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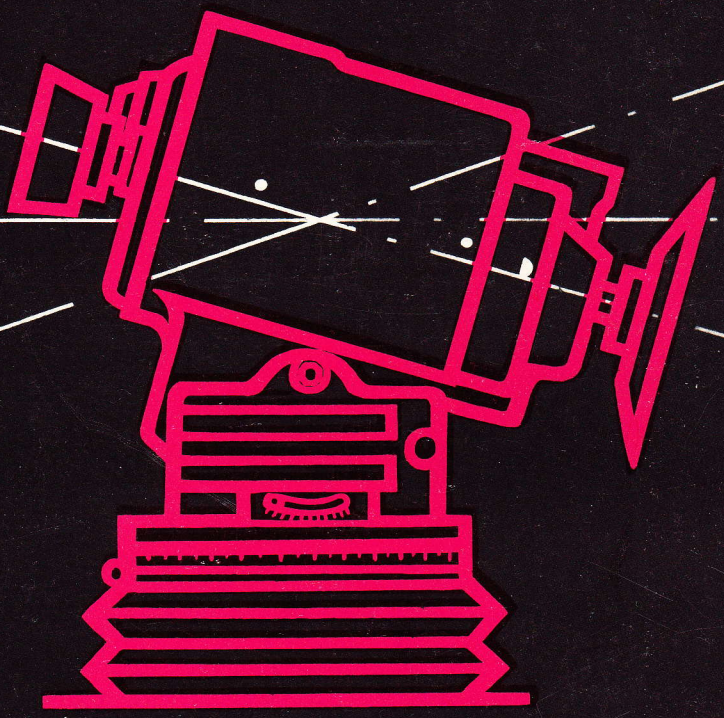
ELLIOTT'S

TOOL & CUTTER GRINDER

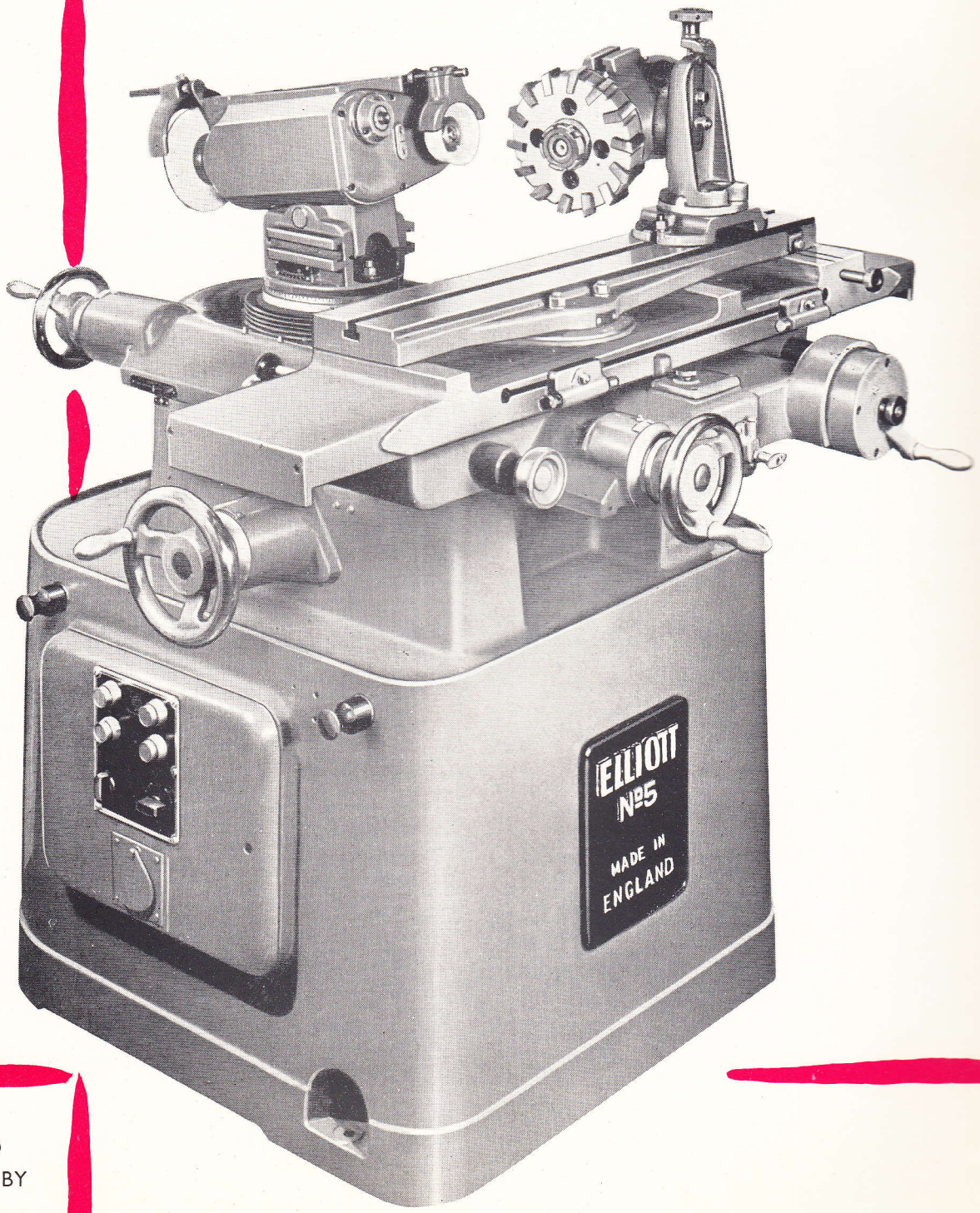


WITH *Tilting* WHEELHEAD.

ELLIOTT

NUMBER 5

the versatile machine



DESIGNED AND
MANUFACTURED BY

ELLIOTT OF LONDON GROUP

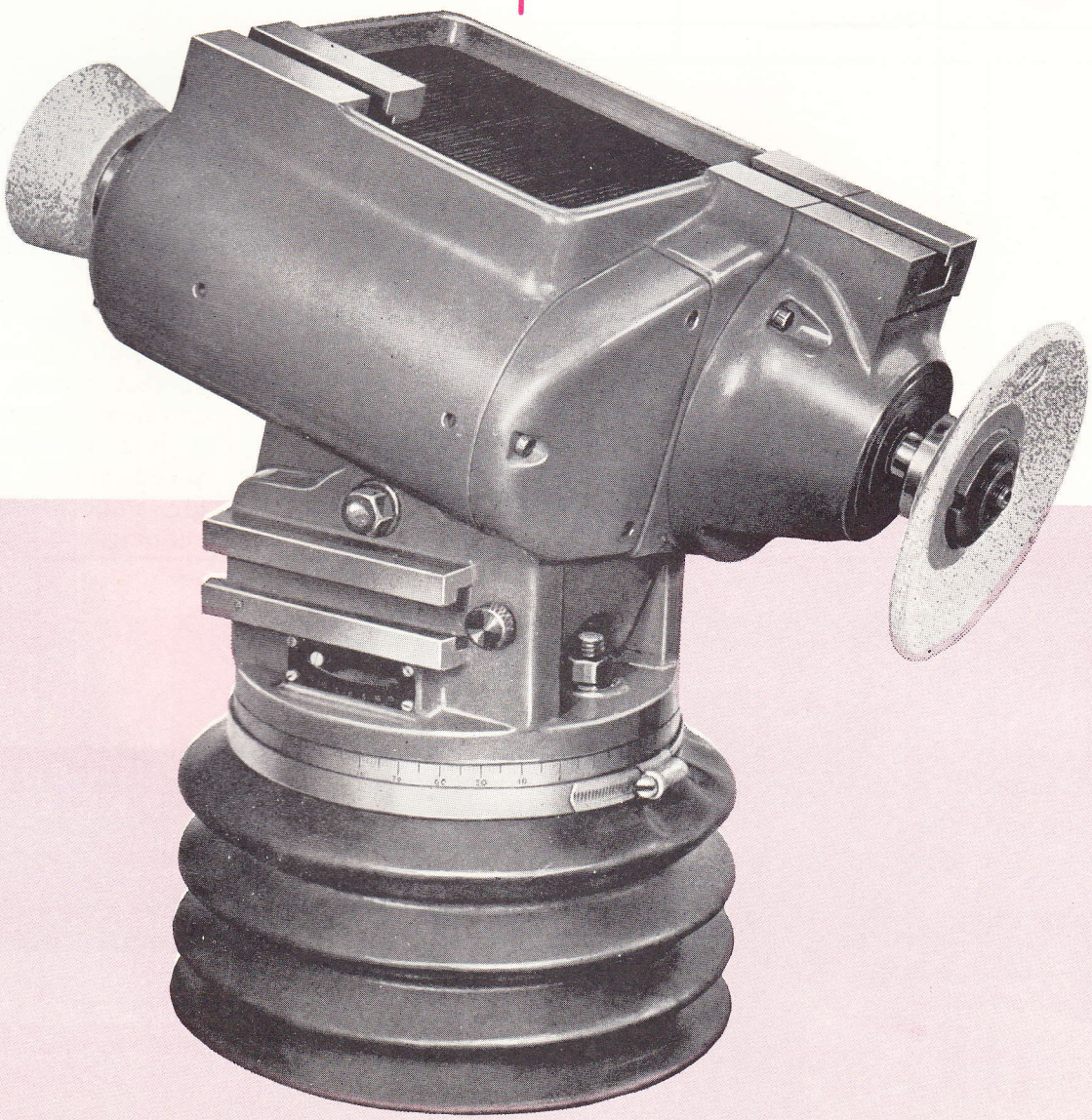
with the *Tilting* head

Establishes cutter grinding as a precision operation — eliminates 'trial and error' and brings cutter grinding within the scope of semi-skilled labour.

