

## CHAPTER 34

# Linotype Lubrication

### OILING AND CLEANING

**T**O INSURE a long life of efficient and trouble-free operation, a systematic plan of machine maintenance should be followed. In this plan, proper lubrication is the most important single factor. So that this may be accomplished in a thorough and routine manner, there are indicated in the following photographs all of the various oiling points on the machine. Unless otherwise specified, all oiling points (indicated as (2) if multiple) are for all types of Models 29, 30, 31 and 32. In addition, the majority will be found applicable as a guide in lubricating other models.

The oil holes are placed in the most convenient and accessible positions practicable. It should be remembered that a few drops of oil applied frequently is more economical and much more efficient than flooding the parts with oil occasionally. In addition to wasting oil, flooding only helps to collect dirt, and in all probability does more harm than good. A piece of waste or cloth should be used to remove all surplus oil from around holes after oiling. Extreme care should be used to prevent any oil from coming in contact with the matrices as it will eventually hinder smooth assembling action.

It is not possible to indicate the desirable frequency of oiling individual points on the Linotype, as is practicable in the case of an automobile. The widely varying conditions under which Linotypes are operated, with respect to running time, cleanliness and climate, combine to make it a problem best solved locally, through the exercise of simple mechanical judgment. It should be sufficient to point out that the constantly moving parts call for more frequent attention than those which only contact when the machine makes its periodic cycles.

Particularly important to proper lubrication is the quality of the lubricant. Cheap vegetable oils are a false economy. Always use high-grade machine oils that will not gum. We recommend Linotype oil and grease as it has been thoroughly tested and found efficient. As a guide, with regard to quality and viscosity, we have indicated throughout, by symbol, the proper lubricant for each oiling point. As will be noted, the proper grade oil in the majority of places is our X-24, a medium-weight motor oil equivalent to the standard S.A.E.20.

### Linotype Approved Lubricants

\* **Linotype Oil**

Part No. X-24 (½ gallon can)

† **Keyboard and Distributor Oil**

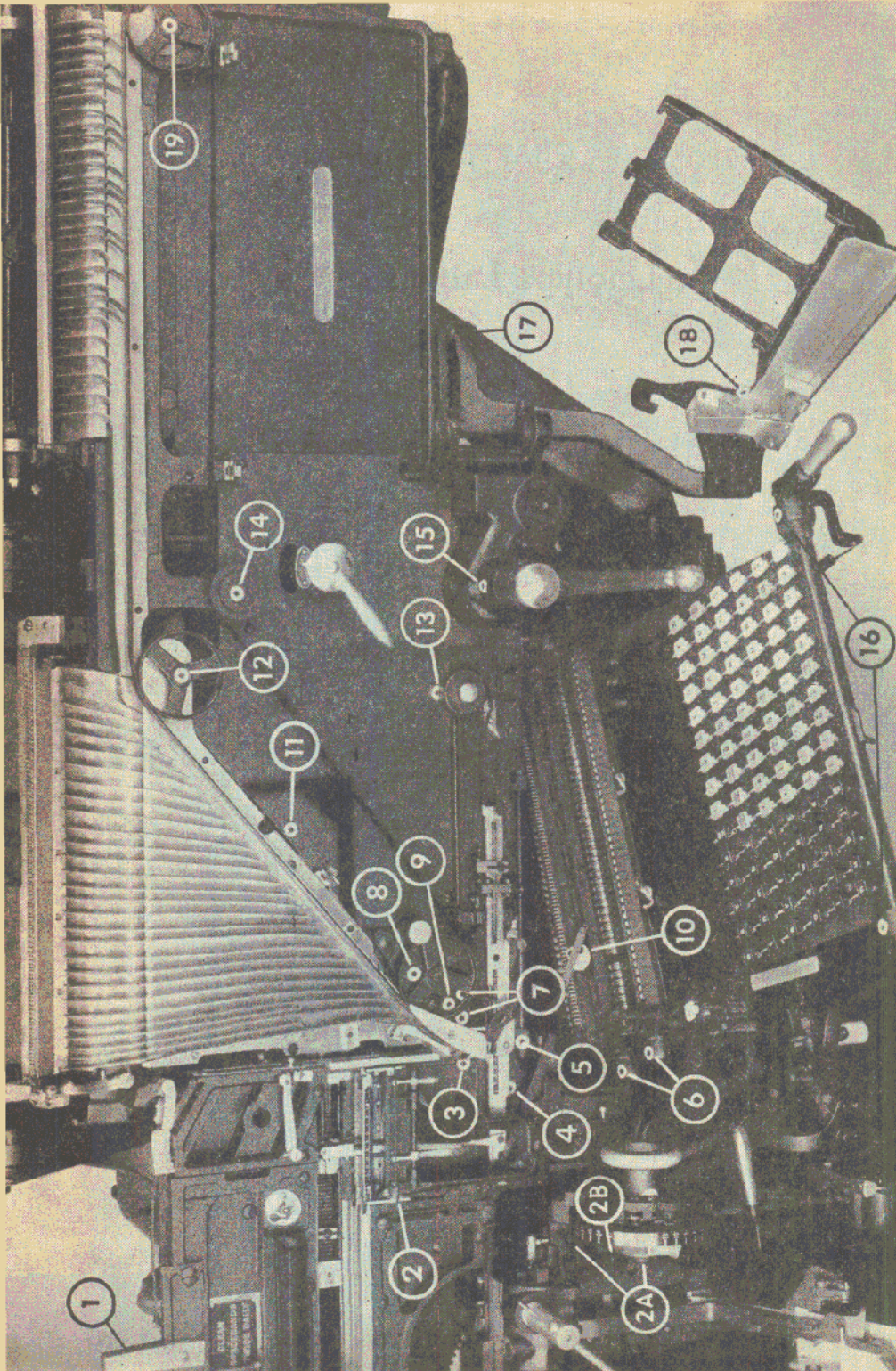
Part No. X-1012 (2 oz. bottle)

