Now - - - - Keep Your Tools Sharper

YOU NEED HAVE NO DULL TOOLS IN YOUR SHOP IF YOU HAVE A COMBINATION EMERY WHEEL AND REVOLVING OIL STONE



Curved carving tools and gouges are easy to sharpen.

You will keep a keen edge on your pocket knife.

Effort is not required to keep your household knives sharp.

The correct bevel on your planer bit can be maintained.

Tool rest swings out of the way for free hand honing.

Emery Wheel and Revolving Oilstone

This tool was developed to afford a quick and effortless way to keep tools sharp and efficient.

The emery wheel removes stock, corrects bevels and the revolving oil stone hones the edge to razor keenness.

The oilstone is two faced. A coarse and fine grit permits rough honing and finish honing.

This grinding stand is offered in two grades, with sleeve bearings and with TIMKEN Bearings. The sleeve bearing model has Gits Oil Seals. The oil stone is revolved by a worm and worm gear, giving a 27 to 1 speed reduction. These gears run in a bath of oil.

specifications: Oil Stone—5 in. diameter, ¾ in. hole in center. Emery wheel—6 in. diameter, 80 grit. All tool rests are adjustable. Belt and motor pulley included. B E A R I N G S—Bunting Bronze Sleeve with Gits Oil seals or Timken Tapered Roller. Positive lubrication for all wearing parts is provided.

No. 11. Sleeve Bearings. Price.....\$...

No. 12. Timken Bearings. Price......\$.

Thread Dial



THE DUALLathe now comes with thread dial a standard equipment. We offer the thread dial separately for those having older DUAL Lathes.

No. 970

Price \$.....

Carriage Stop

Clamps on Lathe bed to stop carriage when doing repeat operations in production work. Fits all older DUAL Lathes as

DUAL Lathes as well as present model. Top section is made of cast iron, machined to fit V on bed. Bottom section is steel.

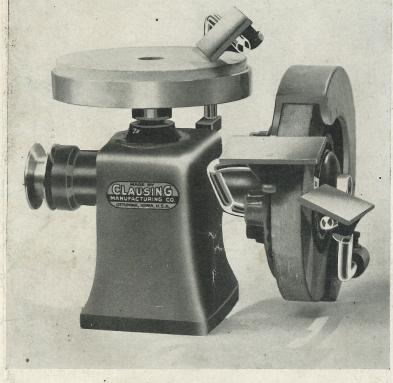
No. 930

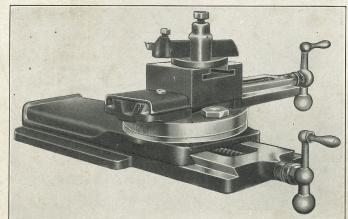
Price \$.

Satisfaction Guaranteed

We guarantee every product of ours against any defect in material and workmanship for a period of two years. We further guarantee that within two weeks after you receive any equipment purchased from us, if you are not entirely satisfied, we will promptly refund you your money plus the return shipping charges.

Clausing Manufacturing Co.
Lillian and Keota Streets
Ottumwa, Iowa
U. S. A.





Precision Compound Slide Rest

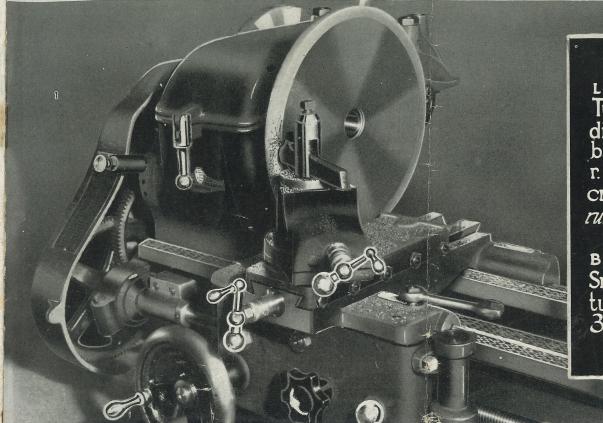
To turn metal on strictly wood turning lathes. Lower slide travels 7 in. Top slide travels 6 in. Swivel graduated from 0 to 90 degrees in two directions. Micrometer collars on both slides graduated in .001 in.

