac{5}{16}$	**3/-**	**5d.**
0	$1\frac{1}{8}$	$1\frac{1}{2}$	**3/6**	**9d.**
1	$1\frac{3}{16}$	$1\frac{7}{8}$	**4/-**	**9d.**
2	$1\frac{5}{8}$	$2\frac{3}{16}$	**4/6**	**1/-**
3	$1\frac{15}{16}$	$2\frac{5}{8}$	**5/-**	**1/3**

For convenience we give diameter of bosses cast on wheels.

Planed Vee Blocks

(CAST IRON)

When an amateur wants to drill a hole through a round bar, or bolt a round piece of work down on the Planer, he generally cuts a **V** in a block of wood. Such a device works fairly well, but Machined Cast Iron Planed V Blocks are very cheap, and they are always handy when wanted. Being accurate there is not the same risk of spoiling good work as in the case of the uneven piece of wood.

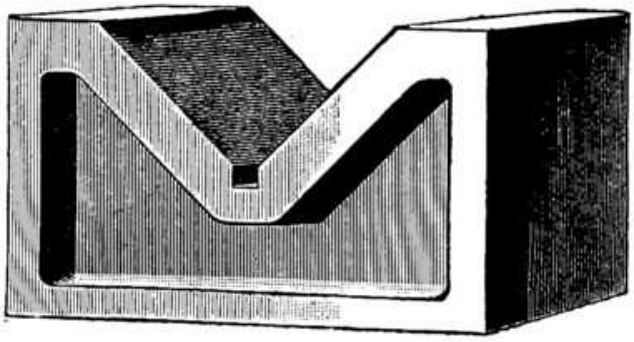
Length, height and width in inches.	Price per pair.	Postage per pair.
1 × ⅝ square	**2/9**	**3**d.
1½ × ¾ ,,	**3/6**	**5**d.
2 × 1 ,,	**3/11**	**7**d.
2½ × 1¼ ,,	**5/-**	**9**d.
3 × 1½ ,,	**6/9**	**1/-**

