

**WAR DEPARTMENT  
MAINTENANCE MANUAL  
AND PARTS CATALOG**

**LATHE, ENGINE EXTENSION GAP  
ELECTRIC MOTOR POWERED  
MODEL HK 14" - 28"**

**FAY & SCOTT**

**DEXTER, MAINE, U. S. A.**

**MARCH 1, 1943**





MANUFACTURED  
BY

**FAY & SCOTT**

DEXTER, ME.  
U. S. A.



## **H K LATHES**

H K LATHES are designed to supply the demand for a machine of maximum strength and durability, combined with minimum weight. The former conditions have been met by the proper distribution of metal, determined by a careful study of the stresses to which a lathe is subjected under the most trying conditions; the latter by using the highest grade of material; bringing out hundreds of duplicate parts by means of fixtures and special machine tools, in a well systematized shop, by a corps of skilled mechanics.

When ordering replacement parts and in all correspondence pertaining to the lathe, it is important that the serial or identification number be mentioned. The serial or identification number is stamped on the upper bed between the "V" ways at the tailstock end of the lathe.

**FAY & SCOTT**

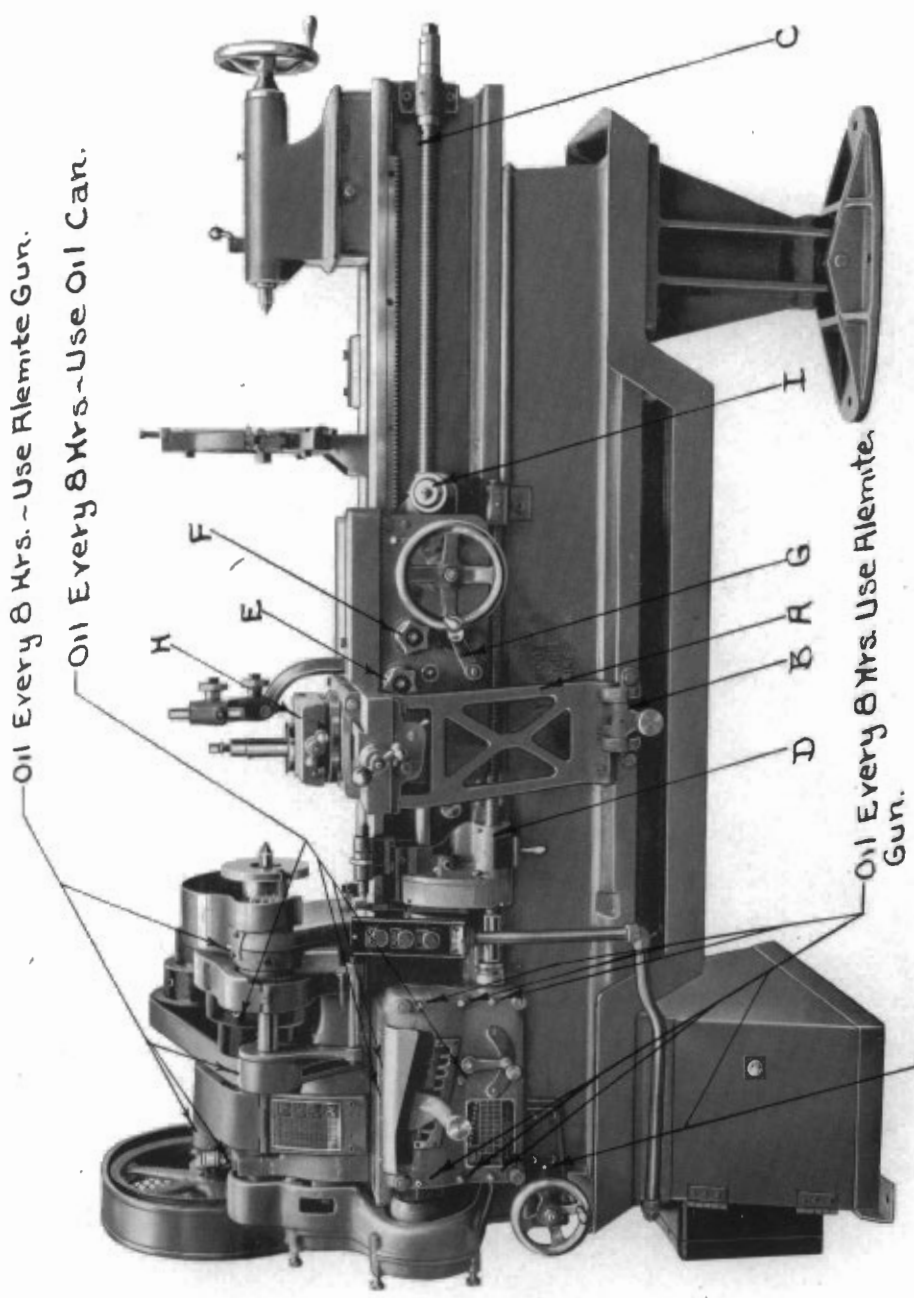
**DEXTER, MAINE, U. S. A.**



## SPECIFICATIONS

### Model HK - 14"-28" Engine Extension Gap Lathe

Swing Over Bed (Gap Closed)	14½ Max.
Swing Over Bed (Gap Open)	30" Max.
Swing Over Carriage	9½ Max.
Distance between Centers	58" Max.
Distance Spindle Nose to end of Gap	19" Max.
Hole through Headstock Spindle	1⅛"
Headstock Center Taper	#4 Morse Taper
Dia. Spindle Nose	2¼
Threads per inch on Spindle Nose	8 T.P.I.
Headstock Bearing, Front	2" x 4"
Headstock Bearing, Rear	1¾" x 2¼"
Spindle Speed Range	8 RPM to 500 RPM
Width of Belt	2"
Back Gear Ratio	8 to 1
Diameter of Tailstock Spindle	1½"
Travel of Tailstock Spindle	5½"
Length of Carriage on Bed	18"
Compound Rest Travels	3¼"
Tool Post Capacity	⅝" x 1⅜"
Lead Screw Threads	1"-5 acme L.H.
No. of Thread Changes	75 Eng. 17 Metric
Feed Range (225 changes)	.0055"-.232"
Center Rest Capacity Range	½" to 4½"
Weight of Lathe with Motor Drive, 1½ H.P. Motor, Taper Attachment, approximately	2,510 lbs.
Weight Skidded and Crated, approximately	2,760 lbs.



Oil Every 8 Hrs. - Use Alemite Gun.  
 Oil Every 8 Hrs. - Use Oil Can.

Oil Every 8 Hrs. Use Alemite Gun.

Two Holes.

PLATE I

Oil Every 8 Hrs. - Use Alemite Gun.

Oil Every 8 Hrs. - Use Oil Can.

Remove Gear Case Cover  
Oil At Five Places  
Every 8 Hrs.  
Use Alemite Gun.

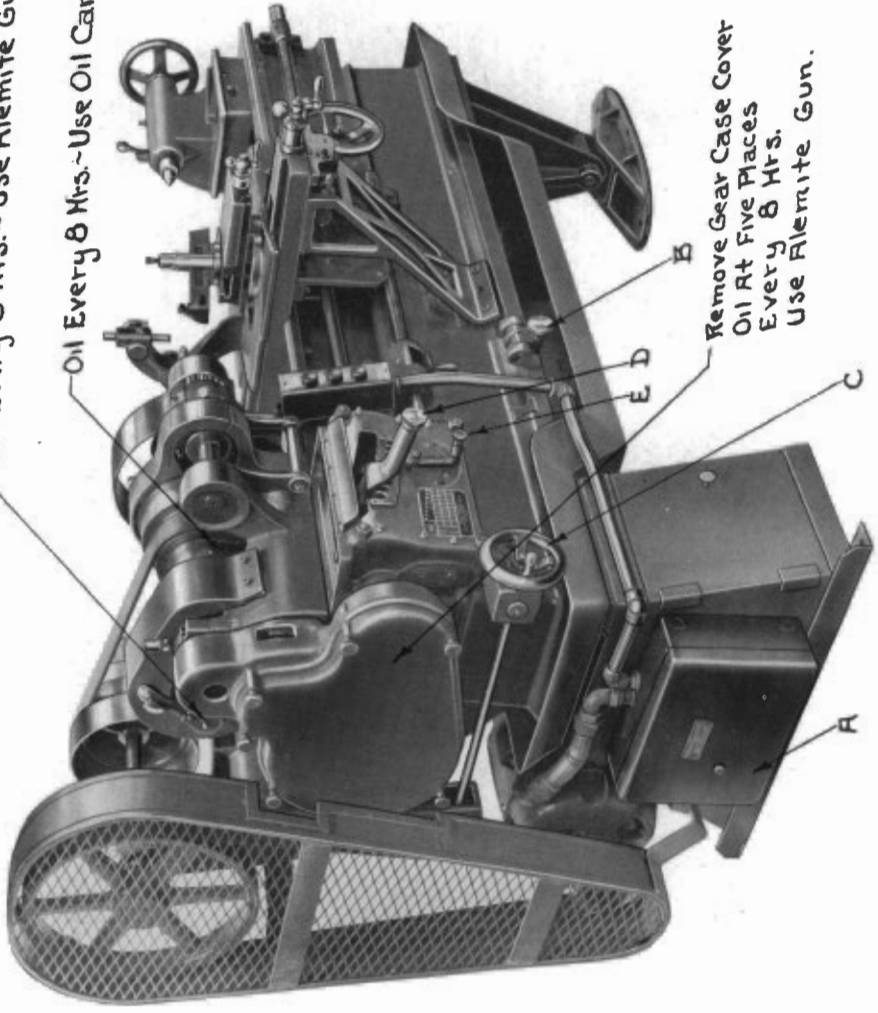
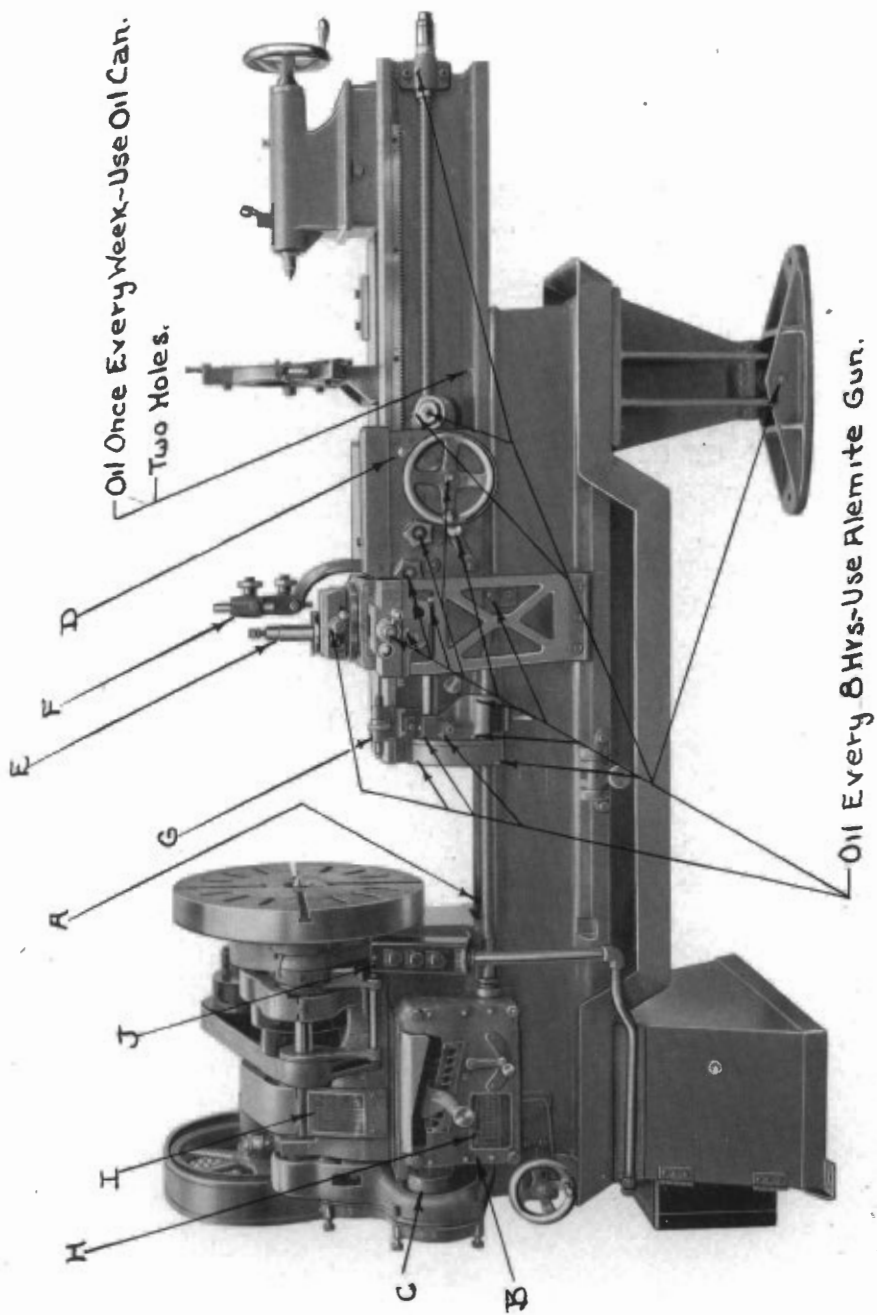


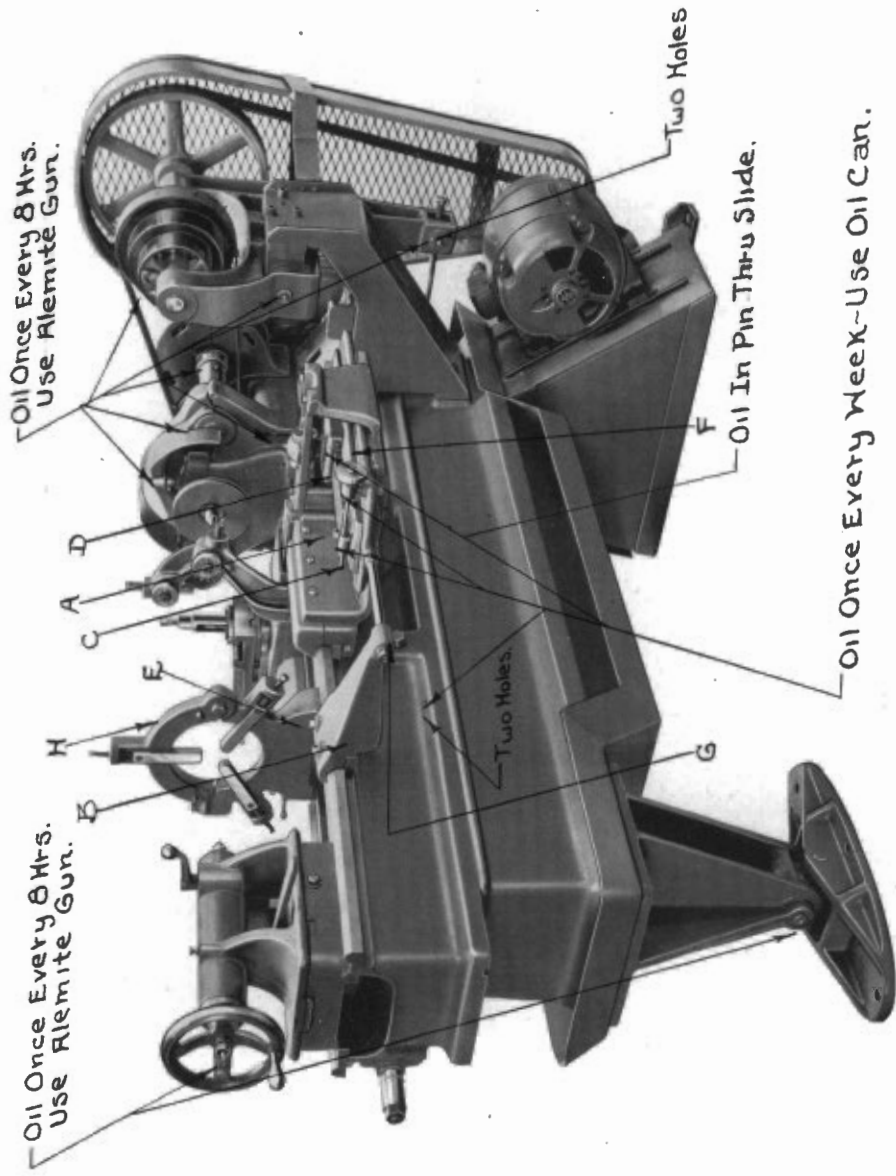
PLATE 2



Oil Once Every Week--Use Oil Can.  
Two Holes.

Oil Every 8 Hrs--Use Alemite Gun.

PLATE 3





## SETTING UP

When installing a Fay & Scott lathe, one must bear in mind that it is a precision tool and utmost care must be taken to avoid breakage or excessive strain. The lathe should remain on the skids provided, until located permanently, and the use of ropes in place of chains is recommended for hoisting.

When installing, extreme care must be taken to assure that the lathe is level in both directions. When installing in a mobile unit, the operator should endeavor to have the lathe as level as possible before proceeding to operate.

The carriage extension is supported by a bracket (Plate 1-A) which is in turn clamped to the lower bed by means of a special hand operated clamp (Plate 1-B). Care must be taken that this clamp is secured (Plate 1-B) before moving the lathe, and released (Plate 2-B) before attempting any longitudinal movement of the carriage.

The motor supplied is a  $1\frac{1}{2}$  H.P., single phase, 60 cycle, reversing type and it is only necessary to connect the two power lines to stations 1 and 2 in the switch box, both clearly marked.

## LUBRICATION

The lathe is completely equipped with alemite ball check oil fittings, with the exception of a few places as shown in Plates 1-2-3-4, which require oiling by means of an oil can. An alemite oil gun is supplied as standard equipment, and an SAE #20 oil or equivalent is recommended. Plates 1-2-3-4 clearly show the points of oiling and maximum elapsed time between. All ways should be well oiled by wiping with oil saturated waste. All lead and feed screws should be kept clean and well oiled at all times.

### GREASE LUBRICATED MOTOR BALL BEARINGS

When the ball bearings are mounted or removed, pressure should be applied with care to avoid damage.

The grease supplied in the bearings at the factory is sufficient to last approximately one year under most operating conditions.

These ball-bearing motors are equipped with pressure gun grease fittings and pressure relief plugs which, if used according to instructions, provide convenience in greasing. Grease should be added as often as operating conditions demand with a hand-operated (not pedal or air-operated) pressure gun as follows:

1. Wipe clean the pressure gun fitting and the regions around the fitting and relief plug.
2. Remove relief plug.
3. Free the relief hole on any hardened grease.
4. Add grease, with the motor running, until it is expelled through the relief hole. If fittings are not safely accessible with the motor running,

## TOOL POST

The tool post (Plate 3-E) is of the conventional collar and wedge type and has a capacity for holding  $\frac{5}{8}$ " x  $1\frac{3}{8}$ " tools.

## COMPOUND REST

The compound rest (Plate 1-H) is of the conventional type, consisting of the top, middle and base — the middle being graduated on all four quadrants from  $0^\circ$  to  $90^\circ$ .

The compound rest top screw collar is graduated in 100 equal divisions, each division representing a .001" movement of the compound rest top.

## FOLLOW REST

The follow rest (Plate 3-F) is especially designed to accept work ranging from  $\frac{1}{4}$ " to 4" in diameter. Provisions are made for attaching to the right hand side of the carriage saddle.

## CENTER REST

The center rest (Plate 4-H) is of the conventional type, designed to accept work from  $\frac{1}{2}$ " to  $4\frac{1}{2}$ " in diameter by the use of two different sets of jaws.

## MICROMETER CARRIAGE STOP

The micrometer carriage stop (Plate 3-G) is used to accurately indicate point for stopping the carriage when turning, facing or boring. Both ends of the stop screw are hardened and attachment may be used on either side of carriage.

## THREAD INDICATOR

The thread indicator is attached to the tailstock end of the apron (Plate 1-I), which is arranged with the worm gear that merges with the lead screw. The dial is graduated to permit the operator to close the split nut on the lead screw and start each cut at the same point.

## TAPER ATTACHMENT

The taper attachment (Plate 4-F) is secured to the back of the carriage, travels with it, and is always in position ready to use and is available the full length of the bed. The swivel plate (Plate 4-C) is graduated in degrees and inches, facilitating quick and accurate adjustments from 0" to 3" taper per foot and  $0^\circ$  to  $7\frac{1}{2}^\circ$  each way from center line, permitting the turning of a taper 12" long.