HEAD TILTS 15°

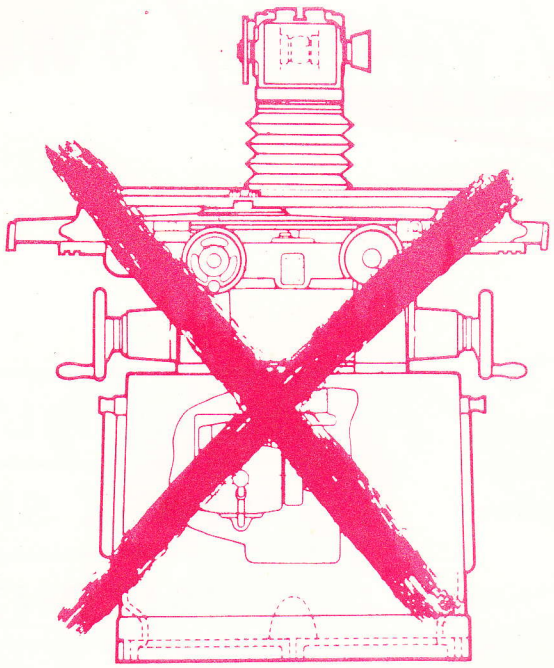
EITHER SIDE OF

HORIZONTAL PLANE



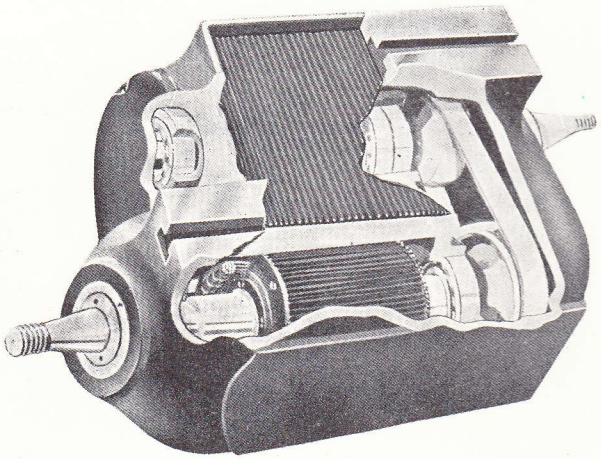
ELLIOTT

NUMBER 5



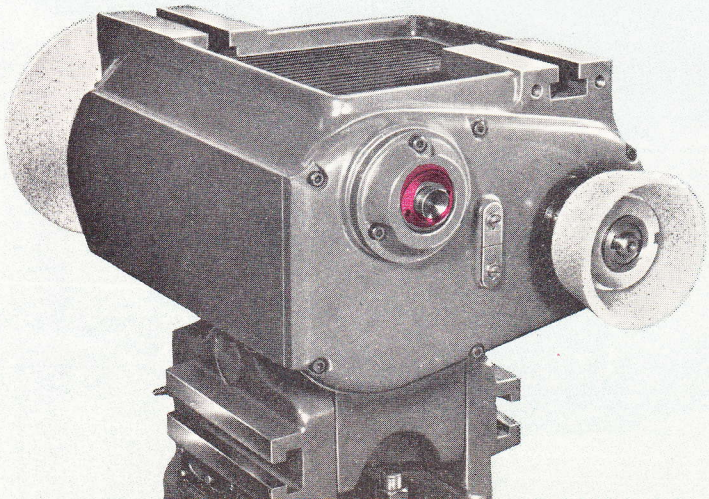
NO MOTOR OR BELTS IN MACHINE BASE

The conventional drive arrangement with the motor housed in the machine base has been eliminated together with all its time-wasting drawbacks of maintenance, belt slip, belt changing, etc.



SELF-CONTAINED HEAD

Dual spindles running in precision ball bearings give correct speeds for large and small diameter wheels. $\frac{3}{4}$ h.p. dynamically balanced stator rotor unit for smooth vibrationless running.



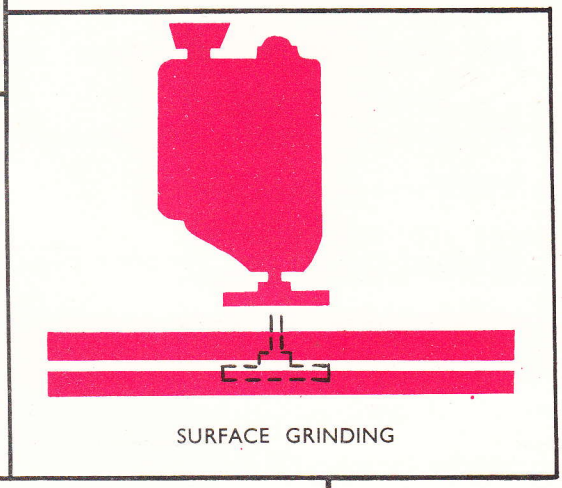
PUSH BUTTON SPINDLE LOCK

Eliminates necessity of using tommy bar and gives steadier, more positive lock, meaning easier and faster wheel changing.

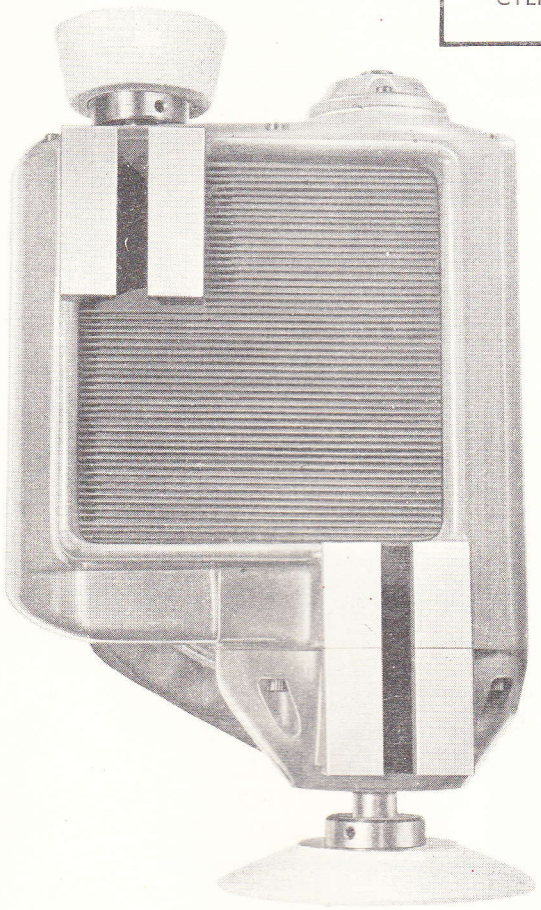
universal head positioning

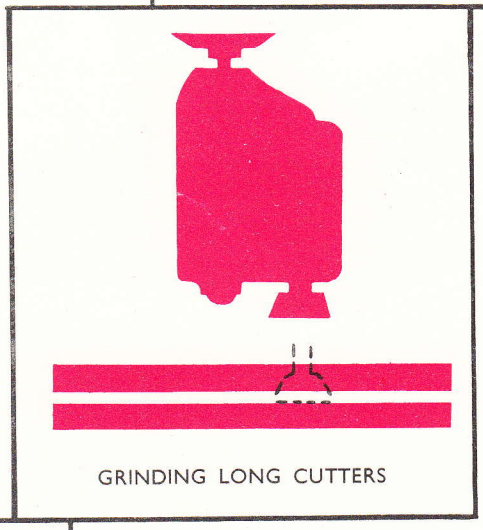
Immediate positioning with the ±15° tilting movement and rotation of the wheel-head in conjunction with the 9″ vertical traverse.

CYLINDRICAL GRINDING

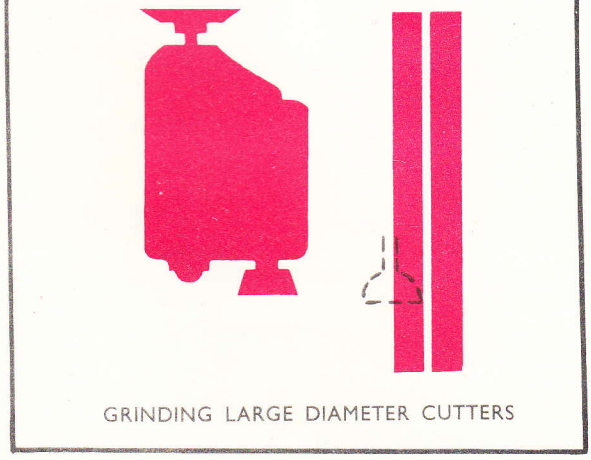


SURFACE GRINDING



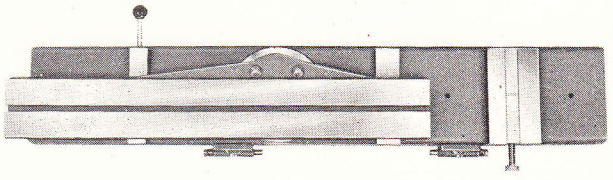


GRINDING LONG CUTTERS



GRINDING LARGE DIAMETER CUTTERS

TABLE swivels 180° to give $2\frac{9}{16}$″ additional distance between wheelhead and table centre line.

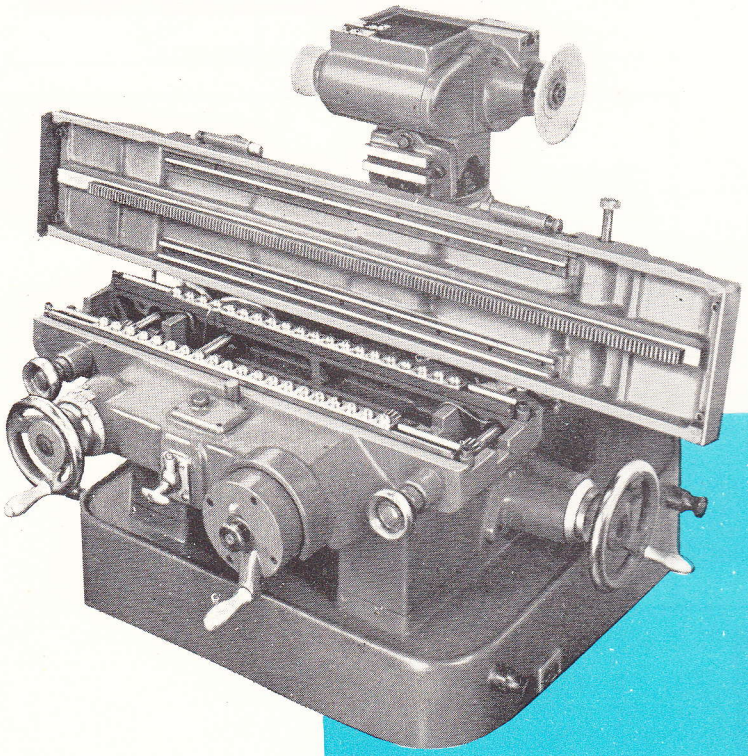


ELLIOTT

NUMBER **5**

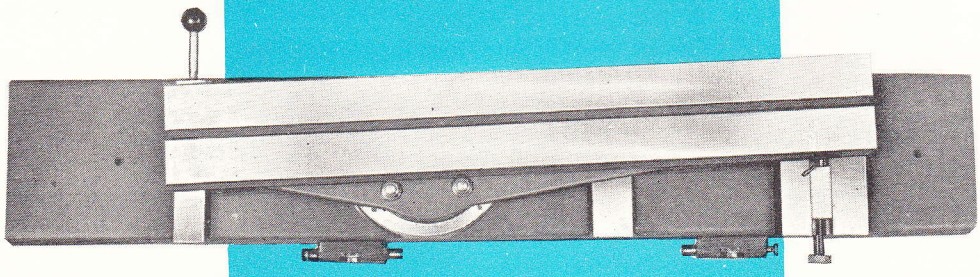
features

1. Tilting wheelhead.
2. Self-contained stator rotor drive.
3. Wheelhead easily adjustable for height.
4. Bridged saddle for greater rigidity.
5. Built-in work table taper setting.
6. Duplicated controls.
7. Reduction gearing for slow table traverse.