Units for these slide rests are stocked in semi-complete form. They can be assembled to fit any lathe from 9 to 12 inches in diameter. Bottoms are flat but subject to special milling to fit certain lathe beds.

No. D-200. Price with flat bottom.....\$.....

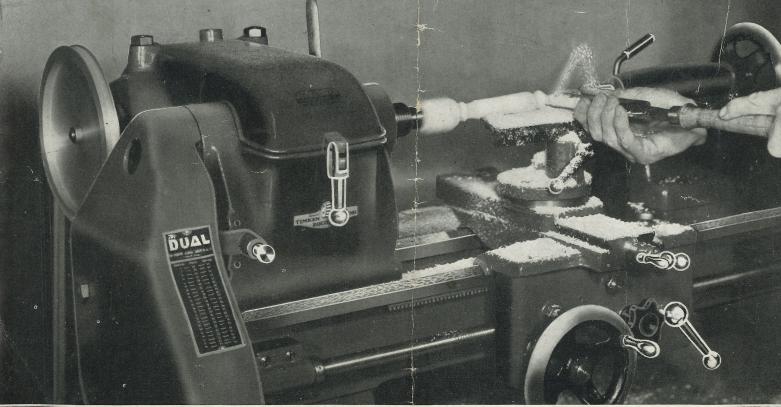
e

The - Lathe



Turning a 10 inch diameter casting in back gears at 48 r.p.m., using power cross feed. Lathe is running automatically

Smoothly, efficiently turning wood at 3000 r. p. m.



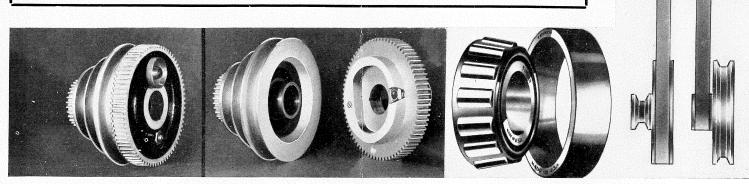
MADE BY

CLAUSING MFG. CO.
Lillian and Keota Streets
OTTUMWA, IOWA, U. S. A.

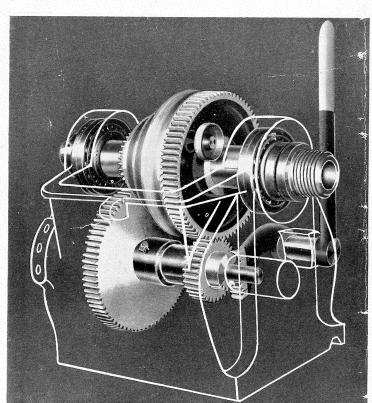
E. C. DOIDGE MACHINERY CO.
WOODWORKING MACHINERY
532-534 SIXTH STREET - SAN FRANCISCO

REASONS WHY—

The name "DUAL" is not just an advertising slogan. It is a DUAL Lathe because special provisions make it so. Lathes, without these special provisions, cannot be recommended for both high and low speed applications. The DUAL Lathe cannot be injured for precision metal turning by using it for wood turning or any other high speed application. Because it has been built to run at high speeds, extra care had to be used in its construction so that it would perform smoothly. This extra care makes it a finer lathe for all purposes. The DUAL lathe was not built to fit a price but built to be used, year after year.



When going from back gear speeds to direct cone drive it is necessary to lock the cone pulley to the bull gear. Usually, a pin is used, but this is not good enough for the DUAL Lathe. We use a clutch that freezes the two units together rigidly. There is no back-lash at any speeds. A split ring, fastened to the bull gear, is machined to fit, without drag, the drum in the cone pulley. When the ring is expanded it grips the pulley. A knurled thumb wheel is turned clockwise to lock the cone pulley and bull gear together and counter clockwise to release them. They can be locked at any position they may be found in. A provision to make it a DUAL Lathe.