*Directions for operating* — When turning tapers, loosen swivel plate screws (Plate 4-A); then set swivel plate (Plate 4-C) by means of adjusting knob (Plate 4-D) to graduations, increasing to required taper per foot or taper in degrees. Third, tighten screws (Plate 4-A-E). Bed clamp (Plate 4-B) may be clamped at any position along the bed for moving lower slide (Plate 4-F) in relation to the work. For turning parallel without the use of the taper attachment, simply loosen bed clamp binder screws (Plate 4-E).

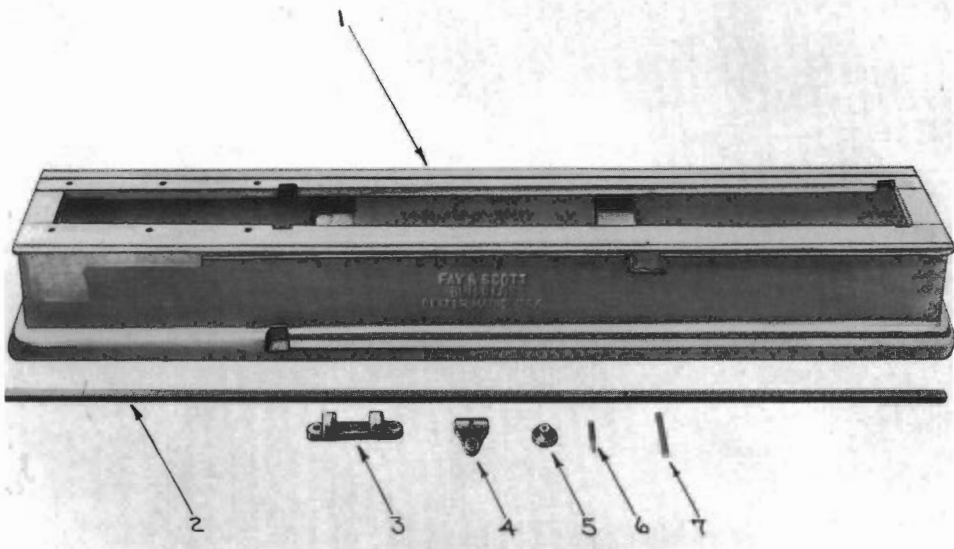


PLATE 5

**LOWER BED, ASSEMBLY A (Plate - 5)**

Item	Part Name	Part No.	Quantity
1.	Lower Bed . . . . .	HK 1145	1
2.	Lower Bed Key . . . . .	HK 1201	1
3.	Carriage Extension Support Arm Bracket . . . . .	HK 1057	1
4.	Carriage Extension Support Clamp . . . . .	HK 1056	1
5.	Carriage Extension Support Clamp Knob . . . . .	HK 1340	1
6.	Carriage Extension Support Clamp Screw . . . . .	HK 1339	1
7.	Carriage Extension Support Clamp Shaft . . . . .	HK 1338	1
	Hex Head Cap Screws $\frac{1}{2}$ -13 x $1\frac{3}{4}$ . . . . .	Comm.*	2
	Hex Head Cap Screws $\frac{1}{2}$ -13 x $1\frac{1}{2}$ . . . . .	Comm.*	6
	Hollow Head Cap Screws $\frac{1}{4}$ -20 x $\frac{3}{4}$ . . . . .	Comm.*	4
	Hollow Head Set Screw Cup Point $\frac{1}{4}$ -28 x $\frac{1}{4}$ . . . . .	Comm.*	1

\* Not shown.

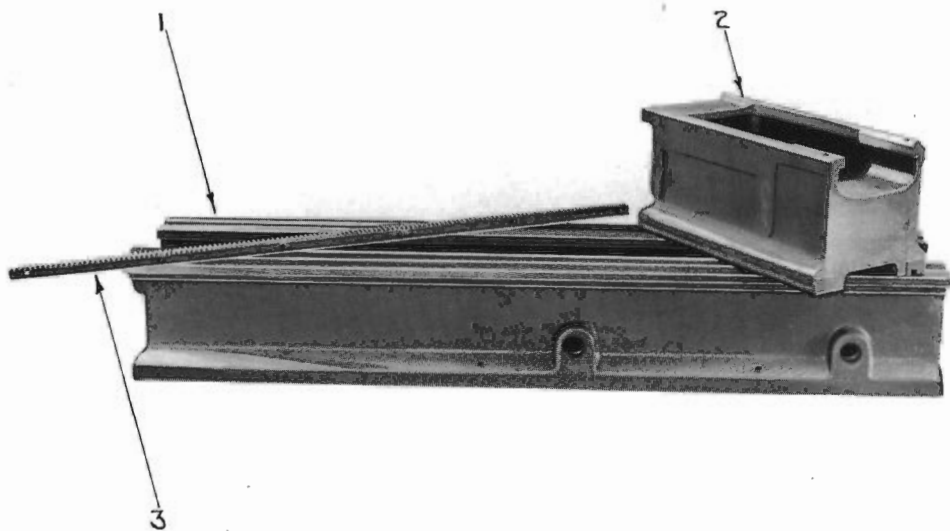


PLATE 6

**UPPER BED, ASSEMBLY A (Plate - 6)**

Item	Part Name	Part No.	Quantity
1.	Upper Bed (Long Section)	HK 1000	1
2.	Upper Bed (Short Section)	HK 1000	1
3.	Bed Rack	H 1271	1
	Rack Dowels	H 1411*	4
	Hollow Head Cap Screw $\frac{7}{16}$ - 14 x $2\frac{1}{4}$	Comm.*	1
	Hollow Head Cap Screw $\frac{7}{16}$ - 14 x $1\frac{3}{4}$	Comm.*	1
	Hollow Head Cap Screws $\frac{5}{16}$ - 18 x 1	Comm.*	6
	Bowen Oilers #5 (56)	Comm.*	4

\* Not shown.

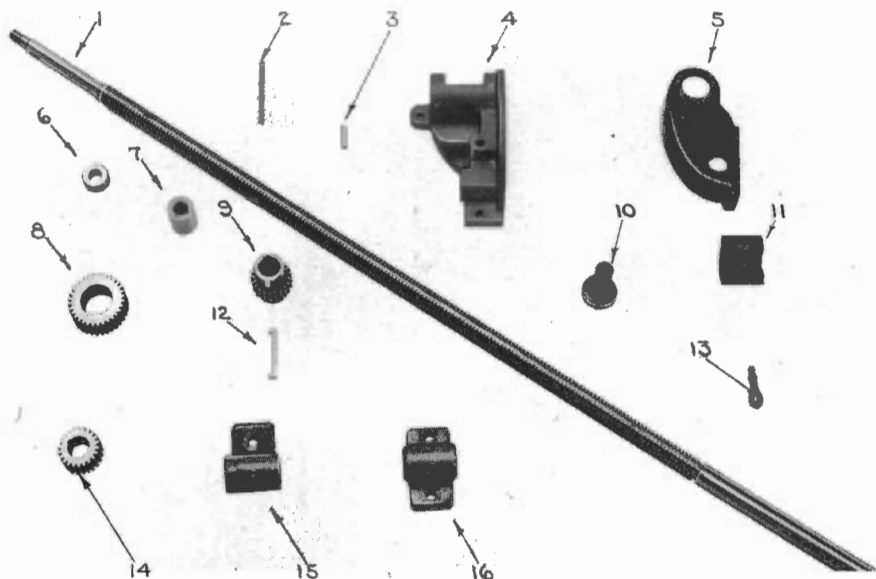


PLATE 7

## LEAD SCREW, ASSEMBLY A (Plate - 7)

Item	Part Name	Part No.	Quantity
1.	Lead Screw	HK 1216	1
2.	Bed Moving Nut Shaft	HK 1330	1
3.	Lead Screw Bearing Dowel	HK 1415	1
4.	Lead Screw Bearing Front	HK 1003	1
5.	Lead Screw Drive Gear Guard	HK 1149	1
6.	Lead Screw Washer	HK 1007	1
7.	Lead Screw Collar	HK 1006	1
8.	Lead Screw Intermediate Gear	HK 1346	1
9.	Feed Rod Gear (Sliding)	HK 1347	1
10.	Lead Screw Intermediate Gear Stud	HK 1252	1
11.	Bed Moving Nut	HK 1146	1
12.	Feed Rod Gear Key	HK 1272	1
13.	Bed Moving Nut Handle	HK 1331	1
14.	Lead Screw Gear	HK 1345	1
15.	Feed Rod Bearing	HK 1101	1
16.	Lead Screw Bearing (Rear)	HK 1004	1
	Hollow Head Cap Screws $\frac{1}{8}$ - 14 x $1\frac{1}{4}$	Comm.*	4
	Hollow Head Cap Screw $\frac{1}{8}$ - 14 x $3\frac{1}{2}$	Comm.*	1
	Hollow Head Cap Screws $\frac{1}{4}$ - 20 x $1\frac{3}{4}$	Comm.*	3
	Hollow Head Set Screw 10 - 24 x $\frac{1}{4}$	Comm.*	1
	Hex Nut (Case Harden) $\frac{5}{8}$ - 11	Comm.*	1
	Woodruff Key #607	Comm.*	1
	Woodruff Key #606	Comm.*	1
	Alemite Fittings #1645	Comm.*	7
	Alemite Fitting #1646	Comm.*	1
	McGill Thrust Bearings #B-5	Comm.*	2
	McGill Roller Bearing #MO-16	Comm.*	1

\* Not shown.

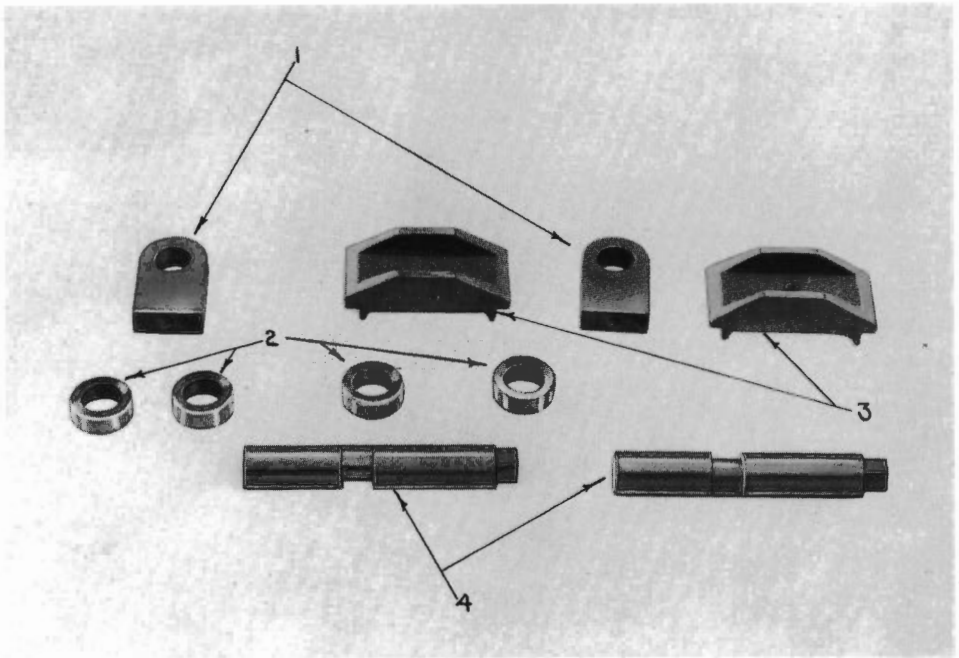


PLATE 8

**BED BINDER, ASSEMBLY A (Plate - 8)**

Item	Part Name	Part No.	Quantity
1.	Bed Binder Blocks . . . . .	HK 1036	2
2.	Bed Binder Shaft Collars . . . . .	HK 1409	4
3.	Bed Binder Straps . . . . .	HK 1035	2
4.	Bed Binder Shafts . . . . .	HK 1250	2
	Hex Cap Screws $\frac{5}{8}$ -11 x $2\frac{1}{2}$ . . . . .	Comm.*	2
	Hollow Head Set Screws Cup Point $\frac{3}{8}$ -16 x $\frac{3}{8}$ . . . . .	Comm.*	4

\* Not shown.

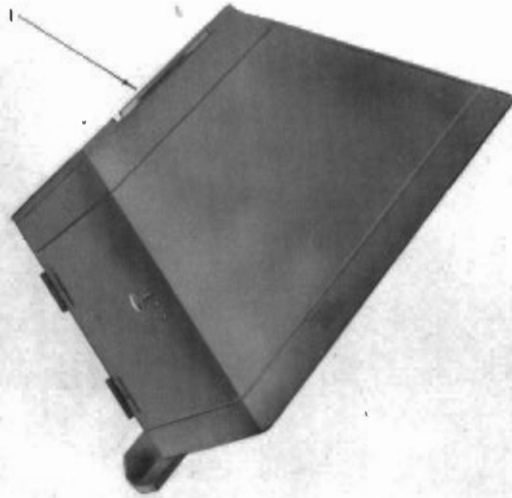


PLATE 9

**HEAD END LEG, ASSEMBLY AX (Plate - 9)**

Item	Part Name	Part No.	Quantity
1.	End Leg Head . . . . .	HKS 100	1
	Hollow Head Cap Screws $\frac{1}{2}$ - 13 x $1\frac{1}{2}$ . . . . .	Comm.*	4
	Hollow Head Cap Screws $\frac{3}{8}$ - 16 x $2\frac{1}{4}$ . . . . .	Comm.*	4
	Hex Nuts $\frac{3}{8}$ - 16 . . . . .	Comm.*	4
	Split Lock Washers $\frac{1}{2}$ " . . . . .	Comm.*	4
	Split Lock Washers $\frac{3}{8}$ " . . . . .	Comm.*	4
	Plain Washers $\frac{3}{8}$ " . . . . .	Comm.*	4

\* Not shown.

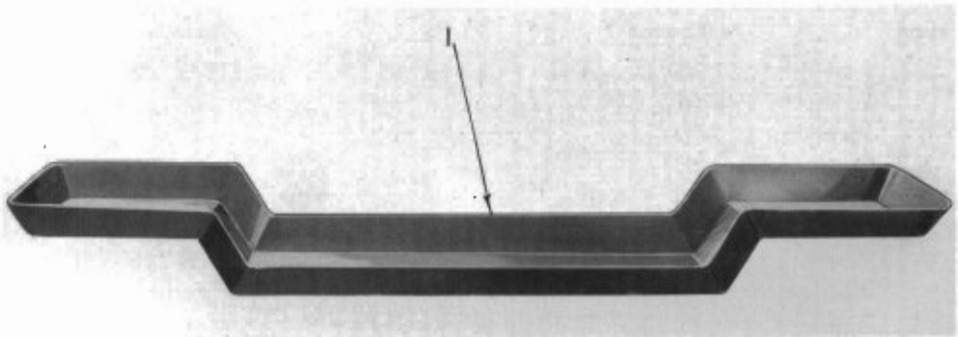


PLATE 10

**CHIP PAN, ASSEMBLY AX (Plate - 10)**

Item	Part Name	Part No.	Quantity
1.	Chip Pan . . . . .	HKS 123	1

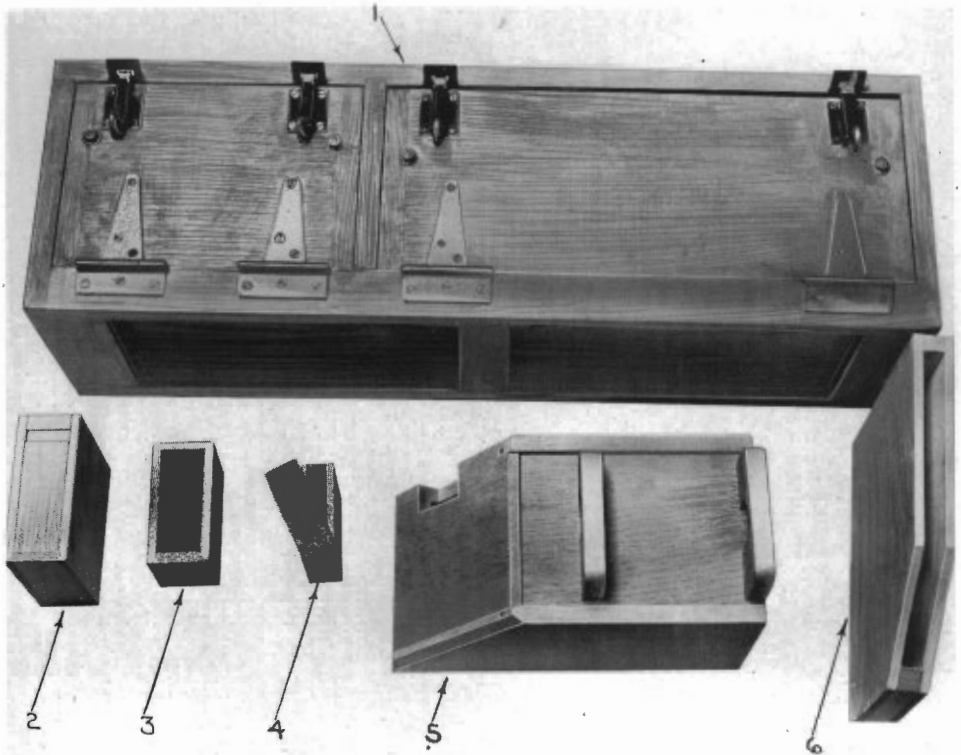


PLATE 11

**ACCESSORY BOXES, ASSEMBLY AX (Plate - 11)**

Item	Part Name	Part No.	Quantity
1.	Tool Box . . . . .	HKS 139	1
2.	Accessory Box #1 . . . . .		1
3.	Accessory Box #2 . . . . .		1
4.	Accessory Box #3 . . . . .		1
5.	Accessory Box #4 . . . . .		1
6.	Accessory Box #5 . . . . .		1
	Hooks . . . . .	HKS 140*	4
	Wrought Steel Transom bolts, #2 Cat. No. 1165 . . . . .	Comm.*	4
	Wrought Steel Hinges (T) Plain 4" Stanley #908 . . . . .	Comm.*	4
	Jack Chain #5 36" . . . . .	Comm.*	1
	"S" Hooks #11 Ga. . . . .	Comm.*	8
	Nut Eye Bolts (Plain Eye #200) 1/4 x 2" . . . . .	Comm.*	8
	Plain Washers 1/4" . . . . .	Comm.*	16
	Plain Washers 5/16" . . . . .	Comm.*	8
	Hex Nuts 5/16"-18 . . . . .	Comm.*	8

\* Not shown.



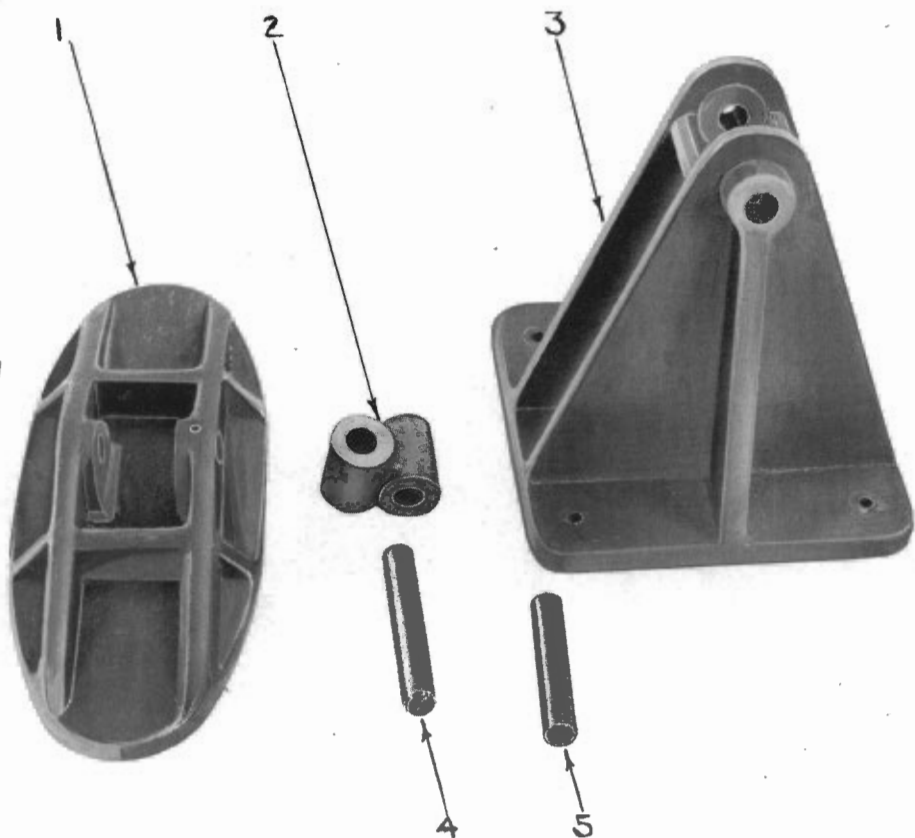


PLATE 12

## END LEG, ASSEMBLY AX (Plate - 12)

Item	Part Name	Part No.	Quantity
1.	End Leg Base (Tail)	HKS 102	1
2.	End Leg Joint (Tail)	HKS 103	1
3.	End Leg Top (Tail)	HKS 101	1
4.	End Leg Long Pin (Tail)	HKS 105	1
5.	End Leg Short Pin (Tail)	HKS 104	1
	Alemite Fittings #1645	Comm.*	2
	Split Lock Washers $\frac{1}{2}$ "	Comm.*	4
	Hex Head Cap Screws $\frac{1}{2}$ -13 x $1\frac{3}{4}$	Comm.*	4
	Hollow Head Set Screws Dog Point $\frac{3}{8}$ -16 x $\frac{3}{4}$	Comm.*	2

\* Not shown.



