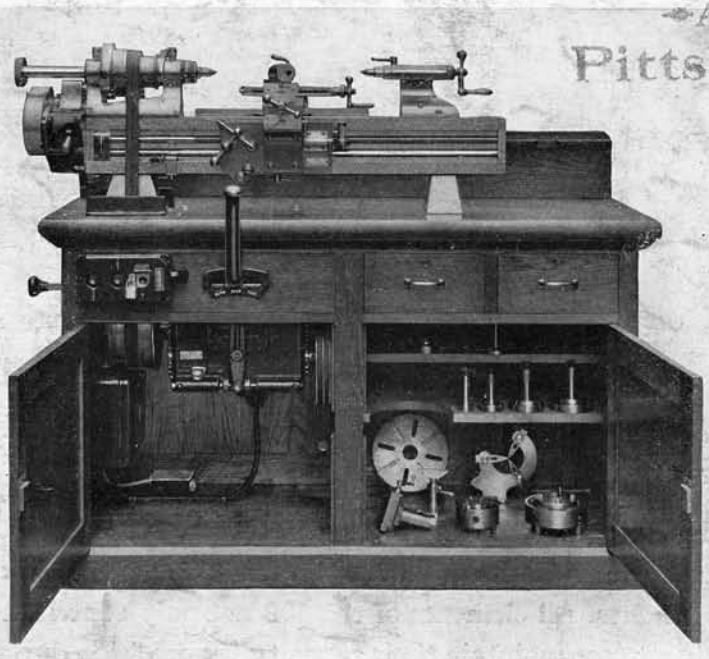
Rivett

608

PRECISION BACK GEARED SCREW CUTTING LATHE

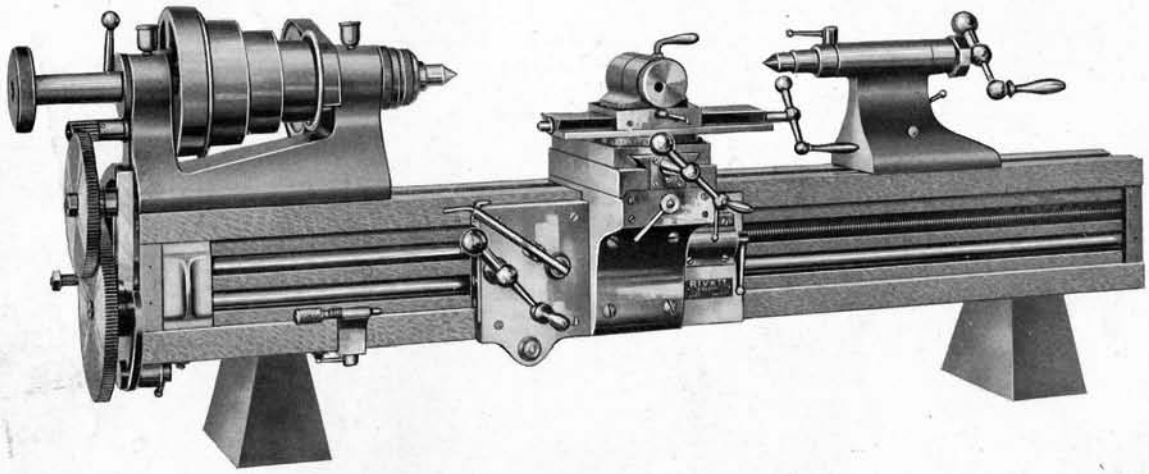


RIVETT LATHE AND GRINDER CORPORATION

BRIGHTON • • BOSTON, MASS., U. S. A.

RIVETT 608 PRECISION BACK GEARED SCREW CUTTING LATHE

THERE is no machine tool better known throughout the civilized world than the Rivett 608 Precision Back Geared Screw Cutting Lathe. Its reputation for enduring accuracy is evidenced in its selection by governments, scientists, universities and industrial laboratories. Perhaps a greater number of modern mechanical marvels have been developed on this small lathe than on all other machine tools combined. Technical instructors of machine shop practice in vocational schools and colleges find the "608" the finest demonstrator for teaching the construction, working principles and functions of lathes. A 608 on cabinet with attachments is a self-contained and portable unit combining in one machine the mechanisms for which several separate tools would otherwise be required. In tool-making shops the 608 will handle a great variety of jobs with a high degree of precision and in minimum time.



THE Precision Limits of the Rivett 608 are achieved by the perfection of its design, the use of materials of the highest obtainable quality and fine workmanship supported by accurate gauging and inspection devices. The lathe will turn or bore within 0.0001″ in six inches, face to eight inches diameter within limits of 0.0002″ concave, 0.0000 convex and cut threads within 0.0005″ lead in twelve inches. All elements of the 608 not only contribute to these unequaled results, but under intelligent care maintain their capacity for precision during many years of service. The super-finish of the lathe is not for new appearance only but to inspire the high order of maintenance which so valuable a tool deserves. Finely-made attachments for milling, spiral cutting, slotting, relieving, taper turning, ball turning, grinding and forming enable the user of a fully equipped 608 completely to finish his work without recourse to other machines and throughout his entire series of operations to utilize the inherent precision of the lathe itself

—The Master Workman's Master Tool.

For mounting and driving equipment — See Rivett Bulletin 120-A

RIVETT 608 PRECISION BACK GEARED SCREW CUTTING LATHE

THE BED is of specially alloyed cast iron, close grained and durable. It is in heavy box section strongly ribbed for maximum rigidity. The top is entirely hand scraped to a true plane surface with a central V-guideway to locate the headstock, tailstock and other attachments in proper alignment. The dovetail and plane surfaces on the front of the bed are hand scraped to serve as guides for the carriage. The lead screw has bearings in the end plates and is supported throughout its entire length in a groove in the front of the bed to prevent distortion. When so specified, lead screw of metric pitch is furnished. An independent feed rod with a sliding gear provides power feed for the carriage without employing the lead screw, thus preserving the precision quality of the latter. The left end of the bed carries either an adjustable yoke on which change gears are mounted or the quick change gear box for thread cutting and power feeding. The supporting pedestal for the tailstock end has a spherical depression on its top surface in which is fitted a spherical washer carrying the bed. This gives the lathe a three-point bearing.

THE HEADSTOCK is fitted with a tool steel spindle, hardened and ground. The front bearing is a double cone having angles of 3° and 45° with the center line. The rear bearing has a straight hole and is tapered on the outside and split. It is drawn into the headstock by an adjusting screw and thus compressed to provide compensation for wear. End thrust is taken by the 45° taper in the front bearing, adjustment being accomplished by a nut inside the large end of the headstock pulley. The mouth, chuck seat and nose thread of the spindle are ground after assembly, insuring the highest degree of accuracy. In the 608-4 N.S. (⅝″ collet capacity) lathe the bearings are of hardened tool steel ground and lapped. In the 608-5C. (1″ collet capacity) lathe the bearings are of bronze. The headstock is back geared. The change gears are driven from the spindle through a train of gears arranged to run in either direction or to be cut off from connection with the spindle when not needed. By use of a single translating gear and supplemental change gears complete ranges of threads to metric measurements may be cut on lathe with ⅛″ pitch leadscrew, and conversely threads to inch measurements may be cut on lathe with 3 m.m. pitch leadscrew.

THE CHANGE GEARS, carried on the yoke, are driven by the stud gear. The yoke is suitably slotted to permit set-ups for cutting full range of threads and is adjustably attached to bring the gears into proper engagement.

THE QUICK CHANGE GEAR BOX, when substituted for the change gear system, makes instantly available a wide range of thread pitches. By the simple movement of an indexing lever seven different threads may be cut. By sliding the stud gears and compound gears to two detented positions a total of 30 different threads are available without removal or changing of gears. An index plate immediately above the barrel of the gear box indicates clearly the correct settings for all threads. The quick change gear box may, at any time, be substituted for the change gear system by removing the yoke and drilling and tapping one hole in the bed end plate.

