Drilling Problems
Easily Solved with...

"Buffalo" No. 18

DRILLING MACHINES

Low Cost Production Tools
RUGGED—DEPENDABLE
EASY TO OPERATE

BUFFALO FORGE COMPANY
BUFFALO, NEW YORK
CANADIAN BLOWER & FORGE CO., LTD., KITCHENER, ONT.

BULLETIN 3123-F

No. 18 Drilling Machines

Nineteen Specially Designed Models To Meet A Variety of Applications

We discovered during the process of designing this line of drilling machines that there are a great many different ideas of what constitutes the ideal arrangement of table, feed, etc. Tabulating the preferences expressed, we found that they fall into easily recognized groups. For this reason, the No. 18 Drill is available in nineteen models—a line-up which will enable the most exacting buyer to secure just the arrangement desired.

No. 18-A—Production type oil groove table, head-raising device, foot feed and table-raising screw.

No. 18-B—Same as 18-A but without foot feed. (Not illustrated.)

No. 18-C—Production type oil groove table, foot feed and table-raising screw.

No. 18-D—Same as 18-C but without foot feed.

No. 18-E—Standard table, head-raising device, foot feed, table-raising screw (not illustrated.)

No. 18-F—Standard table, head-raising device and foot feed (not illustrated.)

No. 18-G—Standard table, head-raising device and table-raising screw (not illustrated.)

No. 18-H—Standard table and head-raising device (not illustrated.)

No. 18-I—Standard table, foot feed and table-raising screw (not illustrated.)

No. 18-J—Standard table and foot feed (not illustrated.)

No. 18-K—Standard table, table-raising screw.

No. 18-L—Standard table.

No. 18-M—Production table, bench type. (Not illustrated.)

No. 18-N—Standard table, bench type.

No. 18-O—Production base, bench type with head-raising device.

No. 18-P—2-spindle production base, bench type, head-raising device.

No. 18-Q—3-spindle production base, bench type, head-raising device. (Not illustrated.)

No. 18-R—4-spindle production base, bench type, head-raising device. (Not illustrated.)

No. 18-S—6-spindle production base, bench type, head-raising device.

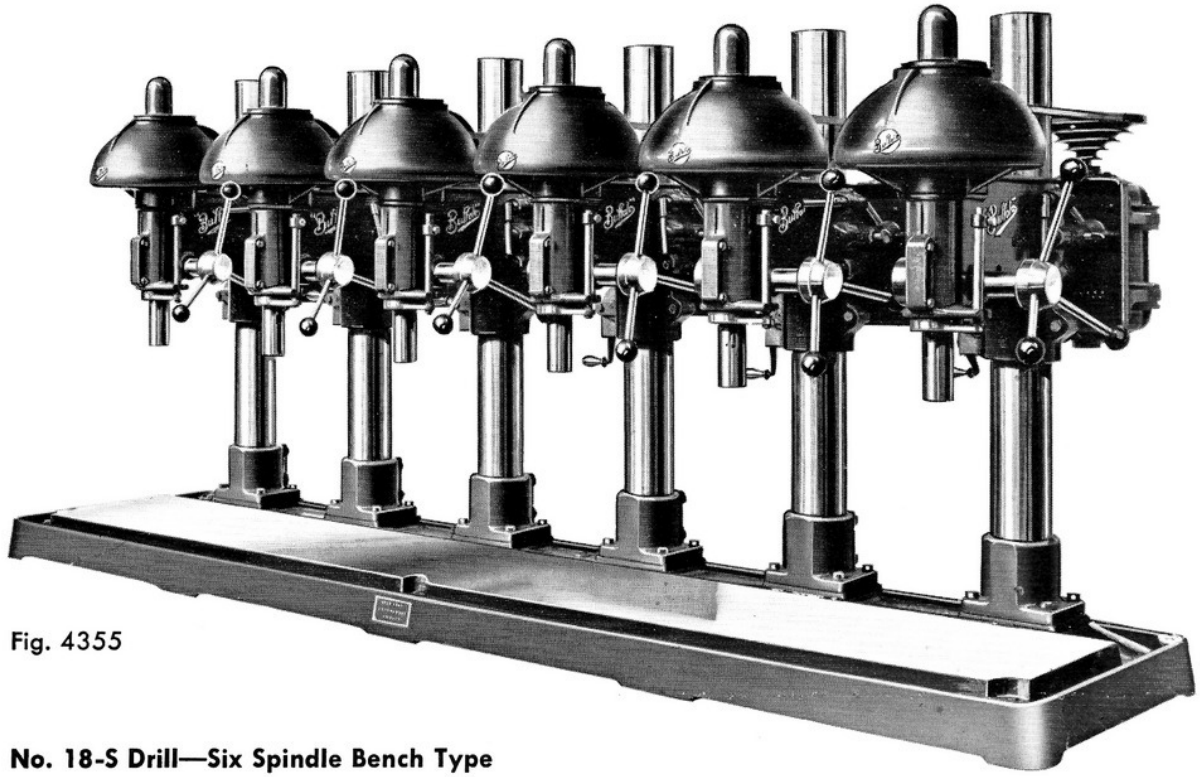


Fig. 4355

No. 18-S Drill—Six Spindle Bench Type

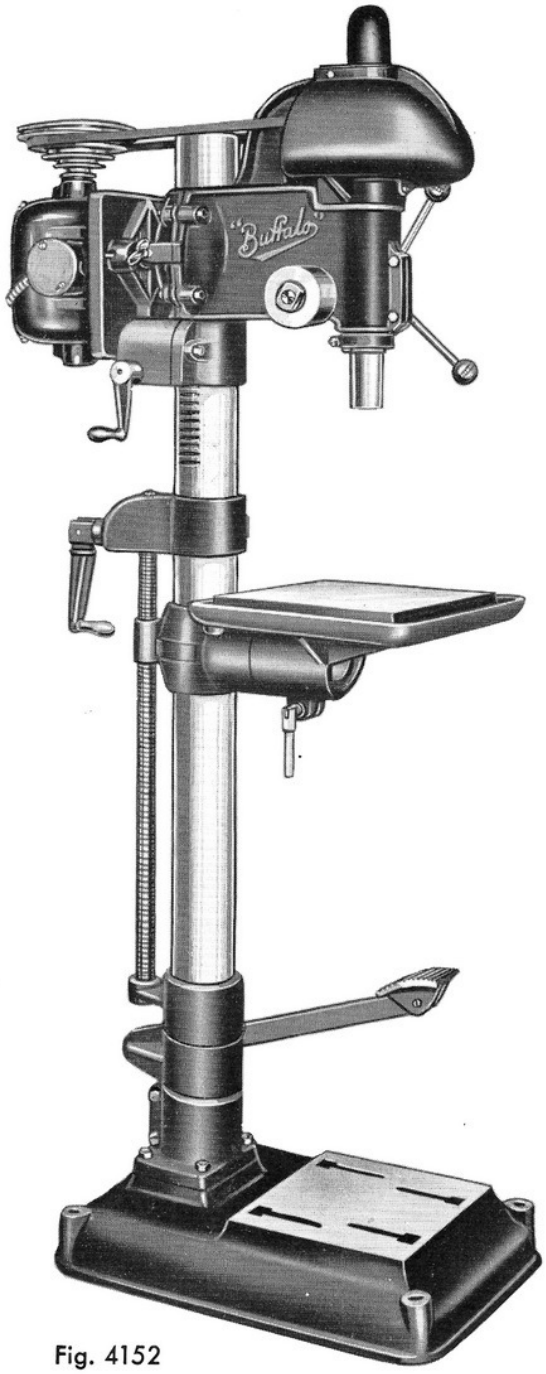


Fig. 4152

Left: No. 18-A Drill

Production type oil groove table, head-raising device, foot feed and table-raising screw. Net weight, 529 lbs.

All Models
18″ Swing.

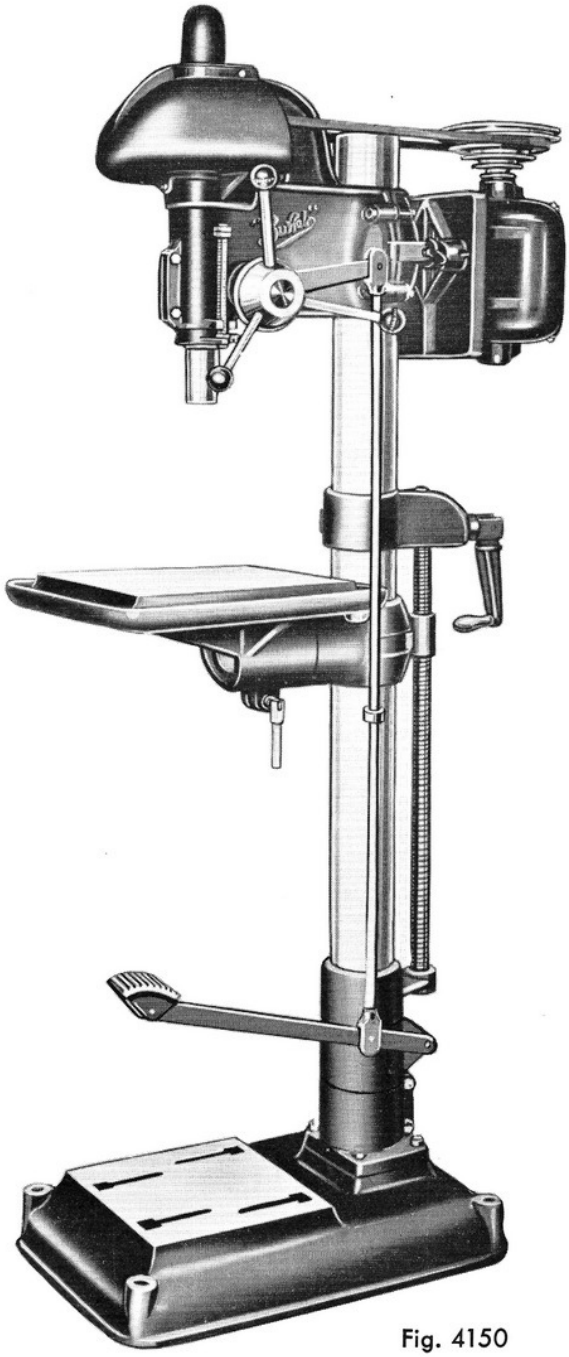


Fig. 4150

All Models
18″ Swing.