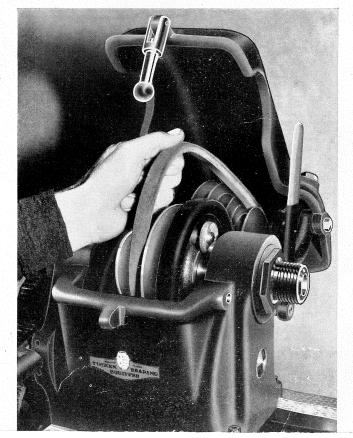
Easy Belt Shifting

RIGHT—Note how easily the belt is shifted. When the hood is raised the belt is automatically released. When the hood is closed the drive is fully covered. There is no danger of the operator getting his hand or clothing caught in between belt and pulley. This hooded drive combines safety with convenience and gives the DUAL Lathe its distinctive streamlined appearance.

Timken Tapered Roller Bearings permit high speeds or low speeds and, always, a rigid spindle. At the same time the spindle always turns freely, unhampered by friction. Best of all, the spindle stays that way even after years of service. A provision to make it a DUAL Lathe.

The above illustration shows how the DUAL Lathe changes from high to low speeds. The lower pulley is the motor pulley and the upper pulley is the counter shaft pulley. This counter shaft pulley is turned from cast aluminum. This insures light weight and avoids a fly wheel effect. A provision to make it a DUAL Lathe.

Compactness—The back gears of the DUAL Lathe are located in the body of the headstock. The purpose of this design is to gain compactness. This leaves the back of the headstock free for the counter shaft, eliminating the necessity of putting the counter shaft above the headstock or separately on the bench. The back gears are $\frac{5}{8}$ in. in width and are all machine cut. They are engaged and disengaged with a lever fastened to an arm which revolves the eccentric back gear shaft by means of gear teeth.



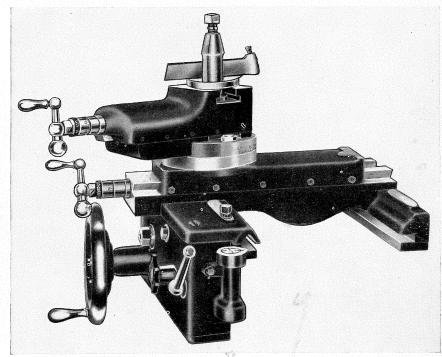


Hollow Headstock Spindle

Machined from a solid bar of alloy steel. ¾ inch hole bored entire length. No. 3 M. T. at head end. Rolls in precision TIMKEN BEARINGS.

Extra Heavy Slide Rest

Special attention is called to the cross slide block of the DUAL slide rest. This block is 9 inches long and has ways the full length. Not only does this insure a good grip upon the bridge of the slide rest but also distributes wear over a greater area, keeping the ways accurate for a longer period of service. Examine an old lathe and you will find that the cross slide is loose in the center and tight when drawn back, where it is not used as much. The DUAL slide rest does not have this weakness. The compound slide bolts rigidly to its base with two bolts. The compound is graduated from 0 to 90 degrees in two directions. Both cross and compound feeds have micrometer collars, graduated in .001 inch. Balcranks are turned from steel. Tool post assembly and drop forged tool holder is included.

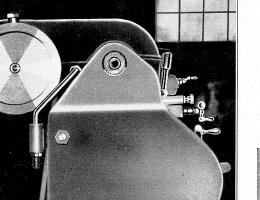


Power Cross Feed in Apron

The power cross feed is standard equipment on the DUAL Lathe. A simple design has been adopted to bring this much desired feature within reach of every lathe buyer. The cross feed is engaged by meshing a pair of bevel gears. These bevel gears are specially cut so they will mesh quickly, without hesitation. The power then goes from the longitudinal lead screw through the pair of bevel gears, through a gear train up to the cross lead screw. The cross feed is the same speed as the longitudinal feed. No gear changes need be made when shifting from one to the other.