‡ **Keyboard Cam Oil**

Part No. X-101 (2 oz. bottle)

§ **Linotype Grease**

Part No. X-1204 (5 lb. can)



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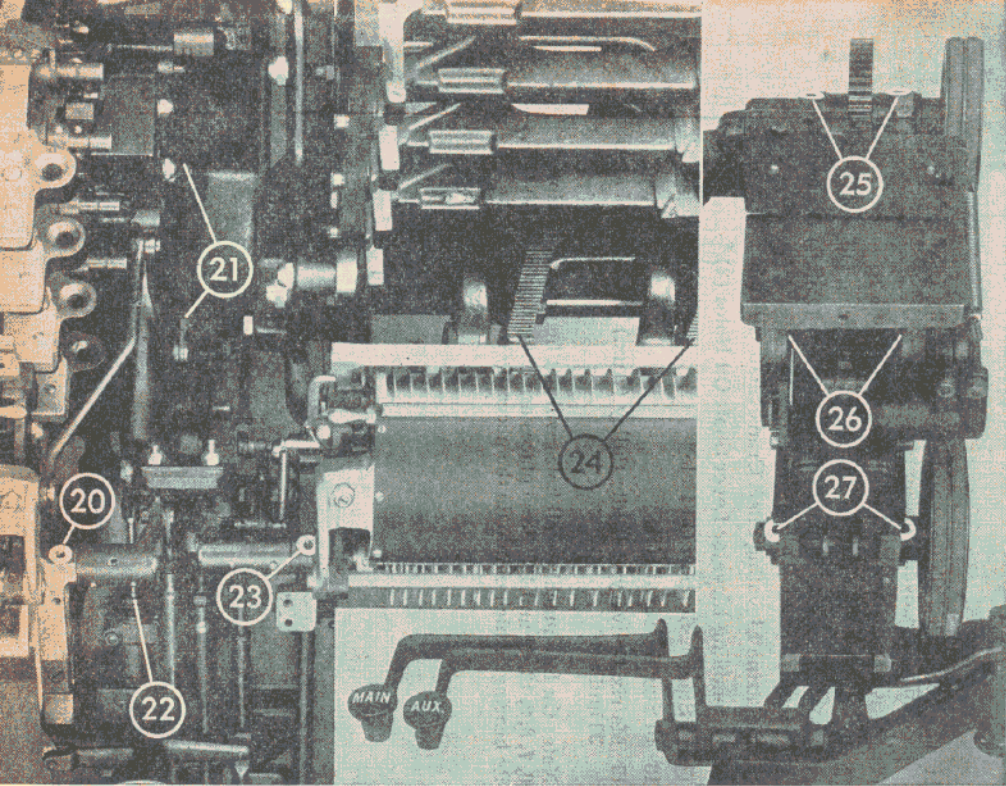
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CLEAN  
RECOMMENDED  
WIDE BRUSH