ANTI-FRICTION TABLE SLIDE

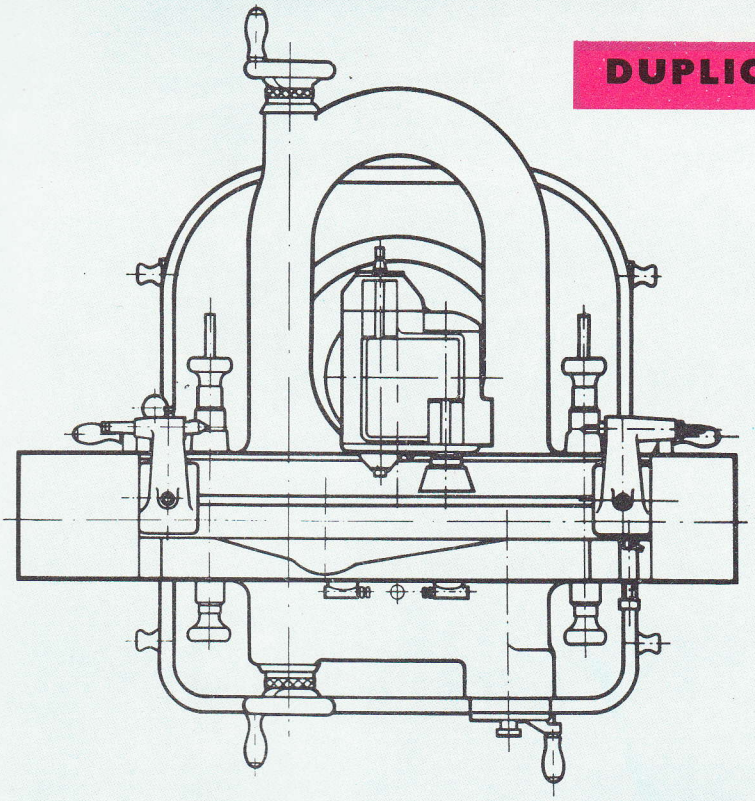
The table runs on super sensitive anti-friction bearings ensuring smooth easy movement. Bearing ways hardened and ground for accuracy and long life.



WORK TABLE TAPER SETTING

Graduated in divisions of 10 minutes and $\frac{1}{8}$" taper per foot.

perfect control—always

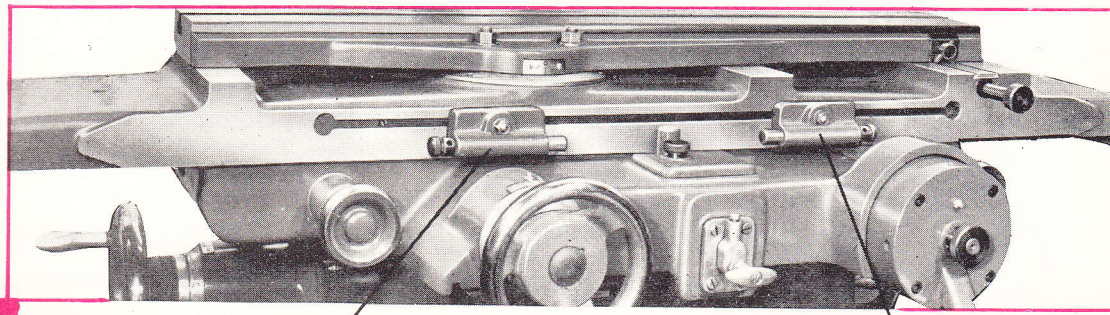


DUPLICATED CONTROLS

3 methods of Table Control

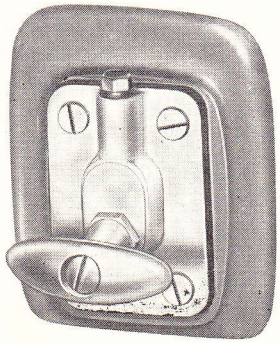
1. Four handwheels give the normally desired speed of table movement from all usual operating positions.
2. Reduction unit for slow traverse.
3. Direct hand control with handwheels disengaged.

The table cross traverse and wheelhead vertical adjustments are served by duplicated handwheels at front and rear, left and right respectively.



Spring Loaded Stops

Determine the length of table traverse and cushion the shock at reversal of table movement. Reversible and provided with fine adjustment for use when positive table stop is required.



ONE SHOT LUBRICATION

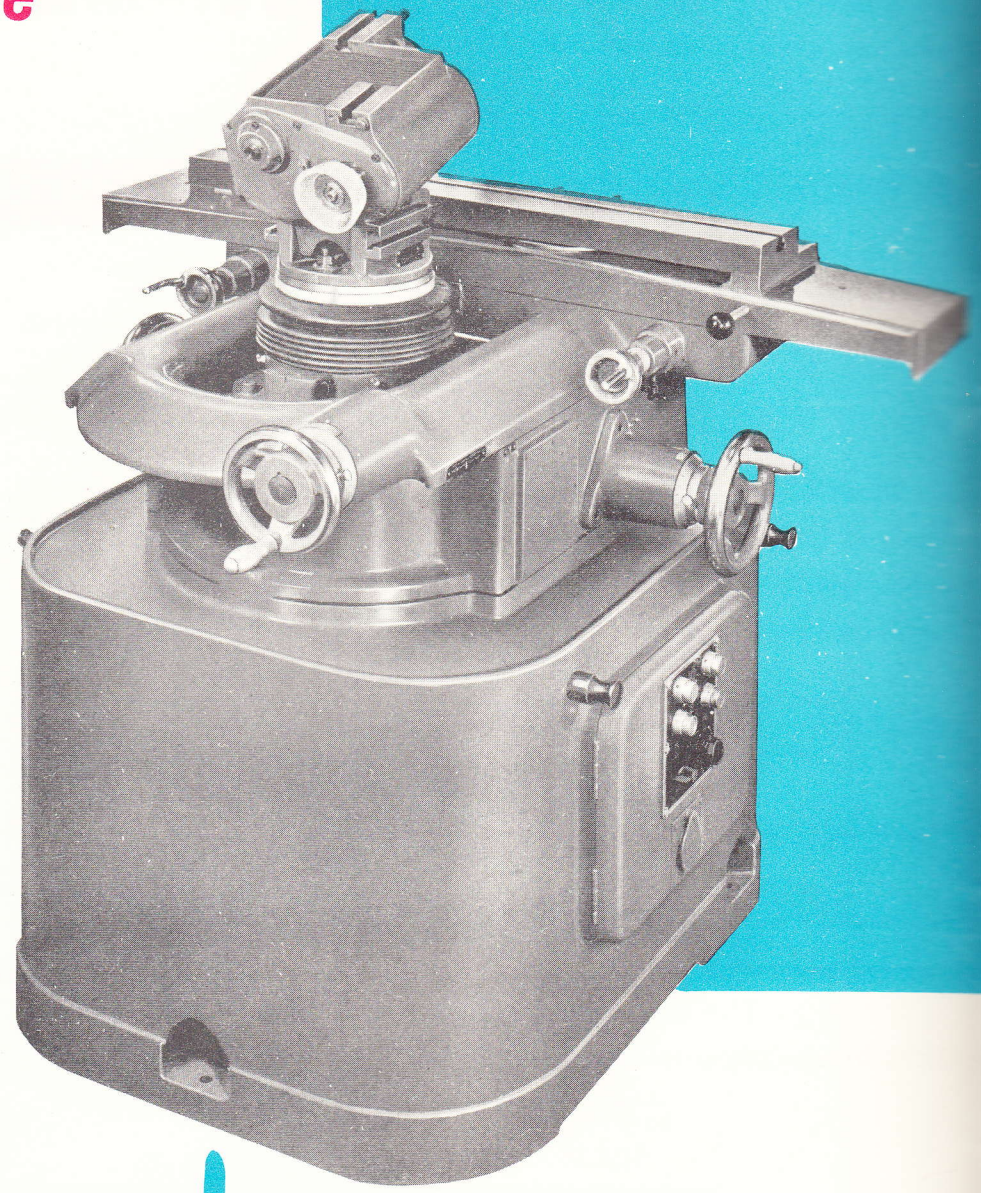
Reduces daily maintenance problems.

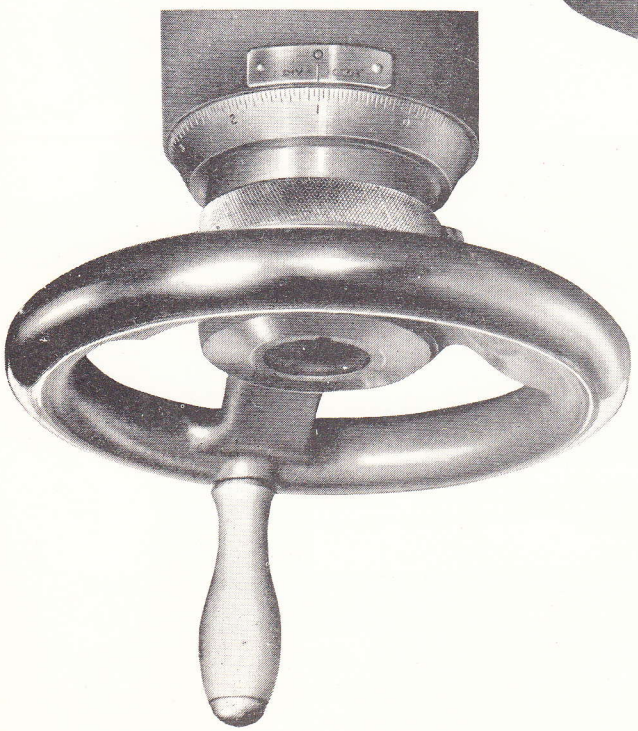
Bridged saddle for rigidity

This feature plus the

heavy rugged base provides

absolute rigidity essential for cutter grinding.