The power longitudinal feed is engaged and disengaged with a split nut set in machined ways. Both power cross and longitudinal feeds can be engaged at the same time without damage.

A large handwheel permits a hand longitudinal feed through reduction gearing.



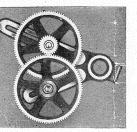
Wrenchless Twin Reverse

The lead screw can be reversed through the wrenchless twin reverse. The gear cover need not be open for this.

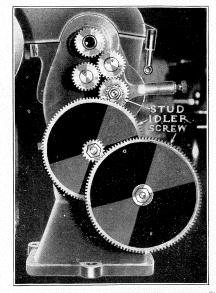
4 TO 40 THREADS (Standard)

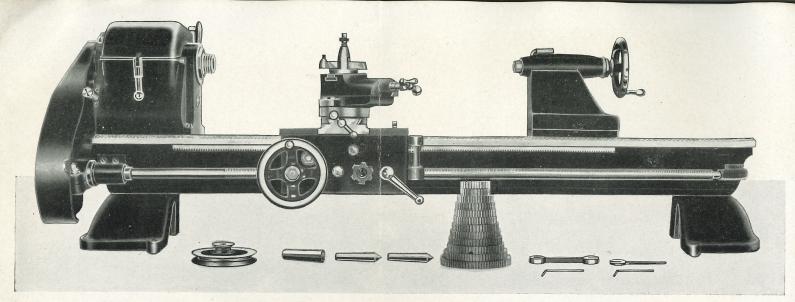
On each gear cover is a thread cutting chart. This chart shows just what gears to use to cut a certain number of threads per inch. For example: If you wish to cut 10 threads to the inch the chart shows that you are to use No. 32 stud gear and No. 40 screw gear. You then connect the stud gear and the screw gear direct with the idler or intermediate gear. You do not use the reduction or small gear on the idler gear. This is used only for power feeds.





This quadrant permits multiplying every standard thread by 4. With it you can cut up to 160 threads per in. Chart is furnished with this attachment showing the threads that can be cut.





Specifications of Dual No. 10 Lathe

RANGE: 36 in. between centers. 12 in. swing over bed. 8 in. swing over slide rest.

BED: 55 in. long, 7½ in. wide, 7½ in. high from bench, 4 in. clearance between bed and bench. Has two V ways and two flat ways. Has milled way for tailstock clamp. Three heavy cross braces. Made

HEADSTOCK: Made of gray iron. Rests on bed at four points. Is hand scraped to precision alignment on bed. Clamped to bed at rear, bolted directly to bed at front. Braced to withstand heavy direct thrust loads.

PULLEY: Made of machined gray iron. 3 in., 4 in. and 5 in. steps. Takes 11-16 in. x 11-32 in. V belt.

TAILSTOCK: Made of heavy gray iron casting. Has set-over of 1 in. in each direction from 0. Witness mark is on rear. Handwheel is 5½ inches in diameter. Has convenient toggle wrench for locking.

TAILSTOCK SPINDLE: 1 in. diameter. No. 2 Morse Taper. Graduated from 0 to 3 inches by 1/8.

HEADSTOCK SPINDLE: Made of machinery steel. 13% in. diameter under front bearing. 11/4 in diameter under rear bearing. No. 3 Morse Taper reduced to No. 2 Morse Taper with reducing sleeve. Reducing sleeve included. 34 in. hole clear through spindle. Spindle nose is 1½ in diameter and has 8 threads to the inch.

BEARINGS: Precision grade TIMKEN TAPERED ROLLER

SLIDE REST: Made of heavy gray iron castings. Lower slide is 11½ in. long. Cross slide block is 9 in. long and travels 8 in. on lower slide. Swivel is graduated from 0 to 90 degrees in two directions. Swivel slide travels 2½ inches. Tool post T slot is milled. Tool post, malleable iron tool holder, rocker and ring included. All ways are 60 degree and gibbed for take-up. Slide rests on bed at four points and is handscraped for alignment. Has adjustable gibb on flat way. Balcranks are turned from steel. Micrometer collars on cross slide and swivel slide are graduated by .001 in. Leadscrew in swivel slide is 3/8 in. dia. Leadscrew in cross slide is ½ in. dia. Leadscrews have 10 Acme threads to the inch. Slide rest is parallel with a 6 in. face plate to within .001 in.