- 1 Second Elevator Guide (Lower) (Apply oil sparingly with finger) †  
Also oil hinge pins in Second Elevator sparingly †
- 2 Assembling Elevator Gate Spring Roll †
- 2a Knife Block Slide Oil Holes (2) \*
- 2b Knife (R.H.) Slide Pusher Cam (Oil bearing surfaces) \*
- 3 Assembler Star Shaft Oil Hole \*
- 4 Assembler Slide Roll Oil Hole \*
- 5 Keyboard Rod Shift Key Link Lever Shaft Oil Holes (2) (except 72-90 machines) \*
- 6 Keyboard Cam Rubber Roll Shaft Oil Holes (4) \*
- 7 Assembler Star Idler Pinion Oil Holes (2) \*
- 8 Matrix Delivery Belt Driving Pulley Shaft Oil Hole \*
- 9 Assembler Star (Inter.) Gear Oil Hole \*
- 10 Keyboard Cam should be removed and cleaned occasionally and a small drop of oil applied to the pin with a toothpick †
- 11 Keyboard Rod Shifter Guide Oil Holes (3) (Except 72-90 machines) (Cover must be removed to oil) \*
- 12 Matrix Delivery Belt Idle Pulley Oil Hole \*
- 13 Assembler Slide Return Spring Stud Bearing Oil Hole \*
- 14 Matrix Delivery Belt Idle Pulley (Aux.) (Small) Oil Hole (Models 30 and 32) \*
- 15 Magazine Elevating Shaft Crank Shaft Oil Hole \*
- 16 Assembling Elevator Lever Shaft Oil Holes (2) \*
- 17 Pi Stacker Support Oil Hole \*
- 18 Pi Star Shaft Oil Hole \*
- 19 Matrix Delivery Belt Idle Pulley (Aux.) Oil Hole (Models 30 and 32) \*