Right: No. 18-C Drill

Production type oil groove table, foot feed and table-raising screw. Net weight, 443 lbs.

Right: No. 18-K Drill

Standard table, table-raising screw. Net weight, 376 lbs.

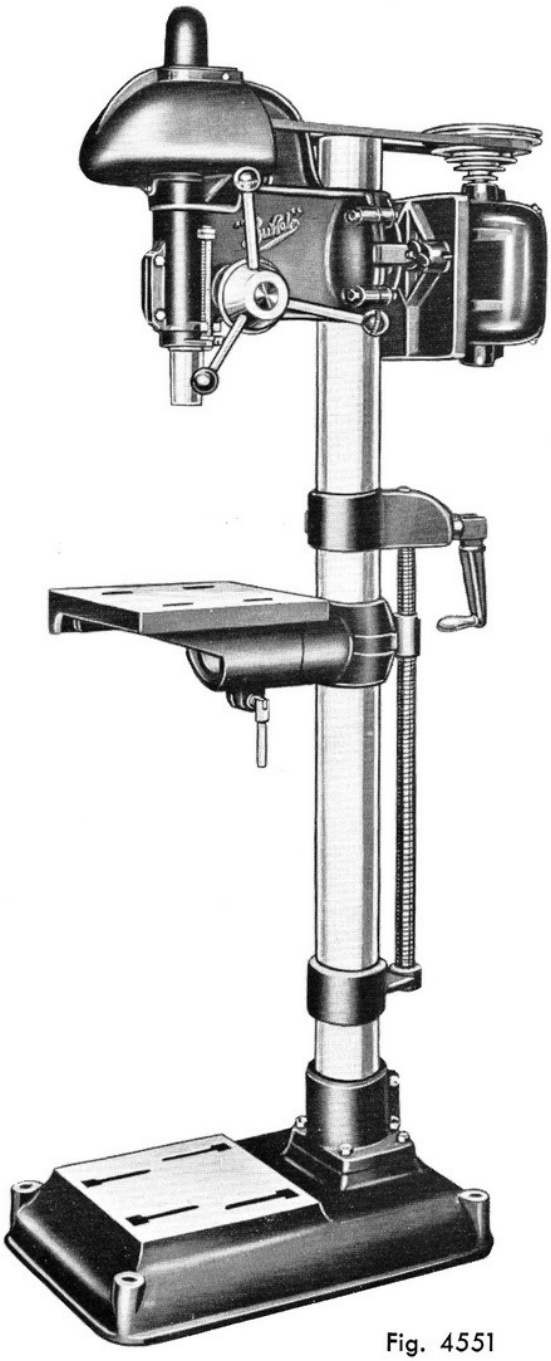


Fig. 4551

All Models
1″ Capacity

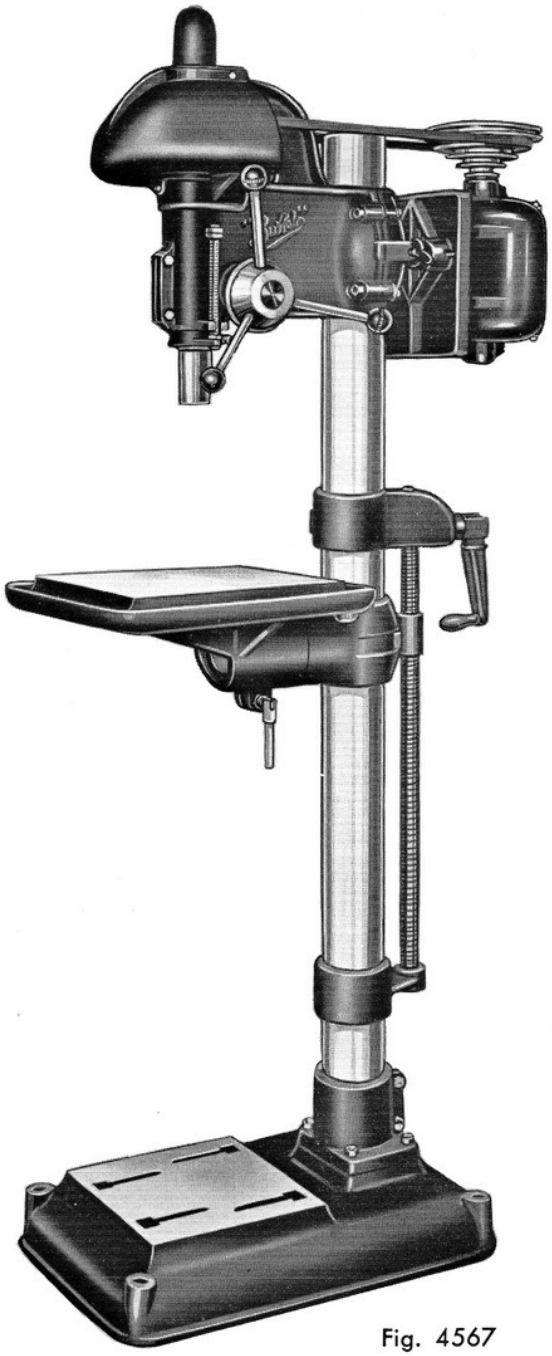


Fig. 4567

All Models 15/16″
least diameter
Alloy Steel Spindle

Left: No. 18-D Drill

Same as 18-C but without foot feed. Net weight, 419 lbs.

Right: No. 18-L Drill
Standard table. Net weight, 335 lbs.

All Models Have Spindle Sleeve Bearing Adjustment.

All Models Have 3.906″ Diameter Column.

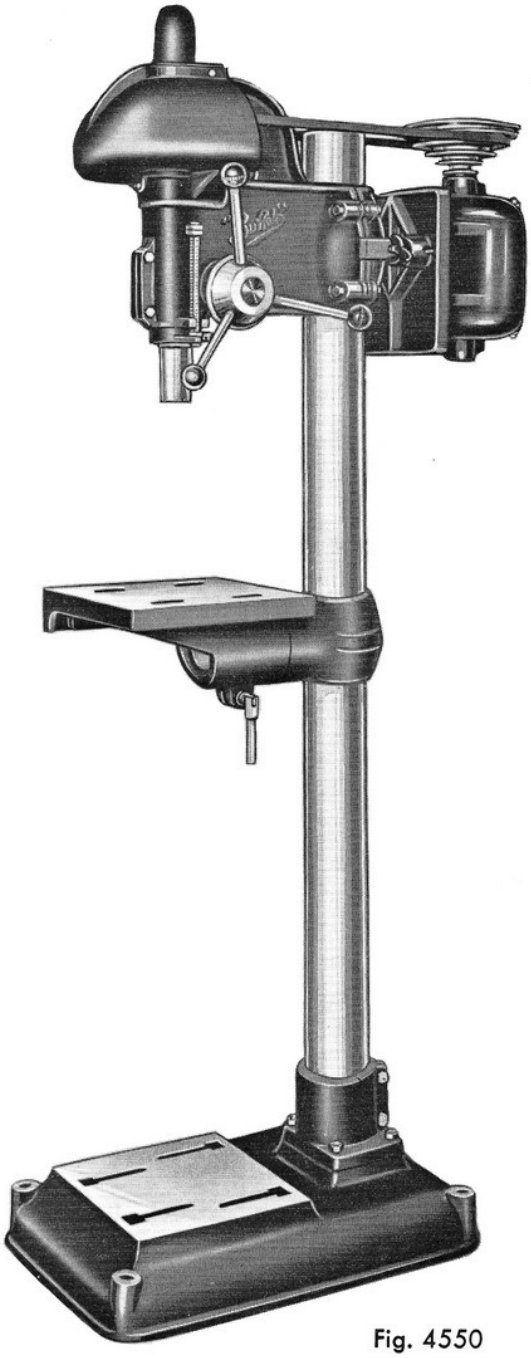


Fig. 4550

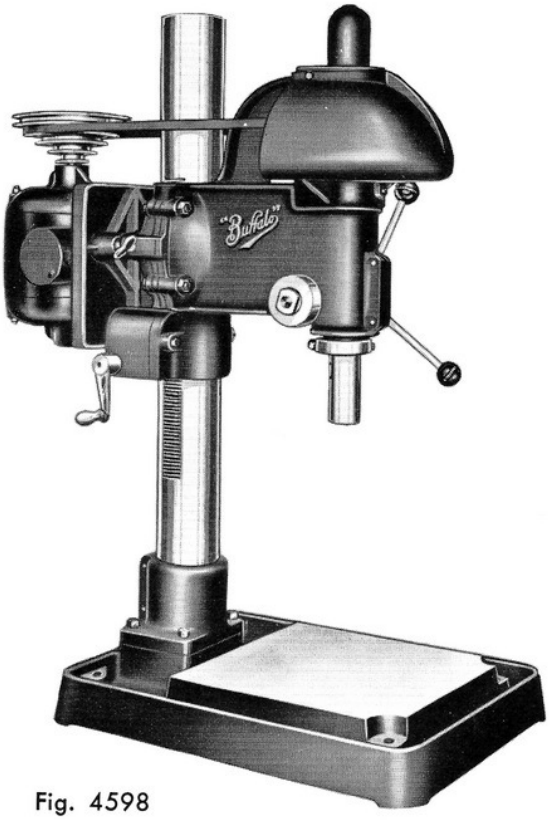


Fig. 4598

"Buffalo"

Left: No. 18-O Drill
Production base, bench type with head-raising device. Net weight, 326 lbs.