THE TAILSTOCK carries a hardened and ground tool steel spindle traversed by a steel screw working in a bronze nut and operated by a ball handle. When the spindle is fully retracted, the center or other attachment is automatically ejected. A binder handle is provided for locking the spindle. The tailstock is scraped to perfect alignment with the headstock and the carriage travel. It is clamped by a handle at the rear which operates through an eccentric binder and T bolt fitting a slot in the bed. A set-over tailstock with screw adjustment for offset of 5/16″ each way from center is available and will be found of value for taper and eccentric work.

THE CARRIAGE is of unique design, not only giving extreme precision in travel in a new lathe but maintaining this accuracy over long periods of service. It has an unusually large area of bearing on the top of the bed and, in addition, an extensive bearing area on the front vertical surfaces, together with a dovetailed guideway with taper adjustable gib in the front face. All these horizontal, vertical and dovetail surfaces are accurately scraped to give equal bearing and guiding values and together cause the cutting tools to move parallel to the lathe center line with a high and lasting degree of precision. The importance of this design cannot be overestimated. The top of the carriage has angular guideways carefully scraped to provide positive and accurate mounting for the slide rest and other attachments. When cutting threads, a bronze half-nut engages the lead screw. This nut is thrown in or out of contact by means of an eccentric lever. Power longitudinal feed is imparted to the carriage from a feed rod through a friction clutch and a train of gears to the rack. This clutch is controlled by a latched lever and may be released either by hand or by contact with an adjustable automatic stop. Power cross feed is thrown in by a lever actuating an eccentrically mounted connecting gear. When cutting threads, the longitudinal feed gear train may be stopped by pulling out a button and thus disengaging the rack pinion. This arrangement eliminates the drag of the carriage gears and facilitates the cutting of very accurate threads. Hand longitudinal movement of the carriage is accomplished by a ball crank handle geared to the rack.

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For collets, step chucks, jaw chucks, etc. — See Rivett Bulletin 100-A

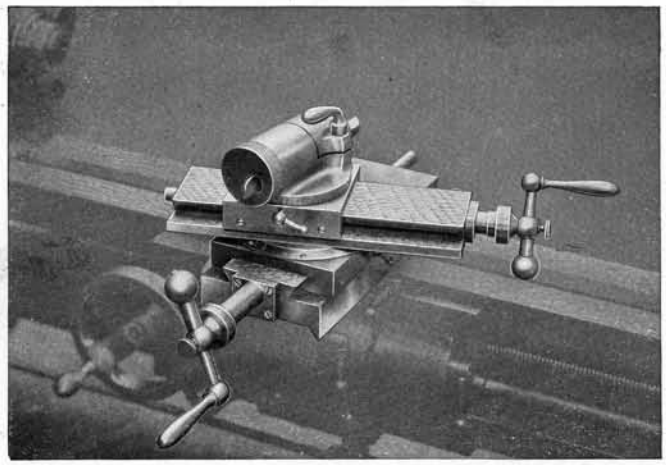

Fig. 3. **Compound Slide Rest** with **Rivett Eccentric Tool Holder,** on 608 lathe carriage

THE COMPOUND PRECISION SLIDE REST consists of a base, an upper and lower slide with a swivel between and feed screws to provide slide movements. All working surfaces are accurately scraped. Non-bearing surfaces are polished. The swivel is fitted with a bevel-edged dial graduated over the full circumference in degrees. It is locked in any position by a convenient handle. Both slides are fitted with gibs for adjustment, the top slide gib being at the front whereby the thrust in usual work is taken on the ungibbed surface. An adjustable stop for the lower slide is provided for thread-cutting and for duplication of sizes in turning and grinding. Feed screws are of steel and work in long bronze nuts. Adjustments are provided to compensate for wear. Each feed screw is fitted with a large dial graduated to slide movement of .001″. Dials may be rotated to any position on the feed screws and locked by knurled thumb screws in the ball handles. The slide rest is built in two types, viz.:—Eccentric Tool Holder (Fig. 3) and Rocker Tool Post (Fig. 4) as determined by the style of the upper slide. In the former the cutting tools are carried in an eccentric compressible bushing with knurled end. Rotation of the bushing in the holder adjusts the height of the cutting edge, and rotation of the tool in the bushing gives proper rake and clearance angle settings. A binder handle clamps the bushing and tool firmly in the block which swivels to any angle on the top slide as indicated by the degree graduations on the full circumference of the lower rim. An eccentric binder clamps the block to its slide. For the eccentric holder the tools are regularly made of ½″ round steel with one or both ends properly shaped for various cuts. Forged tool holders with upper and lower edges turned to ½″ dia. may also be used in the standard bushing. A special eccentric bushing, ¾″ hole, fitted with a sleeve having knurled head on the rear end for adjustment, takes 5/16″ or ⅜″ square tool bits (see Fig. 42). The eccentric tool holder slide rest is required when slide rest milling attachment (Fig. 14) is used.

In the rocker type slide rest the tool post is of conventional design for use of tools made of rectangular stock or forged tool holders to carry tool steel bits. Slot has maximum capacity of ½″ x ⅜″. Rocker tool block gives height adjustment. When specified, slide rest feed screws of 2 m.m. (metric) pitch with dials graduated to 0.02 m.m. are furnished.

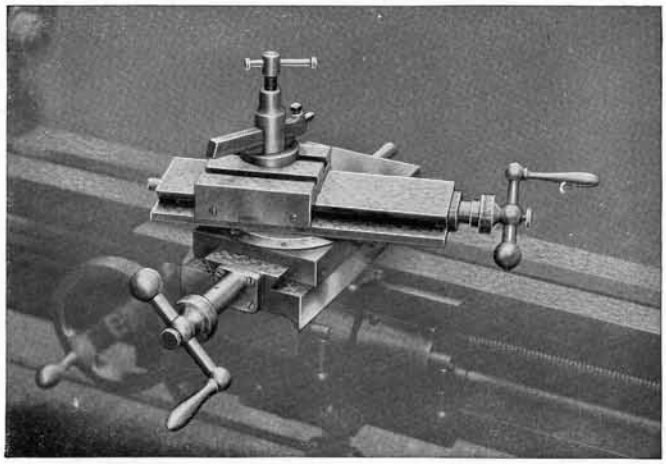

Fig. 4. **Compound Slide Rest** with **Rocker Tool Post,** on 608 lathe carriage

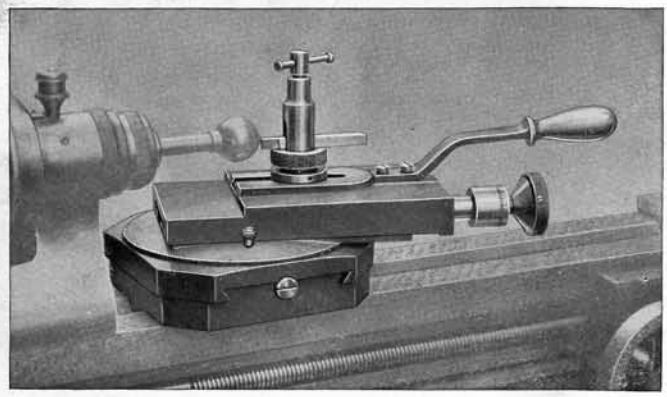

Fig. 5. **Ball Turning Rest,** on 608 lathe bed

THE BALL TURNING REST will accurately generate spherical surfaces and is extremely useful for turning tools such as ball reamers, convex and concave cutters, punch and die, forging die and similar parts. Balled valve seats and discs, knuckles, universal and swing joints, knobs, hemispherical ends and a great variety of similar work may be quickly machined and to a high degree of precision. The ball turning rest is mounted directly on the bed and is easily attached, adjusted and removed. It is heavily built with large slides and ample area of swivel bearing surface. The lower slide has screw adjustment for centering. The feed screw is graduated to .001″. The tool post has adjustment for height of cutting tool. The maximum diameter that can be turned, limited by the swing over the slide, is 3″.