PLATE 13

**ELECTRICAL PARTS, ASSEMBLY AX (Plate - 13)**

Item	Part Name	Part No.	Quantity
1.	"Woods" Light Duty "A" Sheave 3A-3.4 x 1- $\frac{1}{4}$ x $\frac{1}{8}$		1
2.	Motor Conduit . . . . .		1
3.	Motor, General Electric, Type KC-225-1 $\frac{1}{2}$ H.P. . . . .		1
4.	Remote Control Conduit . . . . .		1
5.	"Gates" Ropes-90A-(3 Matched) . . . . .		1
6.	Remote Control Switch Bracket . . . . .	HKS 132	1
7.	Remote Control Switch (General Electric) C.R.-2943-A300A . . . . .		1
8.	Control Box (General Electric) C.R.-7009-B 31JV		1
	Hex Head Cap Screws $\frac{1}{4}$ -20 x $\frac{1}{2}$ . . . . .	Comm.*	2
	Round Head Cap Screws $\frac{1}{4}$ -20 x $\frac{1}{2}$ . . . . .	Comm.*	2

\* Not shown.

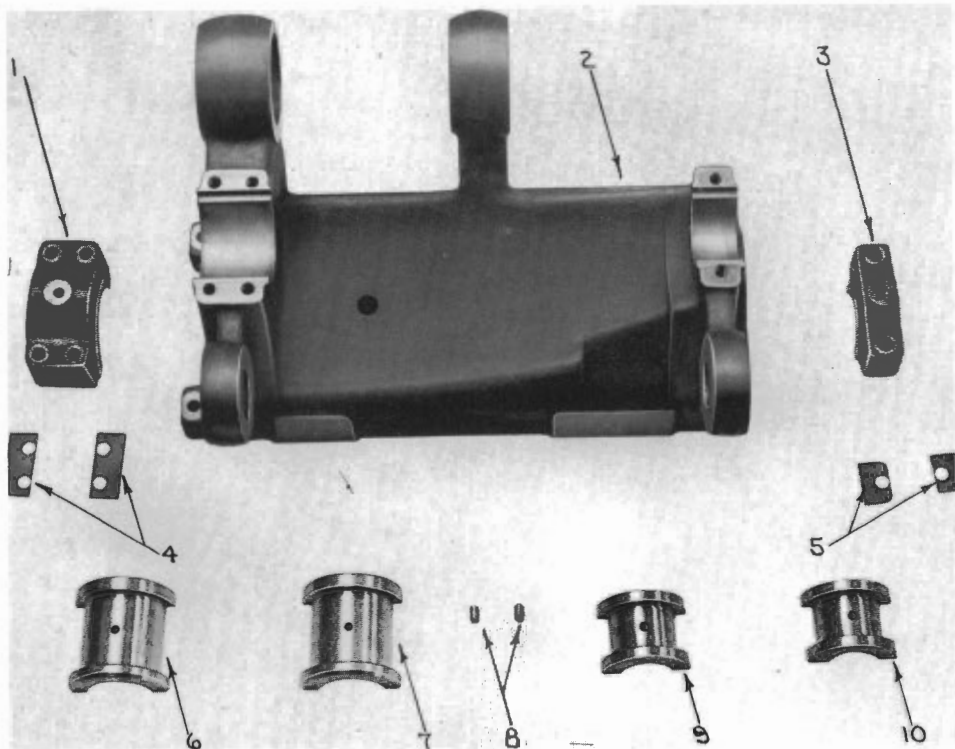


PLATE 14

## HEADSTOCK, ASSEMBLY B (Plate - 14)

Item	Part Name	Part No.	Quantity
1.	Headstock Cap (Large)	H 1137	1
2.	Headstock	HK 1105	1
3.	Headstock Cap (Small)	H 1138	1
4.	Headstock Shims (Large)	H 1285	2
5.	Headstock Shims (Small)	H 1286	2
6.	Headstock Box (Front)	H 1110 A	1
7.	Headstock Box (Front)	H 1110 B	1
8.	Headstock Box Dowels	H 1351	2
9.	Headstock Box (Rear)	H 1099 A	1
10.	Headstock Box (Rear)	H 1099 B	1
	Hex Head Cap Screws $\frac{7}{16} - 14 \times 2\frac{1}{2}$	Comm.*	6
	Hollow Head Cap Screws $\frac{7}{16} - 14 \times 1\frac{3}{4}$	Comm.*	2
	Hollow Head Set Screws Cup Point $\frac{7}{16} - 14 \times \frac{3}{4}$	Comm.*	2
	Alemite Fittings #1635	Comm.*	2
	Alemite Fittings #1645	Comm.*	2

\* Not shown.

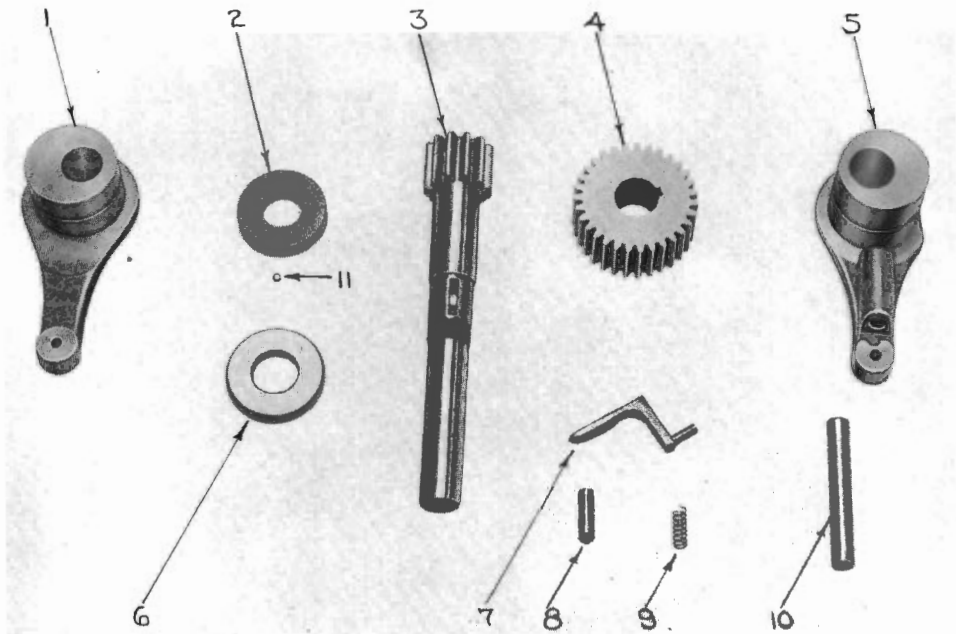


PLATE 15

### TRIPLE GEAR, ASSEMBLY B (Plate - 15)

Item	Part Name	Part No.	Quantity
1.	Headstock Triple Gear Eccentric Bushing Lever Left	HK 1125	1
2.	Headstock Triple Gear Check Nut . . . . .	HK 1133	1
3.	Headstock Triple Gear Pinion Shaft . . . . .	HK 1208	1
4.	Headstock Triple Gear . . . . .	HK 1126	1
5.	Headstock Triple Gear Eccentric Bushing Lever Right	HK 1124	1
6.	Headstock Triple Gear Pinion Washer . . . . .	HK 1131	1
7.	Headstock Triple Gear Lock Lever . . . . .	HK 1136	1
8.	Headstock Triple Gear Lock Pin . . . . .	HK 1296	1
9.	Headstock Triple Gear Lock Pin Spring . . . . .	HK 1300	1
10.	Headstock Eccentric Handle . . . . .	HK 1210	1
11.	Step for Triple Gear Lock Nut . . . . .	HK 1410	1
	Hollow Head Cap Screws $\frac{3}{8}$ - 16 x $1\frac{1}{2}$ . . . . .	Comm.*	2
	Hollow Head Set Screw $\frac{5}{8}$ - 18 x $\frac{1}{2}$ . . . . .	Comm.*	1
	Hollow Head Set Screw $\frac{5}{16}$ - 18 x $\frac{5}{8}$ . . . . .	Comm.*	1
	Hollow Head Set Screw Cup Point $\frac{1}{4}$ - 28 x $\frac{1}{4}$ . . . . .	Comm.*	1
	Woodruff Key #1011 . . . . .	Comm.*	1

\* Not shown.

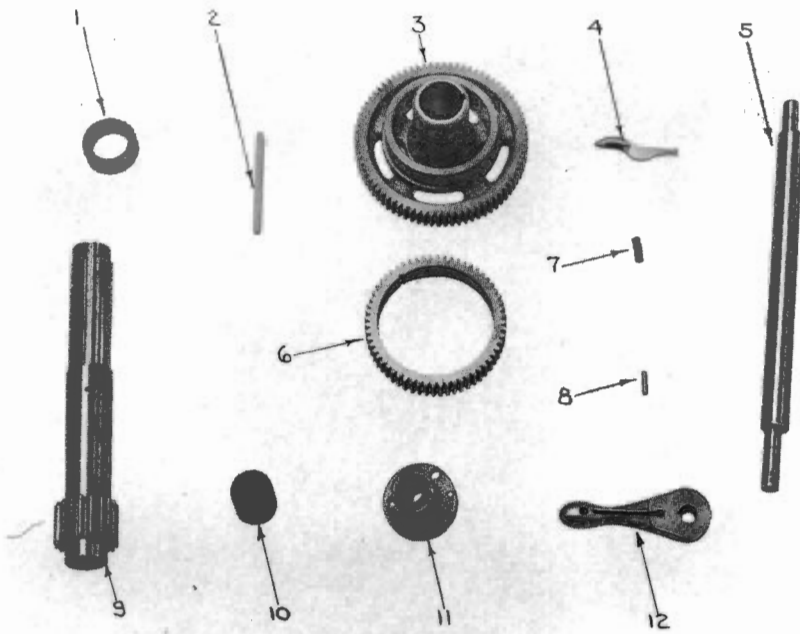


PLATE 16

## HEADSTOCK BACK GEAR, ASSEMBLY B (Plate - 16)

Item	Part Name	Part No.	Quantity
1.	Headstock Back Gear Quill Collar	H 1119	1
2.	Back Gear Quill Key	H 1403	1
3.	Headstock Back Gear	H 1112	1
4.	Headstock Back Gear Lever Pawl	H 1114	1
5.	Headstock Back Gear Shaft	H 1202	1
6.	Headstock Back Gear Ring Gear	H 1108	1
7.	Headstock Back Gear Lock Pin	H 1203	1
8.	Back Gear Flanged Bushing Pin	HK 1406	1
9.	Headstock Back Gear Quill	H 1113	1
10.	Back Gear Bushing (Plain)	H 1117	1
11.	Headstock Gear Bushing (Flanged)	H 1115	1
12.	Headstock Back Gear Lever	H 1116	1
	Headstock Back Gear Pin Spring	H 1206*	1
	Woodruff Key #808	Comm.*	1
	Woodruff Key #505	Comm.*	1
	Woodruff Key #404	Comm.*	1
	Taper Pin #1 x 1 long	Comm.*	1
	Alemite Fittings #1645	Comm.*	3
	Socket Head Set Screw Cone Point $\frac{3}{8}$ - 16 x $\frac{3}{4}$	Comm.*	1
	Socket Head Set Screws Cone Point $\frac{1}{4}$ - 20 x $\frac{7}{16}$	Comm.*	3

\* Not shown.

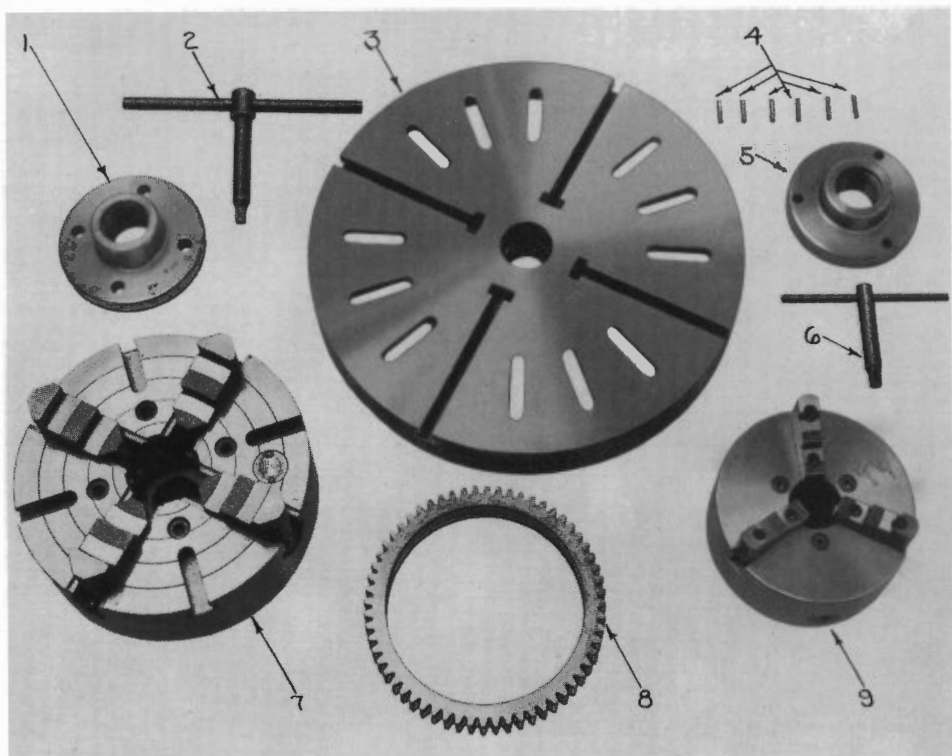


PLATE 17

## FACE PLATES AND CHUCKS, ASSEMBLY B (Plate - 17)

Item	Part Name	Part No.	Quantity
1.	Chuck Face Plate (Independent 4-Jaw) . . . . .	HKS 130	✓ 1
2.	Wrench for Four-Jaw Chuck . . . . .	Comm.	1
3.	Face Plate (Intermediate) 20'' . . . . .	HK 1107	1
4.	Headstock Triple Gear Ring Gear Dowels . . . . .	HK 1350	6
5.	Chuck Face Plate (Universal 3-Jaw) . . . . .	HKS 131	1
6.	Wrench for Three-Jaw Chuck . . . . .	Comm.	1
7.	Chuck (Independent 4-Jaw) . . . . .	Comm.	1
8.	Headstock Triple Gear Ring Gear . . . . .	HK 1114	1
9.	Chuck (Universal 3-Jaw) . . . . .	Comm.	1

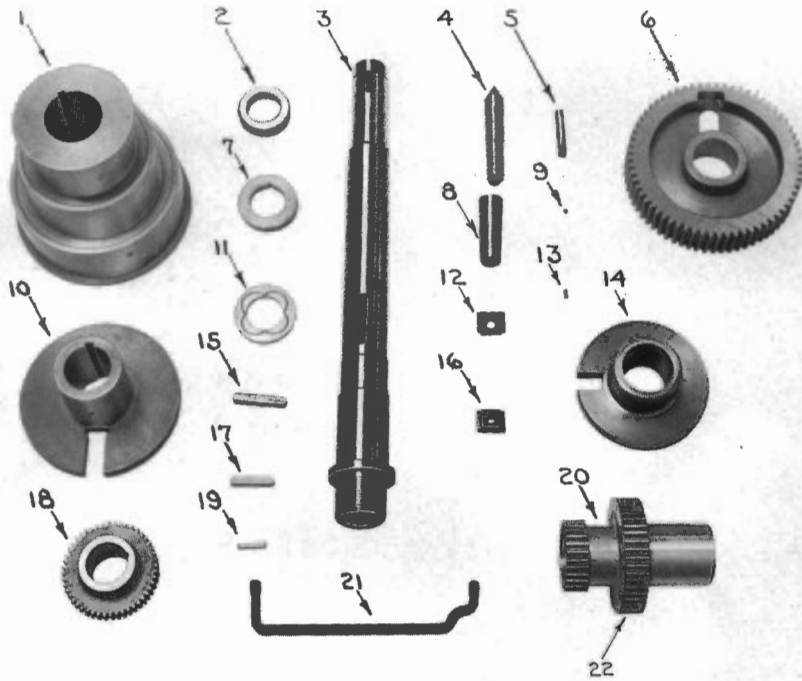


PLATE 18

**HEADSTOCK, ASSEMBLY B (Plate - 18)**

Item	Part Name	Part No.	Quantity
1.	Headstock Cone Pulley	HK 1120	1
2.	Headstock Spindle Check Nut	H 1111	1
3.	Headstock Spindle	HK 1200	1
4.	Headstock Center	H 1211	1
5.	Cone Pulley Oil Tube	HK 1279	1
6.	Headstock Main Gear	HK 1118	1
7.	Headstock Spindle Thrust Washer	H 1205	1
8.	Headstock Spindle Collet	H 1212	1
9.	Step for Headstock Spindle Lock Nut	H 1404	1
10.	Headstock Spindle Driving Disc	HK 1122	1
11.	Headstock Spindle Thrust Washer	H 1121	1
12.	Headstock Main Gear Lock Nut (Top)	HK 1209	1
13.	Headstock Spindle Dutchman	H 1338	1
14.	Headstock Face Plate (6")	H 1109	1
15.	Headstock Spindle Key	H 1335	1
16.	Headstock Main Gear Lock Nut (Bottom)	HK 1292	1
17.	Cone Pinion Key	H 1350	1
18.	Headstock Spindle Feed Gear	H 1127	1
19.	Headstock Spindle Key	H 1336	1
20.	Headstock Cone Pinion	H 1123	1
21.	Headstock Main Gear Lock Nut Wrench	HK 1293	1
22.	Headstock Main Gear Shroud	H 1251	1
	Pipe Plug for Headstock Main Gear	HK 1417*	1
	Hollow Head Cap Screw $\frac{1}{2}$ - 13 x $\frac{7}{8}$	Comm.*	1
	Hollow Head Set Screw $\frac{3}{8}$ - 16 x $\frac{3}{8}$	Comm.*	1
	Hollow Head Set Screw Flat Point $\frac{1}{4}$ - 20 x $\frac{3}{8}$	Comm.*	1
	Hollow Head Set Screws $\frac{1}{4}$ - 20 x $\frac{1}{4}$	Comm.*	2
	Parker Kalon Drive Screws #4 x $\frac{3}{8}$	Comm.*	6
	Alemite Fitting #1645	Comm.*	1

\* Not shown.