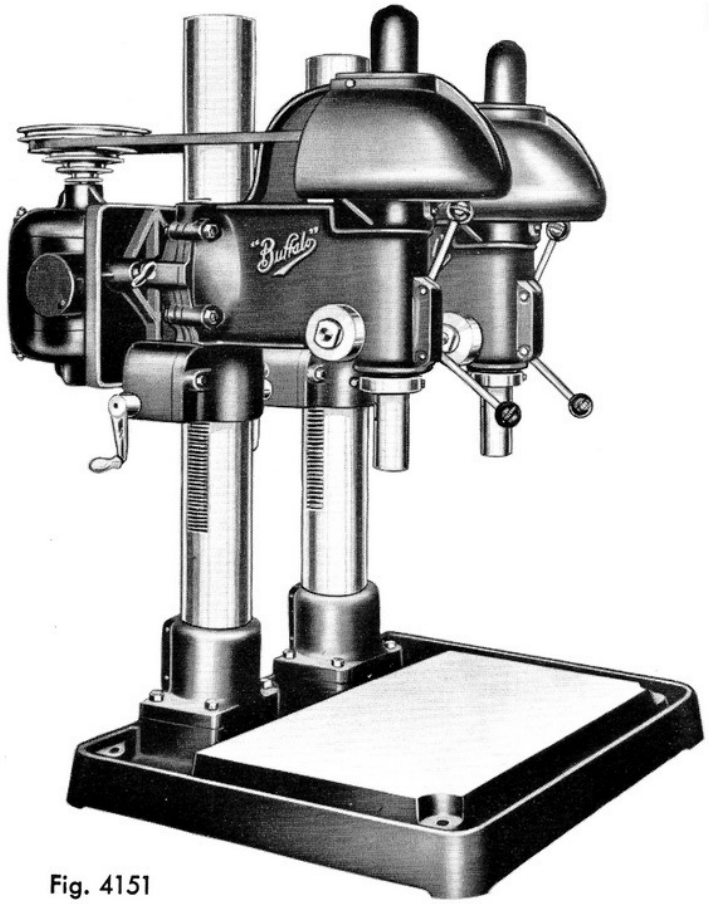


Fig. 4151

Left: No. 18-P Drill

2-spindle production base, bench type, head-raising device. Net weight, 600 lbs.

All Models Have 3.906″ Diameter Column.

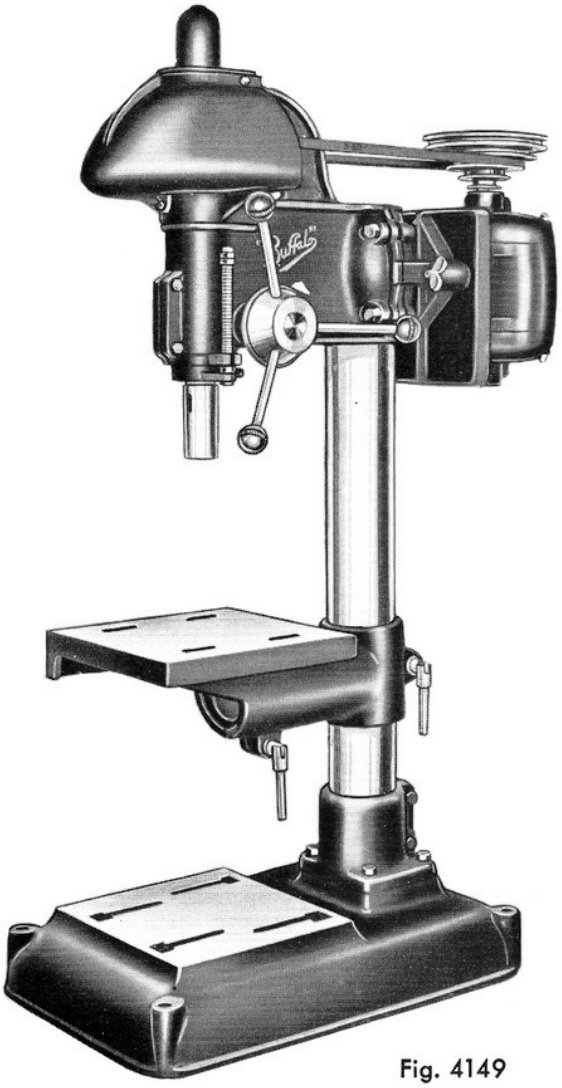


Fig. 4149

All Models Have 3.906″ Diameter Column.

Right: No. 18-N Drill

Standard table, bench type. Net weight, 312 lbs.

Right: No. 18-P Drill

2-Spindle Bench Type, mounted on cast iron legs. Machine lights and legs are optional equipment.

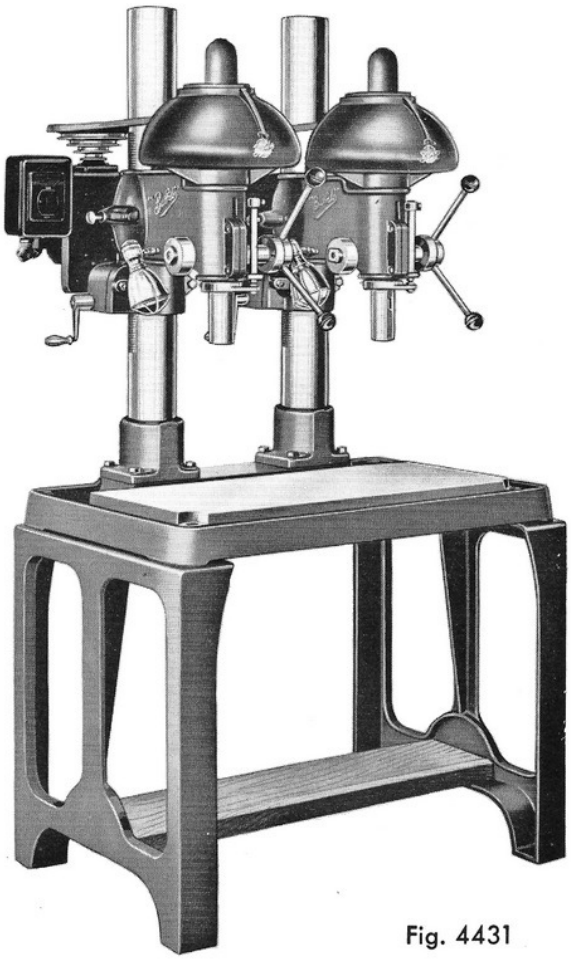


Fig. 4431

NOTE:—Any Bench Model can be equipped with cast iron legs. 2 and 3-spindle machines require two legs; 4, 5 and 6-spindle machines, three legs.

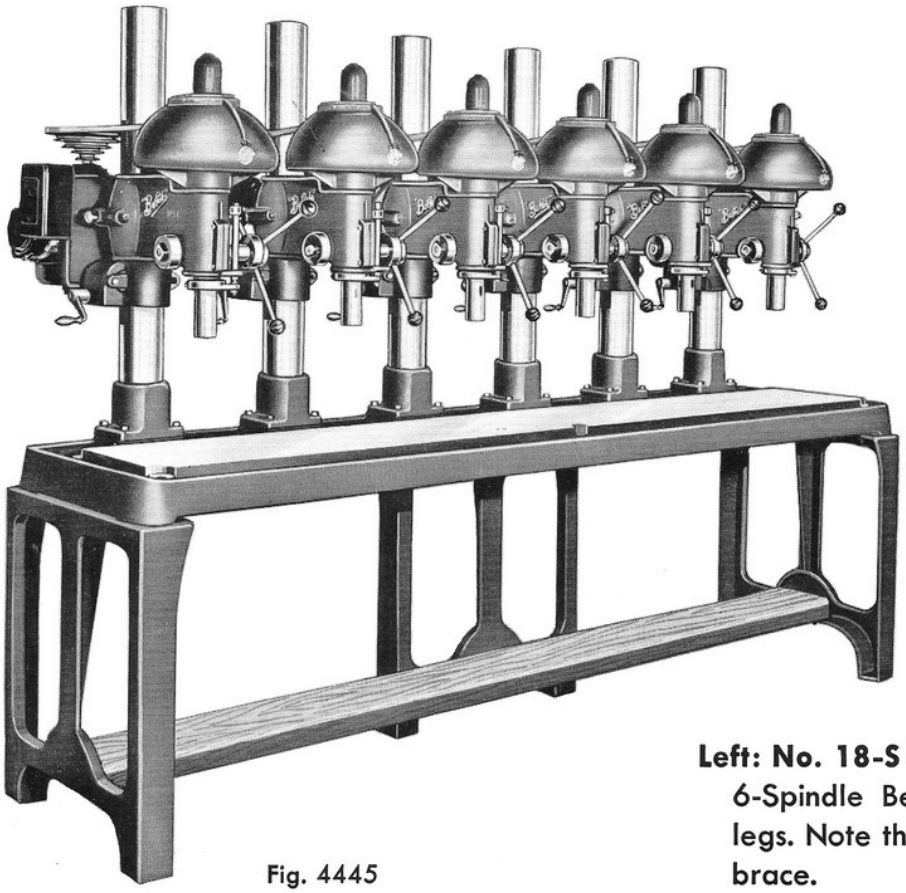


Fig. 4445

All Models Have 3.906″ Diameter Column.