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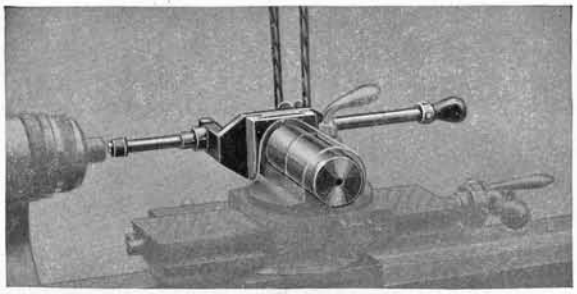

Fig. 6. **Internal Grinding Attachment**

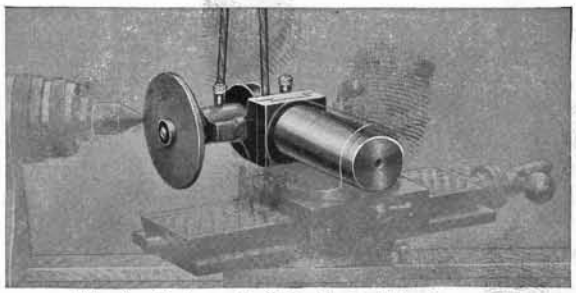

Fig. 7. **External Grinding Attachment**

THE INTERNAL GRINDING ATTACHMENT mounts in eccentric tool holder slide rest. Used for grinding holes, straight and taper, lapping holes and high speed drilling with tools held in drill chuck. Bearings, adjustable for wear. Spindle hardened both ends. No. 4 P. & W. taper hole for insertion of wheel mounts, wheel arbors and drill chucks. Spindle traverse is 2″. Adjustable stop collar regulates depth of cut. Standard speeds: 1100, 2500, 3000, and 7000. A similar attachment for rocker tool post slide rest is furnished with support for mounting on the upper slide with tongue for alignment. Adjusting screws bring the grinding wheel to the center height of the work.

THE EXTERNAL GRINDING ATTACHMENT mounts in the eccentric tool holder slide rest. Used for external work, straight or taper, face and surface grinding. Longitudinal or angular feed by upper slide rest screw. Cross feed by lower screw. Spindle runs in split hard bronze bearings adjustable for wear. End thrust adjustment also provided. Grinding wheels not over 3″ diameter, ¼″ face and 5/16″ hole are used. Standard speeds: 850, 1950, 2500 and 5700. A similar attachment with spindle to mount grinding wheels, ⅜″ holes, and with support for rocker tool post slide rest is also offered.

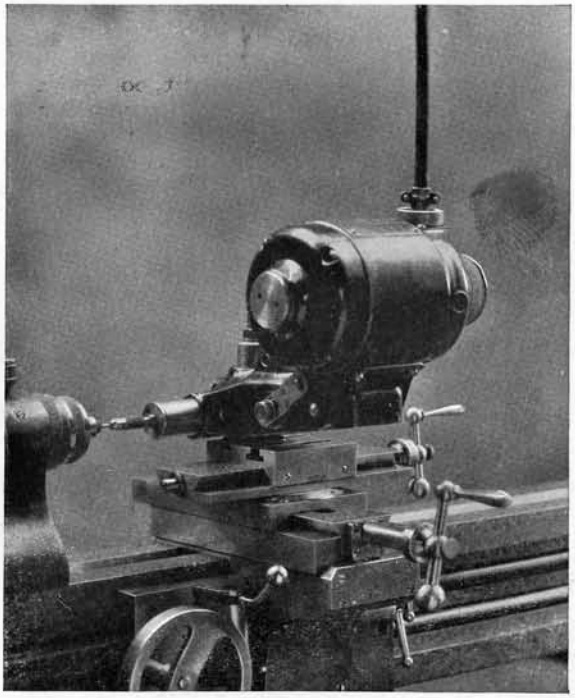

Fig. 8. **Unit Motor Drive Slide Rest Grinding Attachment** mounted on top slide of rocker tool post slide rest, with internal quill and chuck for wheel mounts

Fig. 9. **Unit Motor Drive Slide Rest Grinding Attachment** mounted on top slide of rocker tool post slide rest with external quill (rear view), grinding taper on shaft

THE UNIT MOTOR DRIVE INTERNAL-EXTERNAL GRINDING ATTACHMENT connects to a lamp socket or other receptacle and eliminates the necessity of countershaft drive. It mounts on the rocker tool post slide rest. Settings for grinding straight and taper holes are obtained by use of the graduated slide rest swivel. This attachment operates on either 105-115 A.C. or D.C. or 220-230 A.C. or D.C. current. Specify voltage when ordering. Two quills are furnished, the external with speeds of 5,000 to 20,000 R.P.M. and the internal with speeds of 20,000 to 40,000 R.P.M. The Electric Motor Slide Rest Grinding Attachment, a smaller and inexpensive unit for very light grinding only, is furnished for mounting on either eccentric or rocker tool post slide rest.

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For collets, step chucks, jaw chucks, etc. — See Rivett Bulletin 100-A

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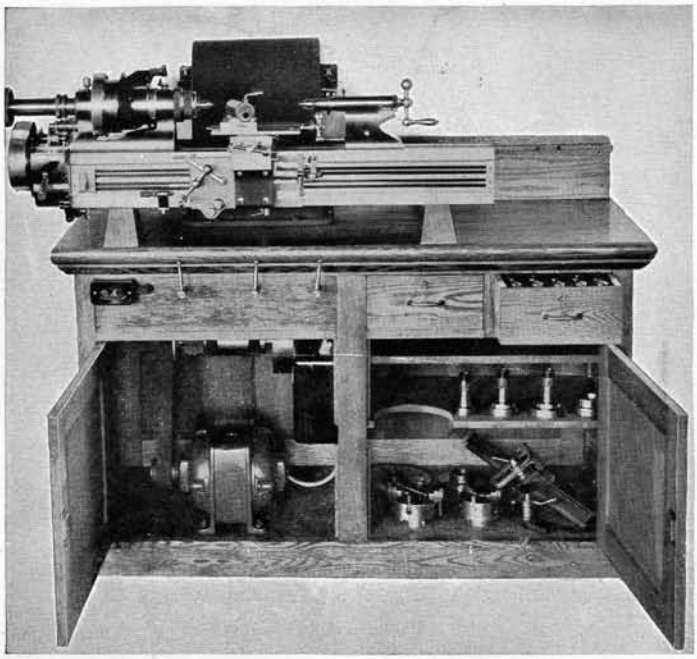

Fig. 10. 608 (5C.) Lathe with **Quick Change Gear Box** on **Cabinet** with **Horizontal Safety Drive Countershaft** (Patented June 18, 1929) and **Jackshaft**

THE RIVETT 608 ON CABINET constitutes a complete precision machine equipment for use on shipboard or in the laboratory, toolroom or home, the whole comprising an integrated unit which may quickly be installed or moved as such and requiring no supports or connections other than the motor lead wires. The numerous available attachments are conveniently stored in the drawers and compartment, a perforated board in the right hand drawer holding a full set of collets. Self locking ball handles, conveniently located at the cabinet front, shift the driving belts making high, low and reverse speeds instantly available. The hard wood cabinet is of sturdiest construction with heavy laminated top which will never warp or twist. Substantial locks for both compartments and drawers are provided. The Rivett Speed Box Motor Drive for cabinet, bench or oil pan with floor legs, fully described in Rivett Bulletin 120-A, is the ideal power unit where no overhead drive for attachments is required,—see front cover. The Rivett Horizontal Safety Drive Countershaft mounts directly on the cabinet top or bench. A single adjustment maintains tension on endless belts. The removable cover not only protects the belts, jackshaft and motor from dirt and chips but prevents lubricating oil being thrown out by the countershaft pulleys. Economy in belting results both from the short center distances and the permanent cementing of joints permitted by full provision for adjustments to compensate for belt stretch. The safety and non-obstructive characteristics are obvious. A Grinding Countershaft Attachment, designed for the horizontal safety drive countershaft, bolts rigidly to its brackets. The cabinet dimensions are: length 57″, width 24″, height 34″. Height: to top of countershaft cover, 52″; to highest point of grinding countershaft attachment, 80″. The overhead type countershaft is mounted on supports and countershaft plank. The Grinding Countershaft Attachment for overhead countershaft, see Fig. 12, is bolted to the countershaft brackets. Either type of grinding countershaft attachment is used for driving grinding attachments, revolving spindle tailstock and traverse miller attachment. Height: to top of countershaft plank, 74″; to highest point of grinding countershaft attachment, 80″.