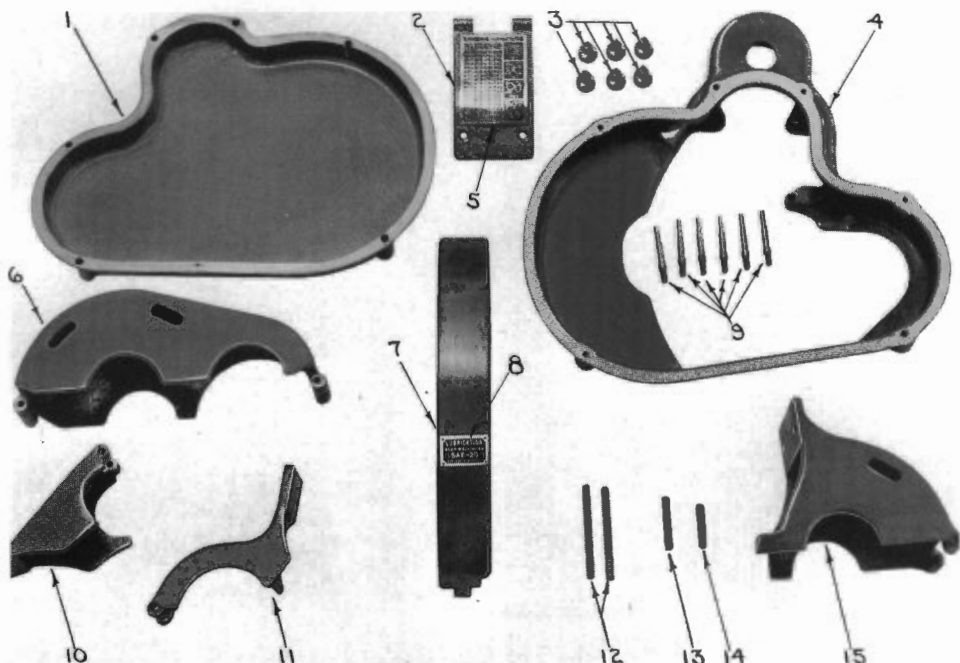


PLATE 19

**GEAR GUARDS, ASSEMBLY B (Plate - 19)**

Item	Part Name	Part No.	Quantity
1.	Feed Gear Guard (Cover)	HK 1144 X	1
2.	Back Gear Guard (Front)	H 1081	1
3.	Feed Gear Guard Cover Knobs	H 1296	6
4.	Feed Gear Guard	HK 1128 X	1
5.	Metric Thread Plate	HK 1416	1
6.	Back Gear Guard (Cover)	H 1083	1
7.	Main Gear Guard (Cover)	HK 1086	1
8.	Lubricating Plate	H 1413	1
9.	Feed Gear Guard Cover Studs	H 1295	6
10.	Main Gear Guard (Rear)	HK 1085	1
11.	Main Gear Guard (Front)	HK 1084	1
12.	Back Gear Guard Hinge Pins	H 1319	2
13.	Main Gear Guard Hinge Pin (Rear)	HK 1354	1
14.	Main Gear Guard Hinge Pin (Front)	HK 1353	1
15.	Back Gear Guard (Rear)	H 1082	1
	Dowels $\frac{3}{16} \times \frac{3}{4}$	Comm.*	8
	Hollow Head Cap Screws $\frac{3}{8} - 16 \times 1\frac{1}{2}$	Comm.*	3
	Hollow Head Cap Screws $\frac{5}{16} - 18 \times 1$	Comm.*	8
	Hollow Head Set Screws Cup Point 10 - 32 $\times \frac{3}{16}$	Comm.*	4
	Parker Kalon Drive Screws #0 $\times \frac{3}{16}$	Comm.*	8

\* Not shown.



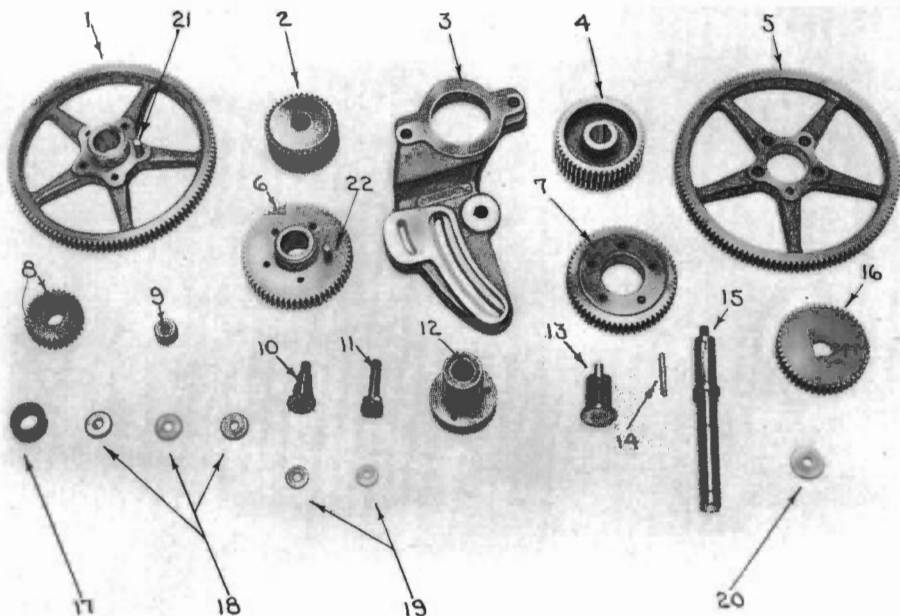


PLATE 20

## HEADSTOCK, ASSEMBLY BX (Plate - 20)

Item	Part Name	Part No.	Quantity
1.	Headstock Intermediate Gear	HK 1008 X	1
2.	Headstock Intermediate Spindle Feed Gear	H 1130 X	1
3.	Headstock Intermediate Gear Bracket	HK 1010 X	1
4.	Headstock Intermediate Spindle Feed Gear	H 1208 X	1
5.	Headstock Intermediate Gear (Metric)	HK 1008 XM	1
6.	Headstock Intermediate Compound Gear (Metric)	HK 1020 XM	1
7.	Headstock Intermediate Compound Gear	HK 1020 X	1
8.	Headstock Intermediate Gear (Small)	H 1009	1
9.	Binder Stud Space Washer	H 1255	1
10.	Small Intermediate Gear Stud	H 1214	1
11.	Tumbler Quadrant Binder Stud	H 1254	1
12.	Headstock Intermediate Spindle Bushing	H 1125	1
13.	Headstock Intermediate Gear Stud	H 1213	1
14.	Headstock Intermediate Spindle Key	H 1415	1
15.	Headstock Intermediate Spindle	H 1204 X	1
16.	Headstock Intermediate Spindle Gear	H 1129	1
17.	Headstock Intermediate Spindle Collar	H 1126	1
18.	Headstock Intermediate Gear Washers	H 1256	3
19.	Headstock Intermediate Gear Bracket Washers	HK 1413	2
20.	Headstock Intermediate Spindle Washer	H 1218	1
21.	Headstock Intermediate Gear Dowel	HK 1402 X	1
22.	Headstock Intermediate Gear Dowel	HK 1402 X	1
	Oil Plug for Headstock Intermediate Spindle	H 1352*	1
	Hex Head Cap Screw $\frac{1}{8}$ - 14 x 2	Comm.*	1
	Hex Head Cap Screws $\frac{1}{8}$ - 14 x $1\frac{3}{4}$	Comm.*	2
	Hollow Head Cap Screws $\frac{3}{8}$ - 16 x $1\frac{1}{4}$	Comm.*	4
	Hollow Head Cap Screws $\frac{1}{8}$ - 18 x 1	Comm.*	3
	Hollow Head Set Screw Cup Point $\frac{1}{8}$ - 18 x $\frac{5}{16}$	Comm.*	1
	Hex Nuts (Case Harden) $\frac{1}{8}$ - 20	Comm.*	3
	Woodruff Key #505	Comm.*	1
	Alemite Fittings #1645	Comm.*	3

\* Not shown.

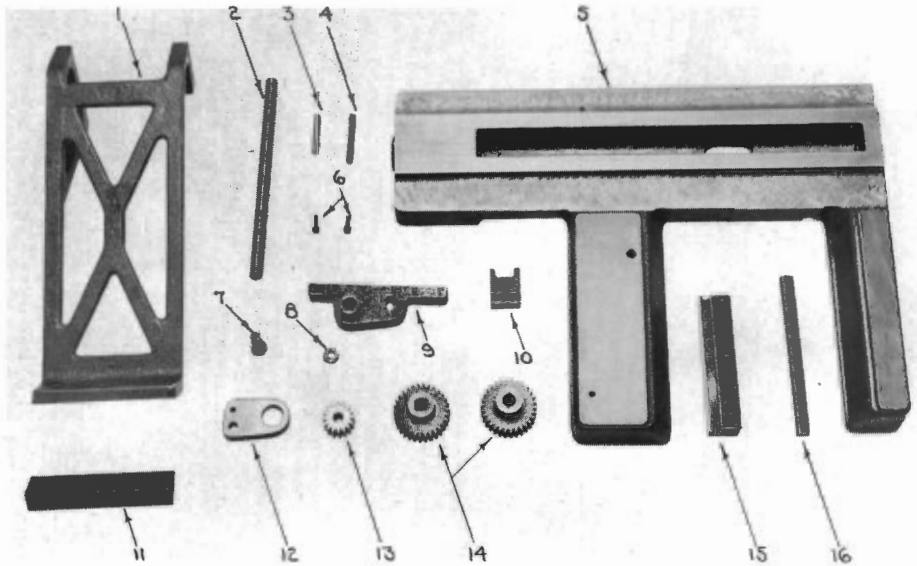


PLATE 21

## CARRIAGE, ASSEMBLY C (Plate - 21)

Item	Part Name	Part No.	Quantity
1.	Carriage Extension Support	HK 1092	1
2.	Carriage Extension Rod	HK 1220	1
3.	Carriage Dowel (Short)	HK 1408	1
4.	Carriage Dowel (Long)	HK 1407	1
5.	Carriage	HK 1045	1
6.	Fay & Scott Gib Screws #1		2
7.	Carriage Cross Feed Intermediate Gear Stud	HK 1326	1
8.	Carriage Cross Feed Intermediate Gear Plate Washer	HK 1334	1
9.	Carriage Extension Rod Support	HK 1141	1
10.	Carriage Binder Gib	H 1047	1
11.	Carriage Extension Support Gib	HK 1094	1
12.	Carriage Cross Feed Intermediate Gear Plate	HK 1195	1
13.	Carriage Cross Feed Intermediate Gear	H 1328	1
14.	Carriage Extension Rod Gear	HK 1040	1
15.	Carriage Short Gib Holder	H 1044	1
16.	Carriage Short Gib	H 1046	1
	Oil Plug for Carriage Extension Rod	HK 1412*	1
	Hex Head Cap Screw $\frac{1}{8}$ - 14 x 3	Comm.*	1
	Hollow Head Cap Screws $\frac{3}{8}$ - 14 x $1\frac{3}{4}$	Comm.*	3
	Hollow Head Cap Screws $\frac{3}{8}$ - 16 x $1\frac{3}{8}$	Comm.*	3
	Hollow Head Cap Screws $\frac{3}{8}$ - 16 x $1\frac{1}{4}$	Comm.*	2
	Hollow Head Cap Screw $\frac{1}{8}$ - 18 x $1\frac{1}{4}$	Comm.*	1
	Hollow Head Set Screw $\frac{1}{8}$ - 18 x $1\frac{3}{8}$	Comm.*	1
	Hollow Head Set Screws $\frac{3}{16}$ - 18 x 1	Comm.*	2
	Hollow Head Set Screws Cup Point $\frac{1}{8}$ - 24 x $\frac{1}{16}$	Comm.*	2
	Hollow Head Set Screw Cup Point $\frac{1}{4}$ - 28 x $\frac{1}{4}$	Comm.*	1
	Hex Check Nuts $\frac{1}{8}$ - 18	Comm.*	3
	Woodruff Keys #405	Comm.*	2
	Alemite Fitting #1645	Comm.*	1
	Alemite Fittings #1646	Comm.*	2

\* Not shown.

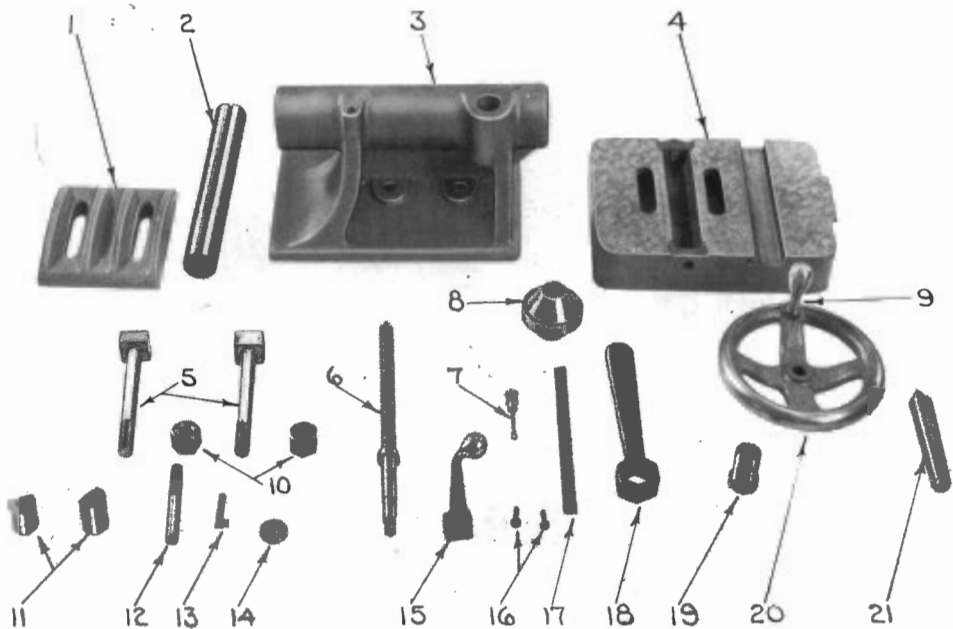


PLATE 22

## TAILSTOCK, ASSEMBLY D (Plate - 22)

Item	Part Name	Part No.	Quantity
1.	Tailstock Strap	H 1022	1
2.	Tailstock Spindle	H 1236	1
3.	Tailstock Top	H 1014	1
4.	Tailstock Base	H 1015	1
5.	Tailstock Binder Bolts	H 1234	2
6.	Tailstock Spindle Screw	H 1237	1
7.	Oil Dip Spindle and Knob	H 1235 and H 1356	1
8.	Tailstock Sleeve	H 1017	1
9.	Tailstock Handwheel Handle	H 1330	1
10.	Tailstock Binder Bolt Nut	H 1249	1
11.	Tailstock Spindle Binder Bushings	H 1238	2
12.	Tailstock Spindle Binder Stud	H 1232	1
13.	Tailstock Spindle Key	H 1233	1
14.	Tailstock Spindle Washer	H 1400 X	1
15.	Tailstock Spindle Binder Lever	H 1241	1
16.	Fay & Scott Gib Screws #1		2
17.	Tailstock Base Gib	H 1019	1
18.	Tailstock Wrench	H 1025	1
19.	Tailstock Spindle Nut	H 1016	1
20.	Tailstock Handwheel #3	H 1018	1
21.	Tailstock Center	H 1211	1
	Woodruff Key #404	Comm.*	1
	Taper Pin #1 x 1 long	Comm.*	1
	Alemite Fitting #1645	Comm.*	1
	Hex Nut (Case Harden) $\frac{7}{16}$ - 14	Comm.*	1
	Hex Head Cap Screws (Case Harden) $\frac{1}{4}$ - 14 x $3\frac{1}{2}$	Comm.*	2
	Socket Head Set Screw Dog Point $\frac{1}{4}$ - 28 x $\frac{3}{8}$	Comm.*	1

\* Not Shown.

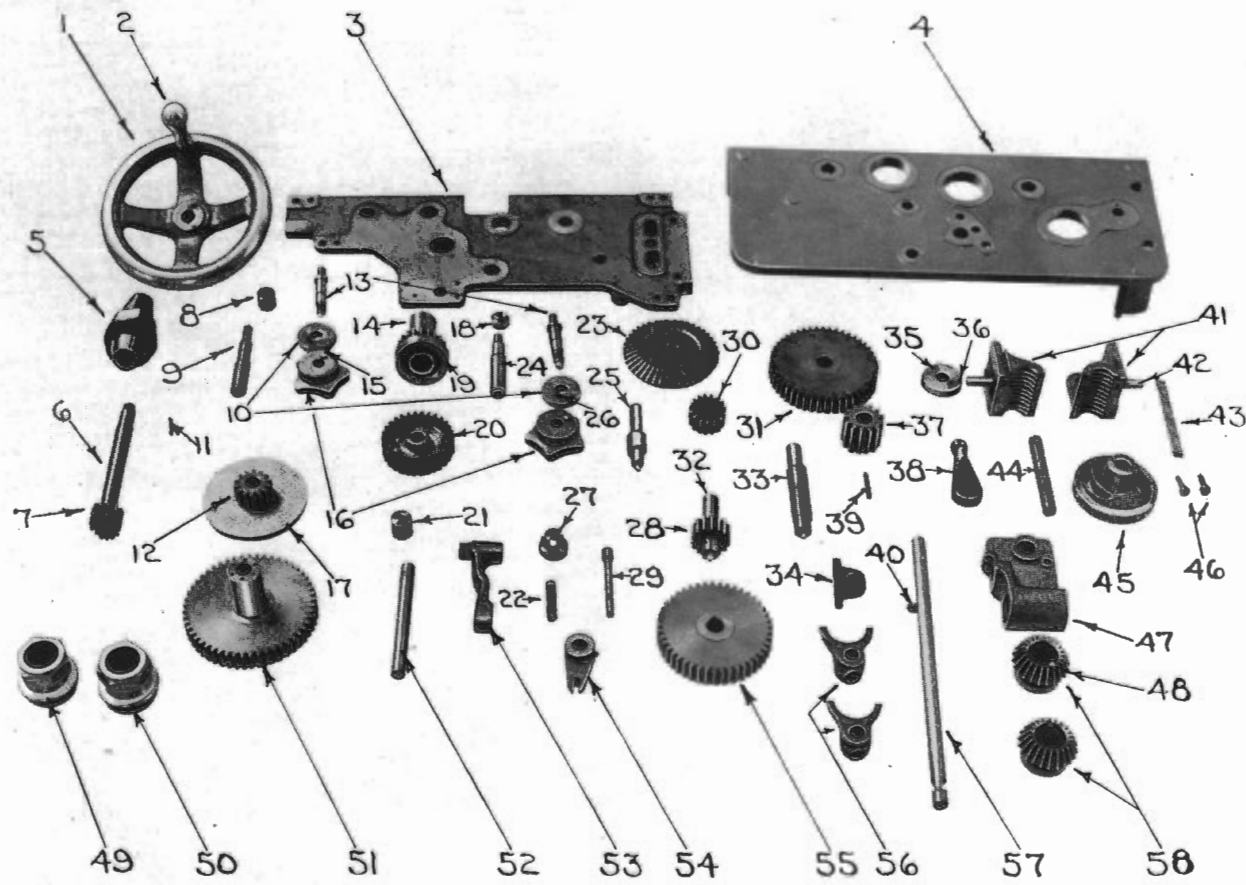


PLATE 23

## APRON, ASSEMBLY E (Plate - 23)

29

Item	Part Name	Part No.	Quantity	Item	Part Name	Part No.	Quantity
1.	Apron Handwheel	H 1018	1	42.	Apron Leadscrew Nut Studs	H 1301	2
2.	Apron Handwheel Handle	H 1330	1	43.	Apron Leadscrew Nut Gib	H 1183	1
3.	Apron Plate (Back)	HK 1172	1	44.	Apron Leadscrew Nut Cam Shaft	H 1302	1
4.	Apron Plate (Front)	HK 1171	1	45.	Apron Leadscrew Nut Cam	H 1175	1
5.	Apron Handmotion Sleeve	H 1197	1	46.	Fay & Scott Gib Screws #1		2
6.	Apron Handmotion Stud	H 1323	1	47.	Apron Leadscrew Support	H 1173	1
7.	Apron Handmotion Pinion	H 1322	1	48.	Apron Bevel Pinion Keys	H 1333	2
8.	Apron Friction Stud Sleeve	H 1313	1	49.	Apron Cross Feed Sleeve	H 1192	1
9.	Apron Lateral Friction Stud	H 1312	1	50.	Apron Lateral Feed Sleeve	H 1187	1
10.	Apron Lateral and Cross Feed Washers	H 1314	2	51.	Apron Lateral Feed Gear	H 1185	1
11.	Apron Handmotion Stud Key	H 1418	1	52.	Apron Reverse Shaft	H 1305	1
12.	Apron Lateral Feed Pinion	H 1310	1	53.	Apron Reverse Lever	H 1182	1
13.	Apron Lateral and Cross Feed Stems	H 1311	2	54.	Reverse Lever	H 1181	1
14.	Apron Cross Feed Pinion	H 1327	1	55.	Apron Compound Gear	HK 1193	1
15.	Apron Friction Knob Pins	H 1246	2	56.	Apron Reverse Fingers	H 1179	2
16.	Apron Friction Knobs	H 1188	2	57.	Apron Reverse Rod	HK 1303	1
17.	Apron Lateral Feed Friction	H 1186	1	58.	Apron Bevel Pinions	H 1325	2
18.	Apron Cross Feed Stud Sleeve	H 1317	1		Woodruff Keys #505	Comm.*	3
19.	Apron Cross Feed Friction	H 1191	1		Woodruff Key #405	Comm.*	1
20.	Apron Cross Feed Gear	H 1326	1		Woodruff Keys #404	Comm.*	10
21.	Lever Cap	H 1332	1		Woodruff Key #304	Comm.*	1
22.	Outer Lever Knob Spring	H 1307	1		Taper Pins #1 x 1" long	Comm.*	2
23.	Apron Bevel Gear	H 1252	1		Taper Pins 3/0 x 3/4"	Comm.*	2
24.	Apron Cross Feed Friction Stud	H 1315	1		Dowels 1/4 x 1" long	Comm.*	4
25.	Apron Bevel Gear Stud	H 1324	1		Cotter Pin 3/8" x 3/4" long	Comm.*	1
26.	Apron Lateral and Cross Feed Pins	H 1245	2		Rivets 3/8" x 1/2" long	Comm.*	2
27.	Reverse Knob	H 1316	1		Alemite Fittings #1645	Comm.*	6
28.	Apron Compound Pinion	H 1308	1		Hex Nut (Case Harden) 1 1/8 - 14	Comm.*	1
29.	Lever Stem	H 1306	1		Hex Nuts (Case Harden) 3/8 - 16	Comm.*	2
30.	Apron Bevel Gear Pinion	HK 1327	1		Castellated Nut 3/8 - 24	Comm.*	1
31.	Apron Rack Gear	H 1329	1		Hollow Head Cap Screws 1/2 - 13 x 1 1/2	Comm.*	2
32.	Apron Compound Pinion Stud	H 1309	1		Hollow Head Cap Screws 5/8 - 18 - 1	Comm.*	4
33.	Apron Rack Pinion Stud	H 1321	1		Hollow Head Cap Screws 1/4 - 20 x 3/4	Comm.*	2
34.	Apron Reverse Rod Bearing	H 1180	1		Hollow Head Cap Screws 10 - 24 x 5/8	Comm.*	2
35.	Apron Leadscrew Nut Cam Washer	H 1318	1		Hollow Head Set Screw 1/4 - 20 x 1	Comm.*	1
36.	Apron Leadscrew Nut Cam Washer Pin	H 1420	1		Hollow Head Set Screws 1/4 - 28 x 1/4	Comm.*	2
37.	Apron Rack Pinion	H 1320	1		Hollow Head Set Screws Cone Point		
38.	Apron Leadscrew Nut Cam Lever	H 1176	1		1/4 - 28 x 1/4	Comm.*	2
39.	Apron Rack Pinion Stud Key	H 1416	1		Hollow Head Set Screw Half Dog Point		
40.	Apron Reverse Rod Pin	H 1304	1		10 - 24 x 1/2	Comm.*	1
41.	Apron Leadscrew Nut	H 1174	1		Hollow Head Set Screws 10 - 24 x 1/4	Comm.*	4

\* Not shown.

