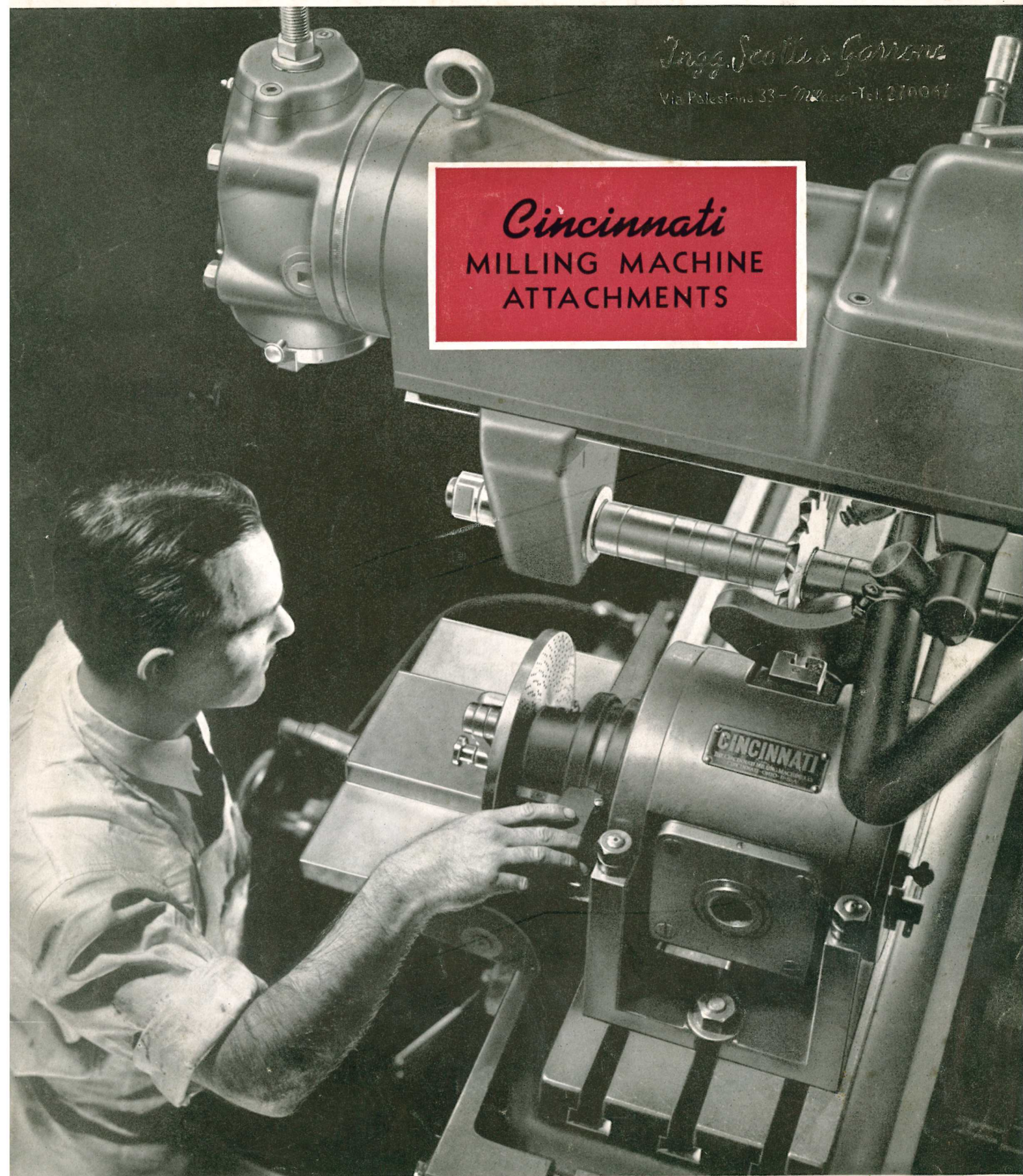


Ingeg. Scattolè & Garrone
Via Palestina 33 - Milano - Tel. 270061

Cincinnati MILLING MACHINE ATTACHMENTS



THE CINCINNATI MILLING MACHINE CO., CINCINNATI 9, OHIO, U. S. A.

Publication No. M-1382-4



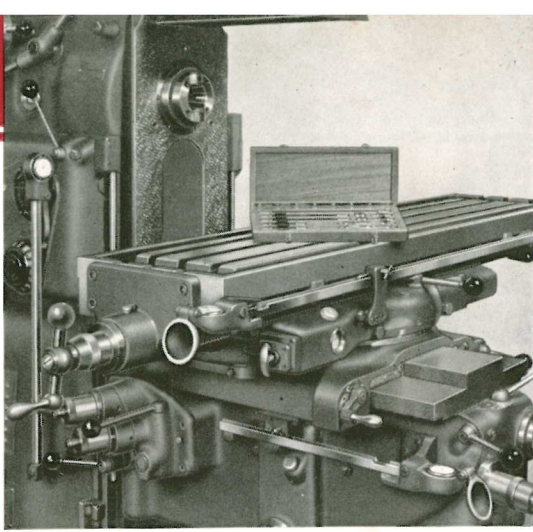
COST REDUCING FEATURES

of Cincinnati Milling Machine Attachments

The need for properly designed and accurately built attachments for use with standard milling machines has long been recognized for tool room work. Many shops, however, overlook the advantages which may be obtained from the increased flexibility and versatility which such attachments will give them. A tough milling job which has you completely stumped will usually be no problem at all with the right attachment. Check over the attachments shown here and you will probably find that your shop has a real need for some of them. Detailed specifications of each may be secured for the asking.