IMPROVED

Machined Cast Iron

Vee Blocks

With CONCAVE SIDES

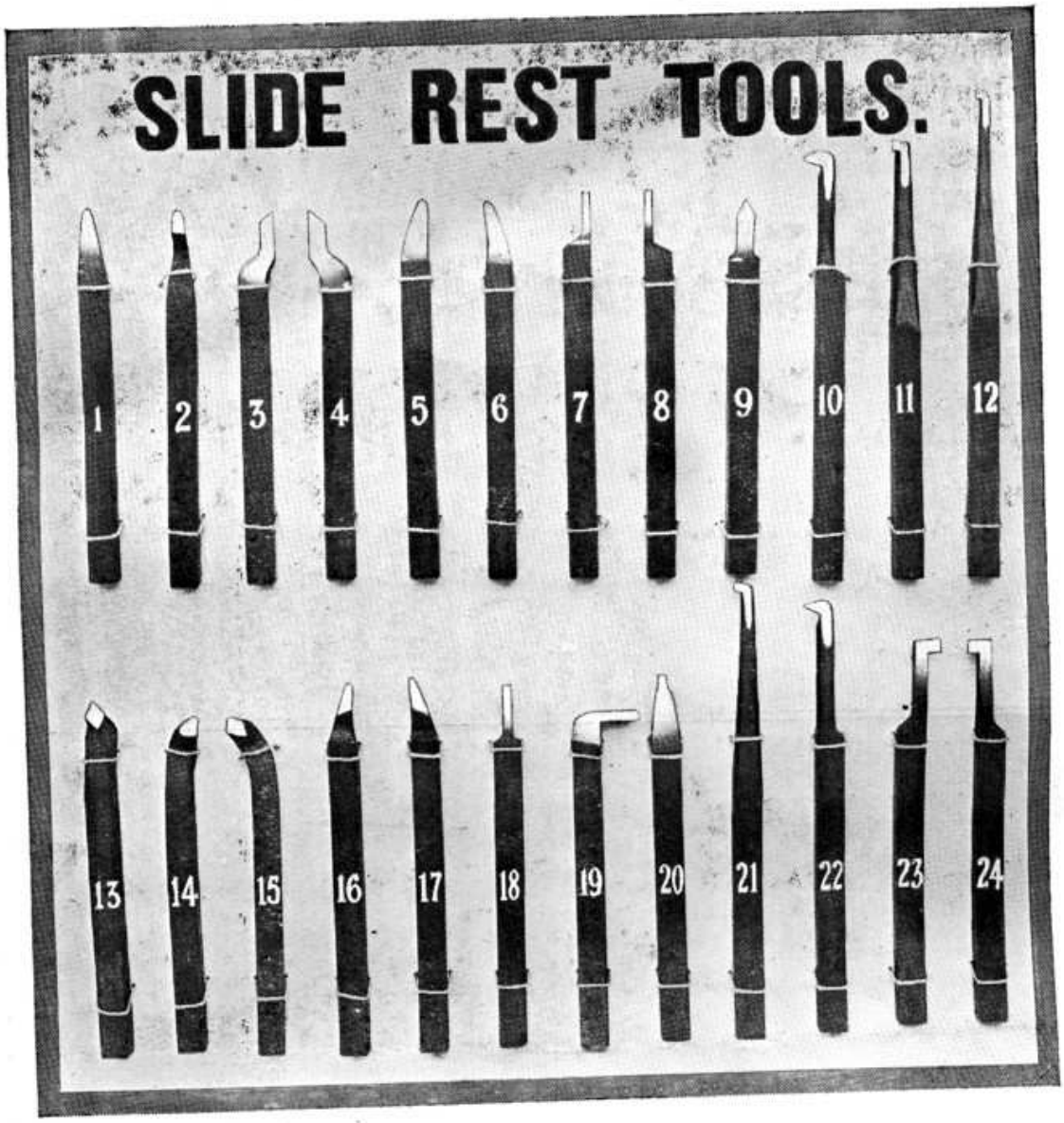


	Rough Castings	Finished
4in. long × 2in. square	**4/–** per pair	**11/6** per pair
5in. ,, × 2½in. ,,	**9/9** ,,	**14/–** ,,
6in. ,, × 3in. ,,	**12/9** ,,	**16/9** ,,
8in. ,, × 4in. ,,	**15/–** ,,	**34/9** ,,

Parallel Packings, Machined-all-over

inches			Postage
[illegible]	×	[illegible]	**3/6** for Two 6in. lengths — 6d.
[illegible]	×	[illegible]	**4/6** ,, ,, ,, — 6d.
1	×	[illegible]	**5/6** ,, ,, ,, — 9d.
1¼	×	[illegible]	**6/6** ,, ,, ,, — 1/-
1¼	×	1	**7/6** ,, ,, ,, — 1/-
1½	×	1	**8/6** ,, ,, ,, — 1/3
1½	×	1⅛	**9/–** ,, ,, ,, — 1/3

Other sizes and lengths, prices on application.



1. Ordinary Round Nose Front Tool.
2. Round Nose Front Swan Neck Tool.
3. Knife Tool, Left Hand.
4. Knife Tool, Right Hand.
5. Ordinary Left Hand Side Tool.
6. Ordinary Right Hand Side Tool.
7. Cutting-off Tool, Left Hand.
8. Cutting-off Tool, Right Hand.
9. Screw-cutting Tool for Outside V Threads.
10. Internal Screw-cutting Tool for Large Holes.
11. Boring Tool for Large Holes.
12. Boring Tool for Small Holes.
13. Heavy Swan Neck Front Roughing Tool.
14. Heavy Left Hand Side Swan Neck Roughing Tool.
15. Heavy Right Hand Side Swan Neck Roughing Tool.
16. Left Hand Side Tool for Fine Corners.
17. Right Hand Side Tool for Fine Corners.
18. Ordinary Centre Cutting-off Tool.
19. Cutting-off Tool for Rings, etc.
20. Tool for Outside Square Threads.
21. Boring Tool for Medium Holes.
22. Internal Screw-cutting Tool for Small Holes.
23. Tool for Undercutting, Left Hand.
24. Tool for Undercutting, Right Hand.

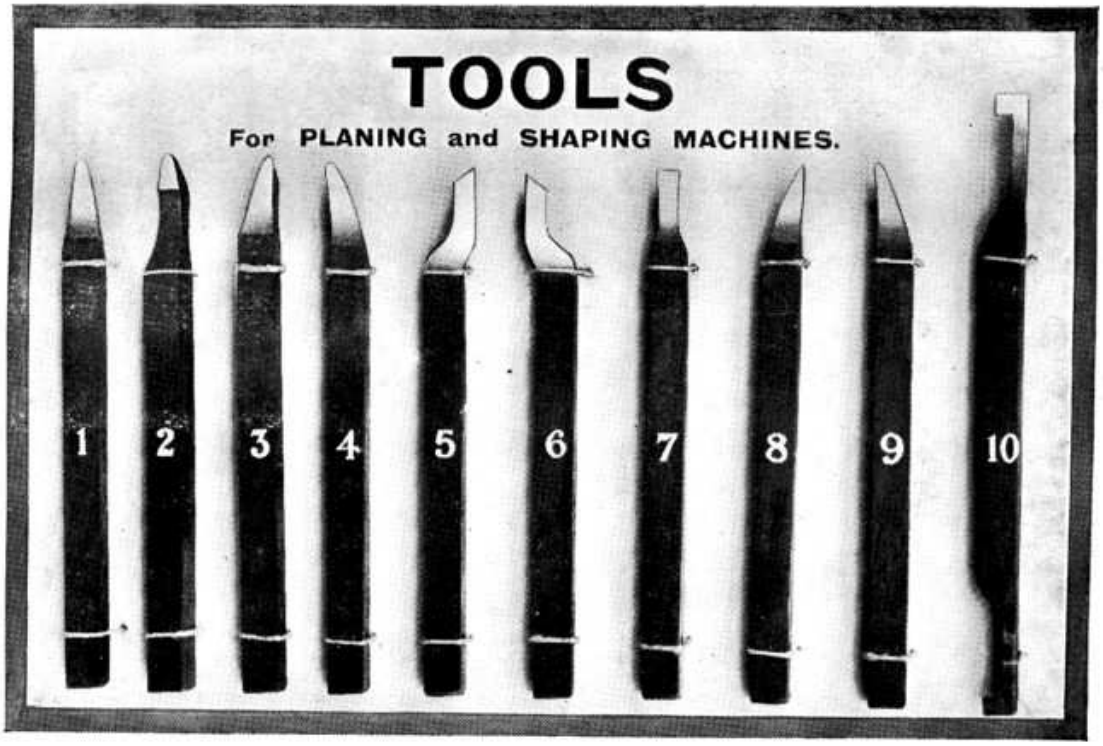
Prices, etc. of these Tools will be found on opposite page.