APRON: Not integral with bridge. Has block type split nut sliding in machined ways, to engage and disengage lead screws, for power longitudinal feed and for thread cutting. Thread dial is standard equipment. Power cross feed is secured by meshing a pair of bevel gears, specially cut to facilitate meshing without halting. Cross feed can be reversed with twin reverse gears. Has large handwheel for manual longitudinal feeding.

LEAD SCREW: 8 threads to the inch. Acme thread. 3/4 in. dia. Lead screw is reversible through twin reverse gears. The lead screw has a keyway milled the full thread length.

GEARS: All are 16 pitch, 14½ degree pressure angle. All gears have ½ in. face except back gears, which have 5% in. face. Gears of 32 teeth and smaller are cut from X1335 machinery steel and larger gears are machined from iron castings. In addition to the feed gears there are 12 independent change gears for cutting 4 to 40 threads to

COUNTER SHAFT: Choice of SKF ball bearings or bronze sleeve bearings. $3\frac{1}{2}$ in, $4\frac{1}{2}$ in. and $5\frac{1}{2}$ in. step cone pulley to match cone pulley in headstock. 7 in. and $4\frac{1}{4}$ in. pulley to match $1\frac{1}{2}$ in. and $4\frac{1}{4}$ in. motor pulley. Shaft is $\frac{3}{4}$ in. diameter.

OPTIONAL CLUTCH: Disc friction type. All revolving parts are circular and do not cause vibration at high speeds. When clutch is engaged, there is no drag. Has brake for stopping disengaged unit. SPEEDS: High—3200, 1960, 1225. Low—680, 420, 260. Back Geared—115, 73, 44.

EQUIPMENT: Includes the complete lathe, as illustrated above, with change gears, counter shaft, as specified, motor pulley, machined face plate., two centers, power cross feed, thread dial, reducing sleeve, tool post assembly, malleable iron tool holder with tool bit and wrench-

POWER: Motor not included. ¼ H. P. recommended for metal turning only. ½ H. P. recommended for combination work.

ACCURACY: After the lathe is assembled, it is tested for alignment of spindle, tailstock, carriage and bed ways in both horizontal and vertical planes. The lathe must pass these tests within .001 in. Actual cuts are made on test stock to insure that the lathe performs accurately. The headstock spindle is finish bored after the lathe is assembled insuring positive concentricity.

The right is reserved to make changes in equipment and design at any time, without incurring any obligations to install these on equipment previously sold.

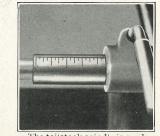


Tailstock is clamped to lathe bed with a quick acting toggle wrench. On most lathes this wrench is on the front side of the tailstock where it always tangles with the compoundslide. Many times, on close quarter set ups, it is almost impossible to lock the tailstock when wrench is on front side. due to wrench is on front side, due to interference of compound slide.

Page Four

Heavy Cast Iron Bed, Strongly Braced Has Two V Ways and Two Flat Ways

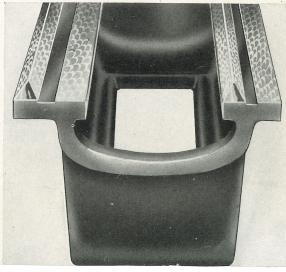
The bed is rough planed, then allowed to season. After seasoning, it is finish planed and then hand scraped until a precision straight edge blues it.

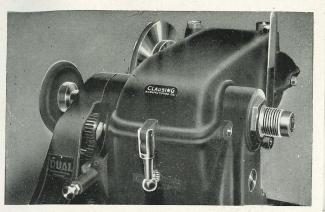


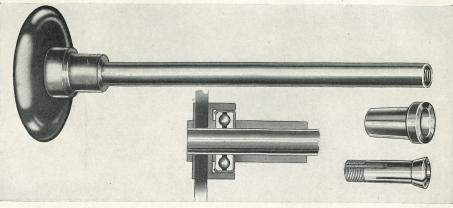
The tailstock spindle is graduated 3 inches by ½ for convenience in gauging depth drilling.