Of the many ways in which these attachments can help you reduce operating costs, a few are listed below:

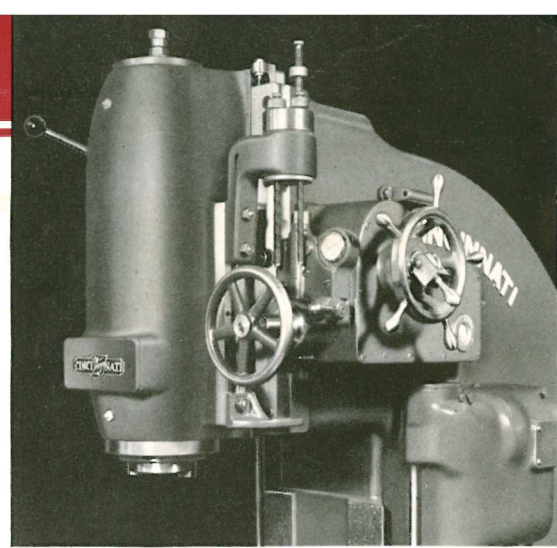
- Increase Scope of Standard Machines
- Eliminate Expensive Fixtures
- Increase Operating Efficiency
- More Operations per Set-Up
- Complex Set-Ups Simplified
- Increase Convenience of Operation
- Keep Otherwise Idle Machines Working
- Increase Production
- Reduce Spoiled Work
- Improve Accuracy
- Reduce Number of Machines Needed
- Assure Maximum Return on Investment



PRECISION MEASURING EQUIPMENT . . .

helps you space holes accurately to very close limits. Simple . . . fast . . . ideal for jig boring and die sinking.

● Publication No. M-1763



FOUR-POSITION TURRET STOP FOR VERTICAL MILLERS . . .

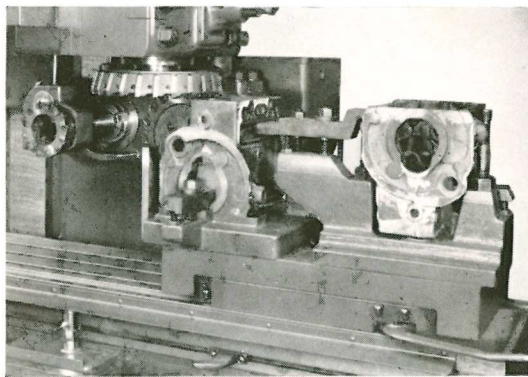
provides you with a faster, easier, more accurate method of setting spindle for step-milling.

● Publication No. M-1002

INDEX BASES . . .

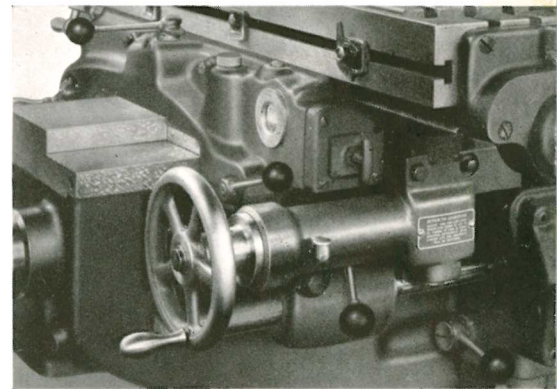
designed for faster production employing the "index base method" of milling. Idle or loading time is reduced to a minimum. The work is loaded at front end while parts on opposite end of base are being milled.

● Publication No. M-1448-2



FRONT TABLE HAND CONTROL . . .

for accurately following outline of dies. Consists of special hand wheel at right side of knee—for moving table longitudinally in the same ratio as crossfeed movement.

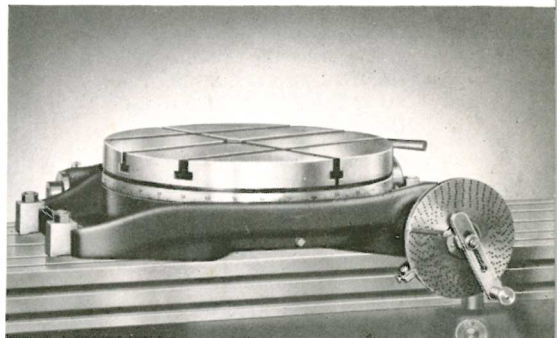
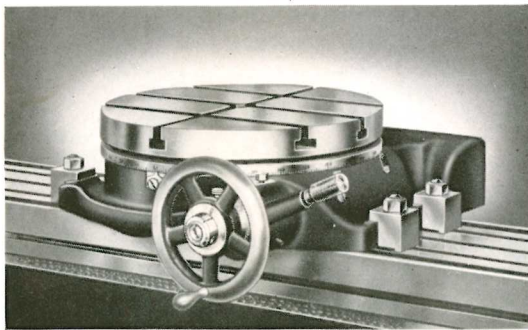


12", 16", 20" and 24" CIRCULAR MILLING ATTACHMENTS . . .