SLIDE REST TOOLS

Made from Best Sheffield Tool Steel and fully warranted. All are carefully hardened and tempered, and ground ready for use.

Sizes up to and including ½in. are now supplied mounted on neat Polished Wood Stands at the prices quoted. Prices are for sets of 12 Tools, which can be supplied in any assortment, usually sent in Nos. 1 to 12 unless otherwise specified.

Price per Set of 12 Tools ..	¼in.	5/16in.	⅜in.	7/16in.	½in.	9/16in.	⅝in.	¾in.
In Best Sheffield Cast Steel ..	6/-	6/9	10/6	9/9	12/-	14/-	19/6	25/-
Air-hardening High-speed Steel ..	12/-	13/6	21/-	19/6	24/-	28/-	39/-	50/-
Prices of Separate Tools (Cast Steel)	8d.	9d.	10d.	11d.	1/2	1/4	1/8	2/3
Ditto do. (High-speed Steel) ..	1/4	1/6	1/8	1/10	2/4	2/8	3/4	4/6



Best Quality Tools made by Engineers who are using them every day. We have the utmost confidence in offering them as reliable and effective for shape.

1. Ordinary Round Nose Front Tool.
2. Round Nose Front Swan Neck Tool.
3. Left Hand Roughing Side Tool.
4. Right Hand Roughing Side Tool.
5. Left Hand Knife Tool.
6. Right Hand Knife Tool.
7. Square Nose Tool
8. Left Hand Side Tool for Fine Angles, etc.
9. Right Hand Side Tool for Fine Angles, etc.
10. Double-ended Undercutting Tool.

Price per Set of 10 Tools	5/16in.	⅜in.	7/16in.	½in	9/16in.	⅝in.	¾in.
In Best Cast Steel	6/9	7/9	10/-	12/6	15/-	21/-	27/6
In Best High-speed Steel.. ..	13/6	15/6	20/-	25/-	30/-	42/-	55/-
Prices of Separate Tools (Cast Steel)	8d.	9d.	11d.	1/1	1/4	1/9	2/6
Ditto do. (High-speed Steel) ..	1/4	1/6	1/10	2/2	2/8	3/6	5/-

Face Plates, Catch Plates & Chuck Backs

These Plates are accurately turned, and are strong and well proportioned. Face Plates can be had either with or without slots. Finished Catch Plates are polished all over. Finished Plates are bored with plain centre hole. Prices for Chasing to suit Spindle Nose, see below.

Rough Castings for Chuck Backs, same prices as Catch Plate Castings.

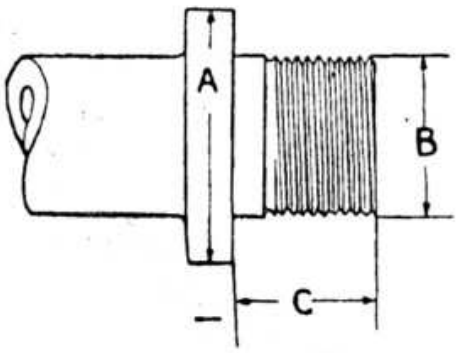
Diameter of Plate in inches	1½	2	2½	3	3½	4	4½
Face Plate Finished, each	..	...	...	5/-	5/-	5/6	6/-
Face Plate Casting only, each	..	...	...	8d.	10d.	10d.	1/-
Catch Plate Finished, each	3/6	4/-	4/6	5/-	6/-	6/6	7/-
Catch Plate Casting only, each	6d.	6d.	8d.	10d.	1/-	1/4	1/8
Chuck Back accurately fitted to Chucks	4/-	4/-	4/6	5/-	5/6	6/-	7/-

Diameter of Plate in inches	5	6	7	8	9	10	11
Face Plate Finished, each	6/6	7/-	9/-	11/-	13/6	17/6	21/-
Face Plate Casting only, each	1/4	1/8	2/6	3/6	4/6	5/6	6/6
Catch Plate Finished, each	8/-	10/-	12/6	15/-	..	...	..
Catch Plate Casting only, each	2/6	3/6	4/6	5/-	..	..	..
Chuck Back accurately fitted to Chucks	10/-	13/6	16/-	20/-	...	..	..

Diameter of Plate in inches	12	14	16	18	20	21	30
Face Plate Finished, each	24/-	32/-	38/-	46/-	50/-	68/-	90/-
Face Plate Casting only, each	7/6	10/6	13/-	15/-	25/-	30/-	52/6

Prices for Chasing Face Plates, Catch Plates, Chuck Backs and Bell Chuck Castings to suit Whitworth Standard Threads, ½in. **2/6**; $\frac{9}{16}$in. **3/-**; $\frac{5}{8}$in. **3/-**; $\frac{3}{4}$in. **3/-**; $\frac{7}{8}$in. **3/6**; 1in. **3/6**; 1⅛in. **4/6**; 1¼in. **4/6**; 1⅜in. **5/-**; 1½in. **5/-**; 1¾in. **6/-**; 2in. **7/-**; Bastard Pitches, **1/-**

The above prices for Chasing include Boring and Facing Bosses when required.