Long Precision Alignment Life

On the V bed way the alignment wear is downward. The Tailstock and Slide Rest develop no cross play but remain rigid on the bed, even after extensive wear.





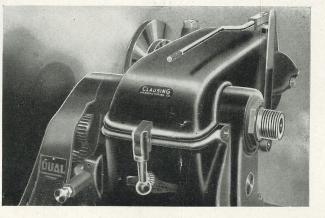


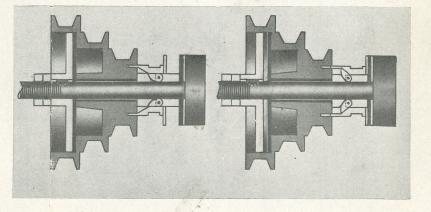
Handwheel Type Draw-in Collet Chuck Attachment

The hollow draw bar of this attachment permits round rods, from 1/8 in. diameter to 1/2 in. diameter, square rods from 1/8 in. sq. to 11-32 in. sq. and hexagon rods from \(\frac{1}{8} \) in. to 7-16 in., to be passed through the spindle of the lathe and held in the collet for machining. Special attention is called to the ball thrust bearing, which permits tighter gripping of the work and easier releasing.

The draw-in collet chuck is the quickest and most accurate method of holding work. The attachment comes complete, consisting of handwheel, drawbar, closer and one collet. A collet is required for each size of work. They are available in sizes by steps of 64ths of an inch, from minimum to maximum capacity.

No. 920. Price.....\$..





Clutch and Brake in Counter Shaft

This attachment permits stopping the power at the counter shaft and quickly stopping the headstock spindle. It is a great time saver in any operation where there is much starting and stopping. The cutaway illustration at the left shows the clutch in an engaged position, at the right in a disengaged position and brake applied. When engaged, a sleeve forces and locks four fingers down, which force the

pulley against and asbestos lined plate. When disengaged the fingers fly out, releasing the pulley. When sleeve is pressed against the leather padded bearing housing, the pulley is quickly brought to a stop. Clutch can be adjusted for correct tension or for tightening after wear occurs.

Lathe Chucks

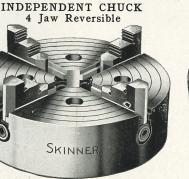
No lathe is complete without a chuck. We offer two grades, the high quality Skinner Chucks for those who have exacting requirements, and a lower priced line. In this lower priced line we do not hesitate to recommend the 8-W and 10-W chucks as being very substantial and capable of handling any load imposed upon them by the DUAL Lathe. With each chuck comes a semi-machined back plate. This chuck-back screws on the spindle nose of the DUAL Lathe and must be finish machined by the purchaser.

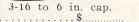


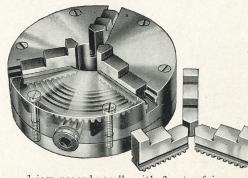
No. 4806. 3-16 to 6 in. cap. Price.....\$.

Skinner Chucks

SELF CENTERING CHUCK





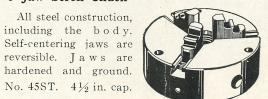


3-jaw geared scroll, with 2 sets of jaws No. 5805. 1-16 to 5 in. cap. Price. \$......

Extra Chuck Backs 3 Jaw Scroll Chuck

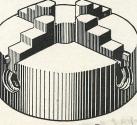
Semi machined, ready to screw on to spindle

ose.		0
ize	Price	Self-centering jav
4 in. dia\$.		reversible. Jaw
6 in. dia\$.		hardened and g
8 in. dia\$.		No. 45ST. $4\frac{1}{2}$ in
		Price\$



4 Jaw Reversible Independent Chuck

No. Cap. Price 4-T 4 in. \$. 6-T 6 in. \$ 8-T 8 in. \$





Jacob Drill Chuck (Arbor not included in price)

Cap. 0-1/4 $0-\frac{3}{8}$ $1-16-\frac{1}{2}$ $0 - \frac{1}{2}$ No. 2 M. T. Arbor....\$. No. 3 M. T. Arbor....\$...