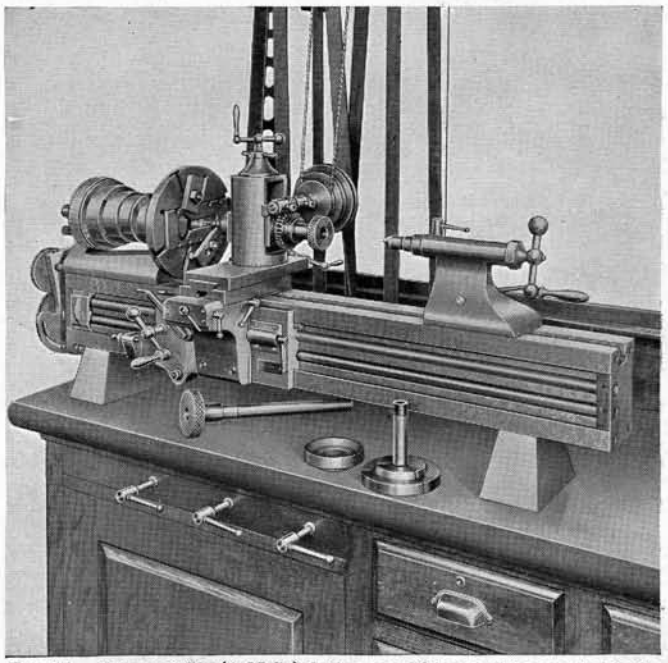

Fig. 11. Rivett 608 (4, N.S.) lathe on cabinet with countershaft drive and **Traverse Miller** finishing contour of a stamping die

THE TRAVERSE MILLER ATTACHMENT is primarily intended for milling lengthwise on work held between the lathe centers, cutting keyways, slots, flats, etc. Combined with the Spiral Attachment all kinds of spiral milling and fluting operations may be accomplished. With the addition of Thread Milling Attachment, screws, worms, hobs and similar work through a wide range of pitches and thread forms can quickly be milled to a high degree of accuracy and smooth finish. The traverse miller mounts on the lathe carriage in place of the slide rest, is fed longitudinally by the feed rod or lead screw and covers the maximum distance between centers of the lathe. Transverse movement or adjustment is accomplished by use of the cross feed screw, with dial graduated to 0.001″. The column carrying the cutter spindle may be swiveled to any rotative position, set to any desired angle by means of degree graduations extending 90° each way from center and locked by two convenient eccentric binder handles. Spindle has a vertical adjustment of 2⅜″ in the column. It is moved by a screw with ball crank handle and an adjustable set collar on the

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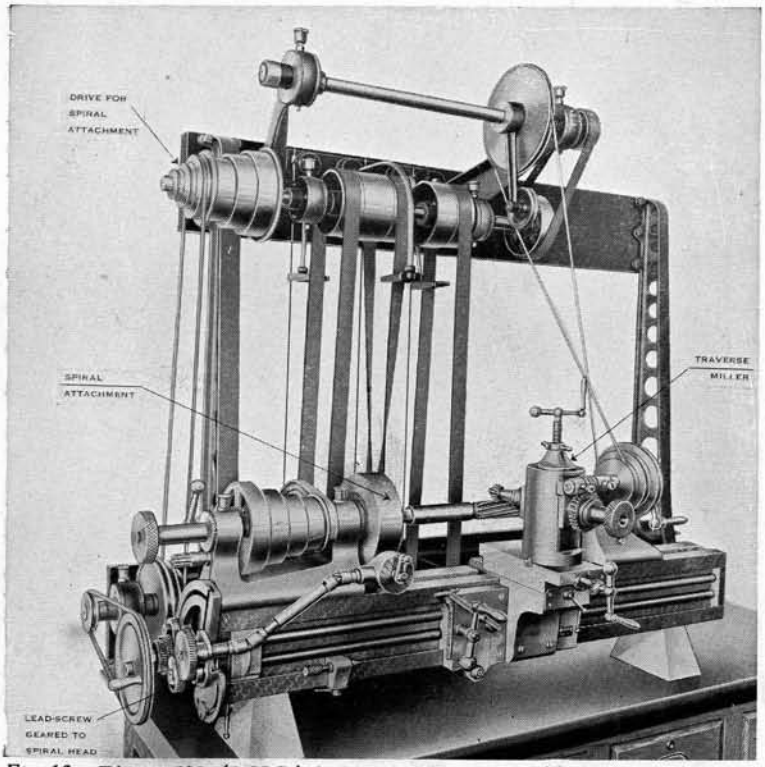

Fig. 12. Rivett 608 (4 N.S.) lathe on cabinet with **Traverse Miller** and **Spiral Attachment** fluting a hand reamer

screw permits feeding to definite depth on duplicate work. A handle on side of column binds the spindle bearing in any vertical position. The spindle is designed to carry cutter arbors having shanks same as Rivett No. 4 N.S. collets which are tightened by draw-in spindle. By the use of Rivett No. 4 N.S. collets, milling cutters or other tools with straight or taper shanks up to ⅝″ diameter may be held. An arbor for cutters with ¼″ hole is furnished with the attachment, but arbors for cutters with holes up to ⅝″ diameter are also carried in stock. The traverse miller is driven from grinding countershaft attachment by a round belt through spiral gear to its spindle. The weighted countershaft idler pulley maintains proper belt tension assuring adequate drive for the attachment at any of its speeds and when swiveled to any position. Ample power is thus transmitted to the cutter. Twelve spindle speeds from 150 to 1750 R.P.M. are available.

THE TRAVERSE MILLER GRINDING ATTACHMENT mounts directly in the spindle and is driven from the grinding countershaft attachment. Work may thus be ground, in many cases following a milling operation and subsequent hardening.

THE SPIRAL ATTACHMENT is used in connection with traverse miller for cutting flutes and other spiral grooving and slotting. A dividing head is interposed in the transmission. It has two perforated plates and an indexing crank for cutting any desired number of teeth or flutes in the work. Using the change gears furnished with the attachment together with those belonging to the lathe, complete ranges and combinations of longitudinal feed and spiral angle may be obtained. The spiral attachment is driven by round belt through an independent pedestal type countershaft, furnished therewith, which mounts on the bench or cabinet top in the rear of the lathe head. A crank handle on the driven pulley is provided for setting up and making trials and adjustments.

THE THREAD MILLING ATTACHMENT is furnished as an adjunct to the traverse miller. It utilizes the round belt feed drive which is part of spiral attachment equipment and which, through change gearing, revolves the lathe spindle and work, and the lead screw, in proper relative speeds to cut desired pitches. It is mounted on the traverse miller spindle bearing and the cutter may be swung to any position from vertical to horizontal. A ring, graduated in degrees, permits accurate angular setting of cutter to correspond with the helix angle of the thread to be milled. Cutter driven by traverse miller spindle through spiral gears to cutter arbor. Arbor takes cutters with 7/16″ holes. Twelve spindle speeds from 88 to 1040 R.P.M. are available.