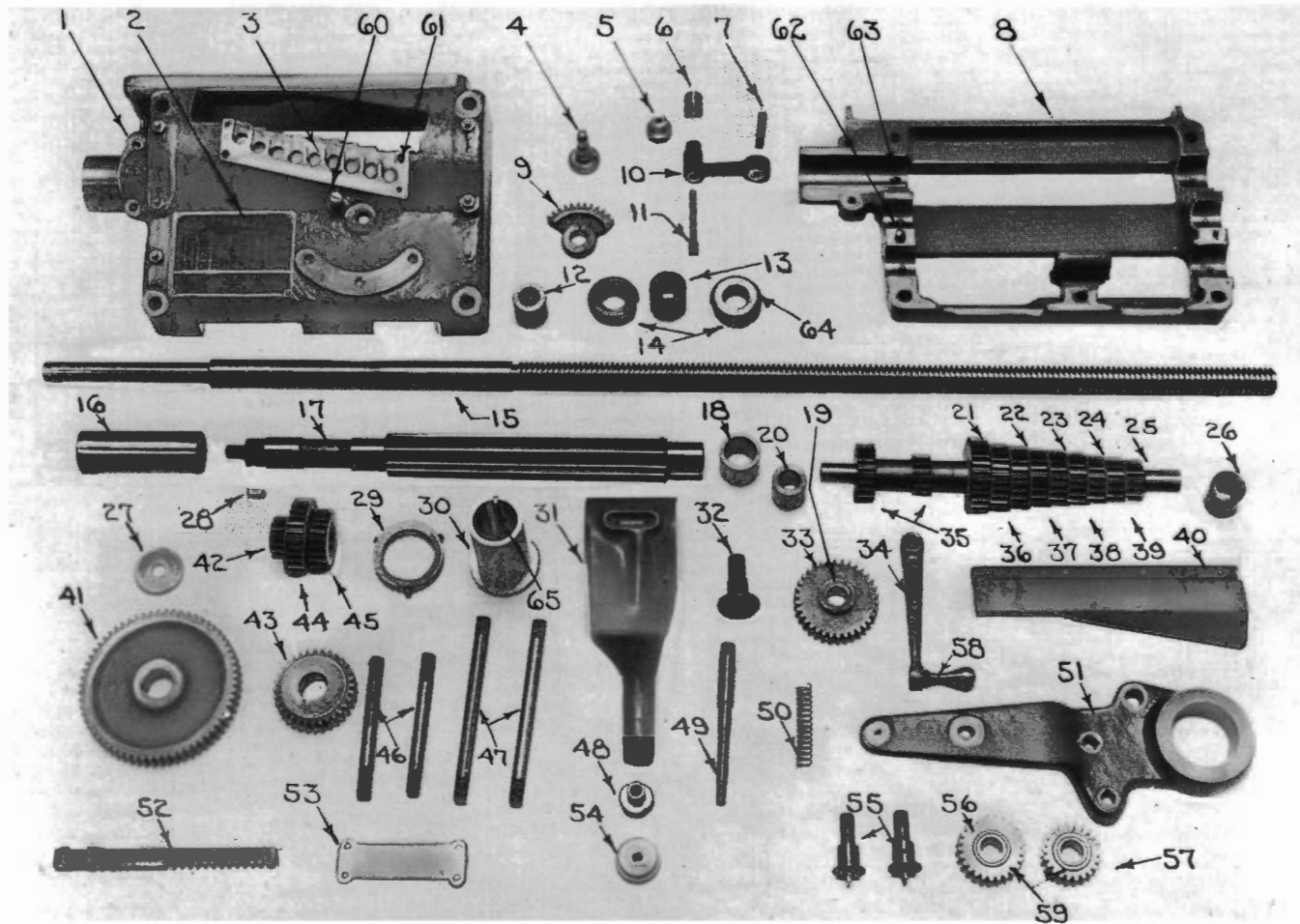


PLATE 24

# GEAR CASE, ASSEMBLY "F" (Plate - 24)

Item	Part Name	Part No.	Quantity	Item	Part Name	Part No.	Quantity	Item	Part Name	Part No.	Quantity
1.	Gear Case (Front)	HK 400	1	33.	Slip Gear	HK 500	1		Slip Gear Keys	HK 517*	2
2.	Name Plate	HK 526	1	34.	Tumbler Gear Quadrant				Bank Gear Key	HK 524*	1
3.	Sliding Lever Index Plate	HK 520	1		Handle	HK 417	1		Woodruff Keys #404	Comm.*	3
4.	Rack Pinion Stud	HK 511	1	35.	Feed Rod Driving Gear				Feed Rod Thrust Bearings (McGill B-9)	Comm.*	2
5.	Clutch Gear Knob	H 1316	1		(Double)	HK 505	1		Taper Pins #4 x 1 3/4	Comm.*	2
6.	Clutch Lever Cap	H 1332	1	36.	Bank Gear (28 teeth)	H 520	1		Taper Pin #1 x 1 1/4	Comm.*	1
7.	Feed Rod Slip Gear			37.	Bank Gear (24 teeth)	HK 506	1		Taper Pin #3/0 x 3/4	Comm.*	1
	Lever Spring	H 1307	1	38.	Bank Gear (22 teeth)	H 526	1		Lock Washer 3/8"	Comm.*	1
8.	Gear Case (Back)	HK 401	1	39.	Bank Gear (18 teeth)	HK 507	1		Alemite Fittings #1644	Comm.*	6
9.	Rack Pinion	HK 415	1	40.	Chip Guard	HK 1414	1		Alemite Fittings #1645	Comm.*	2
10.	Clutch Gear Lever	H 407	1	41.	Driving Shaft Gear				Gits Oilers #522	Comm.*	2
11.	Feed Rod Slip Gear				(Large)	HK 412	1		Bowen Oiler #4 (Style 70)	Comm.*	1
	Lever Stem	H 1306	1	42.	Feed Rod Slip Gear				Hex Nut 1/2 x 13	Comm.*	1
12.	Gear Case Bushing				Pinion	HK 510	1		Hex Nuts (Case Harden)		
	(Lower L.H.)	HK 404	1	43.	Driving Shaft Gear				1/2 - 13	Comm.*	4
13.	Gear Case Bushing				(Small)	HK 416	1		Hex Check Nuts 1/2 - 20	Comm.*	2
	(Lower R.H.)	HK 407	1	44.	Feed Rod Slip Gear	HK 508	1		Hex Check Nut (Case		
14.	Feed Rod Collars	HK 413	2	45.	Feed Rod Slip Gear	HK 509	1		Harden) 3/8 - 24	Comm.*	1
15.	Feed Rod	HK 515	1	46.	Gear Case Studs (Lower)	HK 519	2		Hollow Head Cap Screws		
16.	Gear Case Bushing			47.	Gear Case Studs (Upper)	HK 518	2		7/8 - 14 x 1 3/4	Comm.*	2
	(Upper L.H.)	HK 402	1	48.	Lever Bushing	H 511	1		Hollow Head Cap Screw		
17.	Driving Pinion	HK 503	1	49.	Slip Gear Lever Lock Pin	H 509	1		7/16 - 14 x 1 1/2	Comm.*	1
18.	Gear Case Bushing			50.	Slip Gear Lever Lock				Hollow Head Cap Screws		
	(Upper R.H.)	HK 405	1		Pin Spring	H 510	1		7/16 - 14 x 1	Comm.*	2
19.	Slip Gear Bushing	HK 409	1	51.	Tumbler Gear Quadrant	HK 411	1		Hollow Head Cap Screw		
20.	Gear Case Bushing			52.	Gear Shifting Rack	HK 512	1		3/8 - 16 x 1 1/4	Comm.*	1
	(Center L.H.)	HK 403	1	53.	Rack Guide Plate	HK 514	1		Hollow Head Set Screw		
21.	Feed Rod Driving Gear			54.	Slip Gear Lever Knob	H 512	1		Half Dog Point		
	(32 teeth)	HK 513	1	55.	Tumbler Gear Studs	H 516	2		1/4 - 20 x 3/8	Comm.*	1
22.	Bank Gear (26 teeth)	H 527	1	56.	Tumbler Pinion (25 teeth)	H 514	1		Hollow Head Set Screws		
23.	Bank Gear (23 teeth)	H 521	1	57.	Tumbler Pinion (22 teeth)	H 513	1		Cone Point 1/4 -		
24.	Bank Gear (20 teeth)	H 525	1	58.	Tumbler Quadrant				28 x 1/8	Comm.*	3
25.	Bank Gear Shaft				Handle	H 517	1		Hollow Head Cap Screws		
	(16 Tooth Gear)	HK 504	1	59.	Tumbler Pinion Bushings	H 515	2		12 - 24 x 3/8	Comm.*	4
26.	Gear Case Bushing			60.	Feed Rod Oiler	HK 516	1		Hollow Head Cap Screws		
	(Center R.H.)	HK 406	1	61.	Index Plate Dowels	HK 532	2		10 - 24 x 1/2	Comm.*	4
27.	Driving Pinion Shaft			62.	Gear Case Dowels	HK 528	2		Hollow Head Cap Screws		
	Washer	HK 530	1	63.	Gear Case Dowels	HK 529	6		8 - 32 x 1/4	Comm.*	4
28.	Driving Pinion Key	HK 522	1	64.	Spring for Feed Rod				Round Head Screw		
29.	Slip Gear Lever Bushing				Collar	HK 531	1		8 - 32 x 1/4	Comm.*	1
	Collar	HK 502	1	65.	Slip Gear Lever Bushing				Parker Kalon Screws		
30.	Slip Gear Lever Bushing	HK 408	1		Key	HK 521	1		#0 x 1/8	Comm.*	4
31.	Slip Gear Lever	HK 410	1		Feed Rod Driving Gear						
32.	Slip Gear Stud	HK 501	1		Keys	HK 523*	2				

\* Not shown.

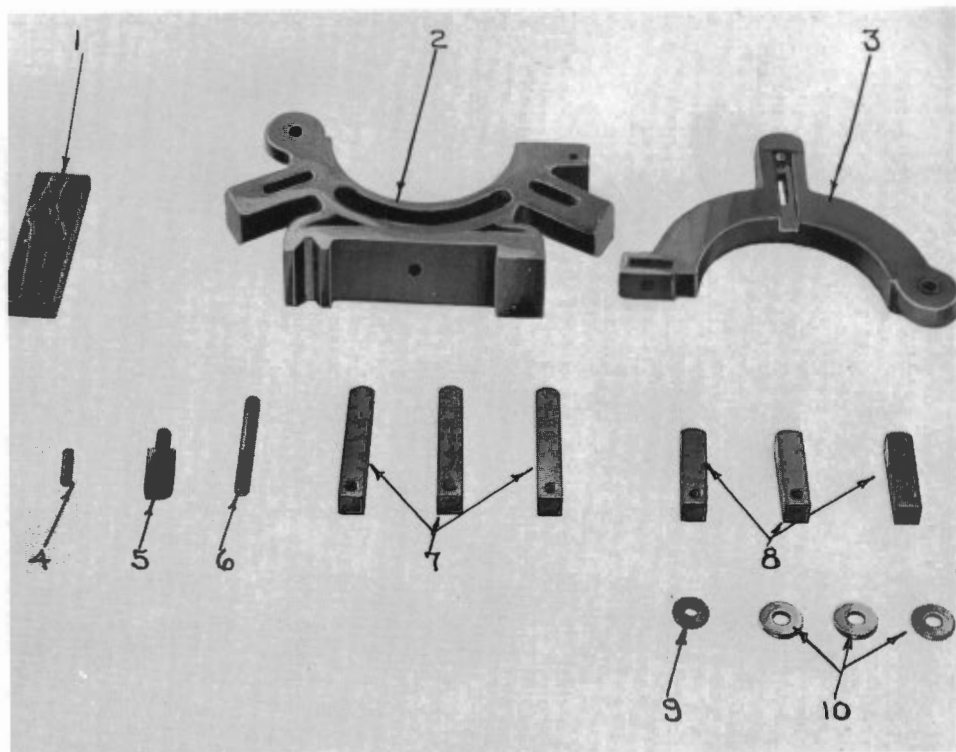


PLATE 25

**STEADY REST, ASSEMBLY G (Plate - 25)**

Item	Part Name	Part No.	Quantity
1.	Steady Rest Strap . . . . .	H 1027	1
2.	Steady Rest Base . . . . .	HS 901	1
3.	Steady Rest Top . . . . .	HS 900	1
4.	Steady Rest Swivel Bolt Pin . . . . .	H 1278	1
5.	Steady Rest Swivel Bolt . . . . .	H 1258	1
6.	Steady Rest Stud . . . . .	HS 1162	1
7.	Steady Rest Jaws (Long) . . . . .	HS 1030	3
8.	Steady Rest Jaws (Short) . . . . .	H 1030	3
9.	Steady Rest Swivel Bolt Washer . . . . .	H 1277	1
10.	Steady Rest Jaw Washers . . . . .	H 1419	3
	Hex Head Cap Screw $\frac{5}{8}$ - 11 x $1\frac{3}{4}$ . . . . .	Comm.*	1
	Hex Head Cap Screws $\frac{7}{16}$ - 14 x $1\frac{1}{2}$ . . . . .	Comm.*	3
	Square Head Set Screws Flat Point $\frac{7}{16}$ - 14 x $2\frac{1}{2}$ . . . . .	Comm.*	3
	Hex Nut $\frac{5}{8}$ - 11 . . . . .	Comm.*	1
	Hex Nuts (Case Harden) $\frac{7}{16}$ - 14 . . . . .	Comm.*	2

\* Not shown.



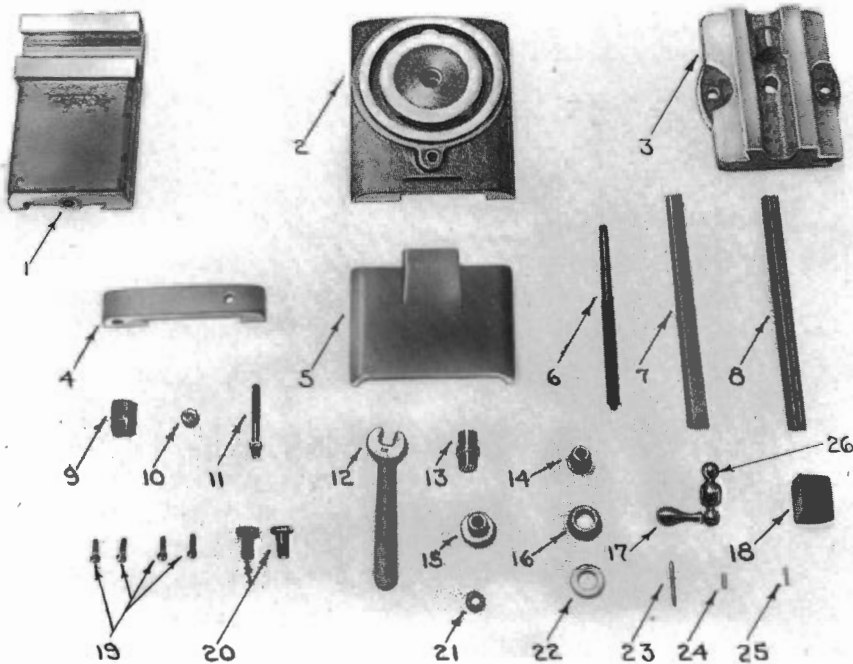


PLATE 26

**COMPOUND REST, ASSEMBLY I (Plate - 26)**

Item	Part Name	Part No.	Quantity
1.	Compound Rest Top	H 1052	1
2.	Compound Rest Base	H 1043	1
3.	Compound Rest Middle	H 1051	1
4.	Stop Gage	H 1169	1
5.	Dust Cover	H 1043	1
6.	Compound Rest Screw	H 1262	1
7.	Compound Rest Base Gib	H 1059	1
8.	Compound Rest Top Gib	H 1055	1
9.	Stop Gage Gib	H 1244	1
10.	Stop Gage Adjusting Nut	H 1298	1
11.	Stop Gage Adjusting Screw	H 1299	1
12.	Compound Rest Wrench	H 1265	1
13.	Compound Rest Swivel Pin	H 1261	1
14.	Compound Rest Index Sleeve	H 1292	1
15.	Compound Rest Sleeve	H 1340	1
16.	Compound Rest Index Collar	H 1291	1
17.	Ball Crank Handle	H 1367	1
18.	Compound Rest Base Nut	H 1058	1
19.	Fay & Scott Gib Screws #1		4
20.	Compound Rest Binder Bolt	H 1263	1
21.	Compound Rest Screw Collar	H 1264	1
22.	Compound Rest Index Lock Nut	H 1293	1
23.	Compound Rest Screw Key	H 1297	1
24.	Compound Rest Base Nut Dowel	H 1412	1
25.	Compound Rest Screw Collar Pin	H 1417	1
26.	Ball Crank	H 1272	1
	Hollow Head Cap Screw $\frac{1}{8}$ - 14 x $\frac{7}{8}$	Comm.*	1
	Hex Head Cap Screw $\frac{1}{8}$ - 14 x $\frac{7}{8}$	Comm.*	1
	Hex Nut (Case Harden) $\frac{1}{8}$ - 18	Comm.*	1
	Hex Nuts (Case Harden) $\frac{1}{8}$ - 20	Comm.*	2

\* Not shown.