GRADUATED VERTICAL MOVEMENT

The duplicated handwheel controls for the wheelhead vertical traverse are calibrated in ·0005″ divisions for fast and accurate setting.

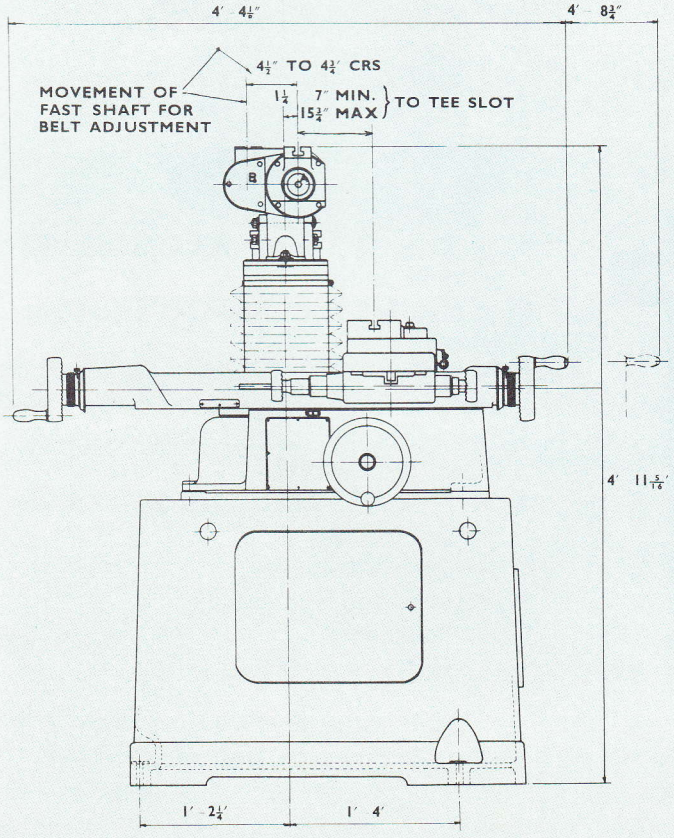
ELLIOTT

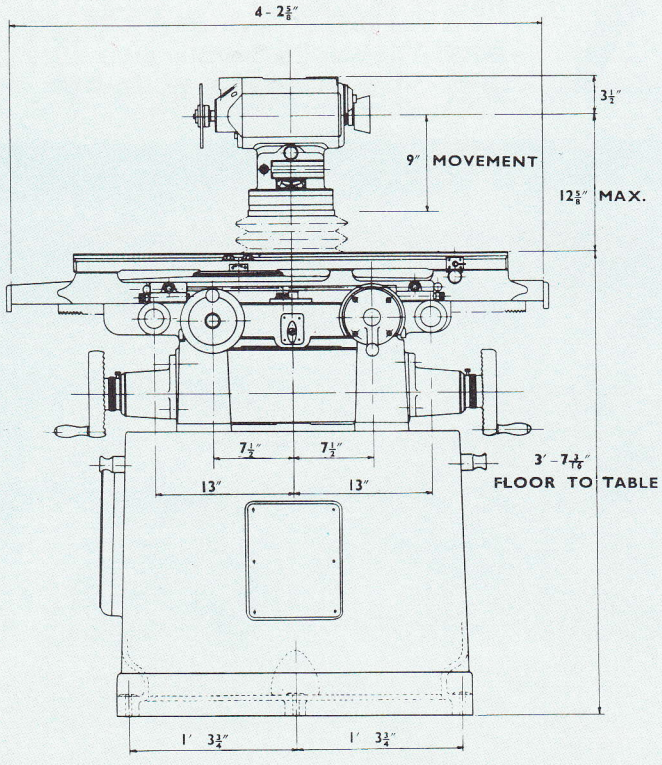
NUMBER 5

specification

Swing over table	10″	254 mm
Length between tailstocks	26″	660 mm
Length between tailstock and workhead	20¾″	527 mm
Face mills on workhead	12″	305 mm
Table working surface	36″ x 5⅛″	1168 x 130 mm
Taper in workhead spindle	50 I.S.T./No. 5 M.T.	50 I.S.T./No. 5 M.T.
Long traverse of table	16¼″	413 mm
Cross traverse of table	8¾″	222 mm
Table swivels	180°	180°
Vertical traverse of wheel head	9″	229 mm
Maximum distance centre spindle to table	12⅝″	320 mm
Wheel head spindle speeds (50 cycle machines)	2800, 3900 r.p.m.	2800, 3900 tr/min.
(60 cycle machines)	3360, 4680 r.p.m.	3360, 4680 tr/min.
Power of motor	¾ h.p.	¾ ch.
Net weight	1876 lb.	851 kg
Gross weight	2464 lb.	1118 kg
Case size	78″ x 56″ x 58″	4·1 m³
Code word	EXTCG	EXTCG

FOUNDATION PLAN

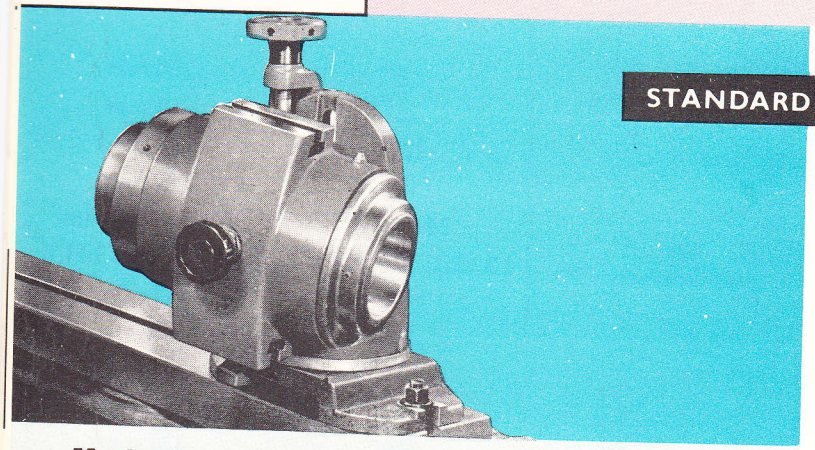




ELLIOTT

NUMBER 5

standard equipment



STANDARD

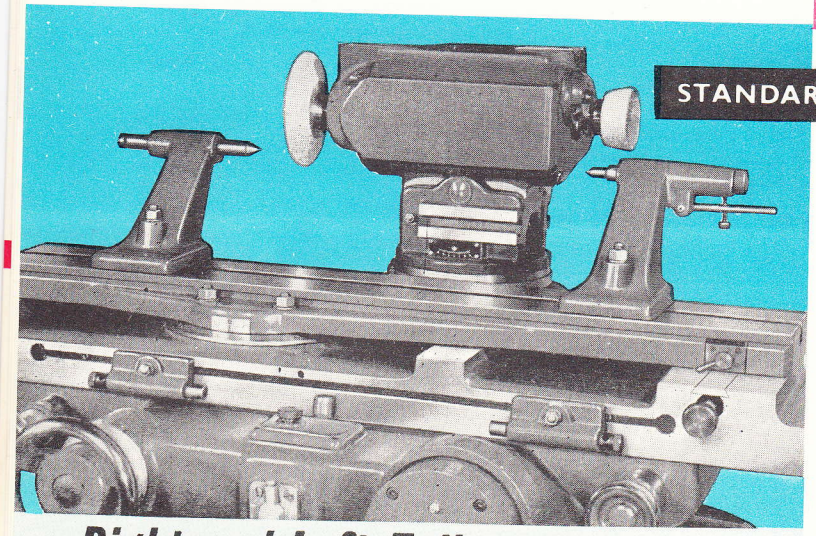
Universal Workhead

Double ended spindle, mounted on anti-friction bearings for smooth, easy movement, accepts No. 50 I.S.T. and No. 5 Morse taper shanks. Adjustable centre height.

STANDARD

Universal Tooth Rest Holder

Accepts plain and micrometer tooth rest stems. Can be mounted on the table, workhead or wheelhead.



STANDARD

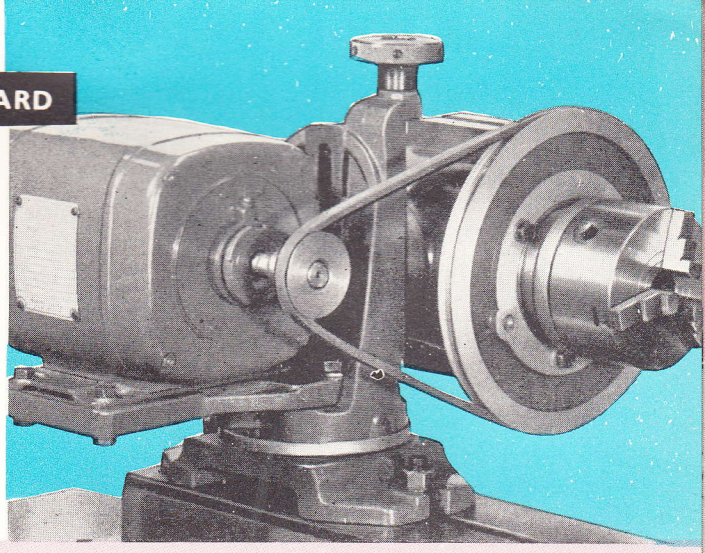
Right and Left Tailstocks

Right-hand tailstock centre is retractable and adjustable for tension. Machined tenons ensure correct alignment.