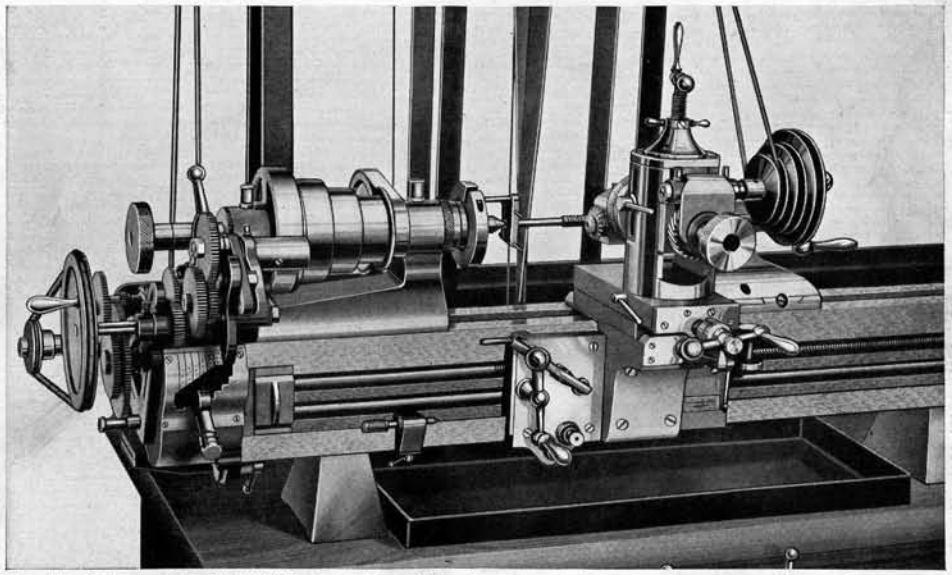

Fig. 13. Rivett 608 (4 N.S.) lathe with quick change gear box on cabinet with **Thread Milling Attachment** on **Traverse Miller** milling a screw thread

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For collets, step chucks, jaw chucks, etc. — See Rivett Bulletin 100-A

THE SLIDE REST MILLING ATTACHMENT is used for milling cutters and gears and for work held in a collet, vise or fixture. A shoe, clamped to the lathe bed, carries a longitudinal slide adjustable by a feed screw with binder and a swivably mounted vertical-faced head graduated in degrees to 90° each way from center line, and locked by a binder handle. On this head is mounted the regular eccentric tool holder type slide rest of the lathe, clamped in any convenient transverse position by a handle screw. A quill with index plate on rear end and with front end to take the regular lathe collets (Rivett No. 4 N.S.), with draw-in spindle, is held in the tool block of the slide rest and provides for holding work in collets or on arbors. Cutters are mounted on suitable arbors drawn into the lathe spindle. Arbors for cutters with holes up to ⅝″ diameter are carried in stock. The graduated swivel on the head and the two slide rest swivels give universal adjustment for position of work and the two slide rest feed screws, with dials graduated to 0.001″, permit feeding in any direction. The Vise, Fig. 20, mounts directly in the quill, or, with its sleeve, in tool block of slide rest. Index plates divide the work. Plates with 45, 56, 60, 64, 72, 80, 84 and 100 divisions are furnished with the attachment. Movement of head on shoe, 1⅛″; lower slide movement, 4½″; upper slide movement, 5½″.

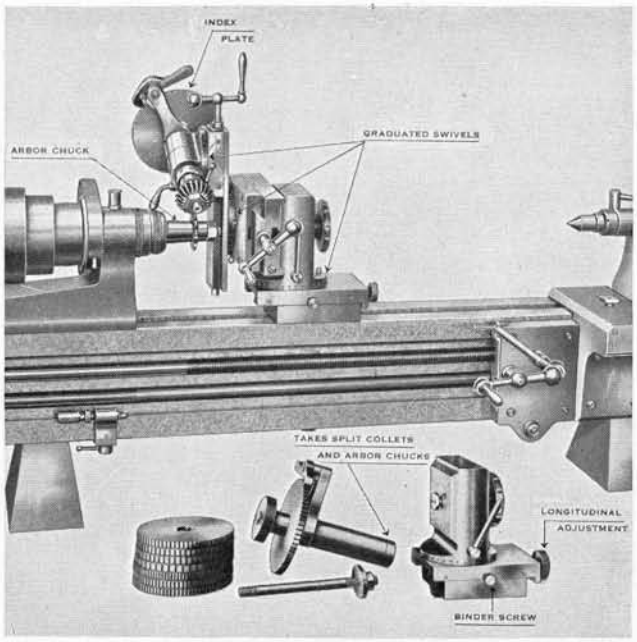

Fig. 14. Rivett 608 (4 N.S.) lathe with **Slide Rest Milling Attachment** milling a bevel gear. Foreground view, attachment removed from lathe

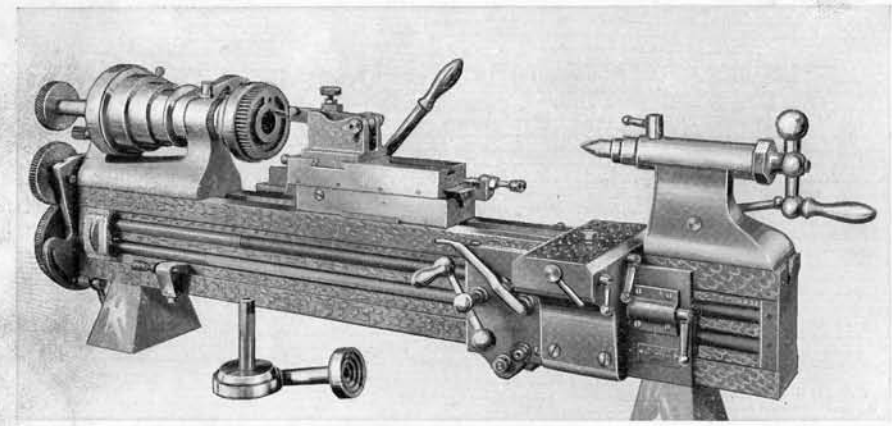

Fig. 15. Rivett 608 (4 N.S.) lathe with **Slotting Attachment** mounted on **Base** of **Cutting-Off** and **Forming Slide** cutting keyway in a bar. Work held in step chuck. Foreground view, step chucks

THE SLOTTING ATTACHMENT is a manually operated device for cutting keyways and slots. It consists of a tool block with holder for 5/16″ round steel tool bits. The holder has vertical adjustment or feed of 1⅛″ and a secondary adjustment for proper cutting rake. When mounted on the base of the Cutting-Off and Forming Slide, set longitudinally of the lathe bed on an adapting shoe, the tool may be reciprocated 3½″ by a hand lever and rack and pinion movement and also be fed 1⅛″ transversely or clamped in fixed position. With this feed, square, hexagon, D-shaped and holes of odd contour may be cut out.

THE INDEXING ATTACHMENT divides or indexes work held in the headstock spindle of the lathe. An index plate is mounted on the rear end of the lathe spindle and clamped by the draw-in spindle. A bracket with index pawl is bolted to the change gear yoke. Index plate with sixty notches is furnished with attachment. Plates with other divisions are carried in stock. These plates are interchangeably used with those for slide rest milling attachment.

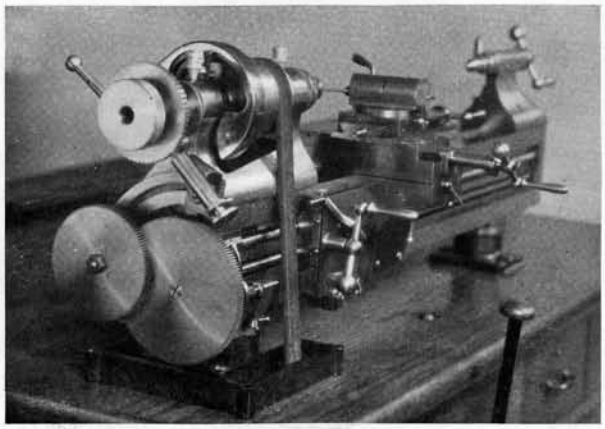

Fig. 16. Rivett 608 (4 N.S.) lathe on cabinet with jack pedestals and speed box motor drive, with **Indexing Attachment**, graduating a dial