60 Degree Centers

Hardened. Made of good quality tool steel. No. 2 Morse Taper shank.

No. 84. Price......\$..



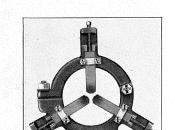
Cup Centers

For wood turning. Sharp hardened point with deep machined No. 2 Morse Taper. No. 96. Price.....\$..



Spur Centers

For wood turning. Keen machined hardened spurs that assure a positive drive. No. 2 Morse Taper shank. No. 86. Price.....\$



Steady Rest

Used to support long shafts for turning, boring, threading, drilling, etc. Opens for convenience in taking work out and put ting work in. Three tool steel support fingers have heat treated ends.

No. 950. Price. . \$...

Page Six

Drill Chucks



Jacob Center Rest Chuck

For holding centerless shafts. Ideal for armature work. (Arbor not included in price).

No. 100. ½-¾ cap...\$..... No. 2 M. T. Arbor....\$.....



Wheel Arbor

Diam. of arbor between flanges ½ in. Maximum distance between flanges 1 in. With accurately ground No. 2 Morse Taper No. 102. Price.....\$......



Wrenchless Drill Chuck

Capacity 0 to ½ inch. Fitted with No. 2 Morse Taper shank. No. 103. Price.....\$..



No. 2 Morse Tapered Blanks

Made in two lengths. Unfinshed ends are 1/8 in. diameter. 98. $1\frac{1}{2}$ inch unfinished Price.....\$.. 5 inches unfinished length. Price.....\$..



Jacob Headstock Chuck

Screws directly onto spindle nose of DUAL Lathe. Long stock can be passed clear through it. No arbor required.

Drill Pad

firm back for drilling under pow-

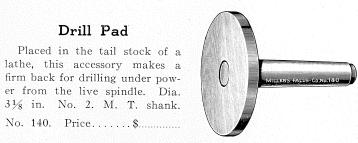
No. 140. Price.....\$..

No. 58B. 1/8-5/8 cap...\$. No. 59B. 3-16-3/4 cap.. \$.



The New Lee Wrenchless Drill Chuck

Grips tighter than a key tightening chuck. Releases easily, instantly. Made in sizes up to 5/8 inch diameter capacity. Write for special circular covering this new chuck that uses a new principle in gripping drills.



Screw Face Plate

For turning small pieces of wood. Dia. of plate is 2 inches. No. 2 M. T. shank.

No. 113. Price.....\$.

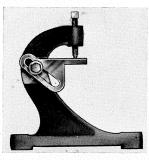


Crotch Center

For use in tail stock for holding round hexagon and other shaped rods for drilling. Dia. of plate is 2 in. No. 2 M. T. Shank.

No. 127. Price.....\$.



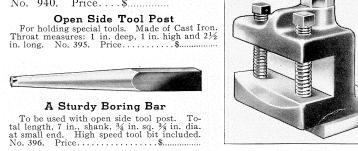


Follower Rest

Follows the tool bit to support a long, light turning. Support bracket can be bolted on either side of standard.

No. 940. Price....\$...

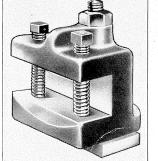
Open Side Tool Post For holding special tools. Made of Cast Iron. Throat measures: 1 in. deep, 1 in. high and 2½ in. long. No. 395. Price.......



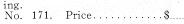


Semi-Machined Face Plate For Wood Turning

Has hole faced, bored and threaded, ready to screw onto spindle nose. Purchaser can machine it. No. 375. Price \$.