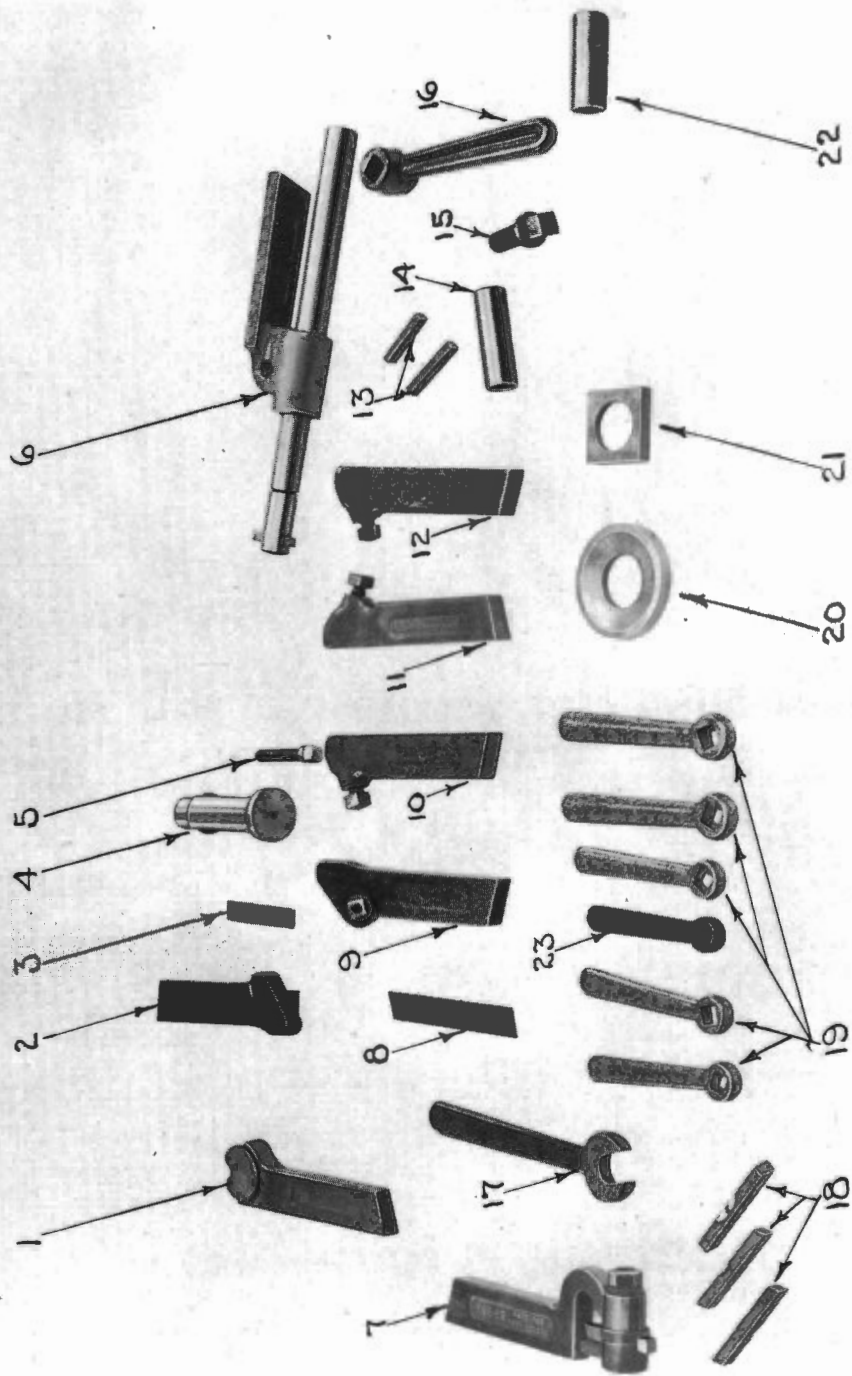


PLATE 27

# TOOLS AND HOLDERS, ASSEMBLY I (Plate - 27)

Item	Part Name	Part No.	Quantity
1.	Knurling Tool Holder . . . . .		1
2.	Right Hand Cut-Off Tool Holder . . . . .		1
3.	Wedge (Williams #15) . . . . .	H 1226 X	1
4.	Tool Post . . . . .	H 1224 X	1
5.	Tool Post Screw . . . . .	H 1225 X	1
6.	Boring Bar and Holder . . . . .		1
7.	Threading Tool Holder . . . . .		1
8.	Cut-Off Tool Bit . . . . .		1
9.	Straight Cut-Off Tool Holder . . . . .		1
10.	Straight Tool Holder . . . . .		1
11.	Left Hand Tool Holder . . . . .		1
12.	Right Hand Tool Holder . . . . .		1
13.	Boring Tool Bit . . . . .		1
14.	Straight Boring Bar Head . . . . .		1
15.	Boring Bar Clamp Screw . . . . .		1
16.	Boring Bar Clamp Screw Wrench . . . . .		1
17.	Threading Tool Holder Wrench . . . . .		1
18.	Tool Bit . . . . .		1
19.	Tool Holder Wrenches . . . . .		5
20.	Tool Post Collar . . . . .	H 1288 X	1
21.	Tool Post Shoe . . . . .	H 1229 X	1
22.	Angular Boring Bar Head . . . . .		1
23.	Tool Post Wrench . . . . .	H 1227	1

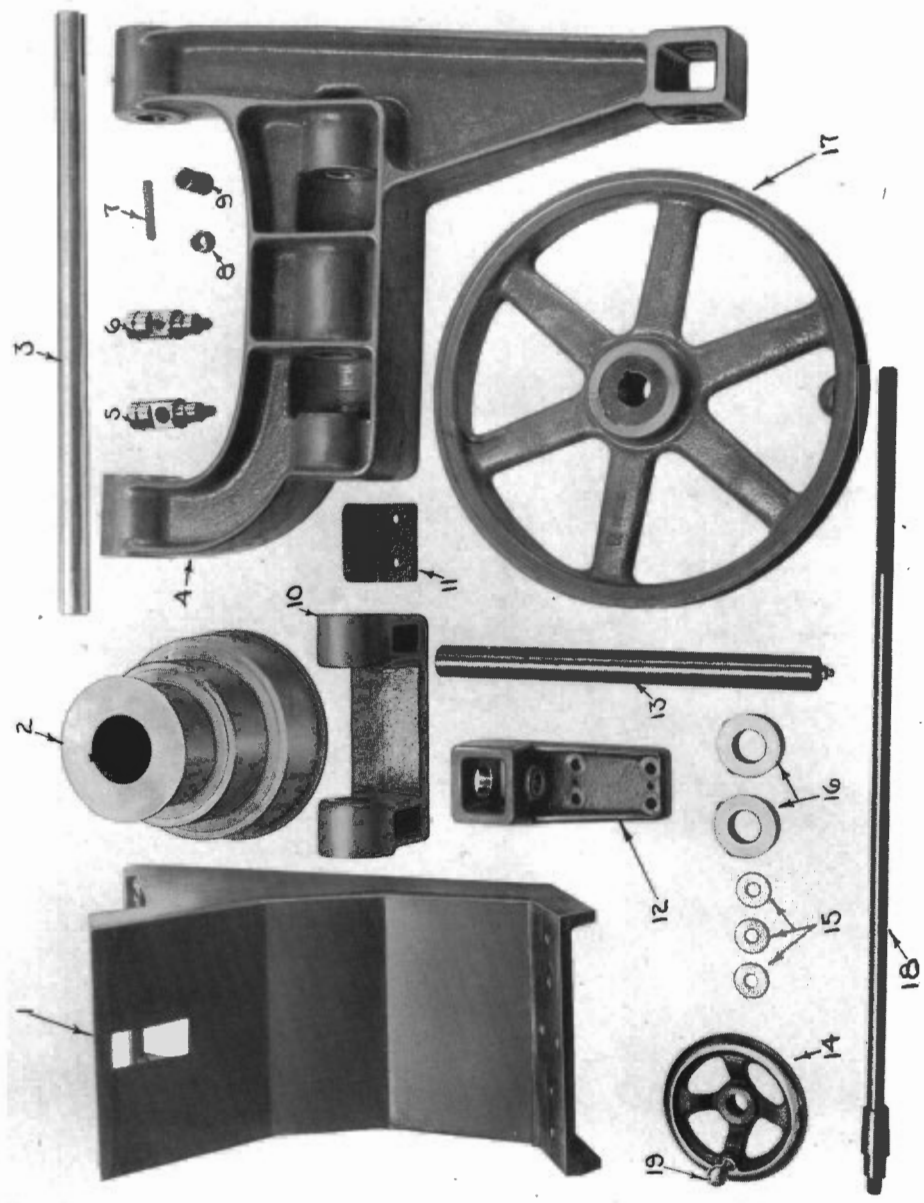


PLATE 28

# COUNTER SHAFT, ASSEMBLY JX (Plate - 28)

Item	Part Name	Part No.	Quantity
1.	Counter Shaft Bracket . . . . .	HKS 106	1
2.	Counter Cone Pulley . . . . .	HS 508	1
3.	Counter Shaft . . . . .	HKS 110	1
4.	Counter Shaft Yoke . . . . .	HKS 107	1
5.	Counter Shaft Adjusting Screw Swivel (Front) . . . . .	HKS 117	1
6.	Counter Shaft Adjusting Screw Swivel (Rear) . . . . .	HKS 118	1
7.	Counter Shaft Key . . . . .	HKS 112	1
8.	Counter Shaft Safety Nut . . . . .	HKS 120	1
9.	Counter Shaft Adjusting Screw Thrust Collar . . . . .	HKS 121	1
10.	Counter Shaft Yoke Support . . . . .	HKS 108	1
11.	Stop for Taper Attachment . . . . .	HKS 141	1
12.	Counter Shaft Adjusting Bracket . . . . .	HKS 115	1
13.	Counter Shaft Support Shaft . . . . .	HKS 109	1
14.	Counter Shaft Adjusting Handwheel . . . . .	HKS 122	1
15.	Counter Shaft Washers . . . . .	HKS 119	3
16.	Counter Shaft Collars . . . . .	HKS 111	2
17.	"Woods" Light Duty "A" Sheave 3A 15.0 x 1 $\frac{3}{16}$ , $\frac{1}{4}$ x $\frac{1}{8}$ . . . . .		1
18.	Counter Shaft Adjusting Screw . . . . .	HKS 116	1
19.	Handle for Handwheel . . . . .	H 1368	1
	Plug for HKS 109 . . . . .	HKS 124*	1
	Counter Shaft Yoke Bushings . . . . .	HKS 113*	2
	Counter Shaft Yoke Support Bushings . . . . .	HKS 114*	2
	Hollow Head Cap Screws $\frac{1}{2}$ - 13 x $1\frac{3}{4}$ . . . . .	Comm.*	2
	Hollow Head Cap Screws $\frac{1}{2}$ - 13 x $1\frac{1}{4}$ . . . . .	Comm.*	8
	Hollow Head Cap Screws $\frac{3}{8}$ - 16 x $1\frac{1}{4}$ . . . . .	Comm.*	4
	Hollow Head Cap Screws $\frac{3}{8}$ - 16 x $\frac{3}{4}$ . . . . .	Comm.*	2
	Hollow Head Set Screw Dog Point $\frac{1}{2}$ - 13 x 1 . . . . .	Comm.*	1
	Hollow Head Set Screw Dog Point $\frac{3}{8}$ - 16 x $\frac{1}{2}$ . . . . .	Comm.*	1
	Hex Nuts $\frac{1}{2}$ - 13 . . . . .	Comm.*	2
	Hex Check Nuts $\frac{1}{2}$ - 13 . . . . .	Comm.*	3
	Split Lock Washers $\frac{1}{2}$ " . . . . .	Comm.*	10
	Taper Pins #3 x 1 . . . . .	Comm.*	2
	Woodruff Key #606 . . . . .	Comm.*	1
	Dowel Pins $\frac{3}{8}$ x 1 . . . . .	Comm.*	4
	Dowel Pins $\frac{1}{4}$ x $1\frac{1}{4}$ . . . . .	Comm.*	2
	Alemite Fittings #1610 . . . . .	Comm.*	3
	Alemite Fittings #1645 . . . . .	Comm.*	4

\* Not shown.

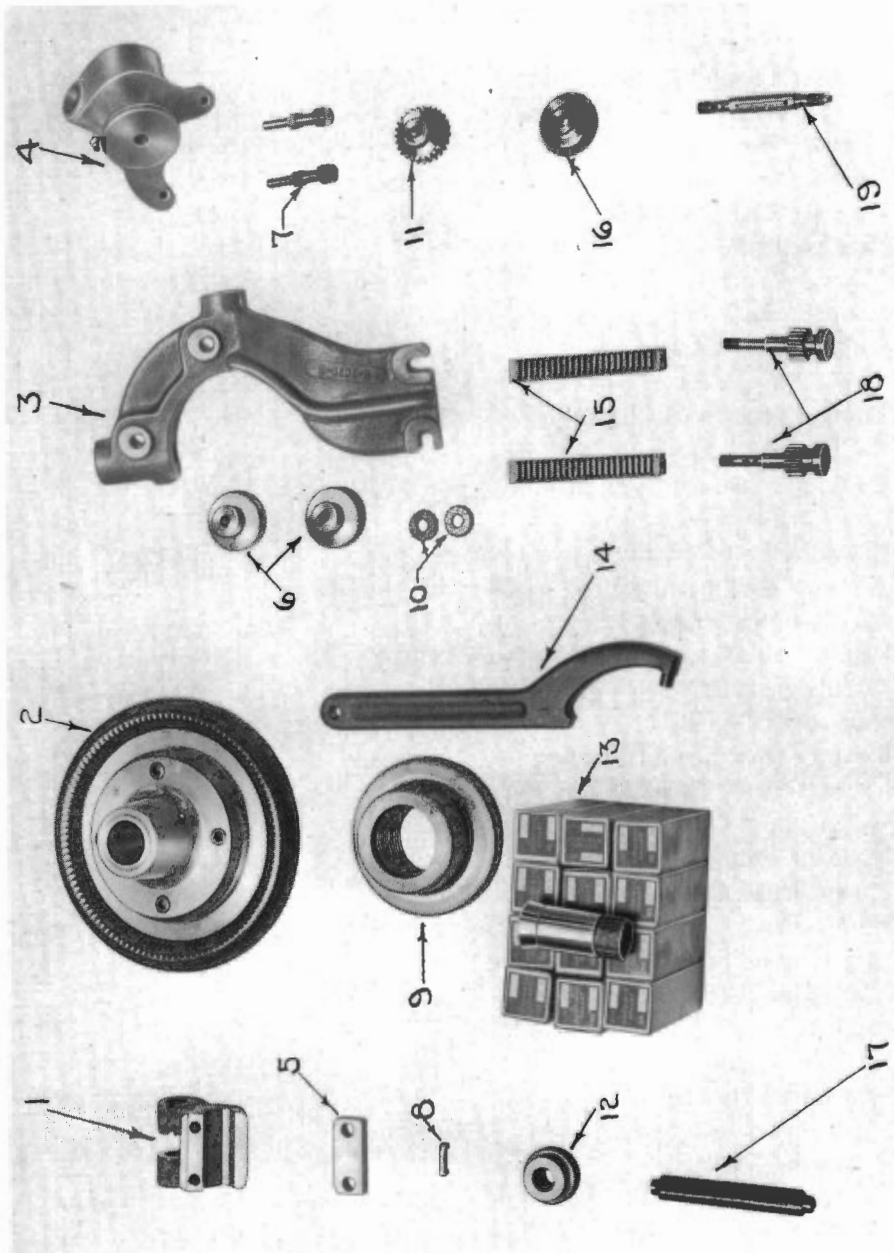


PLATE 29

# MICROMETER STOP, ASSEMBLY L (Plate - 29)

Item	Part Name	Part No.	Quantity
1.	Micrometer Stop . . . . .	H 450	1
5.	Micrometer Stop Clamp . . . . .	H 453	1
8.	Micrometer Stop Key . . . . .	H 454	1
12.	Micrometer Stop Dial . . . . .	H 452	1
17.	Micrometer Stop Screw . . . . .	H 451	1
	Hex Head Cap Screws (Case Harden) $\frac{7}{16}$ - 14 x 1 . . . . .	Comm.*	2
	Hollow Head Set Screw Flat Point $\frac{5}{16}$ - 18 x $\frac{1}{2}$ . . . . .	Comm.*	1

## Sjogren Collet Chuck

2.	Collet Chuck . . . . .	Comm.	1
9.	Chuck Face Plate . . . . .	HKS 133	1
13.	Collets $\frac{1}{8}$ to $\frac{15}{16}$ incl. . . . .	Comm.	1
14.	Chuck Wrench . . . . .	Comm.	1

## Follower Rest, Assembly H

3.	Follower Rest . . . . .	H 1078 X	1
6.	Follower Rest Adjusting Knobs . . . . .	H 710	2
10.	Follower Rest Swivel Washers . . . . .	H 712	2
15.	Follower Rest Jaws . . . . .	H 1079	2
18.	Follower Rest Adjusting Studs . . . . .	H 1080	2
	Hex Head Cap Screws $\frac{7}{16}$ - 14 x $1\frac{3}{4}$ . . . . .	Comm.*	2
	Square Head Set Screws Flat Point $\frac{7}{16}$ - 14 x $1\frac{3}{4}$ . . . . .	Comm.*	2
	Hex Nuts $\frac{3}{8}$ - 16 . . . . .	Comm.*	2
	Woodruff Keys #304 . . . . .	Comm.*	2

## Thread Indicator, Assembly K

4.	Thread Indicator . . . . .	H 475	1
7.	Thread Indicator Studs . . . . .	H 578	2
11.	Thread Indicator Gear . . . . .	H 575	1
16.	Thread Indicator Dial . . . . .	H 576	1
19.	Thread Indicator Shaft . . . . .	H 577	1
	Hex Check Nuts (Case Harden) $\frac{3}{8}$ - 24 . . . . .	Comm.*	2
	Woodruff Key #304 . . . . .	Comm.*	1
	Alemite Fitting #1645 . . . . .	Comm.*	1
	Alemite Fitting #1646 . . . . .	Comm.*	1

\* Not shown.