Left: No. 18-S Drill

6-Spindle Bench Type, mounted on cast iron legs. Note third leg support and rugged cross brace.

Details of Construction

FRAME:

The head frame is large and heavy and is split in front with adjustment for wear of the spindle sleeve bearing. This insures accuracy throughout the life of the machine.

SPINDLE:

Three styles of spindles are available. The No. 3 Morse taper is standard with No. 2 optional. Also, the machine can be furnished with a No. 3 Jacobs taper spindle which fits directly into Jacobs chucks with taper hole. (Refer price sheet.)

These spindles are multiple-splined, made of alloy steel, ground, polished and perfectly balanced. They rotate in two precision-type ball bearings, the lower one being a double row bearing, capable of taking the thrust of large drills. These bearings are sealed to prevent the entrance of dust and loss of lubricant.

The spindle sleeve rack is cut integral and slides in an exceptionally long bearing in the head. Provision is made for adjustment of the spindle bearings and for the frame bearing.

SPINDLE PULLEY:

The spindle pulley is mounted on precision type ball bearings, fitted above and below the pulley so that no driving torque is transmitted directly to the spindle.

TABLES AND BASES:

The tables and bases are of extra heavy proportions and have large working surfaces. The production table and production bench base are smooth while the standard table and base are slotted for T-bolts.

RAISING SCREW:

The table-raising screw is full ball bearing and is actuated by machine-cut steel screw and machine-cut steel gears. The raising crank is pivoted in its shaft and can be turned with the handle toward the inside to protect it from being bumped and broken. Three ball thrust bearings make for easy operation. When the raising screw is not used, the table fork is provided with an eccentric safety latch which prevents the table from dropping.

FOOT FEED:

The foot feed has a 2″ stroke and is operated by a gear meshing the feed pinion. The lever connecting the gear is ratchet-mounted so that the entire foot feed can be disengaged by turning a knurled nut. The foot treadle return is a torsion spring. This construction assures the maximum return pressure at the end of the stroke and does not have the overtravel experienced in the use of counterweights.

Full Specifications on Pages 13 and 14

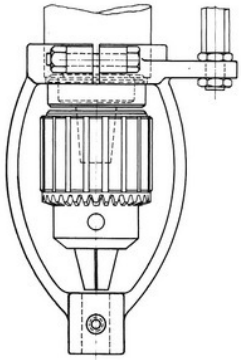
Spindles Are Constructed To Assure Long Life And Accurate Service

The spindle of the Buffalo No. 18 Drill is the result of exacting research to find an alloy steel which has high tensile strength, toughness, and ability to resist wear. Many steels have these properties but are unsuitable for drill spindles because they warp easily when machined and result in a wobbly, inaccurate drive. The spindle used in the Buffalo No. 18 Drill has all the desirable properties and stays straight and true through the many machining operations required to make it.

Since a drill spindle is essentially the most important part of the machine, we have concentrated our efforts on making this high grade heat-treated alloy steel spindle the acme of perfection, rather than build a flashy machine of inferior materials. Mounted in precision-type ball bearings, this vital portion of the Buffalo No. 18 Drill is guaranteed to give long and accurate service.

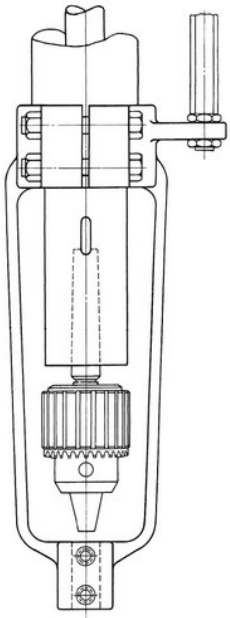
All working parts are of high grade steel, no die cast parts other than the pulleys, and ample adjustments are provided to insure a longer and more accurate machine life.

Buffalo Drills are manufactured for machine tool users by a manufacturer of machine tools.

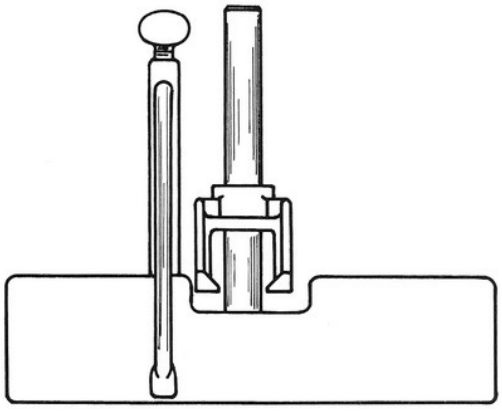


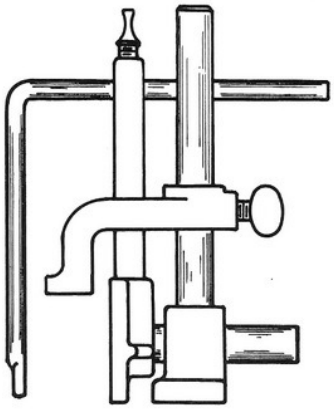
Mortising attachment for use with Jacobs Taper Spindle.

NOTE: Capacity of Mortising Attachments, up to ½″ square hole. Use chisels with ⅝″ diam. shank.

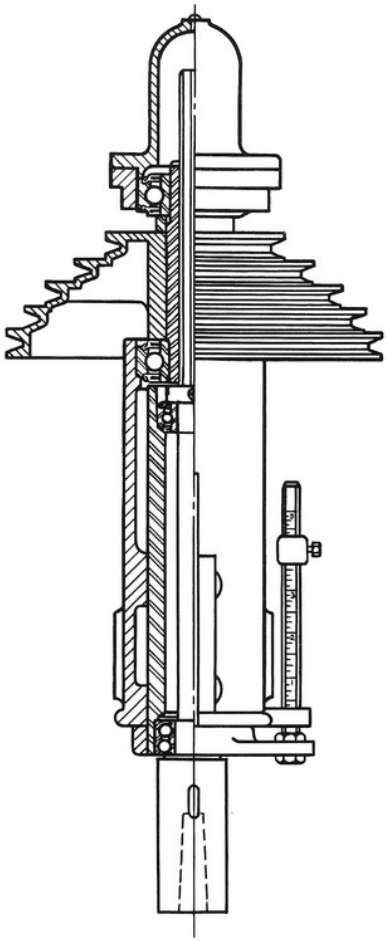


Mortising Attachment for use with Morse Taper Spindle.

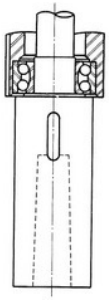




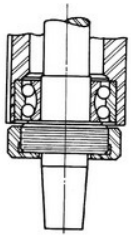
Mortising Fence and Hold-down for use with No. 15 and No. 18 Drills.



No. 2 M.T. Spindle Assembly.

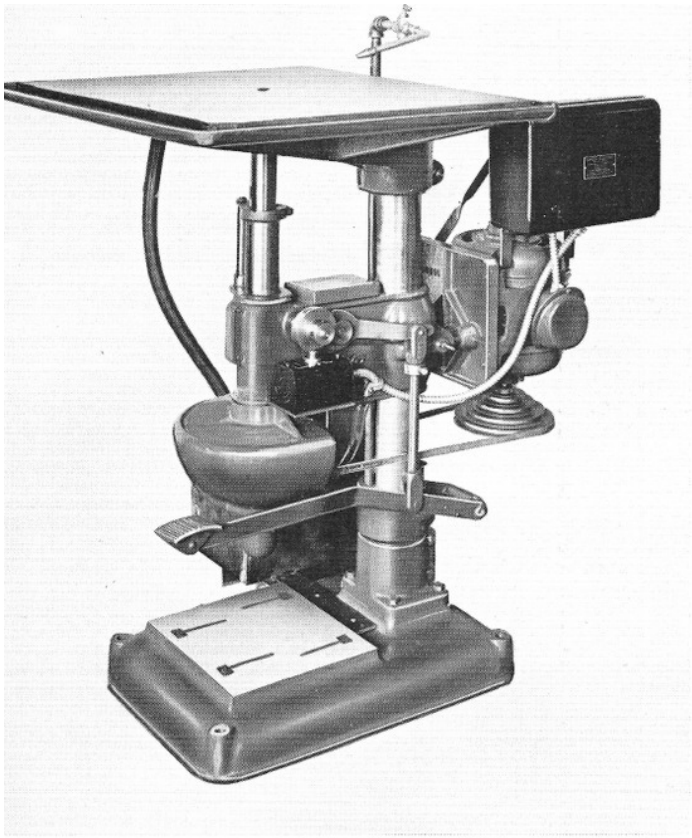


No. 3 M.T.