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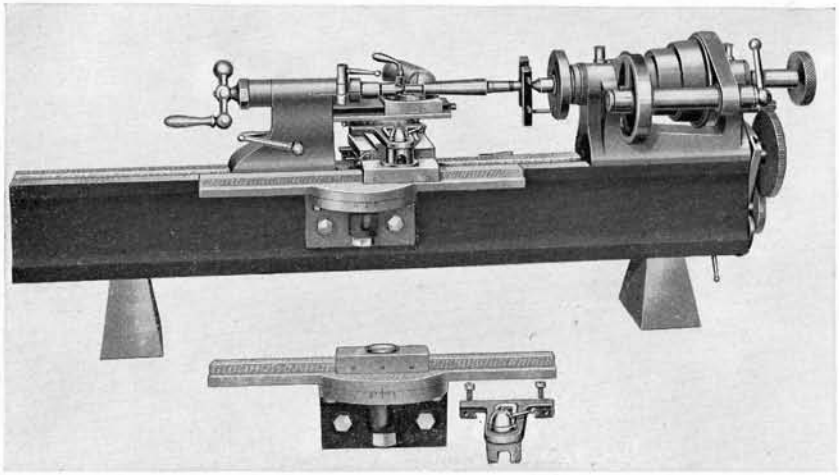

Fig. 17. Rivett 608 (4 N.S.) lathe with **Taper Attachment** (rear view). Foreground view, attachment removed from lathe

THE TAPER ATTACHMENT, indispensable for taper turning, boring and external taper threading, is of conventional form and is carried by a bracket attached to the back of the lathe. All 608 lathe beds have a pad with two tapped holes for this purpose. The dovetailed slide of the attachment can be set to any angle up to 10° or up to 4″ per foot taper, in either direction. Graduated blocks with reference marks for both systems are applied. Tapered work up to 13″ long may be turned.

THE UNIVERSAL RELIEVING ATTACHMENT is used to relieve or back-off the teeth of taps, reamers, milling cutters, counterbores and similar tools having straight or spiral flutes. It is mounted on the carriage in place of the slide rest. The tool block slide swivels to any angle. Power for the necessary quality of reciprocating movement is transmitted through a telescopic shaft drive from the change gears of the lathe. A pedestal-mounted countershaft, back of the headstock on the bench or cabinet, drives the change gearing, which, in turn, is properly set up to drive the lead screw and the telescopic shaft to the attachment. In this manner the relieving tool follows the pitch of threaded tools like taps, and backs-off the teeth. By proper setting the teeth of angular and face cutters may be relieved. A crank handle on the driven pulley is provided for setting up and making trials and adjustments.

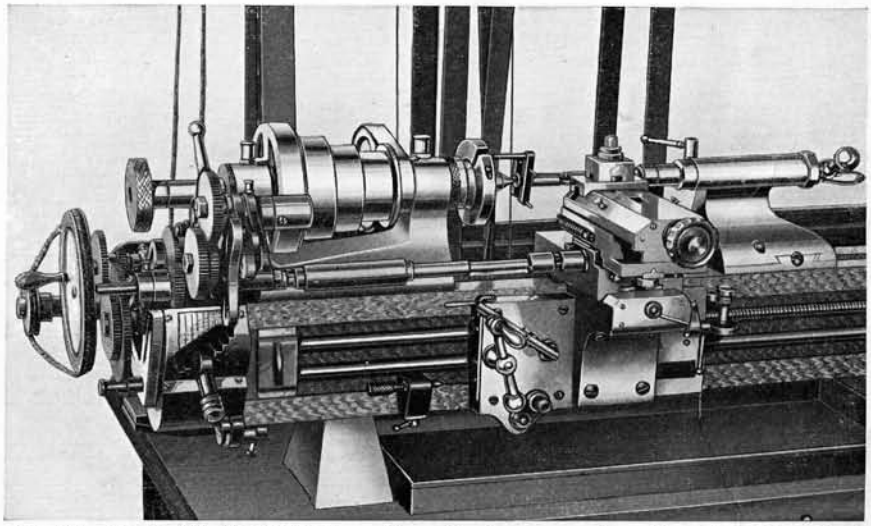

Fig. 18. Rivett 608 (4 N.S.) lathe with quick change gear box, threading dial and set over tailstock, with **Universal Relieving Attachment**, relieving a tap held on centers

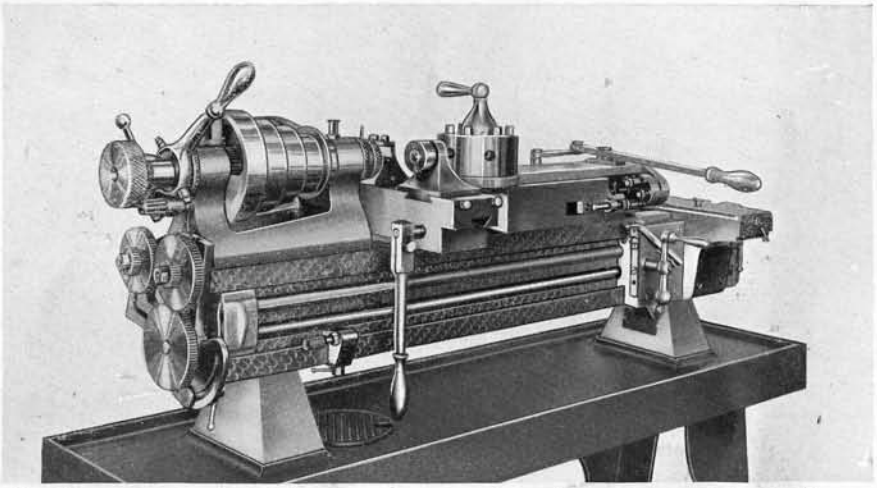

Fig. 19. Rivett 608 (4 N.S.) lathe on oil pan and floor legs with **Lever Chuck Closer, Automatic Indexing Turret Attachment** and **Cutting-Off** and **Forming Slide**

THE AUTOMATIC INDEXI TURRET ATTACHMENT produces duplicate work from bar stock held in collets, or from castings and forgings held in jaw chucks, step chucks, step collets or collet chucks. Turret has six ¾″ holes and six independent automatic length stops.

THE CUTTING-OFF AND FORMING SLIDE has 3½″ transverse movement by hand lever. Circular forming tools 1 11/16″ dia. are held on front of slide and 3/32″ x ½″ cutting-off blades on rear.

THE LEVER CHUCK CLOSER quickly and uniformly opens and closes collets, step chucks, step collets and special holding fixtures.

—[*page nine*]—

For collets, step chucks, jaw chucks, etc. — See Rivett Bulletin 100-A

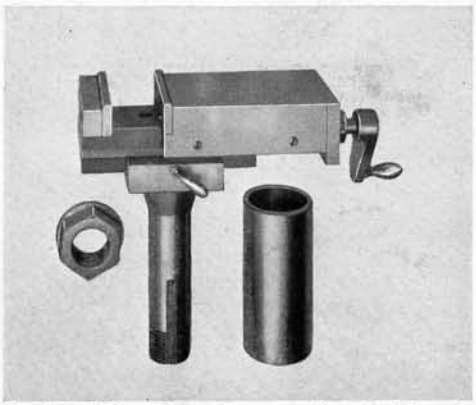

Fig. 20. **Vise.** Shank mounts directly in headstock spindle and slide rest milling attachment quill. With sleeve, shown in foreground, mounts in eccentric tool holder of compound slide rest. Jaws, hardened steel, opening 1½″

Fig. 21. **Steady Rest.** Mounts on lathe bed. Indispensable for support of long work held in chuck or on centers. Brass jaws, 3″ dia. capacity

Fig. 22. **Follower Rest.** Attaches to base of slide rest. Used when threading or turning slender work on centers. Brass jaws, 3″ dia. capacity.