- Left-hand tailstock
- Setting dial
- Work holder
- Right-hand tailstock
- Diamond dressing attachment
- Universal tooth rest holder
- Plain tooth rest stem with finger
- Micrometer tooth rest stem with finger
- Motorised Workhead
- Universal workhead
- Drawbar for workhead
- 2″ extension for fast wheelhead spindle
- 3″ extension for fast wheelhead spindle
- 3″ extension for slow wheelhead spindle
- Centre height gauge
- No. 5-4 Morse adaptor
- No. 5-3 Morse adaptor
- No. 5-2 Morse adaptor

  } or Browne & Sharp alternatives
- No. 50-40 adaptor
- No. 3 Morse centre
- 1 Wheel Guard Holder Base
- 4″ Wheel Guard Holder Stem
- 6″ Wheel Guard Holder Stem
- 8″ Wheel Guard Holder Stem
- 10″ Wheel Guard Holder Stem
- 8″ wheel guard
- 5″ wheel guard
- $3\frac{1}{2}$″ wheel guard
- Tommy bar
- Collet wrench
- Oil gun
- 8″ x $\frac{1}{2}$″ x $1\frac{1}{4}$″ bore straight wheel — AA46/54-J5-VF8
- 6″ x $\frac{1}{8}$″ x $1\frac{1}{4}$″ bore straight wheel — A80-O-BN
- 5″ x $1\frac{1}{2}$″ x $1\frac{1}{4}$″ bore straight cup wheel — AA46/54-J5-V8
- $3\frac{1}{2}$″ x $1\frac{1}{2}$″ x $1\frac{1}{4}$″ bore flared cup wheel — AA46/54-J5-V8
- 6″ x $\frac{3}{4}$″ x $1\frac{1}{4}$″ bore saucer wheel — AA46/54-K5-V8
- 5 Hexagon Wrenches
- 5 Single Ended Spanners
- 1 Box Spanner

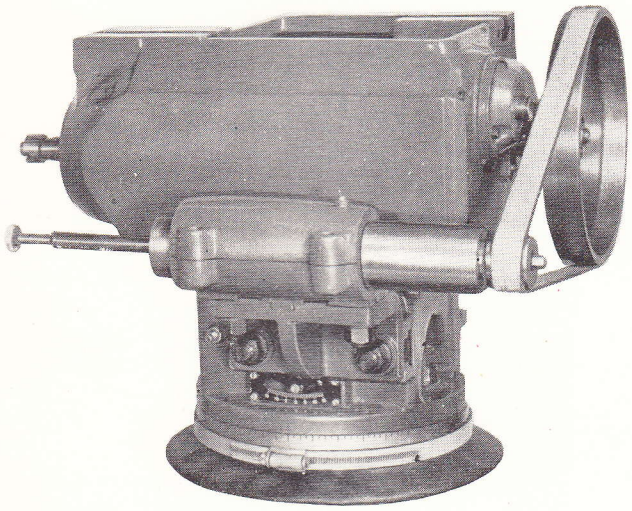
STANDARD



Motorised Workhead

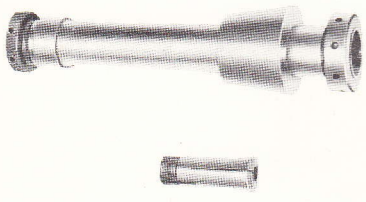
For live and dead centre grinding. Consists of $\frac{1}{4}$ h.p. motor, mounting plate, vee belt, pulleys and arbor mounted $4\frac{1}{2}''$ 3-jaw chuck.

extra equipment



Internal Grinding Attachment

In conjunction with the motorised workhead this accessory gives further versatility to the machine. The detachable quill spindle is hardened and ground and to ensure maximum grip and minimum inertia non-metallic pulleys are fitted.

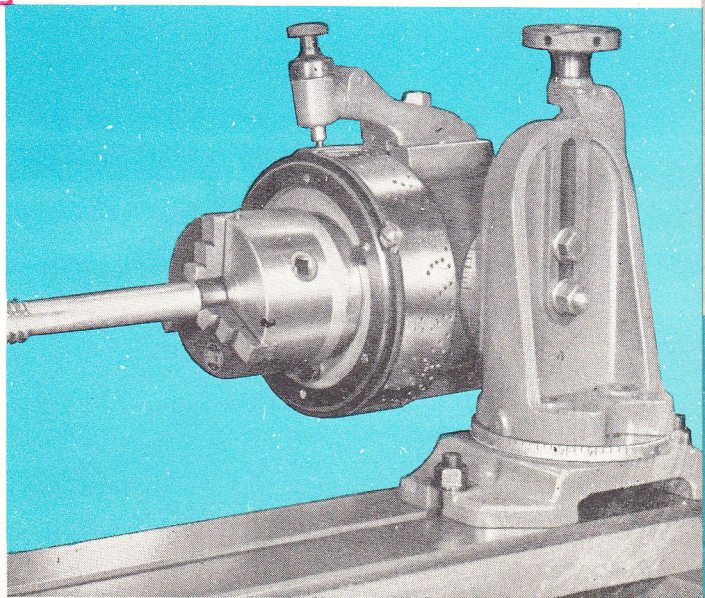


Draw Tube Collet Attachment

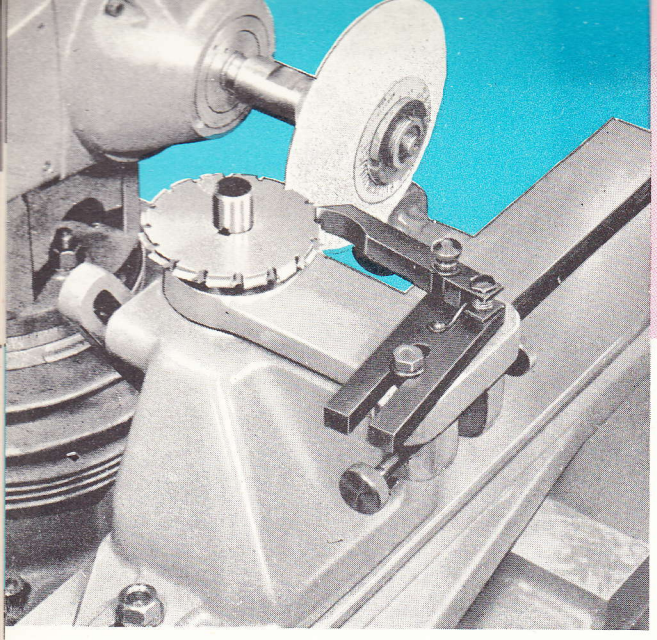
Capacity $\frac{1}{8}''$-$\frac{3}{4}''$ dia.

Indexing Attachment

Consists of plunger unit, indexing barrel with sector arms and mounting. Seven hole circles are provided: 18, 20, 22, 26, 28, 30 and 48.



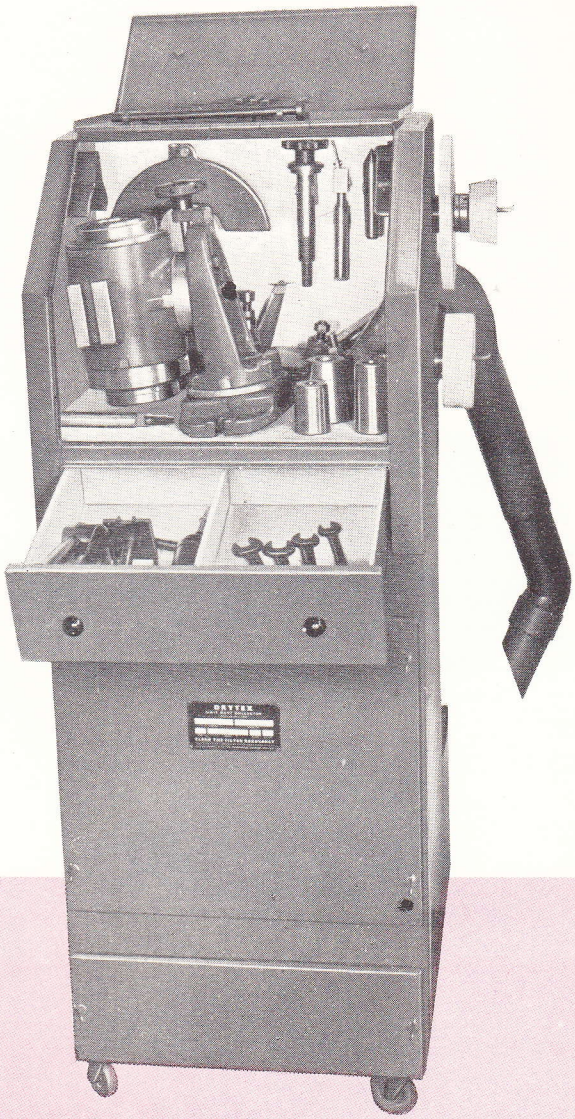
extra



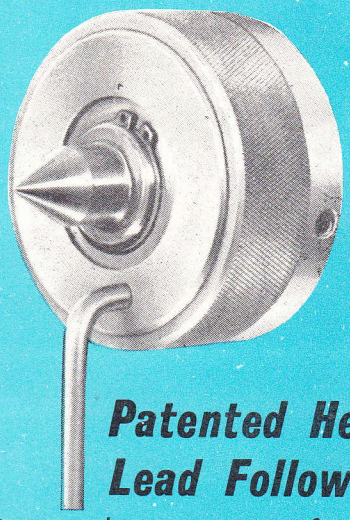
Gear Cutter Sharpening Attachment

Designed for grinding annular involute cutters and many form relieved cutters with radial cutting faces. Supplied complete with gauge and pawl, and five cutter bushes from 1″ to 2″ outside diameter.

Combined Dust Extractor and Tool Cabinet (Patented)



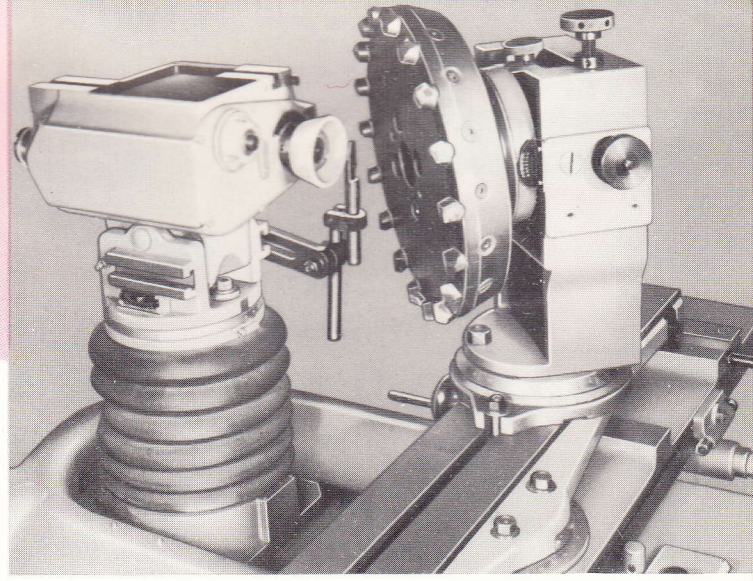
Provides the necessary dust extraction unit plus useful storage space designed to accommodate standard equipment.