Convert your horizontal and vertical milling machines into rotary-type millers while retaining all the advantages of knee and column type machines.

● Publication No. M-1729 (12")

● Publication No. M-1660-1 (16", 20", 24")



HAND FEED . . .

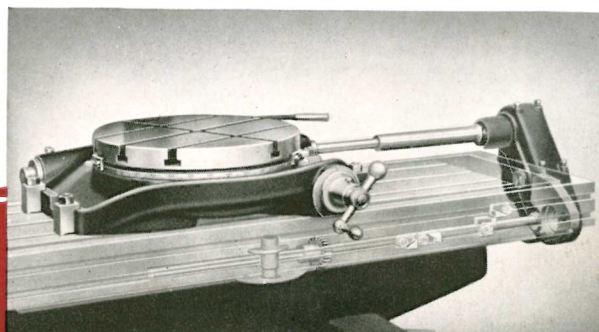
All three sizes may be purchased in the hand feed style. 16" size illustrated. Movements graduated in degrees and minutes to simplify accurate positioning.

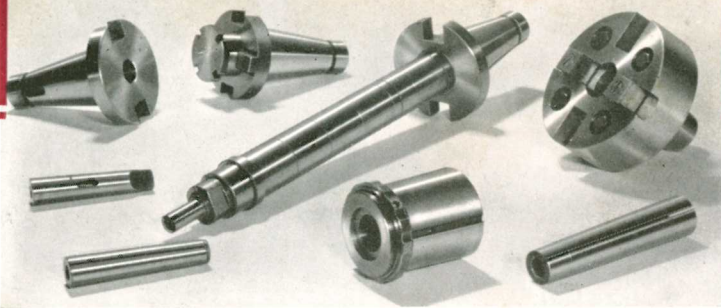
POWER FEED

Driven from table feed screw drive gear, rotary power feeds and power rapid traverse make this style especially valuable for production work requiring circular or segmental cuts. Dogs provide automatic trip-out of rotary feeds.

INDEXING EQUIPMENT

Indexing Equipment for circular milling attachment. Simplifies and speeds up the indexing of work requiring accurately spaced holes, slots, grooves, etc. Uses same index plates as CINCINNATI Dividing Head.





ARBORS, COLLETS, SHELL END MILLS, ADAPTERS . . .

correctly selected, will increase the usefulness of your machines. There's a wide variety to select from, for both the National Standard taper spindle and the old B. & S. taper spindles.

● Publication No. M-1664-2

QUICK CHANGE ADAPTER, ARBORS AND COLLETS . . .

enable you to replace one cutter with another in 20 seconds or less. Permits many operations to be done with one setting of work.

● Publication No. M-985

VERTICAL ATTACHMENT . . .

is ideal for your face milling where there is not enough work to keep a Vertical Milling Machine busy. Spindle speeds same as machine. Can also be obtained for old-style round overarm machines.

● Publication No. M-1717

● Publication No. M-1766 (Heavy Duty)



HIGH-SPEED UNIVERSAL MILLING ATTACHMENT . . .

Mounts rigidly on rectangular overarm. Driven by machine spindle. Speeds from $1\frac{1}{2}$ to $3\frac{1}{2}$ times machine spindle speed, depending upon machine. Suitable for a wide variety of angular cuts with small and medium sized cutters.

● Publication No. M-1720

UNIVERSAL SPIRAL ATTACHMENT . . .

for milling spirals of any angle on a Plain Miller, or angles greater than 45 degrees on a Universal. Mills in horizontal, angular or vertical plane. Spindle speeds same as machine.

Can also be obtained for old-style round overarm machines.

● Publication No. M-804-2

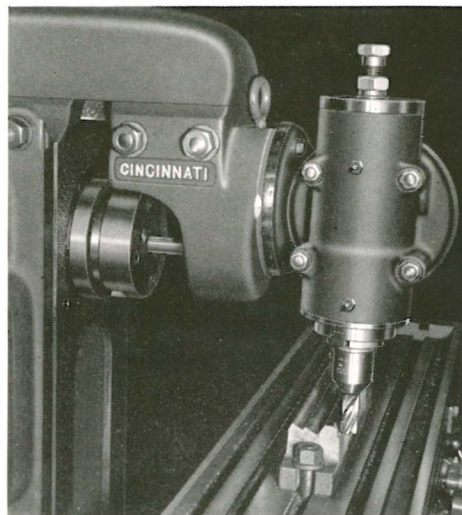
● Publication No. M-1715 (Heavy Duty)

CAP-TYPE ARBOR SUPPORT . . . REPLACEABLE ARBOR SUPPORT

Cap type supports permit removal of arbors without disturbing cutters. Replaceable supports are of two-piece construction to simplify proper alignment of replacement arbor supports.

● Cap Type Support . . . Publication No. M-626.

● Replaceable Type . . . Publication No. M-1361.