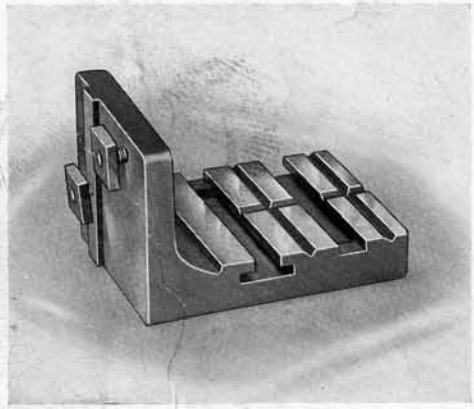

Fig. 23. **Angle Iron.** Used on rocker tool post slide rest and slotted face plate for milling, etc. Length 4¼″; width 3¼″; height 3″. T slots uniform with slide rest and face plate

Fig. 24. **T Rest.** Mounts on lathe carriage in place of compound slide rest. Convenient for hand-tooling and wood-turning

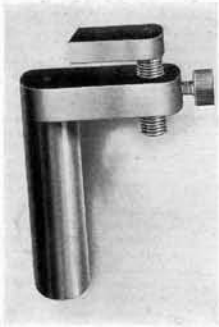

Fig. 25. **L Rest.** Mounts in T rest base in place of T. Valuable for hand-tooling in narrow grooves and corners and truing work held in jaw chuck

Fig. 26. **Triangle Rest.** Mounts in T rest base. Used for slitting, sawing and grinding operations. V-groove locates and holds round work. Length of sides 4⅛″

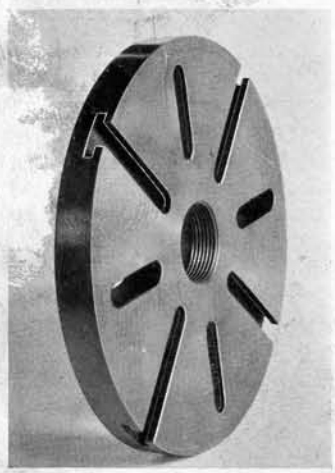

Fig. 27. **Slotted Face Plate,** 8″ dia. Has four plain slots and four T slots

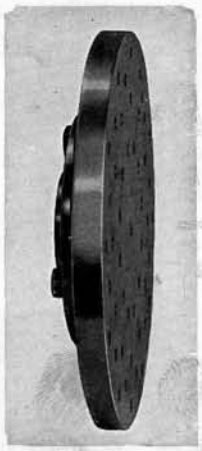

Fig. 28. **Tapped Face Plate,** 7″ dia. Has 49 holes tapped ¼″-20 U.S.S.

Fig. 29. **Tin Faced Lap,** 7½″ dia. Has ⅜″ renewable facing of pure tin

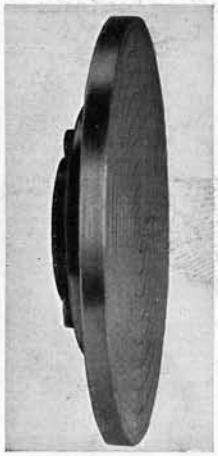

Fig. 30. **Emery Face Plate,** 7″ dia. Has circular scoring for mounting emery discs

For mounting and driving equipment — See Rivett Bulletin 120-A

RIVETT 608 PRECISION BACK GEARED SCREW CUTTING LATHE

DRILL CHUCKS are offered in three sizes, 0 to 3/16", 0 to 5/16", and 0 to 1/2". Drill chucks for use in turret attachment, or in collet held in headstock, are mounted on straight shanks 3/4" diameter by 1 1/8" long. Drill chucks for use in tailstock of lathe, or in headstock center chuck, are mounted on taper shanks. These drill chucks are of standard make, of improved type, with hardened jaws. They are strong and accurate. Drill chucks 0 to 1/8" on shank No. 4 P. & W. taper are offered for internal grinding attachment.

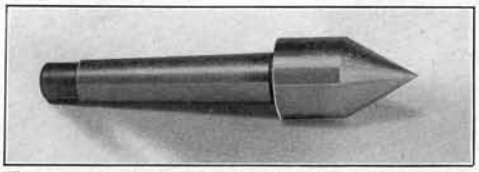

Fig. 31. **Male Center.** 60° included angle, shank Rivett special 3° taper. Furnished hard for tailstock and soft for headstock

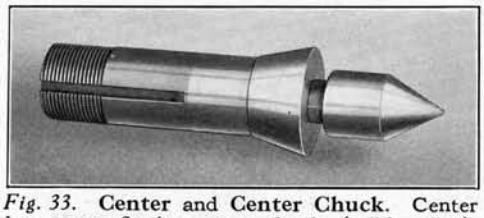

Fig. 33. **Center and Center Chuck.** Center has taper fit in center chuck (solid collet). Center chuck fits headstock spindle

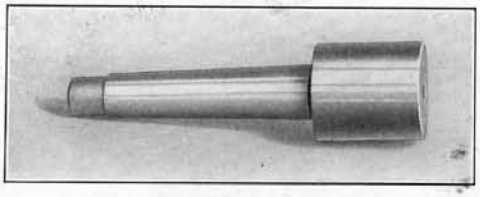

Fig. 35. **Blank Center.** Head is soft, 1" dia., 1 3/8" long and may be turned to desired form. Taper shank fits center chuck and tailstock spindle

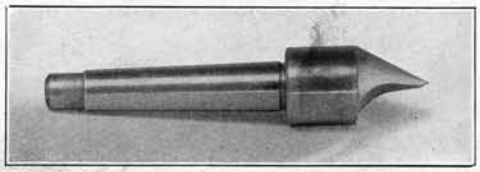

Fig. 37. **Half Male Center.** Head is hardened. Slabbed off to provide clearance for turning tool when facing ends of work. Also useful for external grinding

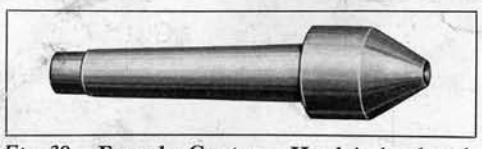

Fig. 39. **Female Center.** Head is hardened, and is ground to 60° external angle. The hole, 3/16" maximum diameter, is 60° included angle

Fig. 41. **Drill Plates** 2", 3", 4", 5", diameter

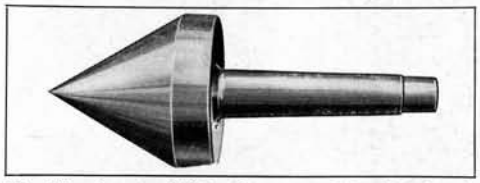

Fig. 32. **Large Male Center.** Head is hard, 1 1/2" dia. with 60° included angle. Useful for turning tubing or work with holes too large to run on standard centers

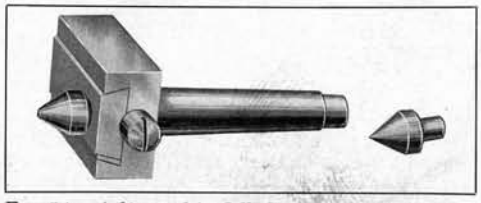

Fig. 34. **Adjustable Off-Center.** Center point is carried on slide with screw adjustment allowing maximum offset of 1/4". Furnished with removable male and female centers 1/2" diameter

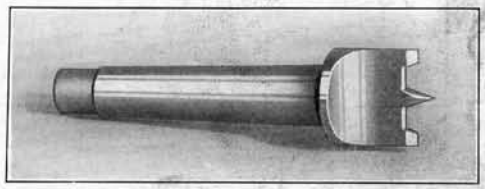

Fig. 36. **Spur Center.** Has conical center point and two knife edges. Useful for wood turning

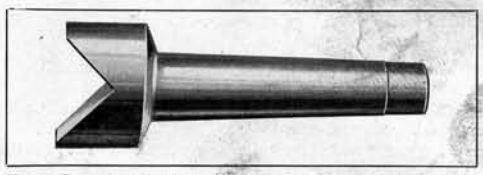

Fig. 38. **Solid V Center.** Head is 1 1/16" dia. and has groove 90° included angle 7/8" wide. Used in tailstock for holding cylindrical work when drilling and spotting to transverse center

Fig. 40. **Revolvable V Center.** Same as solid V center (Fig. 38) except head turns freely on shank, accommodating itself to position of work

DRILL PLATES are made in four sizes, 2", 3", 4" and 5" diameter, mounted on shanks to fit both tailstock spindle and headstock center chuck. The plates are cast iron and the shanks are steel, accurately ground. Used as a back support for work being drilled with a drill in the headstock. By fastening guide and stop strips to the plate, duplicate parts can be as quickly and accurately drilled as if jigged.