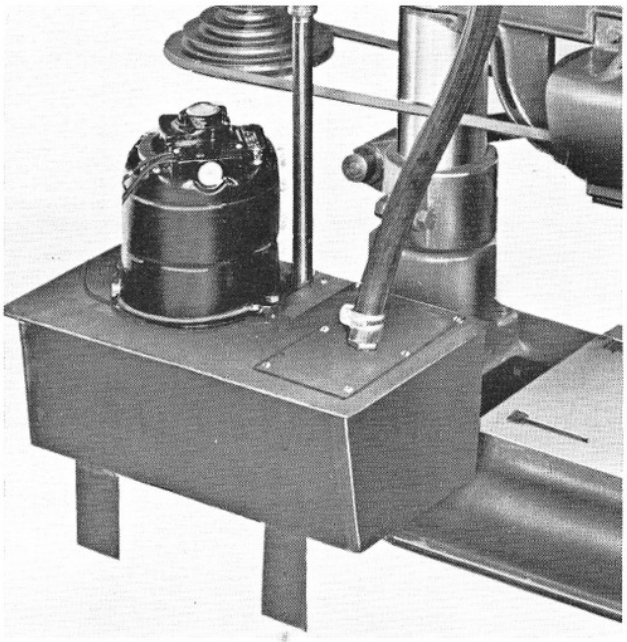


No. 3 Jacobs Taper

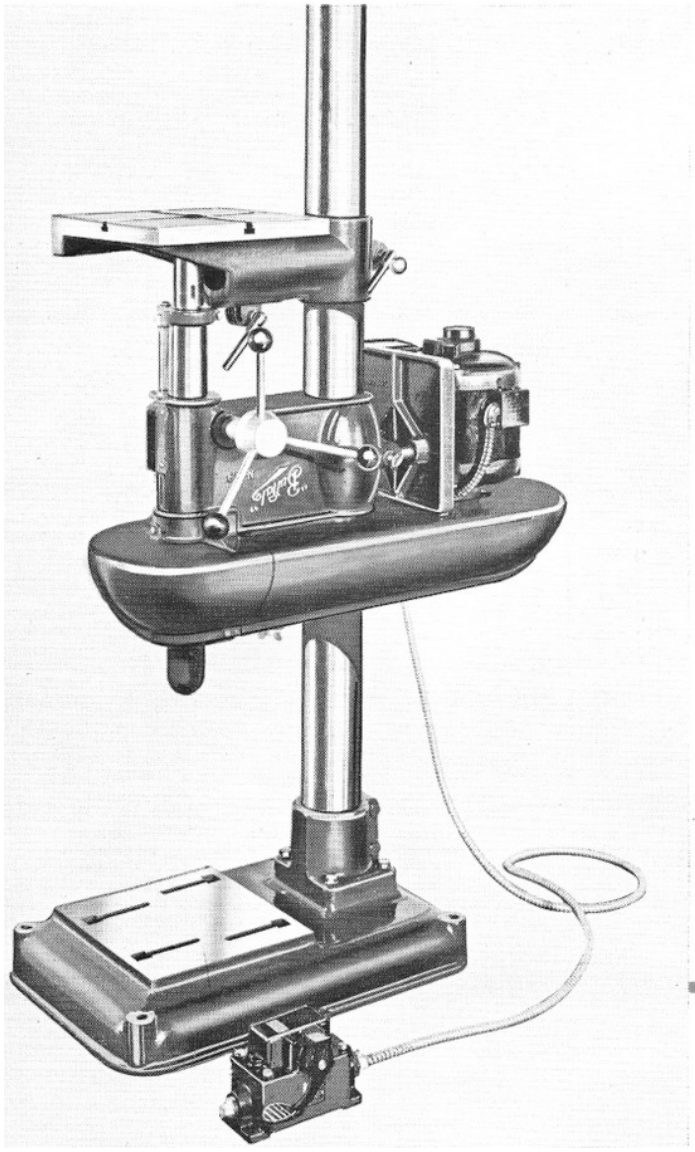
NOTE:
Spindles can be furnished with No. 2 or No. 3 Morse Taper or No. 3 Jacobs Male Taper. No. 3 is considered standard with No. 2 as optional.



★ **MODEL A**—This machine is built to handle large castings and forgings, and is equipped with foot feed and coolant system. The "plugging control" which instantly stops the spindle rotation is interlocked with the foot feed in such manner as to make the control automatic. This leaves the operator with both hands free to handle the work.



Coolant system, standard equipment on Model "A"

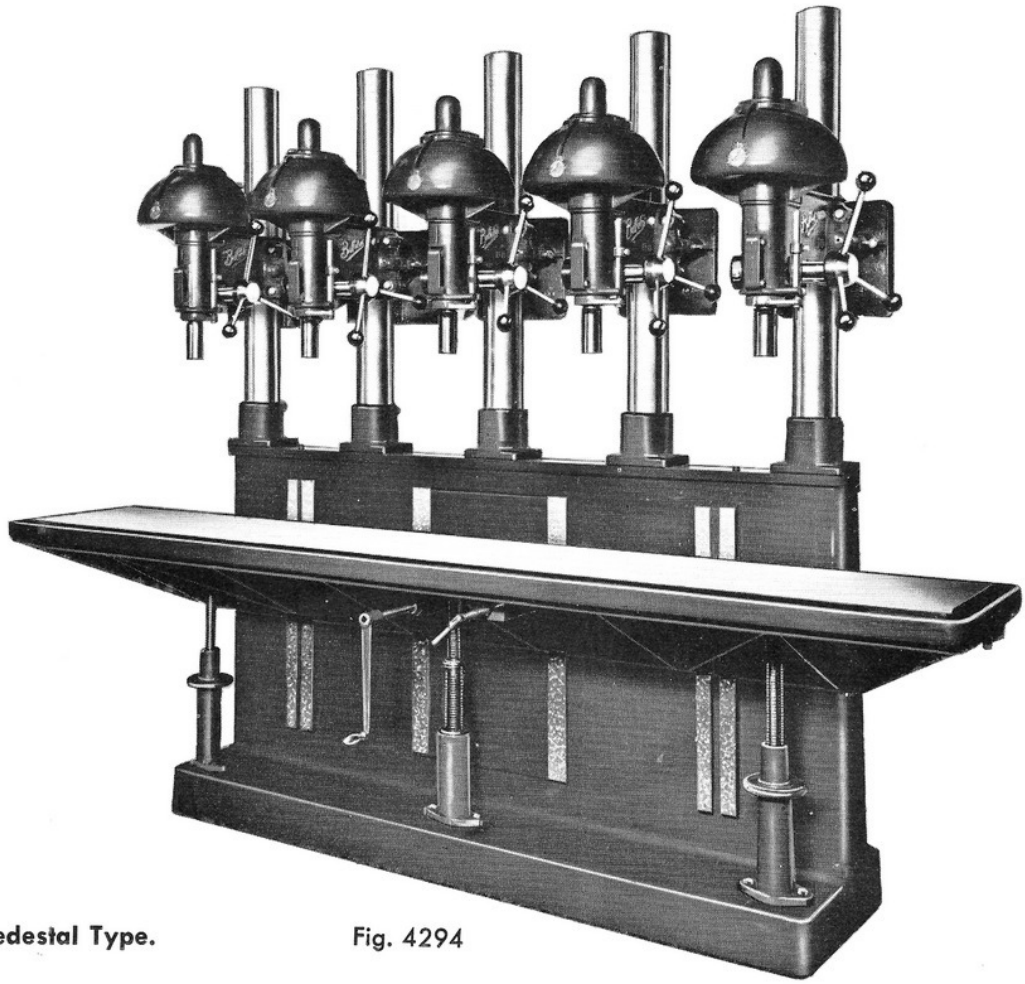


SPECIFICATIONS

	Model A	Model B
Working surface of table	24" x 28"	12" x 12"
Spindle diameter	15/16"	15/16"
Spindle sleeve diameter	2⅜"	2⅜"
Spindle nose—Morse taper ..	2	2
Column diameter	4"	4"
Speeds (1140 RPM Motor)	265, 460, 750, 1200, 2000	

★ **MODEL B**—This machine is designed to handle smaller work pieces and does not have the automatic control actuated by a foot feed. It is hand fed and the motor is stopped by a magnetic reversing switch, operated by a foot treadle pilot switch. This smaller and less expensive model will be found satisfactory for occasional use and on smaller parts.

● **Buffalo No. 18 Drills can also be furnished in Pedestal Models, 1 to 6 spindles.**



Illustrated at Right:

No. 18 Drill—Five Spindle Pedestal Type.

Fig. 4294

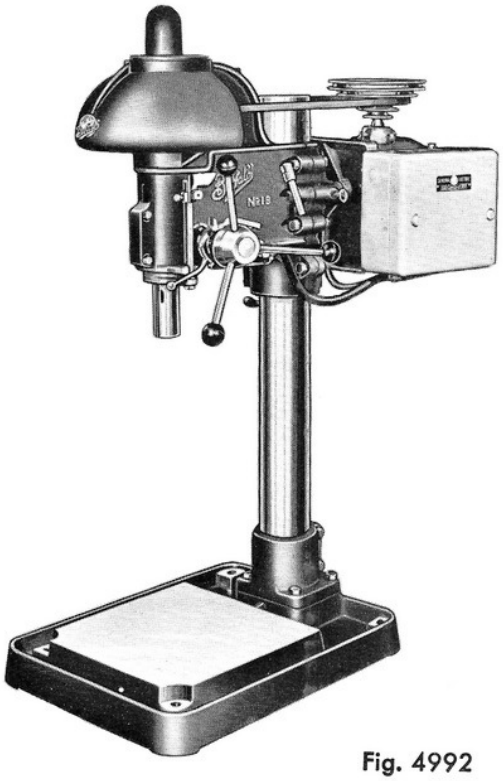


Fig. 4992

Reversing Control For Tapping

Motor reverse tapping is available on all No. 18 drill models. It is not recommended for taps under ¼″ and will tap up to ¾″ national fine thread in cast iron or ½″ coarse thread in mild steel. Standard 2 or 3 phase motors are satisfactory for occasional tapping in maintenance shops or tool rooms. For the general machine shop where even short production runs are made, it is recommended that a high torque—high slip reversing motor be used. (See motor price sheet.)