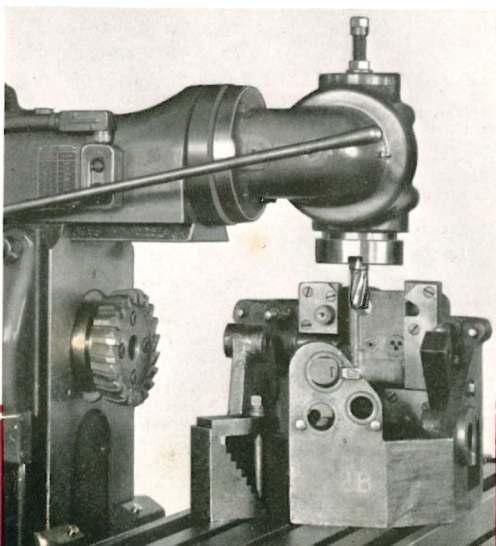


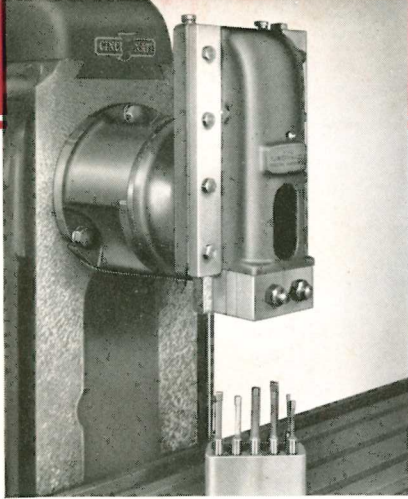
MOTOR DRIVEN UNIVERSAL ATTACHMENT . . .

mounted on special overarm for milling bevels, flats and angles; milling slots in jigs, fixtures, moulds, dies and patterns. Overarm can be used for regular arbor support.

● For Dial Type and High Power machines. Publication No. M-1661.

● For L and MH type machines. Publication No. M-864-1.

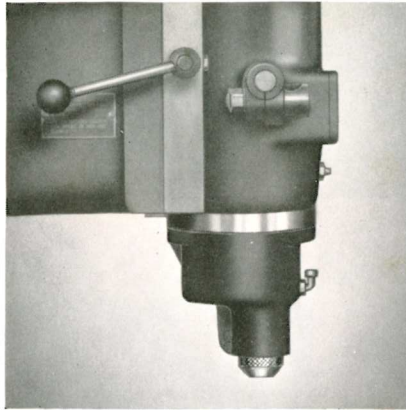




↑ **SLOTING ATTACHMENT . . .**

for your operations where a slotter is not available; for keywaying, die and tool work. Tool slide can be set any angle through 360 degrees. Stroke from 0" (zero) to 4". Set of slotting tools shown in illustration are supplied at extra cost.

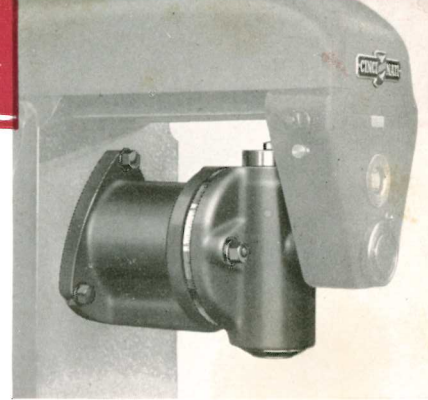
● Publication No. M-919-1



↑ **HIGH-SPEED ATTACHMENT . . .**

for Vertical and Horizontal machines. Used for die work and profiling operations on metal patterns; also model and experimental work. Spindle speed 1.6 times spindle speed of *High-Speed* Dial Types and 3.4 times spindle speed for all other Cincinnati Millers.

● Publication No. M-858-1

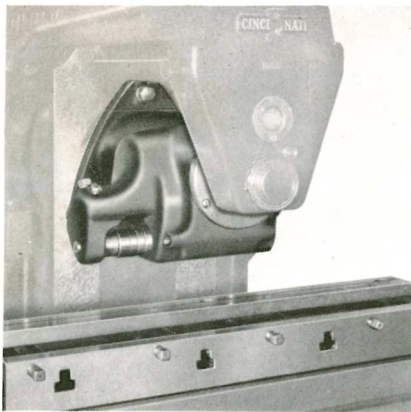


↑ **SEMI-HIGH SPEED VERTICAL ATTACHMENT . . .**

will help you key seat, die sink, mill T slots and work of similar character. Swivels through 360 degrees. Spindle speeds 1½ times speeds of *High-Speed* Dial Types and 2 times speeds of other Cincinnati Millers.

Can also be obtained for old-style round overarm machines.

● Publication No. M-963-1



↑ **RACK CUTTING ATTACHMENT . . .**

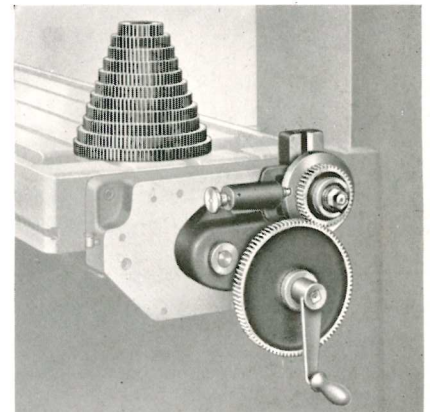
for cutting racks is usually used in connection with rack indexing attachment. Built with either 1½" or 1¾" diameter spindles. Vise is 34" long and takes work up to 5¾" wide.