—[*page eleven*]—

For collets, step chucks, jaw chucks, etc. — See Rivett Bulletin 100-A

RIVETT 608 PRECISION BACK GEARED SCREW CUTTING LATHE

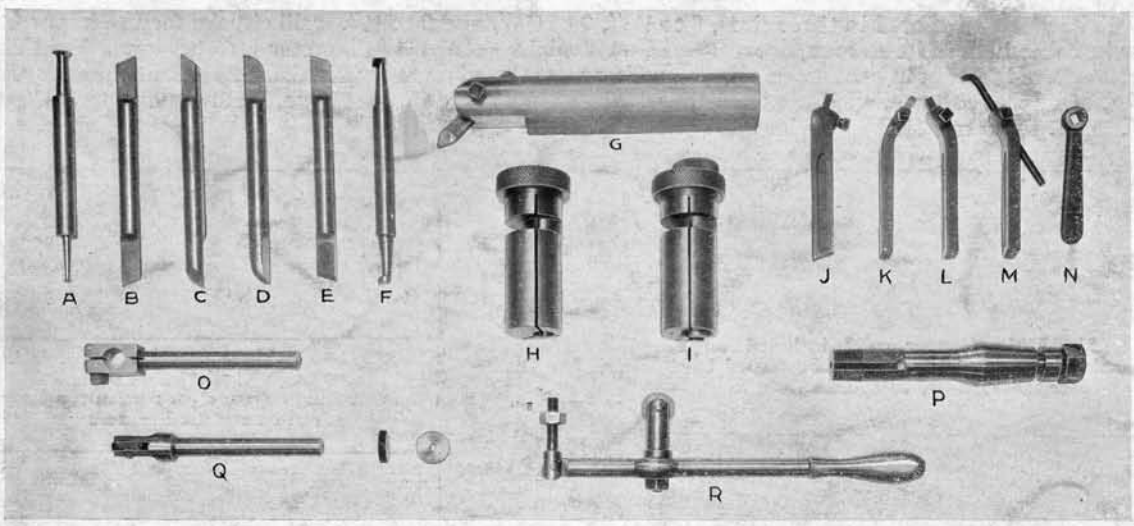

Fig. 42. **Tools and Tool Holders:** A to F inc., ½″ round for eccentric tool holder: A — internal threading; B — external threading; C — centering; D — right and left side turning; E — cutting-off; F — boring. G — bar holder for 5/16″ square tool bits, used in eccentric tool holder. H — eccentric tool holder for ½″ round tools. I — eccentric tool holder with sleeve for 5/16″ or 3/8″ square tool bits. J to L inc., tool holders for 3/16″ square tool bits: J — straight; K — left hand offset; L — right hand offset. M — boring (3/16″ round bar). N — wrench for tool holders. O — holder for internal threading tool for eccentric tool holder. P — arbor for milling attachments. Q — knurling tool for slide rest, with three knurls. R — knurling attachment for cutting-off and forming slide.

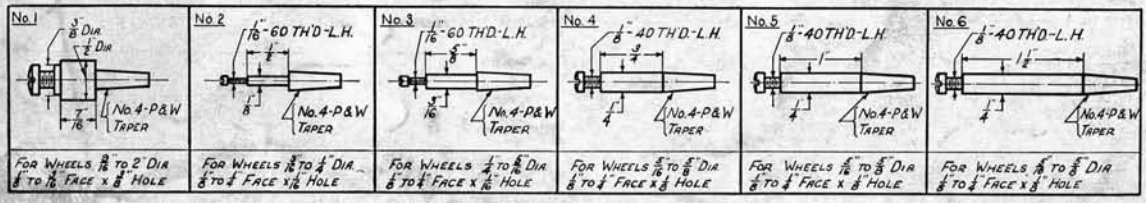

Fig. 43. **Grinding Wheel Arbors.** Fit internal grinding attachment spindle (Fig. 6).

Table A — Lathe Specifications

	4 N.S.	5C.
Swing over bed, dia.	8½″	8½″
Height, top of bed to center of spindle	4¼″	4¼″
Swing over compound swivel of slide rest, dia.	2⅝″	2⅝″
Swing over bottom slide of comp. slide rest, dia.	4⅜″	4⅜″
Swing over carriage, dia.	7½″	7½″
Length of bed	40″	40″
Distance between centers, tailstock flush	18″	16½″
Distance between centers, tailstock overhung	21″	19½″
Max. dia. round stock, held in jaw chuck, passed through spindle	11/16″	1⅛″
Max. dia. round hole in collet	⅝″	1″
Max. size square hole in collet	7/16″	23/32″
Max. size across flats hex. hole in collet	17/32″	⅞″
Diameters of steps of headstock cone pulley	3″	3⅝″
	3¾″	4⅜″
	4½″	5⅛″
Back gear reduction ratio, 1 to	6⅔″	6⅔″
Threads on headstock spindle nose: U. S. form ... outside dia.	1⅝″	2¼″
pitch	12	10
Diameter of tailstock spindle	1″	1″
Taper in mouth of tailstock spindle, special, approximate included angle	3°	3°
Diameter of taper hole at end of tailstock spindle	.541″	.541″
Travel of tailstock spindle	3¼″	3¼″
Travel of top slide of comp. slide rest	5½″	5½″
Travel of cross slide of comp. slide rest	4½″	4½″

Approximate shipping wts. and cubic measurements

608-P.A., P.B., P.C., or P.D., (two cases), net 300 lbs.; gross (Domestic) 400 lbs.; (Foreign) 480 lbs.; cu. ft. 16.

For overhead countershaft with supports, plank and guard, or Horizontal Safety Drive Countershaft, add to net wt., 150 lbs. and to gross wt., 200 lbs.; to cu. ft., 8.

Cabinet with jackshaft and A.C. motor, net 360 lbs.; gross (Domestic) 550 lbs.; (Foreign) 650 lbs.; cu. ft., 39.

Cabinet with speed box and A.C. motor, net 450 lbs.; gross (Domestic) 650 lbs.; (Foreign) 750 lbs.; cu. ft., 39.

Table B — Lathe Spindle Speeds

SPINDLE SPEEDS - 608 LATHE - 1750 R.P.M. MOTOR							
SPEED BOX MOTOR DRIVE				COUNTERSHAFT DRIVE			
4 N.S. LATHE		5C. LATHE		4 N.S. LATHE		5C. LATHE	
BACK GEARED	OPEN BELT	BACK GEARED	OPEN BELT	BACK GEARED	OPEN BELT	BACK GEARED	OPEN BELT
45	300	39	260	51	340	45	300
60	395	50	330	71	475	61	405
80	535	65	430	103	685	85	565
135	900	115	775	116	775	102	680
180	1180	150	1000	163	1090	139	935
240	1600	195	1295	234	1560	194	1290

Table C — Thread Cutting

PRICE LIST REFERENCE	PITCH OF LEAD SCREW	STYLE OF GEARING	THREADS CUT WITH ST'D. SET OF GEARS*		SCREW TH'D. SYSTEMS
			NO.	RANGE OF PITCHES	
PA	1/8 INCH	CHANGE	35	10 TO 100 PER INCH	AMERICAN
PB	1/8 INCH	QUICK CHANGE GEAR BOX	33	10 TO 144 PER INCH	AMERICAN
PC	.3 M.M.	CHANGE	17	0.15 TO 2.50 M.M.	BRITISH ASSOCIATION FRENCH & INTERNAT.
PD	.3 M.M.	QUICK CHANGE GEAR BOX	46	0.15 TO 2.50 M.M.	BRITISH ASSOCIATION FRENCH & INTERNAT.

*Standard set of gears provides for cutting most frequently used screw threads. Intermediate and finer threads may be cut by use of additional change gears. With translating gear, threads to metric measurement may be cut on lathe with 1/8″ pitch lead-screw and threads to inch measurement cut on metric lathe. Complete data shown in gear tables furnished on request.