Motor reverse tapping is not available for D.C. or Single Phase.

Slow Speed Attachment for No. 18 Drilling Machines

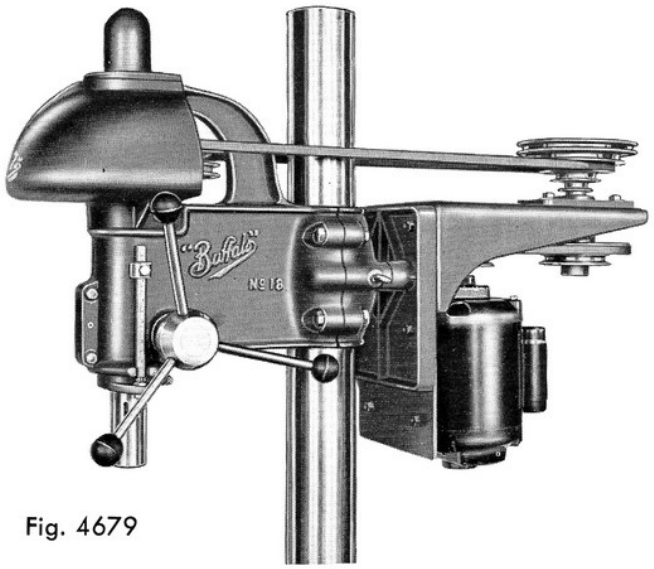


Fig. 4679

For applications requiring slower speeds than normally furnished. Reduction is 4 to 1 or direct by changing lower belt.

Back-geared Motor Drive

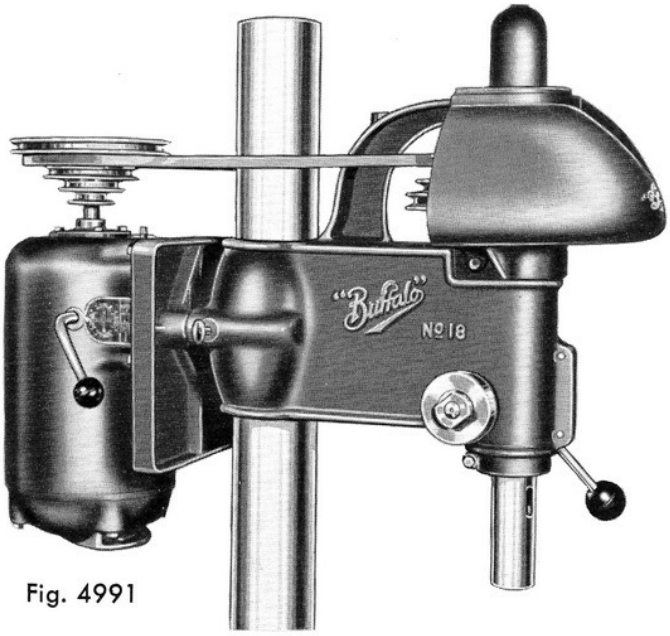


Fig. 4991

For applications requiring back gear arrangement rather than slow speed attachment, we offer the back-geared motor shown at right. Speed ratios 1:1—1:2—1:3 and 1:4. Price and data on application.

R.P.M. MOTOR	SPINDLE SPEEDS DIRECT				
1750	3000	1800	1100	670	400
1450	2500	1500	910	560	330
1150	2000	1200	750	460	265
900	1500	900	550	335	200

R.P.M. MOTOR	SPINDLE SPEEDS WITH SLOW SPEED ATTACHMENT				
1750	750	450	275	163	100
1450	625	375	227	140	83
1150	500	300	187	115	67
900	375	225	138	87	50

Speeds with 1750 R.P.M. Motor

Motor Shaft Speed	SPINDLE SPEEDS				
1740	3000	1800	1125	690	398
855	1500	900	562	345	198
570	1000	600	375	230	132
428	750	450	282	172	99

Speeds with 1150 R.P.M. Motor

Motor Shaft Speed	SPINDLE SPEEDS				
1140	2000	1200	750	460	265
570	1000	600	375	230	132
380	667	400	250	153	88
285	500	300	188	115	66

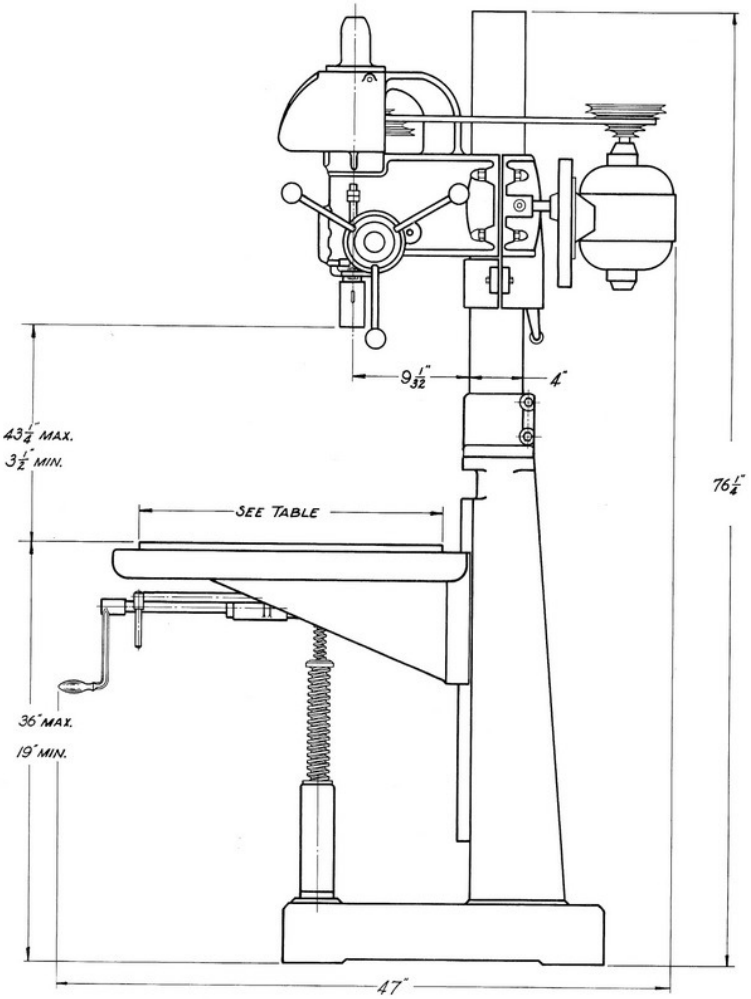
PEDESTAL TYPE

Dimensions and Weights

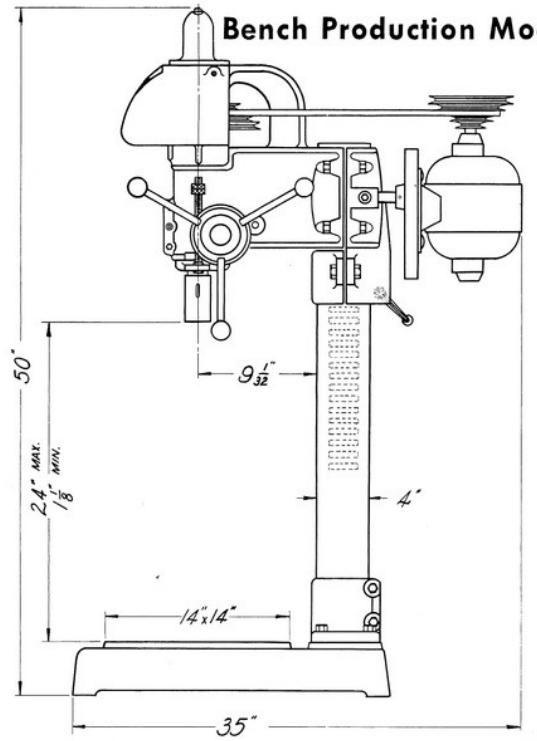
Spindles	Working Surface of Table	Center of Spindles	Net Wgt.
1	23x22	....	573
2	23x46	16	879
3	23x58	16	1168
4	23x70	16⅝	1773
6	23x96	16	2667

Spindles	Foundation Bolt Centers
1	24½x16½
2	24½x20½
3	24½x36½
4	24½x54½
6	24½x84½

Dimensions in inches.