This face plate fits on the spindle nose of the DUAL Lathe. It is graduated from 0 to 360. The marks are all machine cut. With this face plate comes a fixture which clamps the hub of face plate and is inserted in hole in headstock. The face plate can be locked at any point. The unit is useful for dividing. The face plate can also be used for general purpose in wood work-





The complete set of 8 drop forged lathe tools in a metal case.

No. 8A. Price.....\$

Drop Forged Lathe Dogs



- 9		- UgD
No.	Cap.	Price
201	$\frac{1}{2}$ in.	\$
301	$\frac{3}{4}$ in.	\$
401	1 in.	\$
601	$1\frac{1}{2}$ in.	\$

High Speed Tool Bits



Set of 6 ground to shape

3-16 in. sq. \$...

Blanks \$

1/4 in. sq. \$..... Blanks \$..

Drop Forged Tool Holders

Drop forged from special steel; all parts carefully machined and heat treated. You can do your work quicker if you have the necessary tool holders for every job.

The shanks are $\frac{3}{8}$ in. x $\frac{3}{4}$ in. The turning tools hold ¼ in. square tool bits. The boring bar is $\frac{1}{4}$ in. x 5 in. The boring bar is reversible. A high speed steel tool bit and wrench comes with every holder.

2010-S	Straight Shank Turning Tool. \$
2010-R	Right Hand\$
2010-L	Left Hand\$
2030	Boring Tool\$
2020-S	Straight Shank Cut-Off Tool \$
2020-R	Right Hand Cut-Off Tool\$
2040	Knurling Tool\$
2050	Threading Tool\$
	항문 사람들은 가게 살아왔다면 그 가장 하는 것이 되었다. 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그



"Tom Thumb"

A new Genuine Dumore Tool Post Grinder. 1/4 H. P. Dumore universal (AC-DC) motor. Wheel speeds from 8,500 to 19,000 R. P. M. Internal capacity, down to \frac{1}{8} in. in diameter and depth to $2\frac{1}{4}$ in. Pulls 2 in. dia. wheel at 8,500 R.P.M. Quickly interchangeable chuck, simple belt adjustment. Pre-loaded ball bearings and a positive lubrication system. Net weight only $6\frac{1}{2}$ lbs.

No. DU9. Price.....\$...

For Wood Turning

cast iron. Size 3 in.

Made of machined

For wood turning

on the DUAL Lathe

without slide rest.

Made of cast iron,

No. 575. \$.....

machined at bottom

Angle Rest

Tool Rest Base

x 6 in.

No. 572.. \$.

Tool Post Grinder

Without Motor

Will take from $\frac{1}{12}$ to $\frac{1}{3}$ H.P. motor. Precision SKF Ball Bearings keep shaft rigid but free. Shaft diameter is 3/4 in. under bearings .6693 in. Shaft diameter under stone is $\frac{1}{2}$ in. Stone and pulley are interchangeable. Offered complete, as illustrated, except without stone.

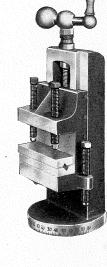
No. 900. Price...\$....

Milling Attachment

For doing many light milling operations on your lathe. This attachment has been designed to sit rigidly upright and eliminate all overhang.

Vertical feed has micrometer collar graduated in. .001 in. Ways are gibbed for tension and take-up. Swivel graduated from 0 to 90 degrees in two directions for accurate mitre work Vise capacity is 1½ in round stock and 2 in flat stock.

No. F. Price. \$.



A Convenient Tool Rest

The compound rest is removed from the slide rest and this rest is mounted instead. It permits efficient free hand turning of wood. The rest can be fed in or out or moved along the bed

and used without clamping the slide rest to the bed. Because of the ample swing of the DUAL Lathe, the operator has plenty of range. The unit includes one 4 in. tool rest and 8 in. tool rest, tool rest base and toggle lever.

No. 576. Price \$...



Woodruf Key Seat Cutters

Dia.	Width	Price
$\frac{1}{2}$	$\frac{1}{16}$	\$
$\frac{1}{2}$	3-32	\$
$\frac{1}{2}$	1/8	\$
5/8	5-32	\$

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Graduated Face Plate