NOTE.—We have light, medium, and heavy pattern Face Plates in most of the sizes up to 12in. diameter.

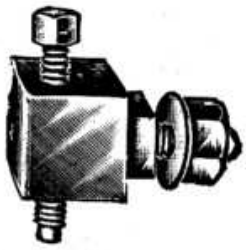
To ensure receiving a suitable Plate, when ordering please give the dimensions of A, B and C of your spindle nose, as shewn on illustration.

Small Catch Plates with Heavy Bosses are charged extra.

TOM SENIOR, Atlas Works, Hightown, Liversedge.

Face Plate Dogs

For the Lathe

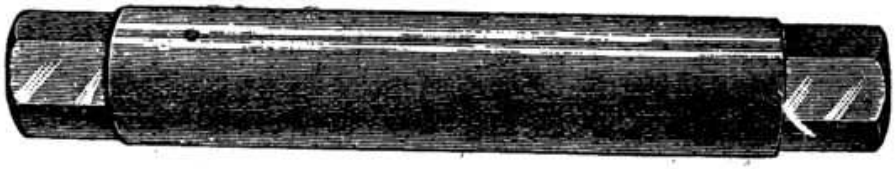


A Set of Four of these Dogs convert an ordinary Face Plate into a Handy Chuck.

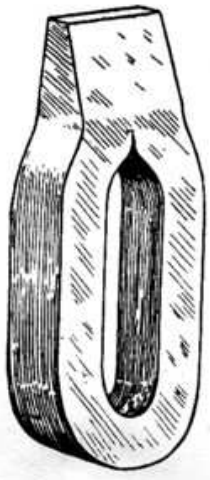
To fit Face Plate Slot Width in inches	Suitable for Diameter of of Face Plate	Price per set of 4 Dogs ready for use s.	d.	Postage per set s.	d.
$\frac{5}{16}$	Up to 5in. diameter	9	6	0	6
$\frac{3}{8}$	,, 6in. ,,	10	6	0	9
$\frac{7}{16}$	,, 7in. ,,	11	6	0	9
$\frac{1}{2}$	,, 8in. ,,	12	6	1	0
$\frac{5}{8}$	,, 10 & 12 ,,	13	6	1	0
$\frac{3}{4}$	,, 14 & 16 ,,	17	6	1	3

ANY OTHER OR SPECIAL SIZES MADE TO ORDER.

Solid Steel Mandrils



Diameter inches	Length inches	Price each s.	d.	Diameter inches	Length inches	Price each s.	d.
$\frac{1}{4}$	$3\frac{1}{2}$	2	3	1	$6\frac{1}{4}$	6	3
$\frac{5}{16}$	4	2	9	$1\frac{1}{8}$	$6\frac{1}{2}$	7	3
$\frac{3}{8}$	$4\frac{1}{4}$	3	0	$1\frac{1}{4}$	$6\frac{3}{4}$	8	0
$\frac{7}{16}$	$4\frac{1}{2}$	3	3	$1\frac{3}{8}$	7	9	0
$\frac{1}{2}$	5	3	9	$1\frac{1}{2}$	$7\frac{1}{4}$	11	6
$\frac{9}{16}$	$5\frac{1}{4}$	4	0	$1\frac{5}{8}$	$7\frac{1}{2}$	13	6
$\frac{5}{8}$	$5\frac{1}{2}$	4	6	$1\frac{3}{4}$	$7\frac{3}{4}$	15	9
$\frac{3}{4}$	$5\frac{3}{4}$	5	0	2	8	18	9
$\frac{3}{4}$	6	6	0				



Holding Down Clamps

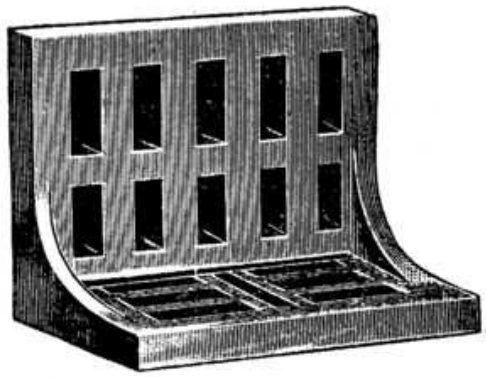
For holding work down to Face Plates, Planing Machines and Drilling Machines. Made of Best Steel, with flat points, in self-colour.

Length over all ..	$2\frac{1}{8}$in.	$2\frac{7}{16}$in.	3in.	$3\frac{5}{8}$in.	$4\frac{1}{4}$in.
Take Bolts	$\frac{5}{16}$in.	$\frac{3}{8}$in.	$\frac{7}{16}$in.	$\frac{1}{2}$in.	$\frac{5}{8}$in.
Price each	4d.	5d.	7d.	10d.	1/6
Price per dozen ..	1/3	1/9	2/6	4/6	6/-
Postage per dozen ..	9d.	1/-	1/3	Rail	Rail

Sole Maker of the "Atlas" Hand Bench Shaping Machine.