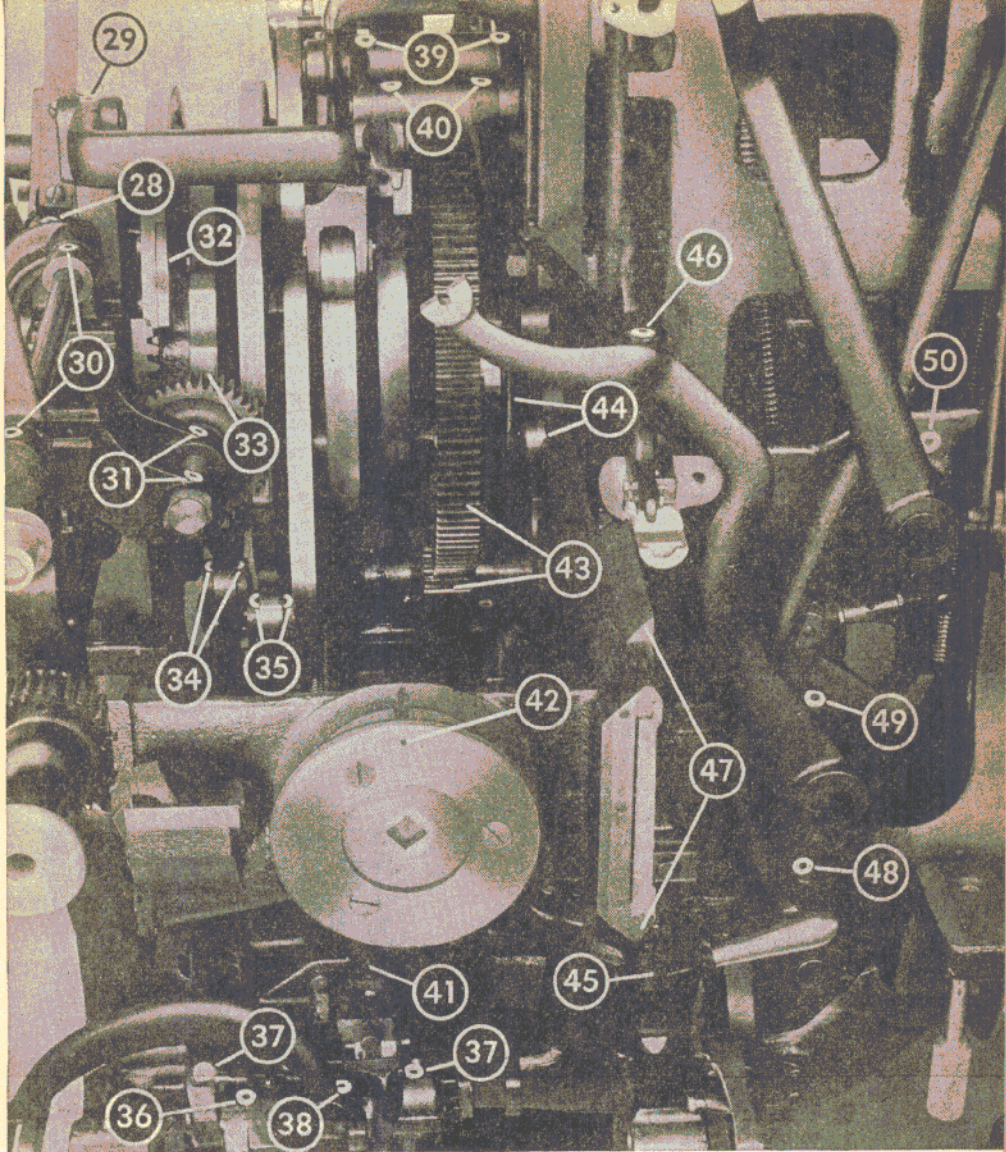
Note: On late machines oil holes will not be found at points 3, 6, 7, 8, 9, 12, 14 and 19. These places are now supplied with Oil-ite bearings which eliminate the necessity for manual oiling.



- 20 Assembler Entrance (Upper) Hinge Shaft Oil Holes (2) (one on each end of Shaft) (Models 29 and 30)\*
- 21 Pivoting Front Guide Balance Spring and Operating Cam Roll (Apply oil to Plunger Rod and Roll) (Models 29 and 30)\*
- 22 Assembler Entrance (Upper) Snubber Piston (Apply oil to Plunger Rod) (Models 29 and 30)\*
- 23 Assembler Ent. (Upper) (Aux.) Hinge Shaft Oil Holes (2) (one on each end of Shaft) (Model 30)\*
- 24 Magazine (Aux.) Elevating Pinion Racks and Gears (Models 30 and 32)\*
- 25 Assembler Entrance (Upper) Shift (Inter.) Driving Gear Shaft Oil Holes (one on Model 29) (two on Model 30)†
- 26 Assembler Entrance (Upper) Fingers Key Shift Operating Cams and Rolls (one on Model 29) (two on Model 30)†
- 27 Assembler Entrance (Upper) Finger Key Shift Operating Cam Shaft Oil Holes (2) (Models 29 and 30)†
- Apply oil sparingly to all bearing surfaces not provided with oil holes. Do not allow any oil to get on Assembler Entrance (Upper) Finger Key Shift Roll Cams.*
- 33 Mold Turning Bevel Pinion (Apply oil to teeth of Gear and sides of square block)\*
- 34 Vise Closing Cam Roll Oil Holes (2)\*
- 35 Justification Cam Roll Oil Holes (2)\*
- 36 Vise Jaw Locking Toggle Lever Oil Hole (Self-quadder)\*
- 37 Vise Jaw Locking Toggle Lever and Control Rod Lever Shaft Oil Holes (2) (Self-quadder)\*