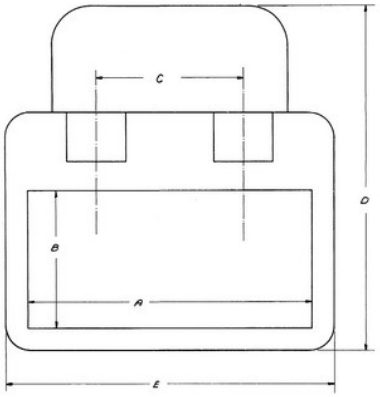


Bench Production Models



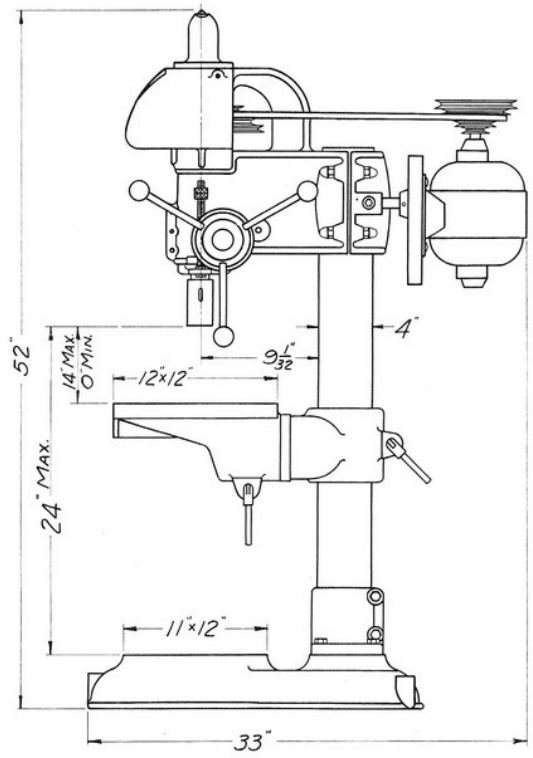
BENCH TYPE

Dimensions and Weights

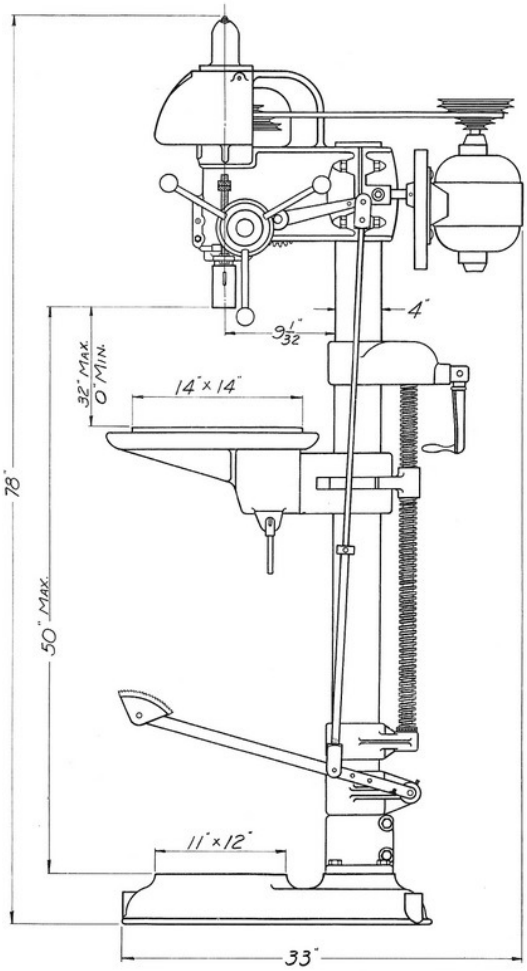


Spindles	A	B	C	D	E	Net Wgt.
1	14	14		35	18¾	326
2	31	14	15	35	35¾	600
3	46	14	15	35	50¾	920
4	59	14	15	35	63¾	1200
6	91	14	15	35	95¾	1700

Dimensions in inches.



Standard Bench Models



Standard Floor Models

SPECIFICATIONS and CAPACITIES

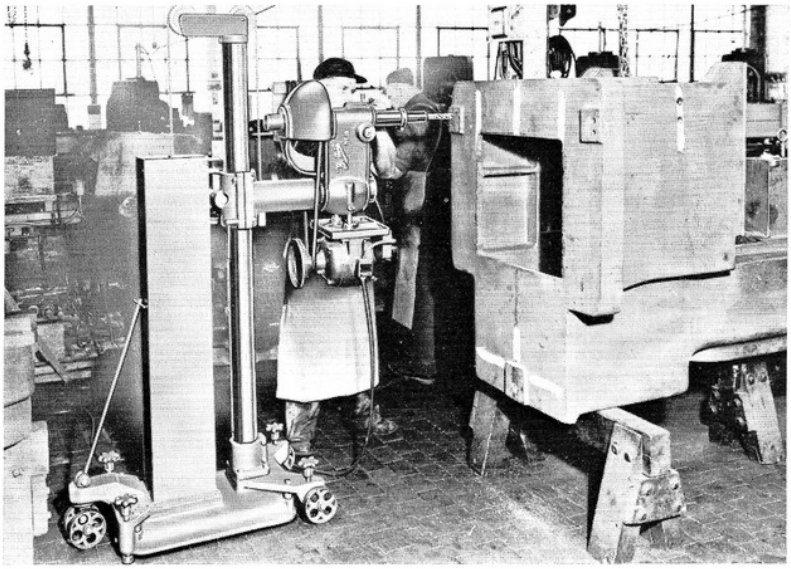
Models	A-B C-D	E-F-G-H- I-J-K-L	M-N	O-P-Q R-S
Capacity in cast iron—¾ H.P. Motor	1″	1″	1″	1″
Feed Travel	5″	5″	5″	5″
Drills to center of circle	18″	18″	18″	18″
Spindle sleeve diameter	2⅜″	2⅜″	2⅜″	2⅜″
Spindle nose diameter	1⅞″	1⅞″	1⅞″	1⅞″
Working surface of base	11x12″	11x12″	11x12″	
Working surface of table	14x14″	12x12″	12x12″	
Maximum distance, spindle nose to table	32″	34″	14″	
Minimum distance, spindle nose to table	0″	0″	0″	
Maximum distance, spindle nose to base	50″	50″	24″	24″
Minimum distance, spindle nose to base				1⅛″
Column diameter	3.906″	3.906″	3.906″	3.906″
Spindle diameter	15/16″	15/16″	15/16″	15/16″
Spindle nose—Morse taper	3	3	3	3
No. 2 Morse Taper Nose, Optional.				
Largest motor size—H.P.	¾	¾	¾	¾

Speeds with 1140 r.p.m. motor	265	460	750	1200	2000
Speeds with 1725 r.p.m. motor	400	670	1100	1800	3000

Maximum tapping capacity ⅝″ in cast iron with 1140 r.p.m. motor

NET WEIGHTS: **18-A,** 529 lbs.; **18-B,** 505 lbs.; **18-C,** 443 lbs.; **18-D,** 419 lbs.; **18-E,** 486 lbs.; **18-F,** 445 lbs.; **18-G,** 462 lbs.; **18-H,** 421 lbs.; **18-I,** 400 lbs.; **18-J,** 410 lbs.; **18-K,** 376 lbs.; **18-L,** 335 lbs.; **18-M,** 355 lbs.; **18-N,** 312 lbs.; **18-O,** 326 lbs.; **18-P,** 600 lbs.; **18-Q,** 920 lbs.; **18-R,** 1200 lbs.; **18-S,** 1700 lbs.

Special Adaptations of "Buffalo" No. 18 Drilling Machines



The No. 18 head, column and adaptor unit can be used in many interesting ways. The above photo is an interesting application for horizontal and vertical drilling. (Fig. 4515)

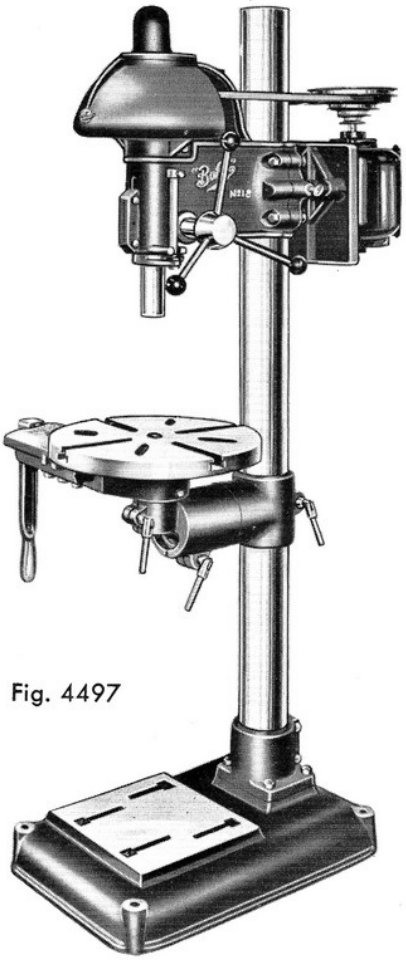


Fig. 4497

Right: A No. 18 drill adapted to use a "Modern" combination table and vise. Price and data on application.