ANGLE PLATES

(Cast Iron)



These Angle Plates are Strongly Webbed.

Strong and well proportioned, with or without Slots, truly planed square on two faces and two edges.

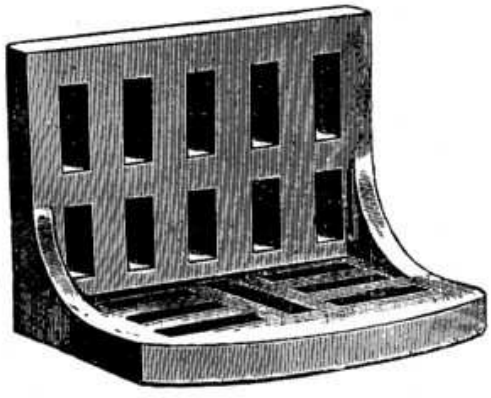
Sizes inches	Casting s.	Casting d.	Finished s.	Finished d.
3 × 2 × 1½	0	10	2	8
3 × 2 × 2	1	0	3	0
3 × 2½ × 2	1	2	3	6
3½ × 2 × 2	1	4	4	0
3½ × 2½ × 2	1	6	5	0
4 × 3 × 2½	1	8	5	6
5 × 3 × 2	2	0	6	0
5 × 3½ × 3	2	6	7	0
5 × 4 × 3½	3	0	7	6
5 × 5 × 4	3	4	8	0
6 × 3 × 2½	3	4	7	6
6 × 4 × 3	3	6	8	6
6 × 5 × 4	4	0	9	6
7 × 5½ × 4½	5	0	11	0
7 × 6 × 5	6	0	12	0
8 × 4 × 4	6	4	13	0

Sizes inches	Casting s.	Casting d.	Finished s.	Finished d.
8 × 5½ × 4½	6	6	14	0
8 × 6 × 5	7	0	16	0
8 × 7 × 6	8	0	17	0
9 × 7 × 5	8	6	18	0
10 × 6 × 5	10	0	19	0
10 × 8 × 6	11	0	20	0
10 × 9 × 7	12	0	22	0
12 × 7 × 6	13	0	23	0
12 × 8 × 7	14	0	25	0
12 × 9 × 6	16	0	29	0
13 × 10 × 8	18	0	37	0
15 × 10 × 8	21	0	45	0
16 × 12 × 9	25	0	50	0
16 × 12 × 10	29	0	54	0
18 × 12 × 10	39	0	70	0
24 × 12 × 10	48	0	80	0

IMPROVED ANGLE PLATES

These Angle Plates are strongly webbed and are planed on the inside and outside faces and two edges. They are handy on the Lathe Face Plate. Made in the following sizes only:

Sizes. Inches.	Casting. s.	Casting. d.	Finished. s.	Finished. d.
3½ × 2½ × 2	2	9	7	6
4 × 3 × 2½	3	9	7	9
5 × 3 × 2	4	9	9	0
6 × 4 × 3	6	3	12	0
6 × 5 × 4	8	0	16	0



Small Slotted Angle Plates

One edge rounded for small lathe work.

These Angle Plates are supplied as follows:

Sizes inches.	Casting s.	Casting d.	Finished s.	Finished d.
3 × 1½ × 1½	0	8	2	6
3 × 2 × 1½	0	10	2	8
3 × 2 × 2	1	0	3	0
3½ × 2½ × 2	1	6	5	0
4 × 3 × 2½	1	8	5	6

Lathe Headstocks & Hand Rests

(SINGLE & BACK-GEARED)

IN-THE-ROUGH, MACHINED AND FINISHED COMPLETE.

These Headstocks are accurately made, and are of the best materials and of approved design. The Back Gear is thrown in and out by eccentric motion. All Back-Geared Lathe Headstock Castings up to and including 4in. Centres may be had with Gears cast off machine cut metal patterns, or the rough blanks for the Gears to be cut from the solid at the same price. All Headstock Castings, 4½in. Centre and over, are supplied only with blanks for machine-cut Gears. All loose Headstocks, 4½in. and upwards, have sliding base for taper turning.

We can recommend customers purchasing Headstock Sets to have the Gear Wheel blanks for cut Gears; the cost for cutting the gears is not much, and they work much better and give better satisfaction. We shall be pleased to quote for cutting the gear blanks after they are turned and bored if required.

All Fast Headstocks have conical necks running in hard gunmetal bearings. All sizes up to 4in. Centre are made for gut band drive only, 4in. Centre Heads can be had for either gut or flat band, over 4in. Centre made for flat band only.