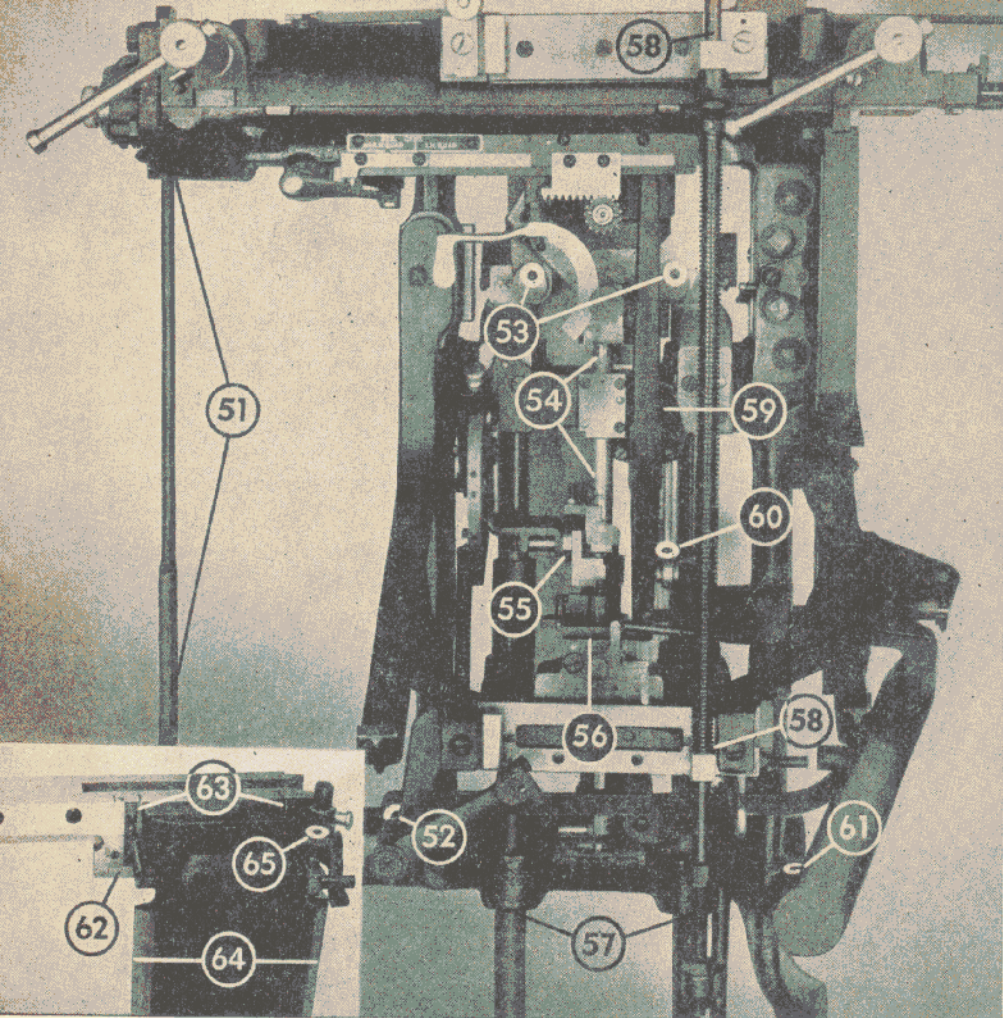
**OPPOSITE PAGE:**

- 28 Distributor Shifter Lever Shaft Oil Holes (2) (one on each end of Shaft)\*
- 29 Pot Pump Lever Oil Holes (3)\*
- 30 Pot Crucible Vertical Mouthpiece Wiper Shaft Oil Holes (2)\*
- 31 Mold Turning Square Block Shaft Oil Holes (2)\*
- 32 Mold Turning Cam Shoes (2) (Oil felt on Gear Guard)\*