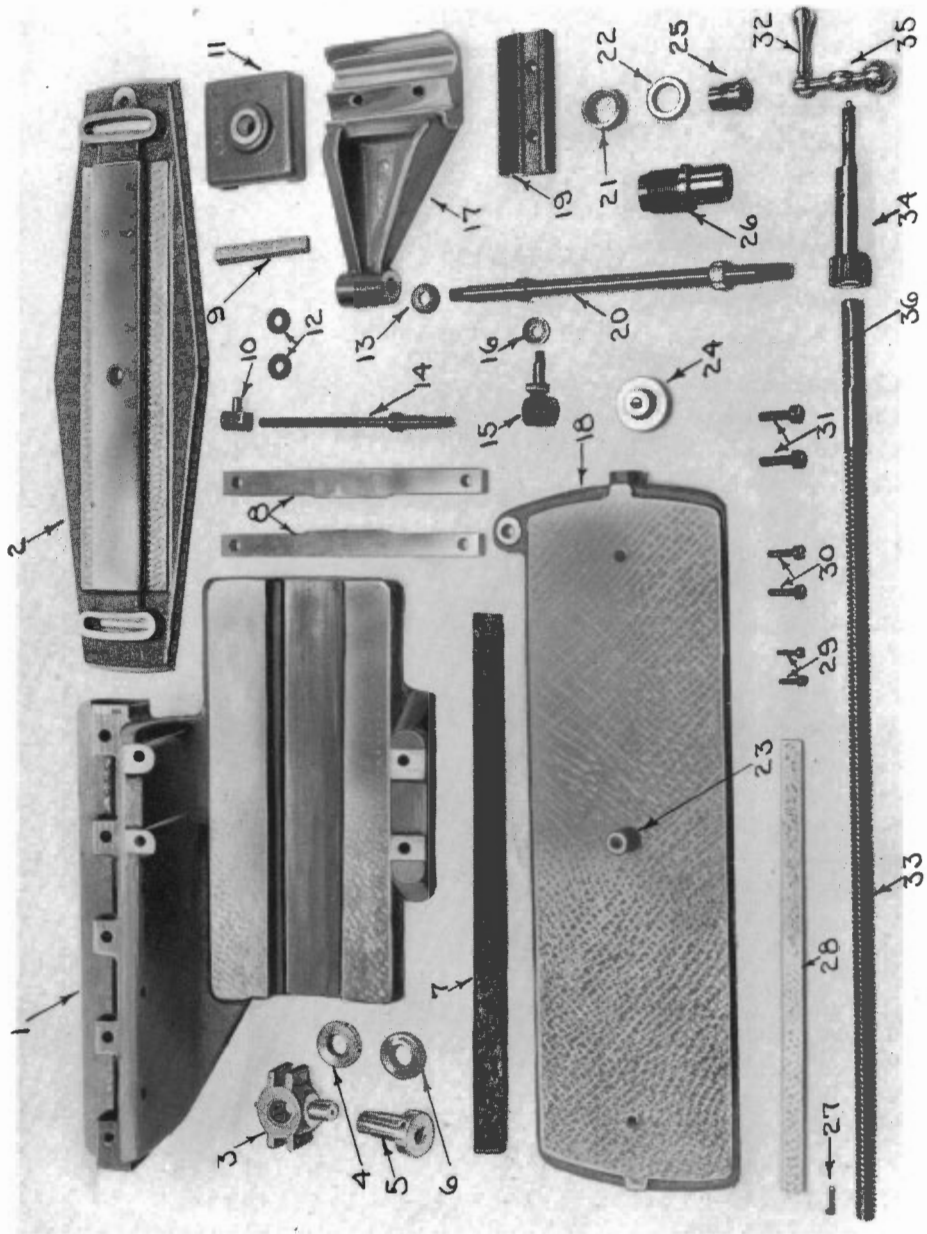


PLATE 30



# TAPER ATTACHMENT, ASSEMBLY M (Plate - 30)

Item	Part Name	Part No.	Quantity
1.	Taper Attachment Bracket	HK 600	1
2.	Taper Attachment Swivel	H 604	1
3.	Taper Attachment Cross Slide	H 606	1
4.	Taper Attachment Screw Sleeve Check Nut	H 702	1
5.	Taper Attachment Screw Sleeve	H 700	1
6.	Taper Attachment Screw Sleeve Nut	H 701	1
7.	Carriage Back Gib	H 601	1
8.	Taper Attachment Guide Bars	H 707	2
9.	Taper Attachment Swivel Slide Gib	H 612	1
10.	Taper Attachment Adjusting Nut	H 709	1
11.	Taper Attachment Swivel Slide	H 605	1
12.	Taper Attachment Swivel Washers	H 712	2
13.	Taper Attachment Stud Washer	H 714	1
14.	Taper Attachment Adjusting Screw	H 708	1
15.	Taper Attachment Adjusting Swivel	H 608	1
16.	Taper Attachment Adjusting Swivel Washer	H 713	1
17.	Taper Attachment Clamp	HK 610	1
18.	Taper Attachment Plate	H 602	1
19.	Taper Attachment Clamp Gib	H 611	1
20.	Taper Attachment Plate Stud	HK 711	1
21.	Carriage Cross Feed Index Collar	H 1289	1
22.	Carriage Cross Feed Index Lock Nut	H 1290	1
23.	Taper Attachment Plate Swivel Pin	H 715	1
24.	Taper Attachment Adjusting Knob	H 710	1
25.	Carriage Cross Feed Index Sleeve	H 1288	1
26.	Taper Attachment Cross Feed Sleeve	HK 607	1
27.	Taper Attachment Screw Sleeve Key	H 703	1
28.	Taper Attachment Slide Gib	H 603	1
29.	Fay & Scott Gib Screws #1		2
30.	Fay & Scott Gib Screws #2		2
31.	Fay & Scott Gib Screws #3		2
32.	Handle for Ball Crank	H 1368 X	1
33.	Carriage Cross Feed Screw	HK 705	1
34.	Taper Attachment Cross Feed Pinion	HK 706	1
35.	Carriage Cross Feed Ball Crank	H 1222	1
36.	Carriage Cross Feed Screw Drive Key	H 704	1
	Woodruff Keys #404	Comm. *	2
	Woodruff Key #304	Comm. *	1
	Hollow Head Pipe Plug $\frac{1}{8}$ - 27 thread	Comm. *	1
	Alemite Fittings #1645	Comm. *	2
	Hex Nut (Case Harden) $\frac{1}{2}$ - 13	Comm. *	1
	Hex Check Nut (Case Harden) $\frac{1}{2}$ - 20	Comm. *	1
	Hex Nuts (Case Harden) $\frac{3}{8}$ - 16	Comm. *	2
	Hollow Head Cap Screws $\frac{7}{16}$ - 14 x $2\frac{1}{2}$	Comm. *	5
	Hex Head Cap Screws (Case Harden) $\frac{7}{16}$ - 14 x $2\frac{1}{2}$	Comm. *	2
	Hex Head Cap Screws (Case Harden) $\frac{7}{16}$ - 14 x $2\frac{1}{4}$	Comm. *	2
	Hex Head Cap Screws (Case Harden) $\frac{7}{16}$ - 14 x $1\frac{1}{4}$	Comm. *	7
	Hollow Head Set Screw Cone Point 6 - 32 x $\frac{1}{2}$	Comm. *	1

\* Not shown.

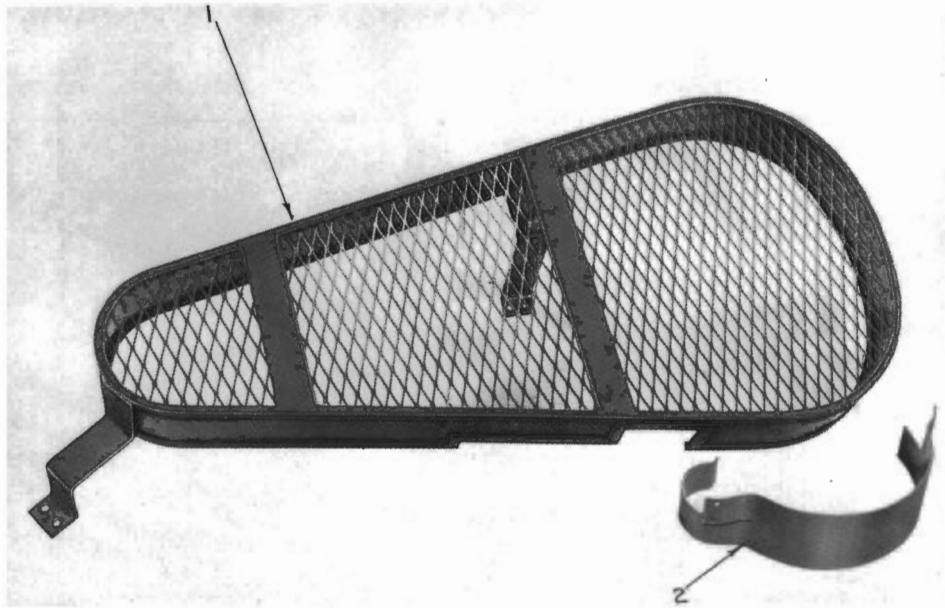


PLATE 31

**SPECIAL GUARDS (Plate - 31)**

Item	Part Name	Part No.	Quantity
1.	Drive Guard Assembly . . . . .	HKS 136 137 138	1
2.	Face Plate Gear Guard . . . . .	HK 1411	1
	Hollow Head Cap Screws $\frac{3}{8}$ - 16 x $\frac{3}{4}$ . . . . .	Comm. *	4
	Hollow Head Cap Screws $\frac{1}{4}$ - 20 x $\frac{1}{2}$ . . . . .	Comm. *	3

\* Not shown.

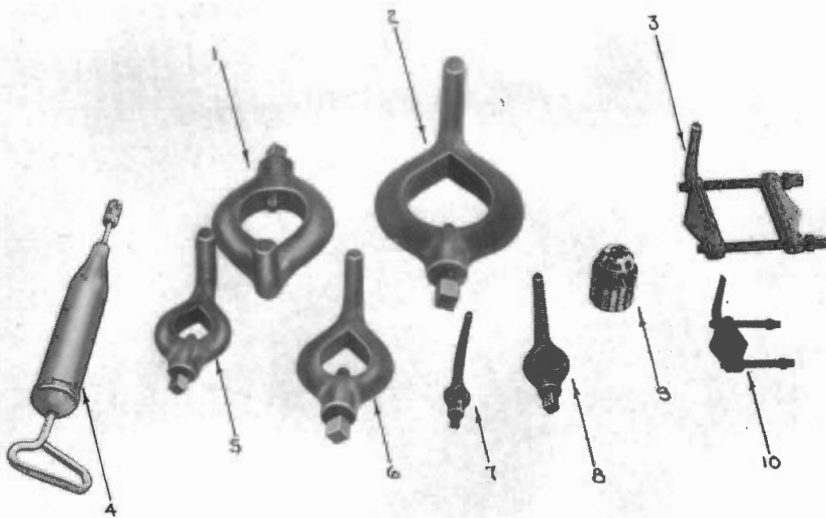


PLATE 32

**LATHE ACCESSORIES (Plate - 32)**

Item	Part Name	Part No.	Quantity
1.	3" Bent Tail Lathe Dog . . . . .		1
2.	4" Bent Tail Lathe Dog . . . . .		1
3.	3 1/2" Clamp Lathe Dog Bent Tail . . . . .		1
4.	Alemite Oil Gun . . . . .		1
5.	1 1/2" Bent Tail Lathe Dog . . . . .		1
6.	2" Bent Tail Lathe Dog . . . . .		1
7.	1/2" Bent Tail Lathe Dog . . . . .		1
8.	1" Bent Tail Lathe Dog . . . . .		1
9.	0 - 1/2" 3-Jaw Drill Chuck . . . . .		1
10.	1 3/4" Clamp Lathe Dog Bent Tail . . . . .		1
	Chuck Wrench . . . . .	Comm. *	1

\* Not shown.

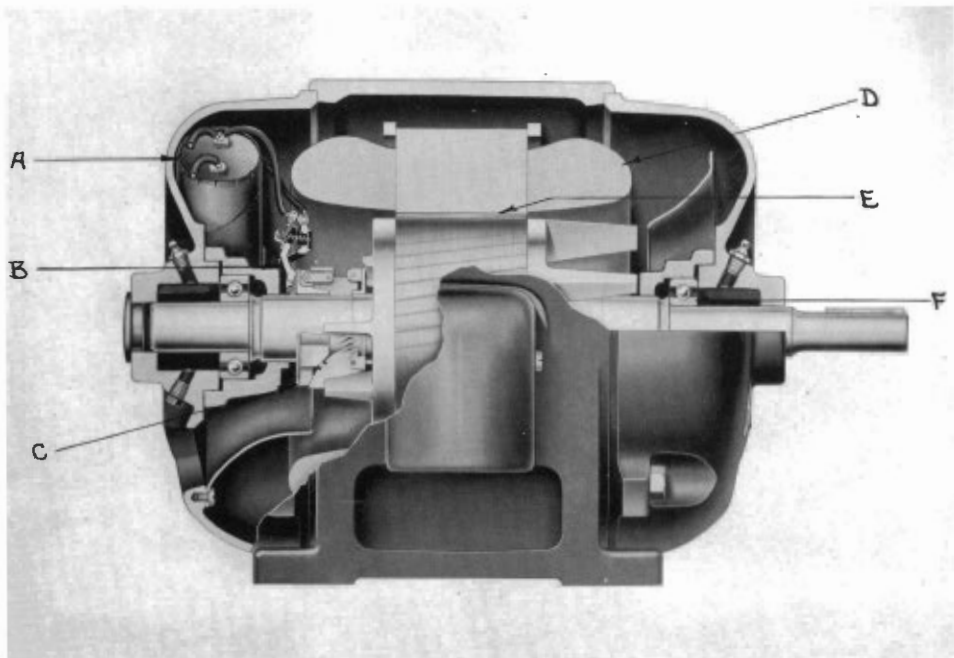


PLATE 33

**(MOTOR CUTAWAY) MODEL 5KC225H4 (Plate - 33)**

Item	Part Name	Quantity
A.	Capacitor, Cat. No. 6613994-G4 . . . . .	1
B.	Switch, Cat. No. 6618233-G1 . . . . .	1
C.	Centrifugal Mechanism, Cat. No. 5541748-G6 . . . . .	1
D.	Set Stator Coils with Winding Supplied, Cat. No. 3226541-1 . . . . .	1
E.	Rotor, Cat. No. 6613338-G1 . . . . .	1
F.	Ball Bearings, 306 Rad., Cat. No. 3666784-P7 . . . . .	2

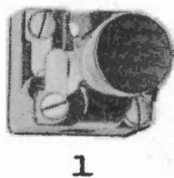
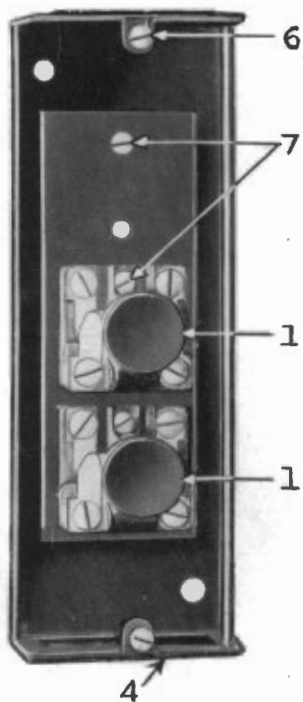


PLATE 34

4 A

**GENERAL ELECTRIC - CR-2943  
PUSH BUTTON STATION  
(Plate - 34)**

Item	Part Name	Quantity
1.	Push Button Unit A-300A 229924261 . . . . .	3
4.	Box for CR 2943-A-A300A Push Button Station . . . . .	1
4A.	Cover for CR 2943-A-300A Push Button Station . . . . .	1
6.	Screw for Cover (8-32 thread) Cat. No. 36X670 . . . . .	2
7.	Screw Fastening Push Button Unit to Box (8-32 thread) Cat. No. 36X670 . . . . .	3

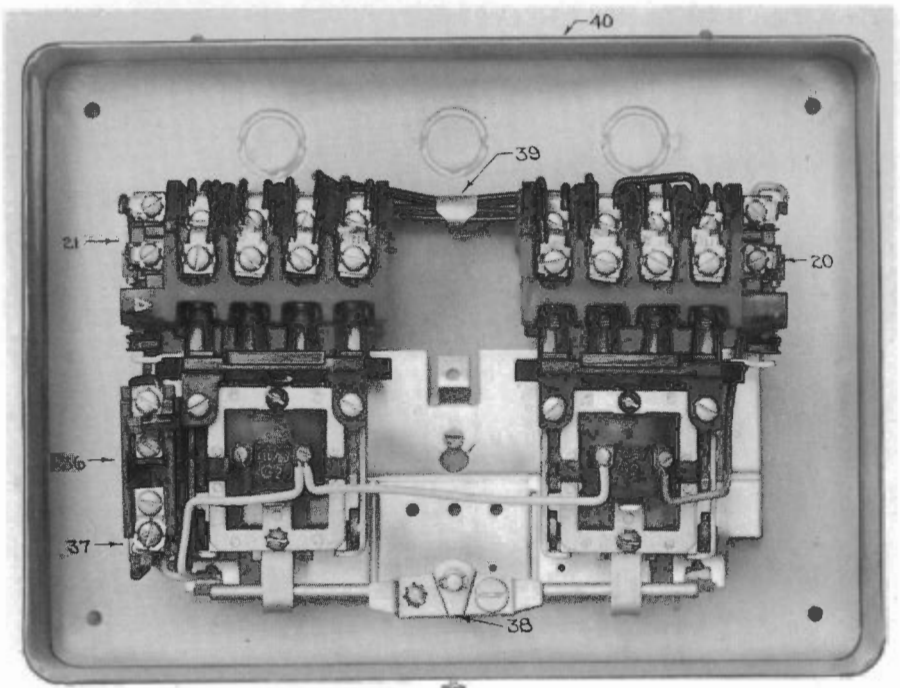


PLATE 35

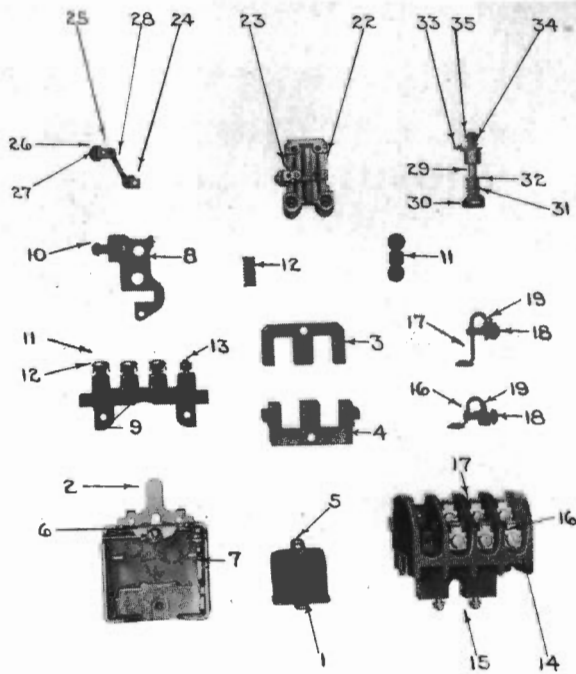
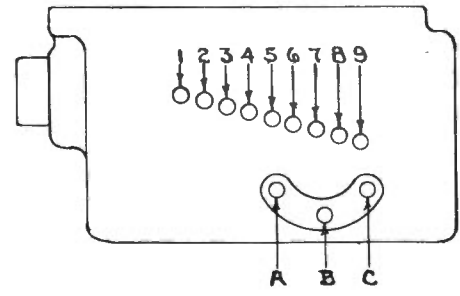
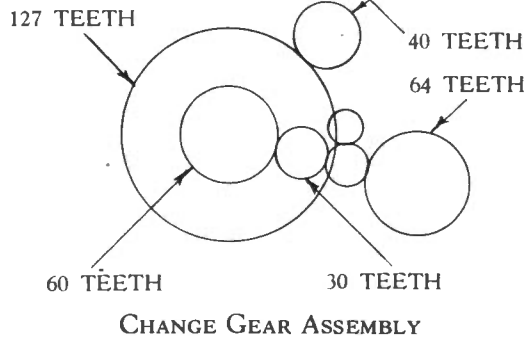


PLATE 36

# GENERAL ELECTRIC CR7009-B31PG REVERSING SWITCH

(Plates 35 and 36)

Item	Part Name	Cat. No.	Quantity
1.	Operating Coil	22D82G2	2
2.	Frame	5928994G1	2
3.	Upper Magnet	5316920G5	2
4.	Lower Magnet	5316920G6	2
5.	Coil Holder	5355911	4
6.	Screw for Coil Holder (10-32)	5388829	2
7.	Push Rod, Right Hand	5976320G2	2
8.	Push Rod, Left Hand	5976320G1	2
9.	Molded Support for Four Movable Contacts	5981284P2	2
10.	Screw Fastening Push Rod to Support (10-32)	154917	4
11.	Movable Contact Plate with Tips	5373245G3	8
12.	Compression Spring for Movable Contact	2415135	8
13.	Clamp for Contact Plate and Guide Post	5357520	8
14.	Molded Arc Chute and Support for Stationary Contacts (four-pole)	8245334P1	2
15.	Screw Fastening Arc Chute to Frame (10-32)	105136	4
16.	Stationary Contact, Front	5373245G1	8
17.	Stationary Contact, Rear	5373245G2	8
18.	Binding Screw for Stationary Contact	6915750P21	16
19.	Terminal Clamp for Binding Screw	5306831P24	16
20.	Interlock, Complete, Left Hand	4988141G7	1
21.	Interlock, Complete, Right Hand	4988141G9	1
22.	Molded Base	5311624P2	2
23.	Stationary Contact with Two Tips	5344192G1	2
24.	Stationary Contact with One Tip	5344192G2	2
25.	Connection Clip	5344192P3	2
26.	Binding Screw for Cat. 5344192G1 and 5344192P3	1417898	4
27.	Terminal Clamp for Binding Screw	5305241P15	4
28.	Connection Strip, Back of Base	5382826	2
29.	Molded Plunger	5344193P2	2
30.	Cap for Bottom of Plunger	5341041	2
31.	Compression Spring for Plunger	2415302	2
32.	Retainer for Compression Spring	5359517	2
33.	Movable Contact Plate with Tips	5341087G1	2
34.	Compression Spring for Movable Contact Plate	2415168	2
35.	Retainer for Spring	5359517	2
36.	Overload Relay, less Heater	4988111C	1
37.	Support for Relay	6922721G2	1
38.	Mechanical Interlock	5194493G21	1
39.	Zinc Marking Tag	414266	1
40.	Enclosing Case, less Cover	5324459G17	1
	Screw Fastening Stationary Contacts and Connection Clip to Base (6-32) (not shown)	9625	6
	Retainer for Cap (not shown)	5359517	2
	Screw Fastening Interlock to Support (6-32) (not shown)	9625	4
	Washer for Cat. 9625 (not shown)	1400527	4
	Locking Ring for Cat. 9625 (not shown)	5346400P2	4
	Support and Operating Arm for Interlock, Complete, Left Hand (not shown)	2837309G2	1
	Support and Operating Arm for Interlock, Complete, Right Hand (not shown)	2837309G1	1
	Support for Right Hand Interlock (not shown)	5308296P1	1
	Support for Left Hand Interlock (not shown)	5308296P2	1
	Screw Fastening Support to Molded Arc Chute (not shown)	5950603	2
	Operating Arm for Interlock (not shown)	5308296P3	2
	Screw Fastening Operating Arm to Movable Contact Support (6-32) (not shown)	139003	2
	Front Cover, with Reset Button (not shown)	5324458G36	1
	Overload Relay Heater (now shown)	81D258	1