Height of Centres...	2½in.	3in.	3½in.	4in.	4½in.	5in.	6in.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Finished Heads, Single Geared ..	45 0	60 0	72 0	105 0	120 0	127 0	150 0
Rough Castings, per set, Single Geared	8 0	12 0	13 0	17 0	23 0	30 0	40 0
Planing extra, per set	4 0	5 0	7 0	9 0	11 0	15 0	16 0
Finished Heads, Back-Geared	67 0	90 0	97 6	150 0	160 0	180 0	200 0
Finished Heads, Back-Geared, including Reversing Plate and Wheels all fitted for Screw-cutting Lathes	77 0	100 0	107 6	160 0	170 0	190 0	210 0
Complete Set of Rough Castings, Back-Geared..	12 6	15 0	16 6	24 0	37 0	46 0	60 0
Complete Set of Rough Castings for Screw-cutting Heads including Reversing Plate and Wheels ..	15 0	17 0	19 0	29 0	42 0	56 0	72 0
Extra for Planing Heads	6 0	7 6	8 0	12 0	15 0	19 0	21 0
Extra for Planing Heads and Boring in alignment	30 0	30 0	30 0	30 0	35 0	40 0	50 0
Extra for Planing Heads, Boring in alignment and Turning and Cutting Gear Blanks	45 0	45 0	45 0	45 0	50 0	55 0	65 0
Turning and Fitting Spindle, including Phosphor Bronze Bearing and Ball Thrust Washer, and Spindle Nose chased	40 0	45 0	50 0	50 0	55 0	60 0	70 0
Extra for Large Face Plate Rough Casting for use in Gap	4 0	5 0	5 0	6 6	9 0	15 0	21 0
Extra for above finished Face Plate	12 0	13 0	14 0	17 0	23 0	31 0	40 0
Hand Rests, Plain Rests, finished	7 0	8 0	10 0	12 6	17 0	20 0	35 0
Rough Castings	1 8	2 6	2 8	4 0	5 6	7 6	11 0
Planing Bottom	1 0	1 0	1 6	2 0	2 6	3 0	3 6
Boring Socket	0 8	0 8	1 0	1 4	1 8	2 0	2 6
Eccentric Hand Rest, finished	25 0	26 0	27 0	30 0	35 0	38 0	42 0
Rough Castings	2 6	3 0	3 6	4 0	4 0	4 6	5 0
Planing extra	1 6	1 6	1 6	2 0	2 0	2 6	3 0
Boring extra...	1 6	2 0	2 0	2 0	2 6	3 0	3 6

For illustrations of these Headstocks see illustrations of Headstocks shewn on various sizes of Lathes in this Catalogue

LATHE BEDS

Standards & Bench Legs

All our Lathe Beds are cast from entirely new patterns, designed to withstand the greatest strain likely to be put on them.

All Beds are provided with Planed V edges without any extra charge. Gap Beds have all Leading Screw Bracket Facings cast on and planed free.

All Finished Beds are accurately planed and undercut. All Gap Beds have Gap Piece accurately fitted.

Gap Lathe Beds

No.	Length inches	Width on Face	Tenon	For Centre Lathes inches	Rough Casting £ s. d.	Accurately Planed Bed £ s. d.
14	24	3¼	11/16	2½ or 3	0 17 0	2 5 0
14½	30	3 5/16	¾	2½ or 3	1 1 0	2 8 0
15	30	3¾	1	3	1 3 0	2 11 0
16	36	4½	1	3 or 3½	1 7 0	2 15 0
17	36	4⅜	1	4	1 11 0	3 0 0
18	42	3¾	1	4	1 15 0	3 4 0
19	48	6	1¼	4	2 3 0	3 8 0
20	48	6	1¼	4½	2 5 0	3 15 0
21	54	6	1¼	4½	2 10 0	3 19 0
22	48	6¼	1⅝	5	2 12 0	4 0 0
23	54	6¼	1⅝	5	2 15 0	4 10 0
24	60	6½	1⅝	5	3 0 0	4 16 0
25	60	7	1½	5 or 6	3 18 0	6 5 0
26	72	7⅞	1¾	6 or 6¾	4 0 0	7 0 0

6, 7 and 8 feet Beds of Heavier Pattern, prices on application.

BENCH LEG CASTINGS to suit No. 1, Rough, **4/-** pair; Planed, **7/-** pair. To suit No. 2 and 14, Rough, **5/-** pair: Planed, **8/6** pair. To suit No. 3, 4, 15, 16, Rough, **7/-** pair; Planed, **10/6** pair. To suit No. 5, 6, 17, 18, 19, Rough, **8/6** pair; Planed, **13/-** pair.

STANDARD CASTINGS of neat design, to suit Bed No. 2, 14, 14½, Rough, **21/6** pair; Planed, **29/-** pair. To suit No. 3, 4, 15, 16, Rough, **30/-** pair; Planed, **40/-** pair. To suit No. 5, 6, 17, 18, 19, Rough, **38/-** pair; Planed, **49/-** pair. To suit No. 7, 8, 20, 21, Rough, **45/-** pair; Planed, **58/-** pair. To suit No. 9, 10, 22, 23, 24, Rough, **50/-** pair; Planed, **60/-** pair. To suit No. 11, 12, 13, 25, 26, Rough, **55/-** pair; Planed, **65/-** pair.

NOTE.—Any Gap Lathe Bed above can be had accurately planed for **8/-** less than list price if no Gap Piece is required fitted.