Patented Heavy Lead Follower

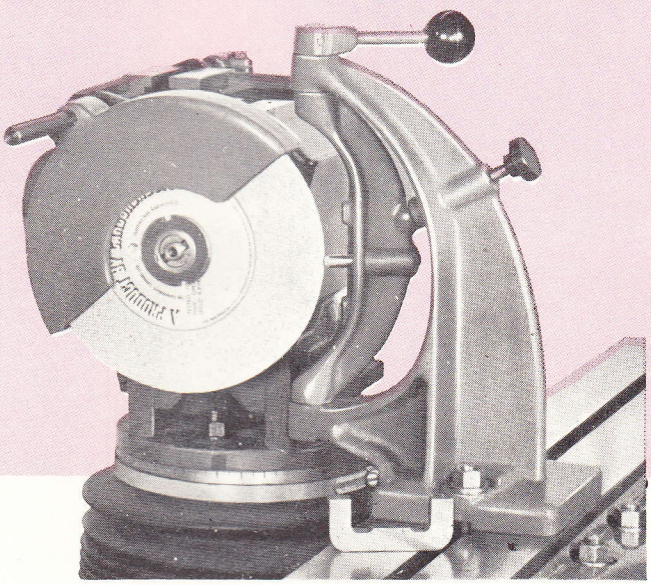
Eliminates the necessity of the operator applying hand rotary motion to the mandrel when grinding helical cutters and hobs. This is an important advancement to meet the trend of modern cutter technique and design.

equipment



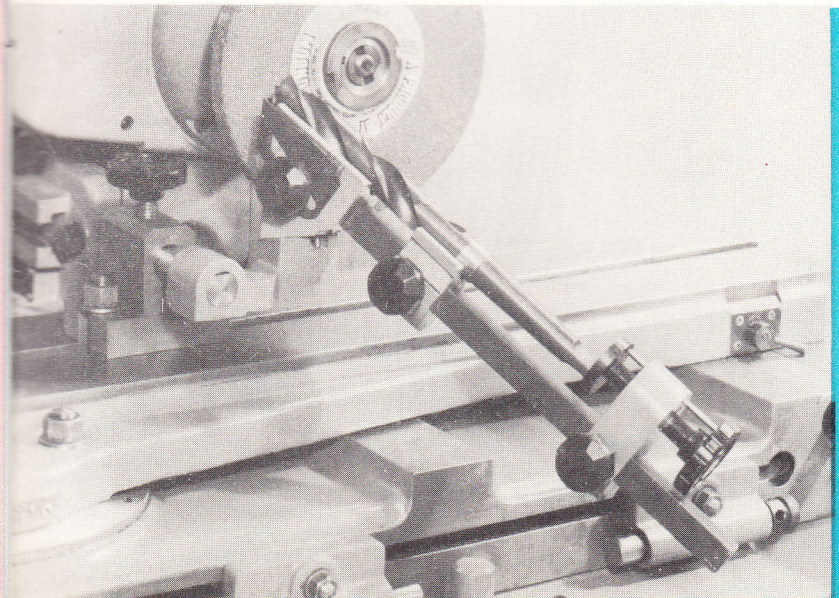
Heavy Duty Workhead

For heavy duty face mills which cannot be mounted in the vertical plane on the standard workhead. The No. 50 I.S.T. spindle rotates through 360°, can be locked in any position and tilted 15° either side of vertical. Maximum capacity 14″.



Radius Dressing Attachment

Supplied complete with setting gauge and diamond, this attachment provides a simple means of dressing wheels with either concave or convex radii.



Twist Drill Grinding Attachment

This is a simple device correctly designed and accurately constructed to produce on twist drills from $\frac{1}{4}$″ to 1″ diameter a geometrically correct relief giving a clearance angle which increases towards the axis. It will take parallel or taper shank drills, and provides a practical method of re-grinding at very little cost.

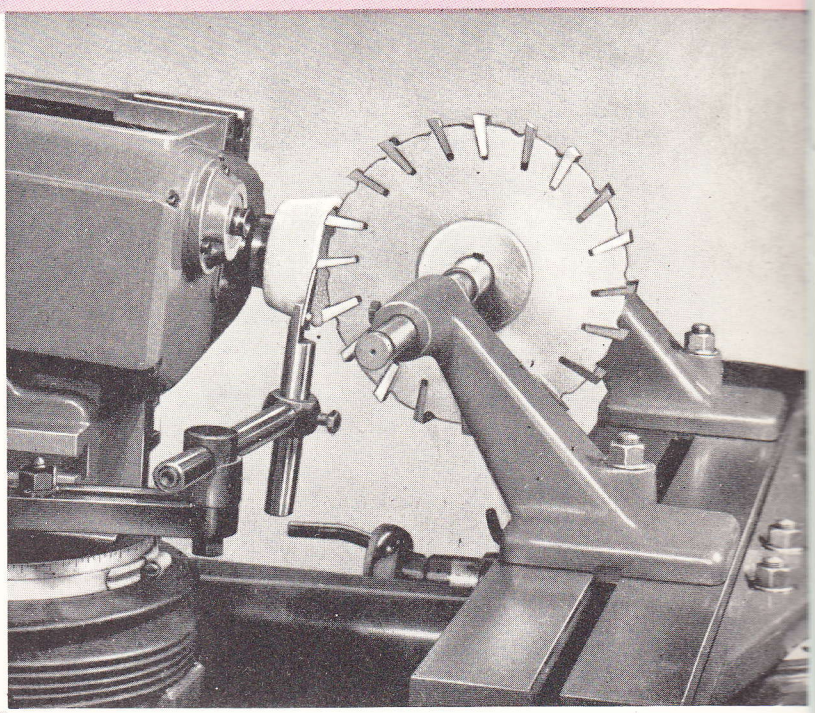
ELLIOTT

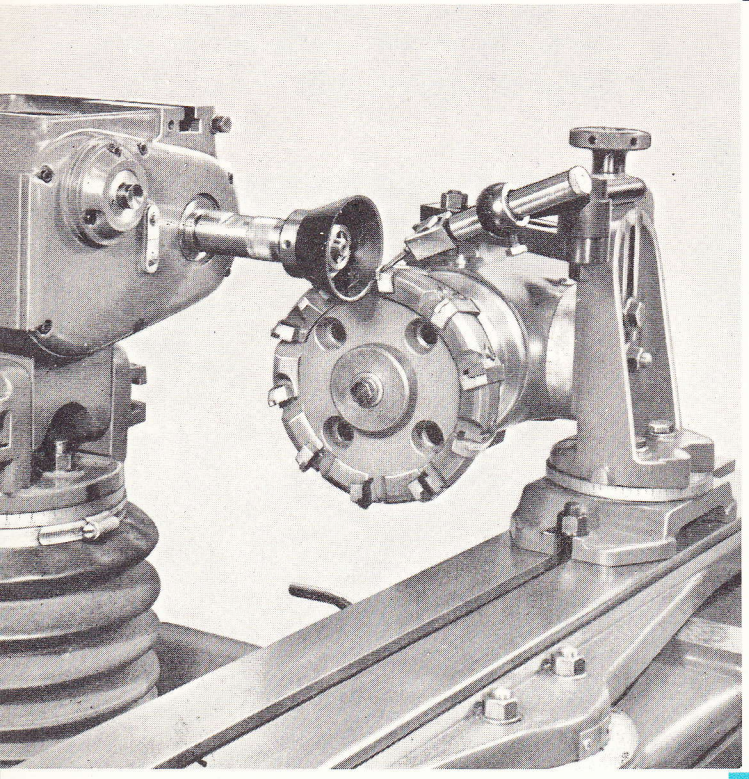
NUMBER 5

Set-Ups

Setting Time Halved

On staggered tooth cutters right and left hand spiral teeth are ground at one setting. Primary and secondary lands are achieved simply by tilting the wheelhead, the cutter tooth being set on centre.