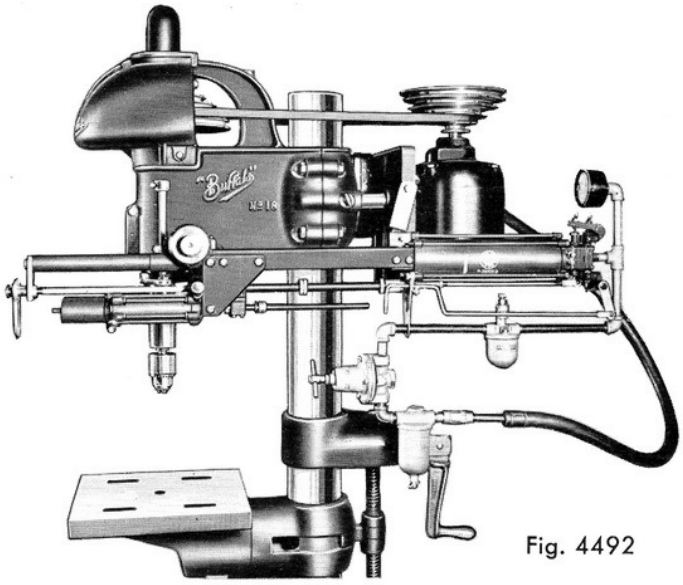
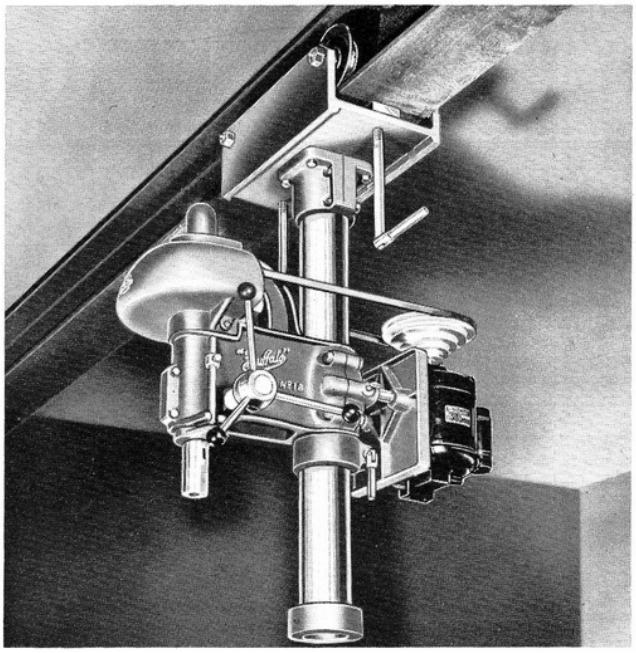


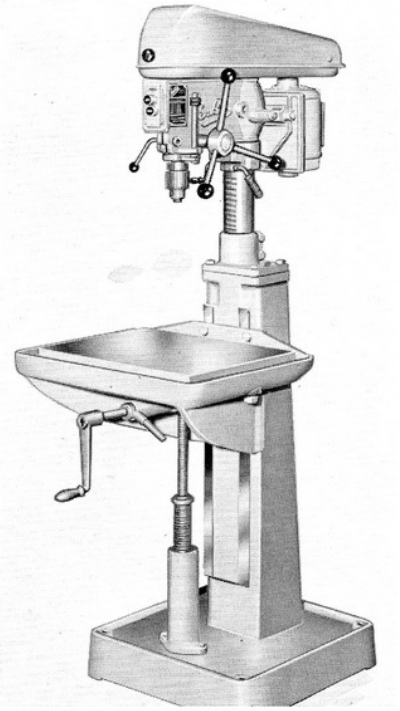
Fig. 4492

Many time and money-saving set-ups can be made by using the Bellows air feed. Models are available to suit all applications from a simple power feed to intermittent or automatic cycle feed.

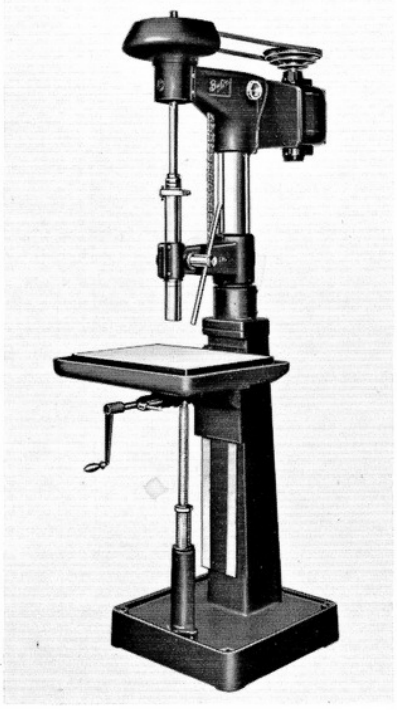


A mobile unit made with a No. 18 drill head. Easily moved to heavy castings and forgings, thus saving time and cost of moving heavy pieces to drilling machines. Suspended from ceiling on I-beam. (Fig. 4993)

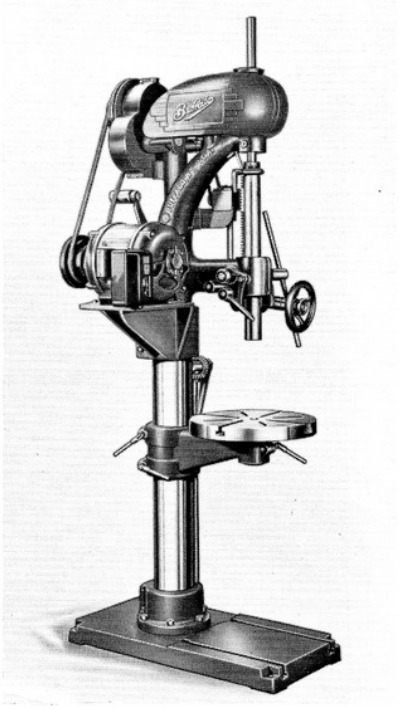
Other Popular "Buffalo" Drilling Machines



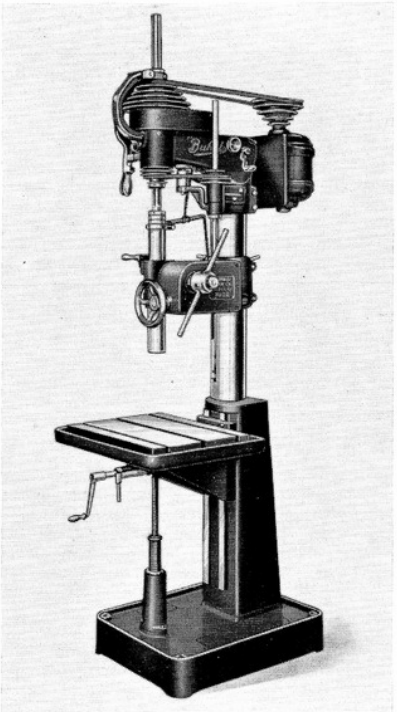
No. 15—A versatile tool. Standard Heavy-Duty models available in Bench, Floor and Multiple Bench Types; "M", or Manufacturing models in Bench and Pedestal types, 1 to 6 spindles. Ask for Bulletin 4024.



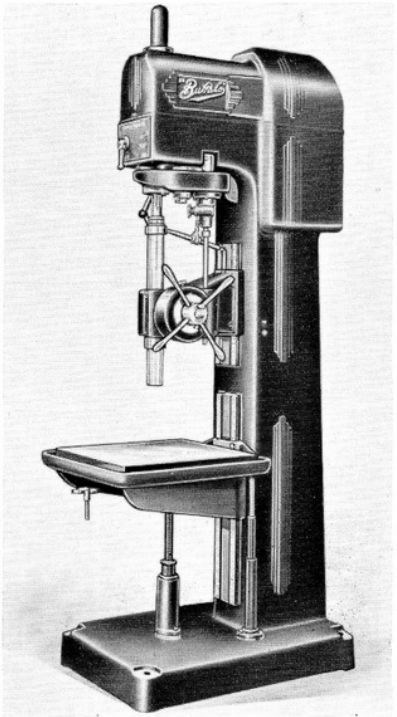
No. 16—Built in three sizes: 16″, 24″, 30″, Sensitive Type or Power Feed. The 24″ and 30″ are available in Bench or Pedestal models; the 16″ in Bench, Pedestal or Round Column Floor Type. Ask for Bulletin 2730



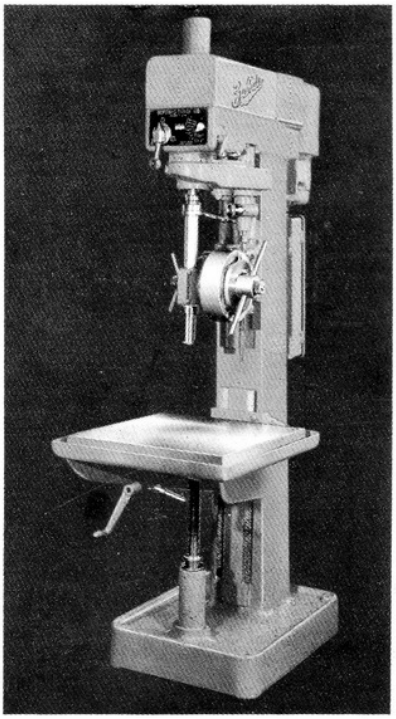
No. 21—A powerful, well-balanced drill for machine shop and maintenance work. Has 8 speeds, 4 feeds, lever and hand wheel feeds. Drills up to 1½″ in cast iron. Bulletin 3746 gives complete information.



No. 22—Sensitive or Power Feed models. Handles as fast and smoothly as a regular sensitive drill on light work. Pedestal type shown. Also in Round Column and Multi-Spindle models. Ask for Bulletin 2989.



No. 2 & 3 "RPMster"—For the shop that demands the finest! Two sizes: the No. 3 has a capacity of 2″ in cast iron, the No. 2 a capacity of 1½″. The overhang on both is 13″. Ask for Bulletin 3257.



No. 1 RPMster—A smaller, less expensive drill than the No. 2 & 3 RPMster, but highly efficient and versatile. Capacity: 1″ in mild steel. Pedestal models only, 1 to 6 spindles. Ask for Bulletin No. 3967.

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