Straight Lathe Beds

No.	Length inches	Width on Face	Tenon	For Centre Lathes inches	Rough Casting £ s. d.	Accurately Planed Bed £ s. d.
1	20	$3\frac{5}{16}$	$\frac{11}{16}$	$2\frac{1}{4}$	0 9 0	0 17 0
2	24	$3\frac{1}{4}$	$\frac{3}{4}$	$2\frac{1}{2}$	0 13 0	1 1 0
3	30	$3\frac{5}{8}$	1	3	0 17 6	1 8 0
4	36	$3\frac{3}{4}$	1	3 and $3\frac{1}{2}$	1 1 0	1 15 0
5	36	$5\frac{7}{8}$	$1\frac{1}{4}$	4	1 6 0	2 0 0
6	42	5	1	4	1 10 0	2 0 0
7	48	$5\frac{7}{8}$	$1\frac{1}{4}$	$4\frac{1}{2}$	1 16 0	2 16 0
8	54	$5\frac{7}{8}$	$1\frac{1}{4}$	$4\frac{1}{2}$	2 0 0	3 0 0
9	48	6	$1\frac{1}{4}$	5	2 2 0	3 0 0
10	54	6	$1\frac{1}{4}$	5	2 6 0	3 10 0
11	48	6	$1\frac{1}{4}$	6	3 0 0	4 2 0
12	60	7	$1\frac{1}{2}$	6	3 10 0	4 12 6
13	72	7	$1\frac{1}{2}$	6	4 0 0	5 5 0

Lathe Driving Wheels

In-the-Rough or Finished, all Finished Wheels are either keywayed or fitted with Set Screw.
In ordering state size of Bore required.
All Wheels have straight pattern arms and are designed to Standard Step of $\frac{3}{8}$in. each side.

Diameter inches	For GUT BAND No. of Speeds	Weight lbs.	Casting £ s. d.	Finished £ s. d.
14	3	18	0 6 0	1 1 0
14	3 large and 1 small	22	0 7 6	1 5 0
19	3 ,, 1 ,,	28	0 9 9	1 10 0
19	3 ,, 1 ,,	36	0 12 0	1 17 6
19	3 ,, 1 ,,	45	0 15 0	2 2 0
19	3 ,, 1 ,,	60	1 0 0	2 12 6
19 special heavy	2 ,, 1 ,,	70	1 3 0	2 15 0
21	3 ,, 1 ,,	66	1 1 6	2 2 0
23	3 ,, 1 ,,	60	1 0 0	2 12 0
24	4 ,, 1 ,,	80	1 6 0	3 0 0

Balanced Wheels up to and including 19in. diam. 2/- each extra. Over 19in. diam. 3/6 each extra.

FLAT BAND BELT

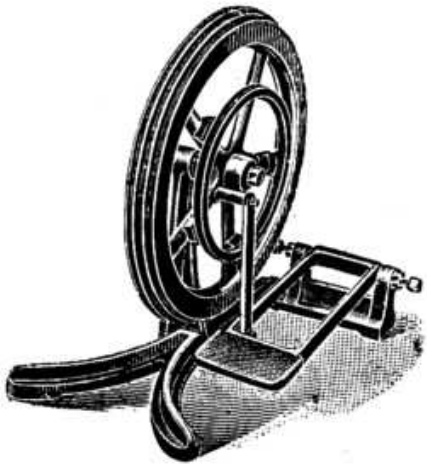
Diameter inches	Weight lbs.	No. of Speeds	Width of Belt inches	Casting £ s. d.	Finished £ s. d.
16	28	3	1 x $\frac{3}{8}$ Step	0 10 0	1 10 0
19	38	3	1 ,,	0 14 6	1 17 6
22	48	3	1 ,,	0 17 0	2 2 6
22	56	3	$1\frac{1}{4}$,,	0 19 6	2 5 0
22	70	3	$1\frac{1}{2}$x $\frac{1}{2}$ Step	1 5 0	2 12 6

Balanced Wheels up to and including 19in. diam. 2/- each extra. Over 19in. diam. 3/6 each extra.

IMPROVED

Foot Motors

Fly-wheels are designed to Standard Step or $\frac{3}{8}$in. each side.



This Treadle Motion has been designed to be fastened down to the ground. The Fly-wheel is turned and carefully fitted to frame and the Motor is complete as shewn in the illustration.

Diam. of Fly-wheel inches	Belt	No. of Speeds	Weight of Fly-wheel lbs.	Price of Treadle Motion complete £	s.	d.	Rough Castings only £	s.	d.
19	Gut	4	28	2	0	0	1	2	6
19	,,	4	36	2	2	6	1	5	6
19	,,	4	45	2	5	0	1	8	0
21	,,	4	66	2	10	0	1	15	0
24	,,	5	80	3	0	0	2	0	0
$15\frac{5}{8}$	Flat 1in.	3	50	2	5	0	1	10	0
19	,,	3	38	2	0	0	1	6	0
22	,,	3	48	2	10	0	1	9	0

NUT BOX CASTINGS

for Double Clamp Nut

(Not including Gunmetal Nut Casting)

	Suit $2\frac{1}{2}$in. and light 3in. Lathe	3in. and $3\frac{1}{2}$in. ordinary Lathe	4	$4\frac{1}{2}$	5	6	inches
Rough Castings	5/-	7/-	9/-	11/-	13/-	20/-	per set
Planed Castings	10/6	15/6	20/-	25/-	30/-	35/-	per set
Gunmetal Nut Rough Casting	3/-	4/-	6/-	6/9	7/-	8/6	per set

Small Hand Wheel Castings

Useful as Loose Head Wheels, &c.