● Publication No. M-920

↑ **RACK INDEXING ATTACHMENT . . .**

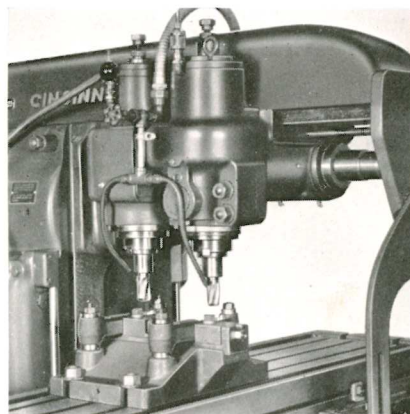
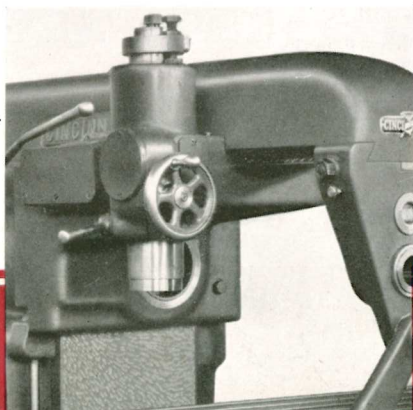
used with rack milling attachment. It is connected to the leadscrew at end of table, and consists of indexing and locking plate with change gears. Different combinations of gears enable racks of different pitches to be machined.

● Publication No. M-920



↑ **KEYWAY MILLING ATTACHMENT . . .**

for rounding out the ends of keyways. Mounted on face of column and supported by overarm. Quill adjustment and fixed stops provide fast, accurate method for positioning cutter to depth.



↑ **TWO-SPINDLE VERTICAL MILLING ATTACHMENT . . .**

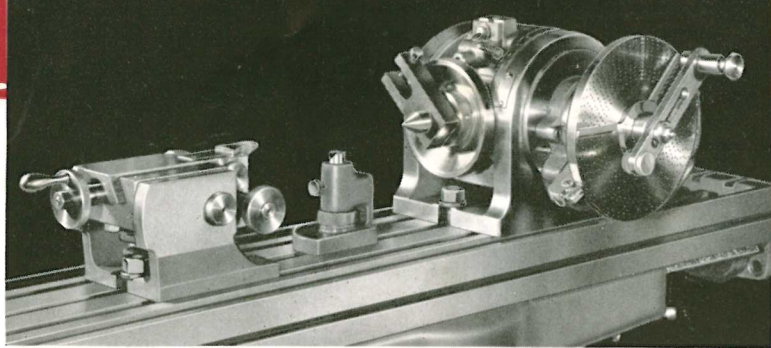
for milling channels in aero-engine baby rods, etc. Outer spindle has both horizontal and vertical adjustment for lining up with inner spindle. Depth of cut is controlled by knee adjustment.

↑ **CHUCK ADAPTER AND 3-JAW UNIVERSAL CHUCK . . .**

Chuck adapter is used for applying Chuck to Milling Machines having National Standard Flanged Spindle Nose. The Chuck is fitted with a suitable flange for use also with dividing and index heads. Supplied in 6" and 9" sizes.

● Publication No. M-644-1

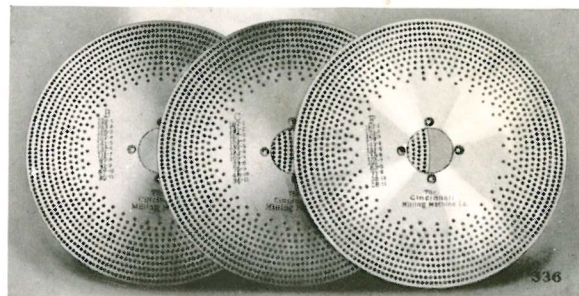




UNIVERSAL DIVIDING HEAD . . .

for milling accurately spaced slots, drilling holes, milling master cams, or any type of job which requires close accuracy on the arc of a circle.

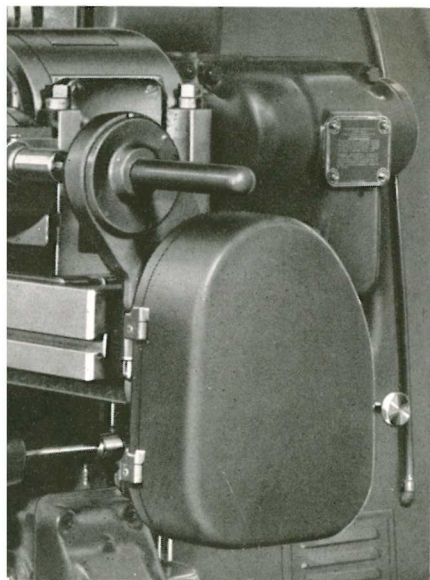
● Publication No. M-1755



HIGH NUMBER INDEXING ATTACHMENT . . .

for regular dividing and plain and spiral heads. Three special index plates. Indexes all numbers up to and including 200; all even numbers and those divisible by 5 up to 400, except 225, 275, 325 and 375. You can apply them to your old Dividing Head.