LEAD IN MILLIMETERS

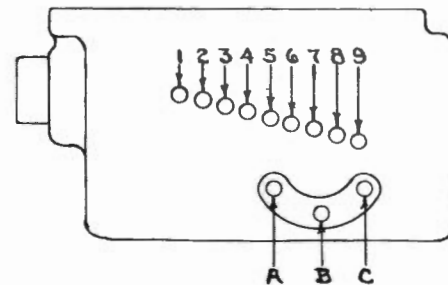
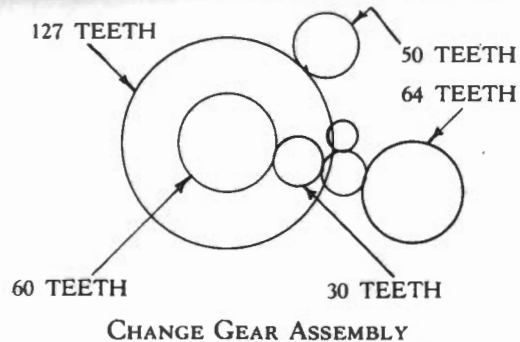
FINE THREAD SERIES METRIC SYSTEM

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	0.750	0.858	0.948	1.000	1.043	1.091	1.200	1.333	1.500
B	0.375	0.429	0.474	0.500	0.522	0.545	0.600	0.666	0.750
C	1.500	1.714	1.896	2.000	2.087	2.182	2.400	2.666	3.000

FEEDS THOUSANDTHS INCHES PER REVOLUTION OF SPINDLE

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	.0110	.0125	.0135	.0147	.0155	.0160	.0171	.0195	.0220
B	.0055	.0063	.0067	.0074	.0077	.0080	.0085	.0098	.0110
C	.0220	.0250	.0270	.0293	.0310	.0320	.0352	.0390	.0440





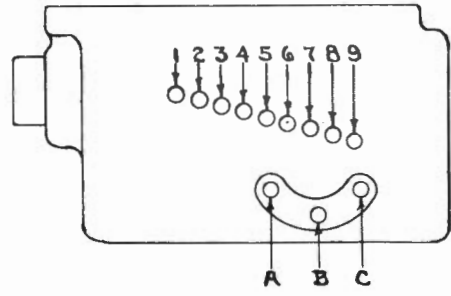
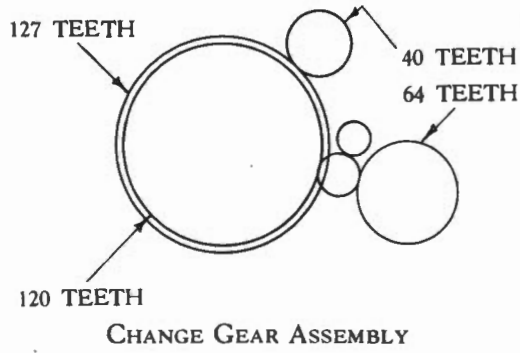
LEAD IN MILLIMETERS

FINE THREAD SERIES METRIC SYSTEM

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	.9375	1.072	1.154	1.250	1.304	1.364	1.500	1.666	1.875
B	.4688	.5358	.5765	.6250	.6522	.6818	.7500	.8333	.9375
C	1.875	2.143	2.308	2.500	2.609	2.727	3.000	3.333	3.750

FEEDS THOUSANDS INCHES PER REVOLUTION OF SPINDLE

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	.0138	.0156	.0169	.0183	.0195	.0200	.0220	.0244	.0275
B	.0069	.0078	.0085	.0091	.0098	.0100	.0110	.0122	.0138
C	.0275	.0312	.0339	.0366	.0389	.0400	.0441	.0488	.0550



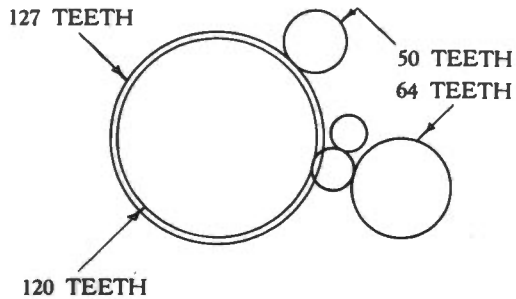
**LEAD IN MILLIMETERS**

**MEDIUM THREAD SERIES METRIC SYSTEM**

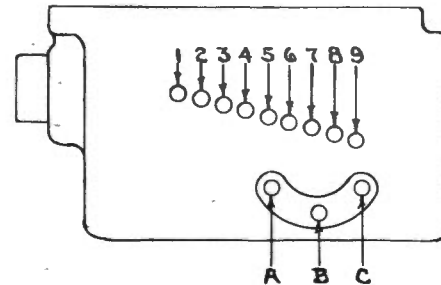
Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	1.500	1.714	1.896	2.000	2.087	2.182	2.400	2.666	3.000
B	0.750	0.858	0.948	1.000	1.043	1.091	1.200	1.333	1.500
C	3.000	3.429	3.692	4.000	4.174	4.364	4.800	5.333	6.000

**FEEDS THOUSANDS INCHES PER REVOLUTION OF SPINDLE**

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	.0220	.0251	.0271	.0293	.0311	.0320	.0352	.0390	.0440
B	.0110	.0126	.0135	.0147	.0150	.0160	.0171	.0195	.0220
C	.0440	.0503	.0542	.0586	.0622	.0640	.0705	.0780	.0880



CHANGE GEAR ASSEMBLY



GEAR BOX LEVER POSITIONS

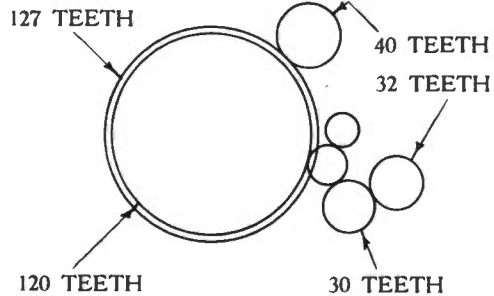
LEAD IN MILLIMETERS

MEDIUM THREAD SERIES METRIC SYSTEM

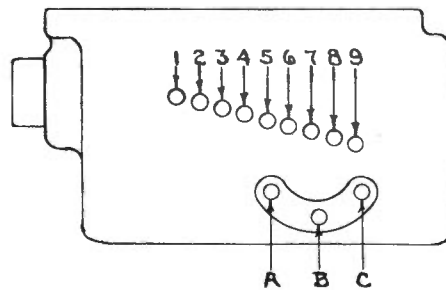
Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	1.875	2.143	2.308	2.500	2.609	2.727	3.000	3.333	3.750
B	.9375	1.072	1.154	1.250	1.304	1.364	1.500	1.666	1.875
C	3.750	4.286	4.615	5.000	5.217	5.455	6.000	6.666	7.500

FEEDS THOUSANDS INCHES PER REVOLUTION OF SPINDLE

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	.0275	.0312	.0339	.0366	.0389	.0400	.0441	.0488	.0550
B	.0138	.0156	.0169	.0183	.0195	.0200	.0220	.0244	.0275
C	.0550	.0625	.0678	.0733	.0778	.0800	.0882	.0976	.1100



CHANGE GEAR ASSEMBLY



GEAR BOX LEVER POSITIONS

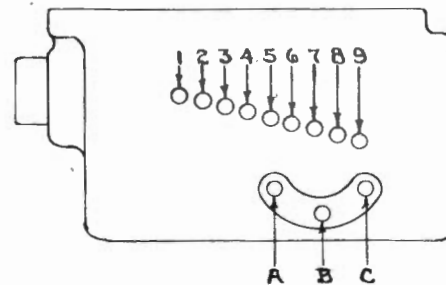
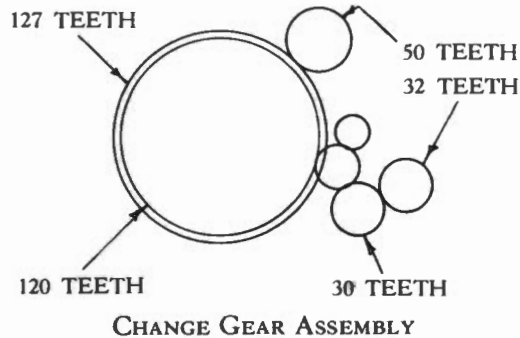
PITCH IN MILLIMETERS

COARSE THREAD SERIES METRIC SYSTEM

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	3.000	3.429	3.692	4.000	4.174	4.364	4.800	5.333	6.000
B	1.500	1.714	1.896	2.000	2.087	2.182	2.400	2.666	3.000
C	6.000	6.857	7.385	8.000	8.348	8.727	9.600	10.66	12.00

FEEDS THOUSANDS INCHES PER REVOLUTION OF SPINDLE

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	.0440	.0503	.0542	.0586	.0620	.0640	.0705	.0780	.0880
B	.0220	.0251	.0271	.0293	.0310	.0320	.0352	.0390	.0440
C	.0880	.1006	.1084	.1172	.1240	.1280	.1410	.1560	.1760



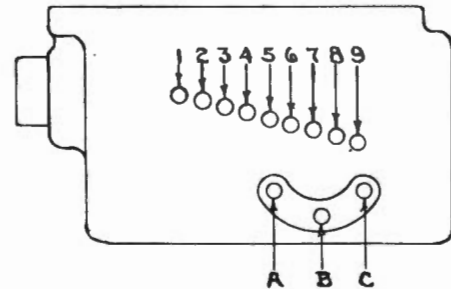
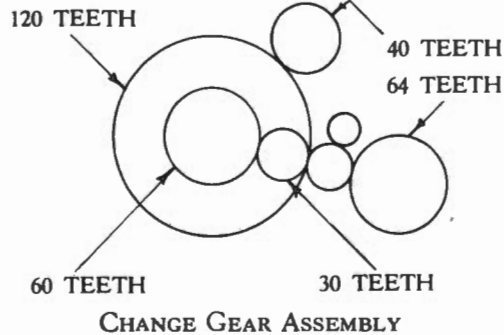
LEAD IN MILLIMETERS

COARSE THREAD SERIES METRIC SYSTEM

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	3.750	4.286	4.615	5.000	5.217	5.455	6.000	6.666	7.500
B	1.875	2.143	2.308	2.500	2.609	2.727	3.000	3.333	3.750
C	7.500	8.572	9.231	10.00	10.43	10.91	12.00	13.33	15.00

FEED THOUSANDTHS INCHES PER REVOLUTION OF SPINDLE

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	.0550	.0625	.0678	.0733	.0778	.0800	.0882	.0976	.1100
B	.0275	.0312	.0339	.0366	.0389	.0400	.0441	.0488	.0550
C	.1100	.1250	.1356	.1466	.1556	.1600	.1764	.1952	.2200



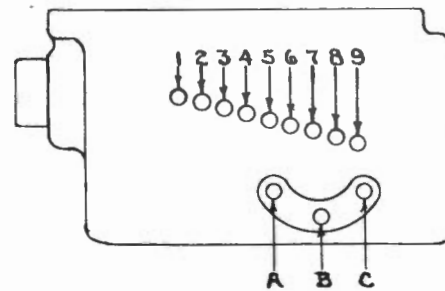
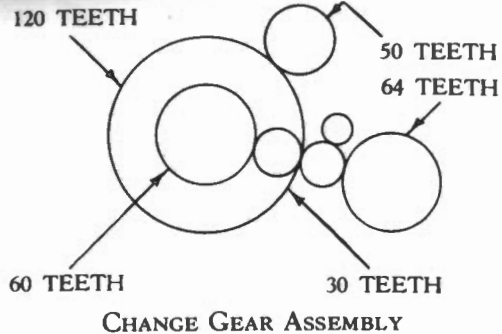
THREADS PER INCH

FINE THREAD SERIES ENGLISH SYSTEM

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	32	28	26	24	23	22	20	18	16
B	64	56	52	48	46	44	40	36	32
C	16	14	13	12	11½	11	10	9	8

FEEDS THOUSANDTHS INCHES PER REVOLUTION OF SPINDLE

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	.0116	.0133	.0143	.0155	.0161	.0166	.0183	.0206	.0233
B	.0058	.0066	.0071	.0078	.0080	.0083	.0092	.0103	.0116
C	.0232	.0266	.0286	.0310	.0323	.0333	.0367	.0413	.0465



**THREADS PER INCH**

**FINE THREAD SERIES ENGLISH SYSTEM**

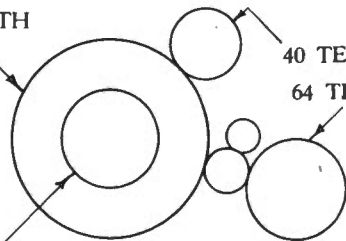
Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	25.60	22.40	20.80	19.20	18.40	17.60	16.00	14.40	12.80
B	51.20	44.80	41.60	38.40	36.80	35.20	32.00	28.80	25.60
C	12.80	11.20	10.40	9.600	9.200	8.800	8.000	7.200	6.400

**FEEDS THOUSANDTHS INCHES PER REVOLUTION OF SPINDLE**

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	.0145	.0166	.0179	.0194	.0202	.0208	.0225	.0260	.0290
B	.0073	.0083	.0088	.0099	.0101	.0104	.0115	.0130	.0145
C	.0290	.0333	.0359	.0388	.0404	.0417	.0459	.0520	.0580

120 TEETH

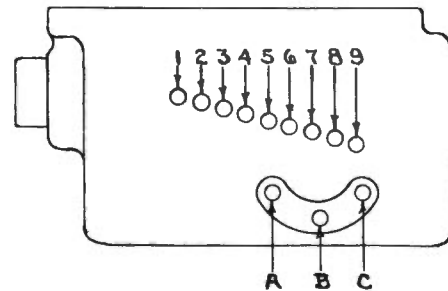
60 TEETH



CHANGE GEAR ASSEMBLY

40 TEETH

64 TEETH



GEAR BOX LEVER POSITIONS

THREADS PER INCH

MEDIUM THREAD SERIES ENGLISH SYSTEM

Lower Lever on Position

Upper Lever on Position

	1	2	3	4	5	6	7	8	9
A	16	14	13	12	11½	11	10	9	8
B	32	28	26	24	23	22	20	18	16
C	8	7	6½	6	5¾	5½	5	4½	4

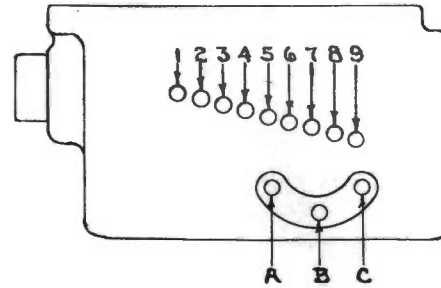
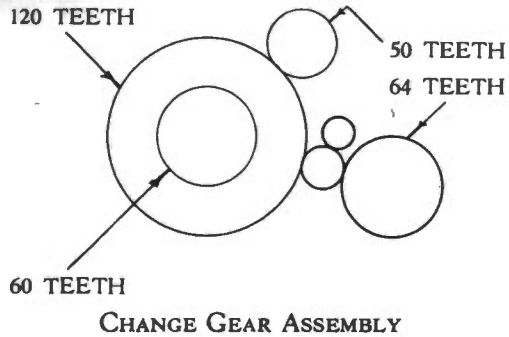
FEEDS THOUSANDTHS INCHES PER REVOLUTION OF SPINDLE

Lower Lever on Position

Upper Lever on Position

	1	2	3	4	5	6	7	8	9
A	.0232	.0266	.0286	.0310	.0323	.0333	.0366	.0413	.0465
B	.0116	.0133	.0143	.0155	.0161	.0166	.0183	.0206	.0233
C	.0464	.0532	.0573	.0620	.0646	.0666	.0733	.0825	.0930





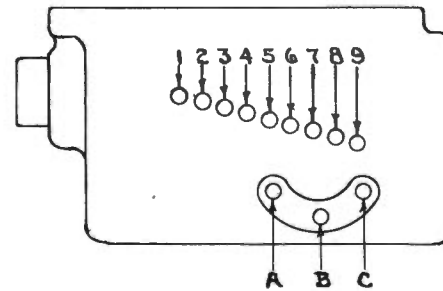
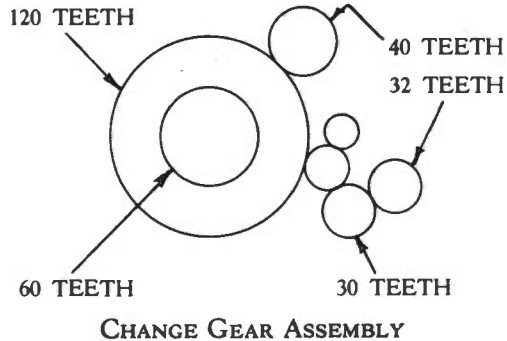
**THREADS PER INCH**

**MEDIUM THREAD SERIES ENGLISH SYSTEM**

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	12.80	11.20	10.40	9.600	9.200	8.800	8.000	7.200	6.400
B	25.60	22.40	20.80	19.20	18.40	17.60	16.00	14.40	12.80
C	6.400	5.600	5.200	4.800	4.600	4.400	4.000	3.600	3.200

**FEEDS THOUSANDTHS INCHES PER REVOLUTION OF SPINDLE**

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	.0290	.0333	.0359	.0388	.0404	.0417	.0459	.0520	.0580
B	.0145	.0166	.0179	.0194	.0202	.0208	.0229	.0260	.0290
C	.0580	.0666	.0718	.0776	.0808	.0833	.0918	.1030	.1160



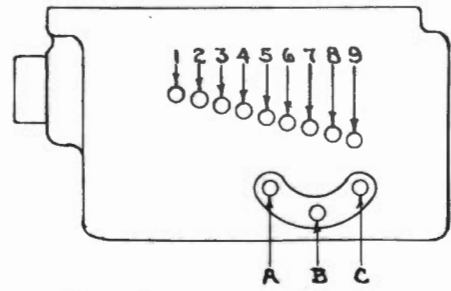
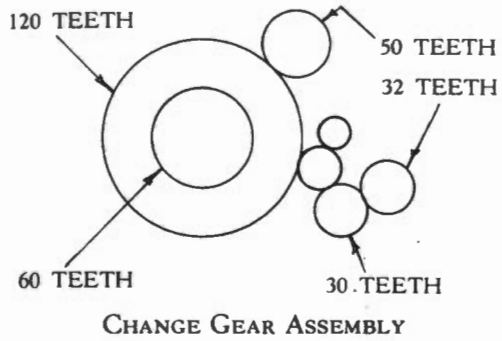
**THREADS PER INCH**

**COARSE THREAD SERIES ENGLISH SYSTEM**

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	8	7	6½	6	5¾	5½	5	4½	4
B	16	14	13	12	11½	11	10	9	8
C	4	3½	3¼	3	2⅞	2¾	2½	2¼	2

**FEEDS THOUSANDTHS INCHES PER REVOLUTION OF SPINDLE**

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	.0464	.0532	.0573	.0620	.0646	.0666	.0733	.0825	.0930
B	.0232	.0266	.0286	.0310	.0323	.0333	.0366	.0413	.0465
C	.0928	.1064	.1146	.1240	.1292	.1332	.1466	.1650	.1860



THREADS PER INCH

COARSE THREAD SERIES ENGLISH SYSTEM

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	6.400	5.600	5.200	4.800	4.600	4.400	4.000	3.600	3.200
B	12.800	11.20	10.40	9.600	9.200	8.800	8.000	7.200	6.400
C	3.200	2.800	2.600	2.400	2.300	2.200	2.000	1.800	1.600

FEEDS THOUSANDTHS INCHES PER REVOLUTION OF SPINDLE

Lower Lever on Position	Upper Lever on Position								
	1	2	3	4	5	6	7	8	9
A	.0580	.0666	.0718	.0776	.0808	.0833	.0918	.1030	.1160
B	.0290	.0333	.0359	.0388	.0404	.0417	.0459	.0520	.0580
C	.1160	.1333	.1436	.1548	.1620	.1640	.1820	.2060	.2320

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