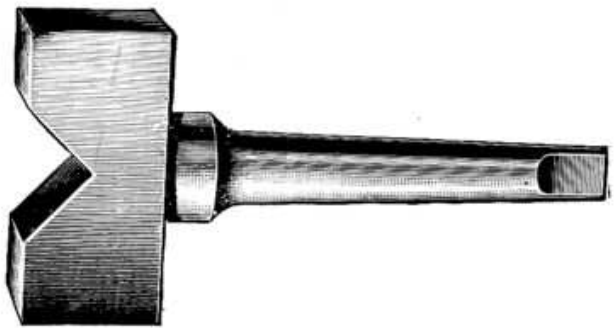
Diameter	$1\frac{3}{8}$	$1\frac{5}{8}$	$2\frac{1}{4}$	$2\frac{3}{4}$	3	$3\frac{5}{8}$	4	5	6	inches
Price	4d.	4d.	8d.	8d.	1/-	1/3	1/6	1/10	2/6	each

Rack Castings in-the-Rough for Lathes, etc.

						Price each
16 Pitch,	14 inches long,	$\frac{9}{16}$	inch wide on	Face	.. ..	3/-
14 ,,	18 ,,	$\frac{5}{8}$	,,	,,	.. ..	3/6
12 ,,	18 ,,	$\frac{11}{16}$	,,	,,	... ...	4/6
10 ,,	18 ,,	$\frac{11}{16}$	,,	,,	.. ..	5/6
8 ,,	24 ,,	$\frac{7}{8}$	,,	,,	... ...	6/6
6 ,,	30 ,,	1	,,	,,	.. ..	7/-
Pinion Castings to suit		16	Pitch	Rack	.. ..	1/4
,,	,,	14	,,		... ...	1/4
,,	,,	12	,,		... .	2/-
,,	,,	10	,,		.. ..	2/6
,,	,,	8	,,		... ...	1/9
,,	,,	6	,,		.. ..	2/6

Planing any of the above Rack Castings, 2/6 each extra.

Revolving Head-Drilling Pads

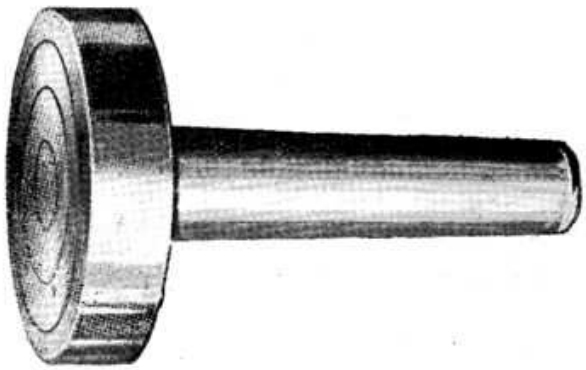


With Vee Block in front and No. 1 Morse Taper Shank, as illustrated .. **4/6** each.

Ditto No. 2 Morse Taper Shank ... **5/6** each.

DRILLING PADS

with Morse Taper Shanks



No. 1 Shanks .. **3/6 each.**

No. 2 Shanks ... **6/6 each.**

Leading Screw Brackets & Swing Arm Castings

(For use on Screw-Cutting Lathes)

	For 2½in. & and light 3in. Lathe	3in. & 3½in. ordinary. Lathe	4in.	4½in.	5in.	6in.
Rough Castings	5/-	7/-	9/-	11/-	13/-	20/- per set.
Planed Castings, Bored and Turned	15/-	17/6	20/-	26/-	29/-	36/- per set.

Lathe Leg Standards

We have patterns for the following sizes, which we offer as useful for many purposes.

Crank Shafts

Supplied for use in Treadle Lathes in sizes up to and including for 48in. Lathe × 1¼in. diam. of Shaft.

Rough Forging .. 17/6 each.

Rough Forging, but turned between webs for bearing 25/6 each.

Bearing Castings & Collars

For Ends of Crankshafts are supplied :

In-the-Rough .. 4/- per set.

Bored up to 1¼in. .. 12/6 set.

Treadle Castings

Castings as illustrated are supplied in-the-Rough, 6/- each.

Castings as shewn on our "Yankee" Lathe may also be had in-the-Rough, 6/- each.

Height overall ft.	Height overall ins.	Size at Top inches	Height to Centre of Bearing ins.	Weight each lbs.	Price each Rough Casting s.	Price each Rough Casting d.	Price each Planed-on-Top s.	Price each Planed-on-Top d.
2	4½	4¼×4¼	12¾	34	11	6	13	6
2	9	2½×2¼	12½	20	7	0	9	0
2	8½	3⅝×3	11⅝	30	10	0	12	0
2	7¾	4 ×3½	13¾	37	12	6	14	9
2	8¾	3¼×2¾	12½	28	9	6	11	6
2	6½	4⅞×4	16¼	55	18	0	20	6
2	2½	10 ×6	12	64	21	0	23	6
2	6½	5¾×3½	None	34	11	6	13	6
2	6¾	6 ×4¾	,,	62	20	6	23	0
2	6¾	5½×3½	,,	34	11	6	13	6
2	1	6 ×4¾	,,	56	18	0	20	6
2	3¼	8 ×4½	,,	56	18	0	20	6
2	7	9 ×4	,,	56	18	0	20	6
2	2½	11 ×7½	,,	85	28	0	31	9
2	1½	5¼×5	,,	21	7	0	9	6