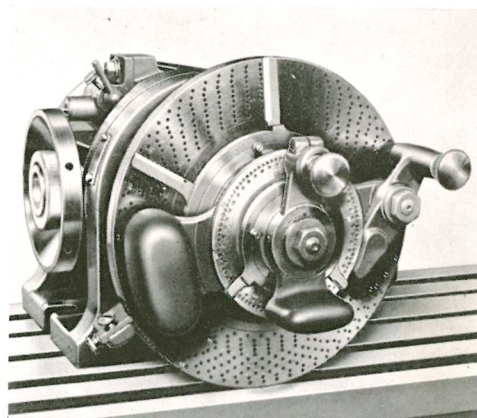
● Publication No. M-987



ENCLOSED DRIVING MECHANISM FOR DIVIDING HEAD . . .

for use with newer model CINCINNATI Milling Machines. For milling spiral or helical gear teeth, drum cams, or other spiral shapes. May be used with Dividing Head or Spiral Milling Head.

● Publication No. M-1755



WIDE RANGE DIVIDER . . .

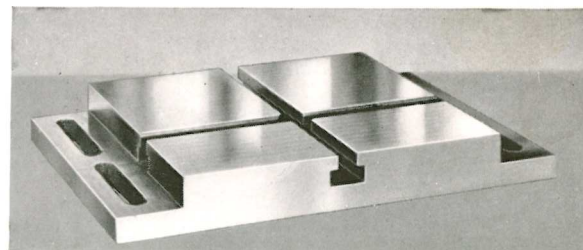
with Cincinnati Universal Dividing Head, gives you a rapid selection of divisions from 2 to 400,000 and any angle at intervals of six seconds without the use of change gears or additional index plates. Keyways, slots and holes can be quickly spaced in angular relationship to each other. Can be used for indexing bevel or spiral gears. Your present Cincinnati Head can be rebuilt and equipped with the Wide Range Divider at low cost.

● Publication No. M-972-1

OPEN TYPE DRIVING MECHANISM FOR DIVIDING HEADS . . .

For use with earlier designs of CINCINNATI Milling Machines. May be used with Dividing Head or Spiral Milling Head.

● Publication No. M-1755



RIGHT ANGLE PLATES . . .

for setting up Dividing Head or small fixtures at right angles to table T slots. Equipped with suitable tongue strips to fit table T slots.

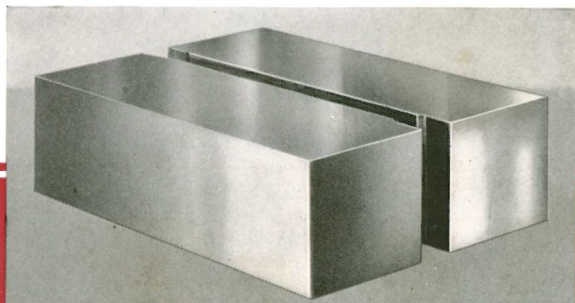
● Publication No. M-1755

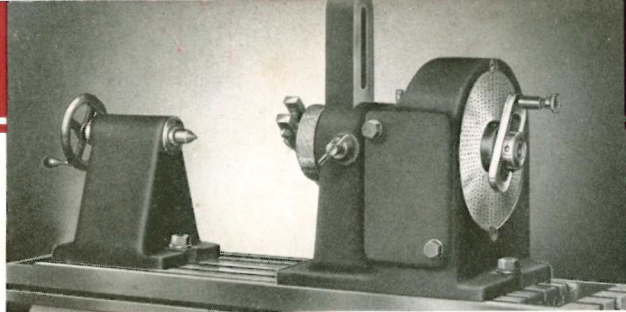


RAISING BLOCKS . . .

give increased range to your Dividing and Index Heads. Height of blocks, 2" for 14" head, 2 1/2" for 12" head, and 3" for 10" head.

● Publication No. M-1755

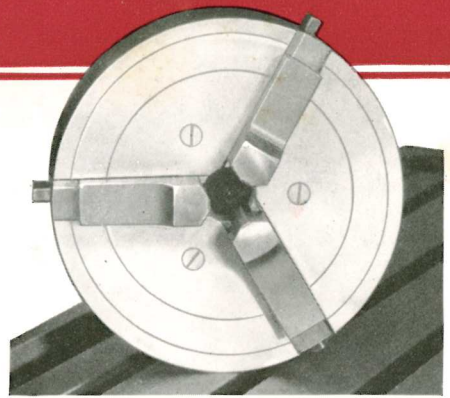




PLAIN INDEX HEAD . . .

built with 12" and 16" swing for ordinary gear cutting and similar work that is machined by being indexed between centers. It indexes three and five divisions—and all even numbers from 4 to 50, inclusive.

● Publication No. M-1031



CHUCK FOR DIVIDING HEAD . . .

3-Jaw Universal Chuck fitted with threaded flange for mounting on Dividing Head spindle nose.

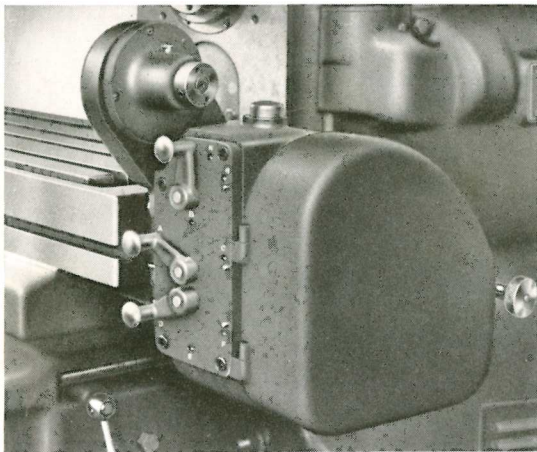
● Publication No. M-1755



GEAR CUTTING ATTACHMENT . . . SPIRAL MILLING HEAD

Gear Cutting Attachment for cutting spur gears, and Spiral Milling Head for cutting helical gears, worms, etc. Spiral Milling Head consists of the attachment shown in illustration with driving shaft for connecting to machine lead screw. Built in 12" and 16" swings.