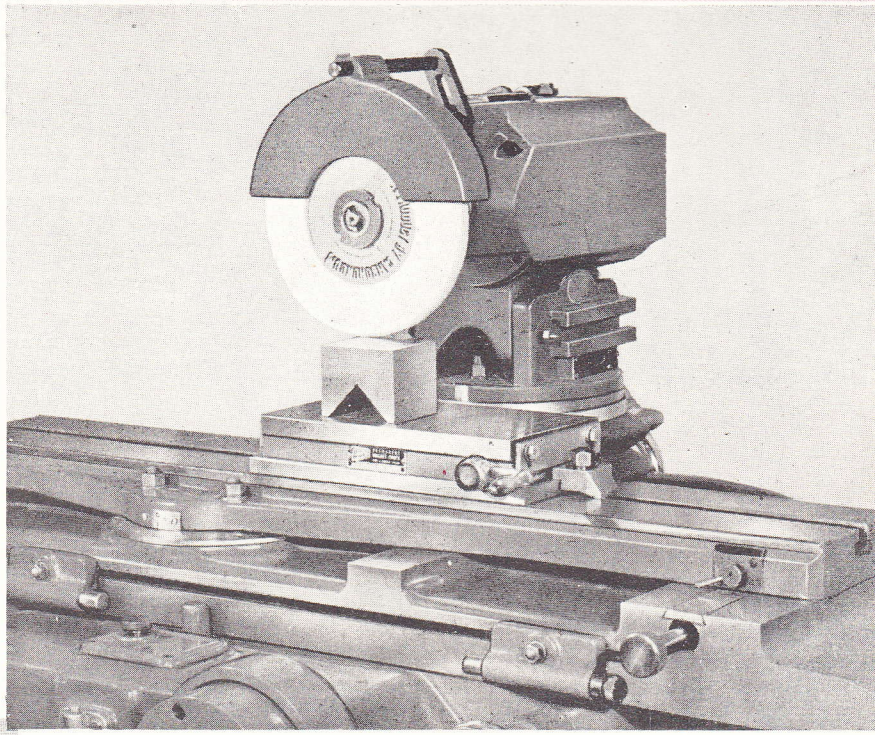


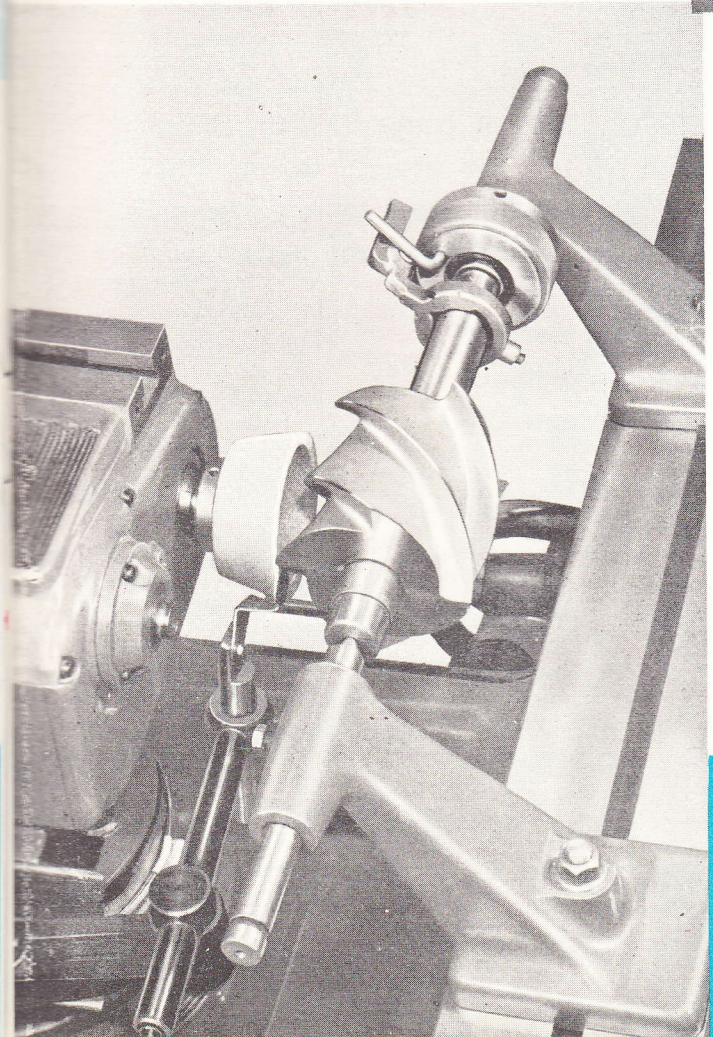
Universal Workhead

Using a wheel spindle extension, with the workhead tilted and swivelled, this set-up illustrates grinding the faces of a damaged carbide tipped cutter.

Surface Grinding

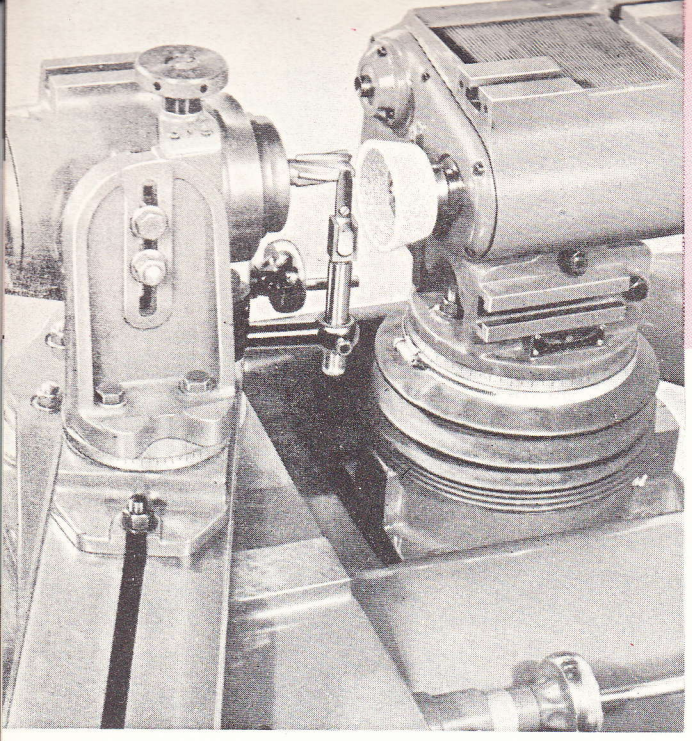
For the majority of small components, held either in a universal vice or on a magnetic chuck, direct mounted wheels can be used. For larger coverage, wheelhead spindle extensions are provided as standard equipment.





Spiral Grinding

Using the Heavy Lead Follower for spiral cutters or hobs the operator can handle leads in excess of those managed by hand rotation.

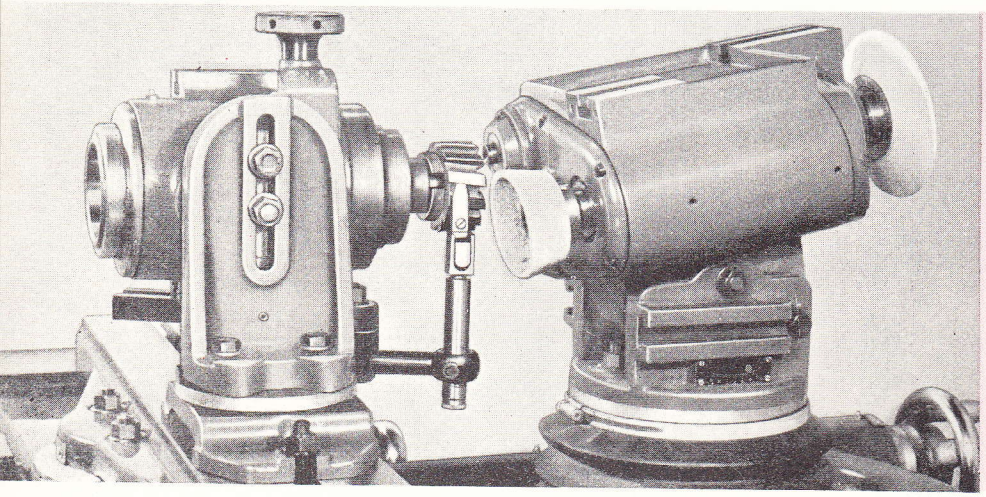


ELLIOTT

NUMBER 5

Face Grinding End Mills

End mills up to 10″ in length can be accommodated by taking full advantage of the various offset swivels of the table and workhead. When grinding heavy spiral end mills the indexing attachment is used to advantage.

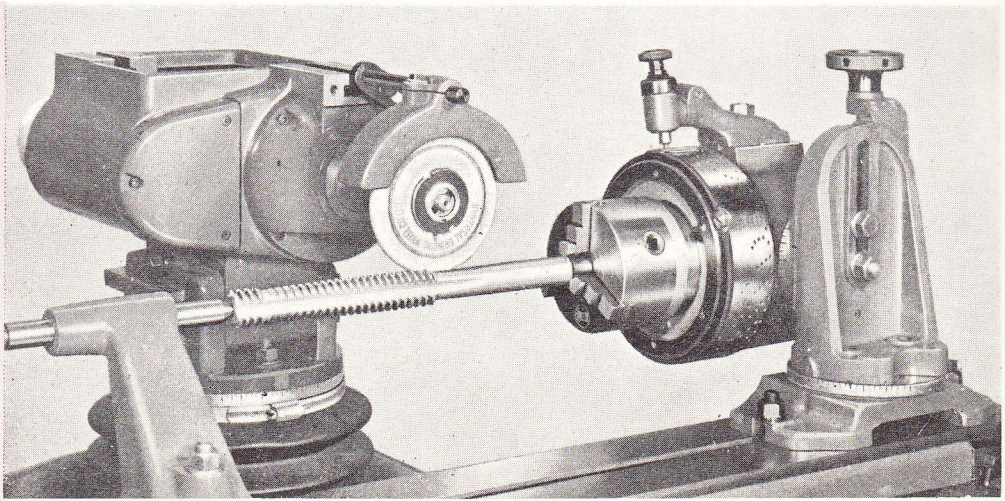


Tilting Wheelhead

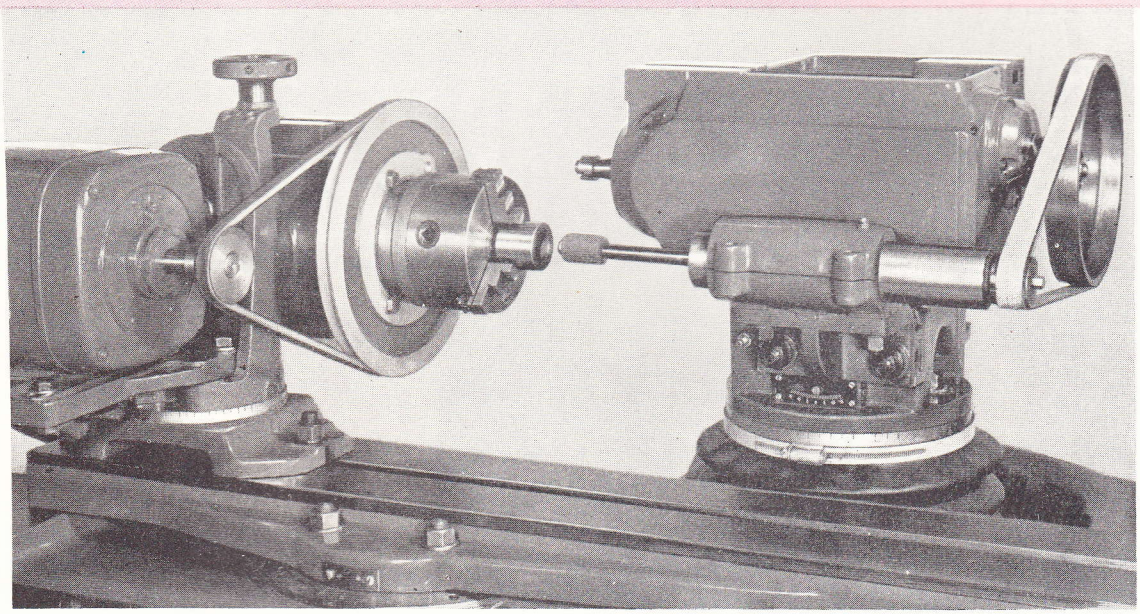
This illustration clearly shows the simplicity with which conventional cutters can be ground on all faces in the same set-up without complicated adjustments.

Indexing Attachment

Ensures the accurate spacing of teeth or flutes either during manufacture or servicing.