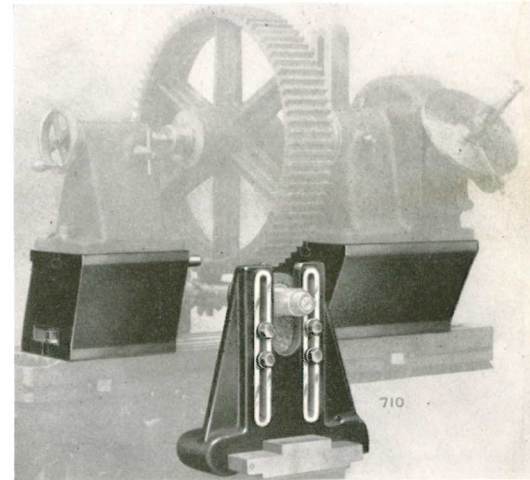
● Publication No. M-1031



SHORT AND LONG LEAD ATTACHMENT . . .

For CINCINNATI Dial Type Milling Machine only. More than 13,000 leads between .010" and 1000" when used with CINCINNATI Dividing Head. Completely enclosed.

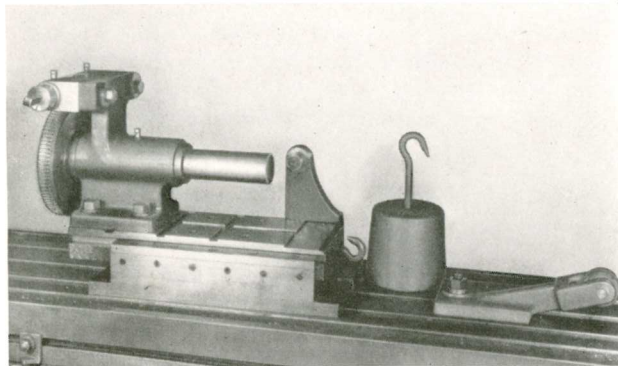
● Publication No. M-1166



UNDERCUTTING ATTACHMENT . . .

greatly extends the range of your milling machine for milling large spur and spiral gears. Consists of two raising blocks and special supports for the outer end of the arbor.

● Publication No. M-627



CAM MILLING ATTACHMENTS POWER OR HAND FEED . . .

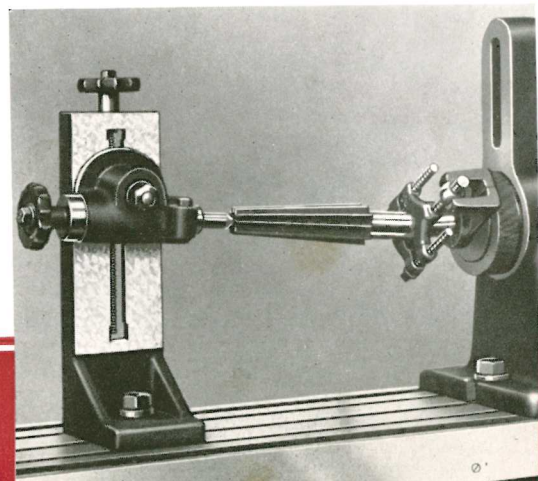
for milling face cams 16" in diameter and cylindrical cams 8" in diameter. The change from face to cylindrical cam milling is readily made by turning the worm wheel at right angles to milling machine spindle.

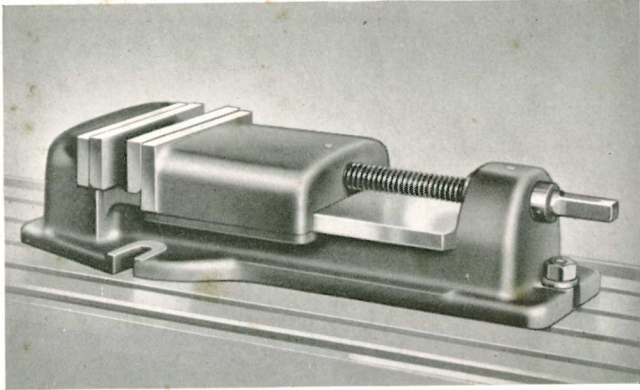
● Publication No. M-857-1

HIGH TAILSTOCK . . . COMPENSATING DOG AND DRIVER . . .

For taper work too steep for regular Dividing Head tailstock. Center carried in swivel block—Compensating Dog and Driver provide smooth, efficient drive with taper work.

● Publication No. M-857-1

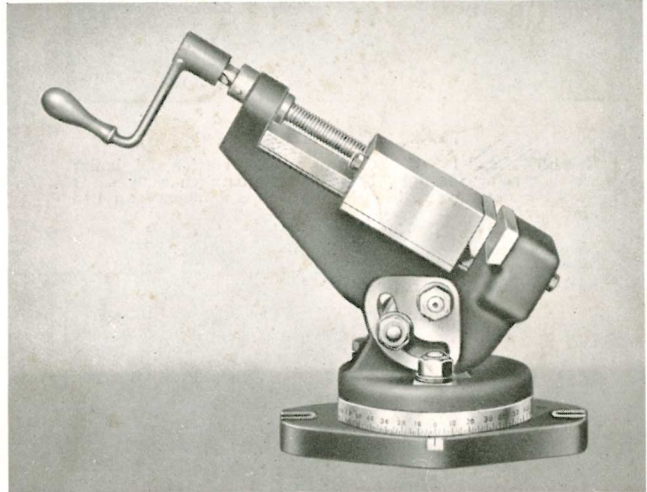




Nos. 3 AND 5 PLAIN VISES . . .

Provides a simple, efficient work holding device for use with plain machines. Depth, width and opening of jaws: No. 3— $1\frac{5}{8}$ " x $6\frac{1}{8}$ " x 4"; No. 5— $2\frac{1}{2}$ " x $5\frac{5}{8}$ " x 7".

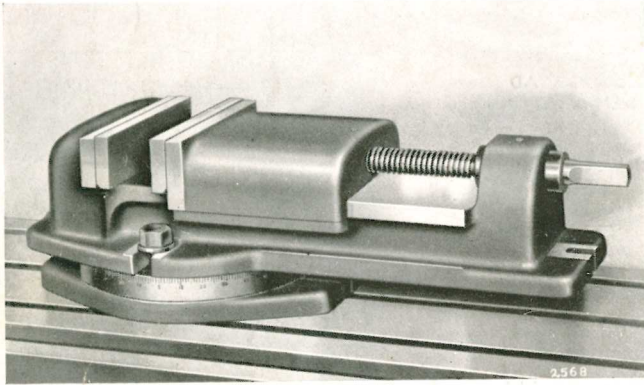
● Publication No. M-1665



TOOLMAKER'S UNIVERSAL VISE . . .

For general tool room work. Can be swiveled up to 90 degrees from the horizontal in a vertical plane—complete 360 degrees in a horizontal plane.

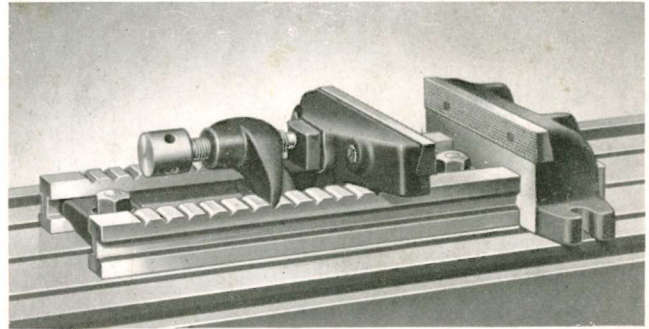
● Publication No. M-988



Nos. 3 AND 5 SWIVEL VISES . . .

For use with universal machines. Can be converted to Plain Vise by removing swivel base. Jaw openings same as corresponding size Plain Vise.

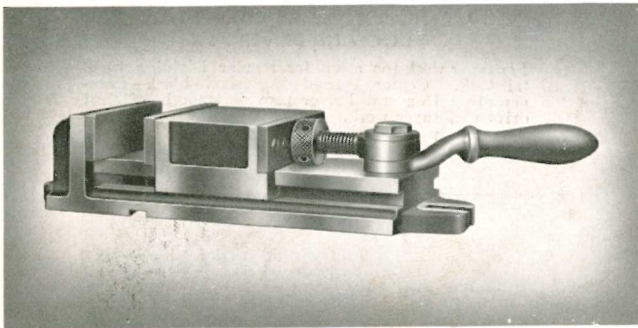
● Publication No. M-1665



ALL STEEL VISE . . .

Slight swivel in movable jaw adapts jaw to irregularities of rough castings. Notched support bars provide quick adjustment of movable jaw.

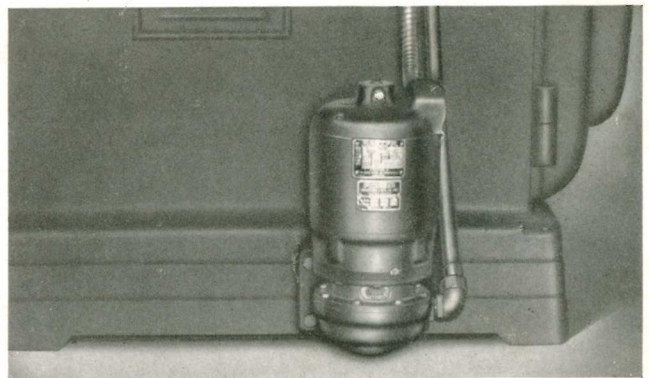
● Publication No. M-1247



SMALL MILLING MACHINE VISES . . .

A high production vise for small work. Lever clamping action is quick and powerful. Available in plain or swivel types. Maximum jaw opening 2".

● Publication No. M-710



CUTTER COOLANT PUMPS . . .

Individually motor driven coolant pumps, available for all machines, provide an abundant flow of coolant when required. Centrifugal type, directly connected to driving motor.

● Publication No. M-1483