Set-Ups

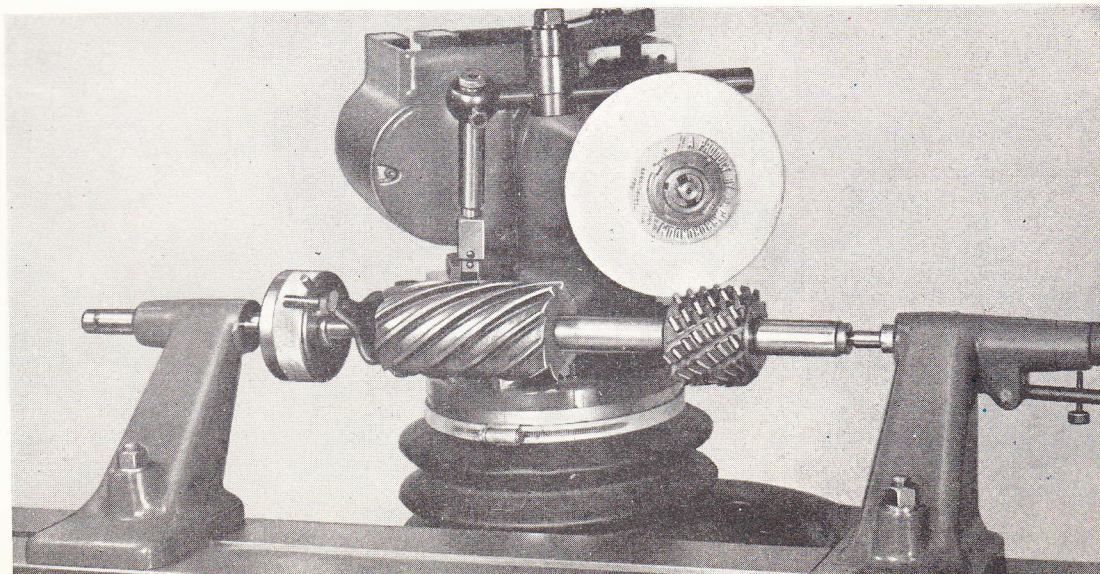


Internal Grinding

The internal grinding spindle operates at 18,000 r.p.m. Mounting arrangement ensures alignment in both planes.

Hob Grinding

Another example of the use of the Heavy Lead Follower together with a master to carry out an operation which has hitherto necessitated expensive equipment.



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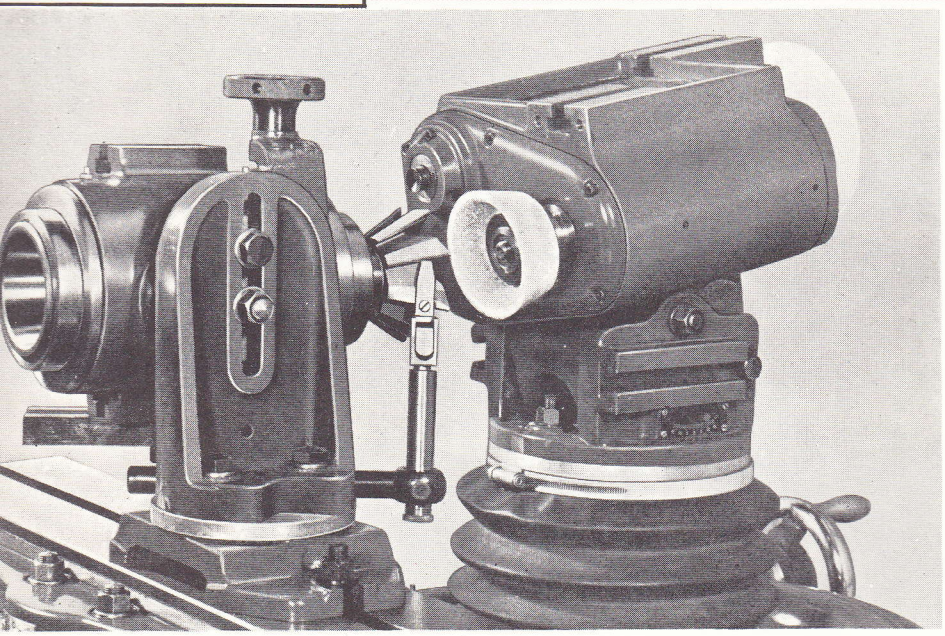
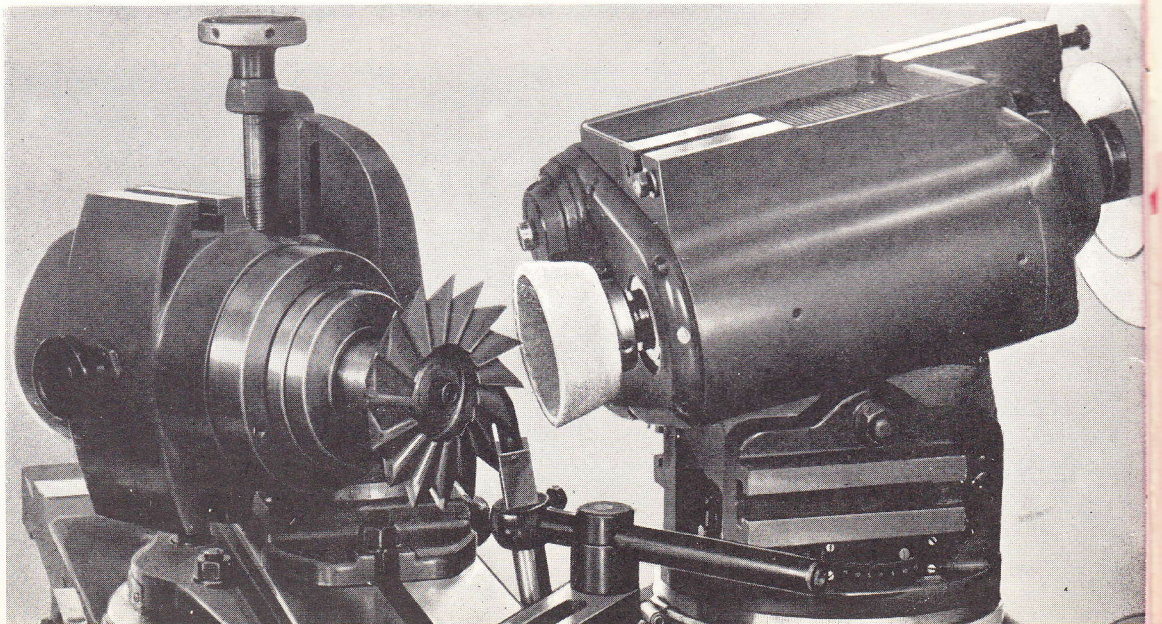
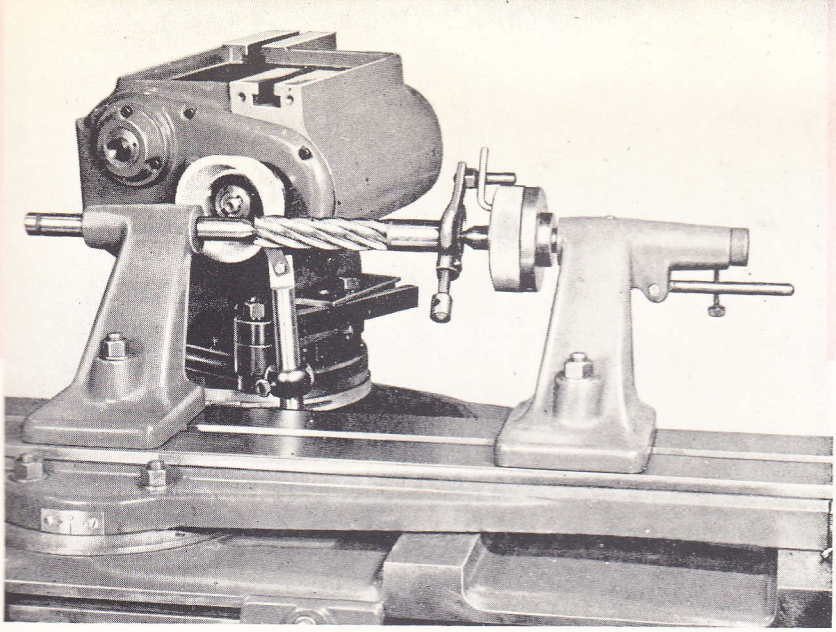
NUMBER 5

Set-Ups

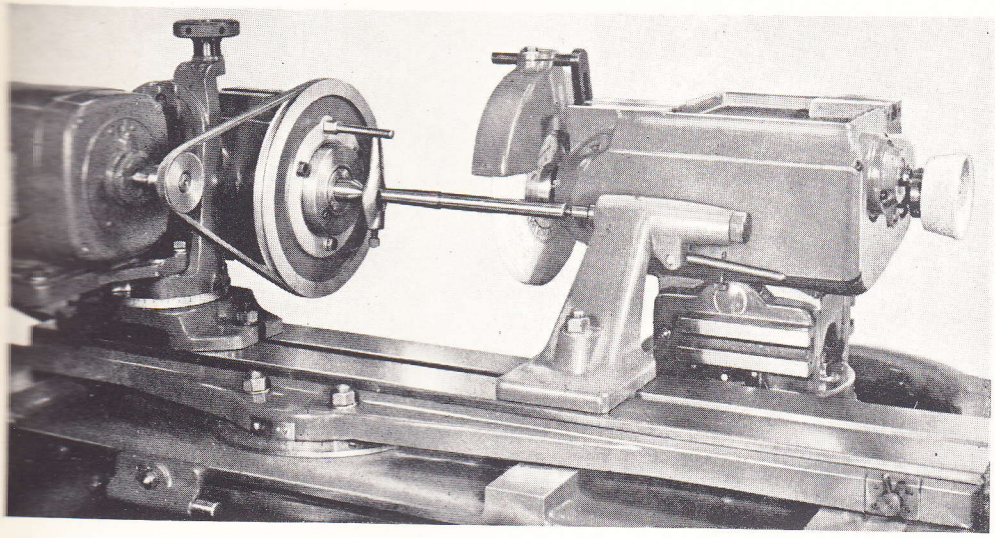


Other examples of the use of the tilting head to give immediate theoretically correct clearance angles without the necessity of complicated settings.





Another example of the use of the Heavy Lead Follower on a component which would be particularly difficult to grind by conventional methods.



Cylindrical Grinding

The workhead is so designed that when motorised both live and dead centre grinding can be performed, the latter being of vital importance when external grinding between centres, ensuring that any slight eccentricities are not reproduced on the workpiece.

Face Grinding

An example of the motorised workhead being used on live grinding—the cutting face of a Fellowes type gear shaping cutter is being reground.