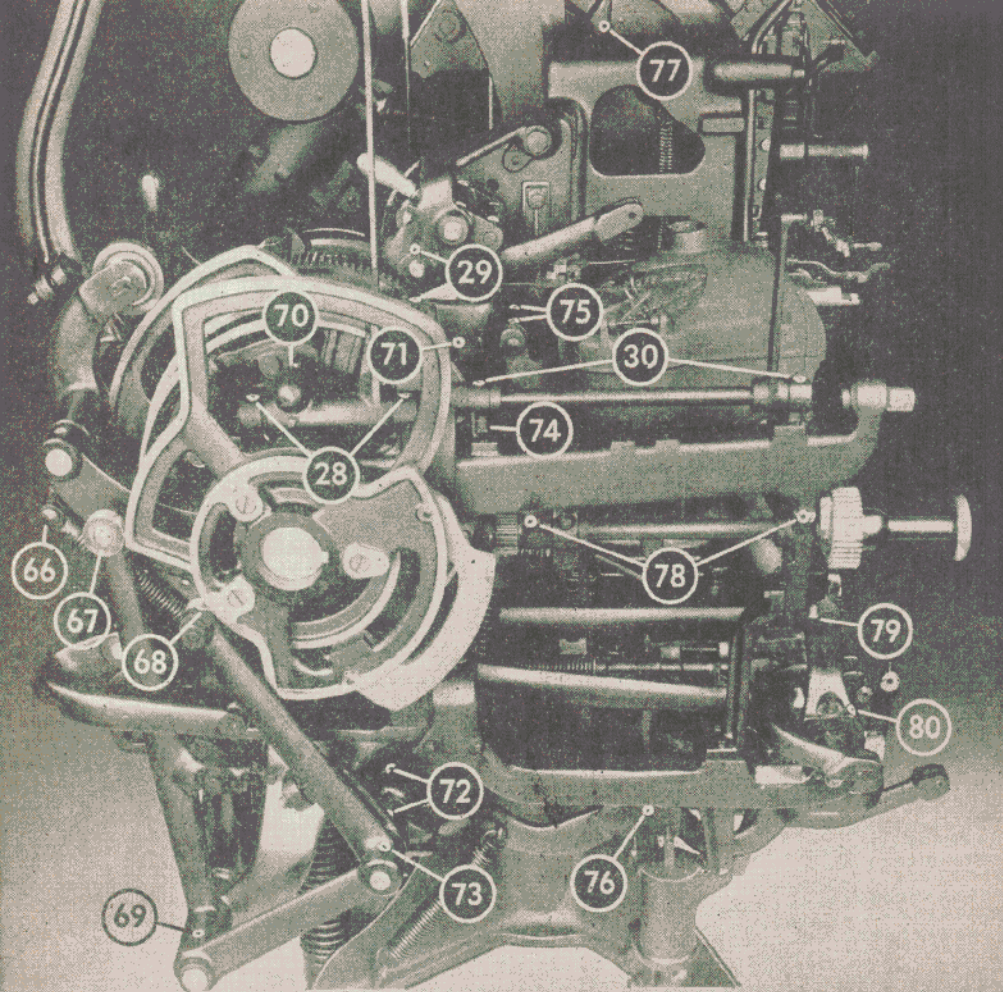


- 38 Vise Jaw Control Rod Lever Oil Hole (Self-quadder)\*
- 39 Mold Cam Lever Handle Oil Holes (2)\*
- 40 Mold Cam Lever Oil Holes (2)\*
- 41 Justification Release Cam Lever Slide (Apply oil to bearing surfaces) (Self-quadder)\*
- 42 Mold Disk Bearing Oil Hole \*
- 43 Mold Cam and Driving Gear (Apply oil to teeth of Gear)\*
- 44 Mold Cam Roll and Mold Cam Lever Roll (Apply oil to Rolls and Studs)\*

- 45 Starting and Stopping Lever Hinge Pin; also bearing surfaces of Connecting Rod \*
- 46 Pot Pump Lever Stop Lever Operating Lever Oil Hole \*
- 47 Mold Disk Slide (Pull slide part way out and apply oil to bearing surfaces)\*
- 48 Spaceband Lever Shaft Oil Holes (2) (one in front and one in back)\*
- 49 Delivery Slide Lever Shaft Oil Holes (2) (one in front and back)\*
- 50 Elevator Transfer Lever Shaft Oil Holes (2) (one in front and back)\*



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| 51 Vise Jaw (L.H.) Wedge (Apply oil to bearing surfaces)*                   | 58 Knife Wiper Bar Rod (Apply oil to sides of Rod)*       |
| 52 Slug Lever Arm Shaft Oil Hole *  | 59 Mold Disk Dog (Apply oil to sides of Plunger)†         |
| 53 Vise Jaw Operating Lever Fulcrum Stud Oil Grooves (2) (Self-quadder)†    | 60 Vise Automatic Stop Rod Lever Oil Hole †               |
| 54 Vise Jaw Control Rod (Apply oil to sides of Rod) (Self-quadder)†         | 61 Slug Lever Oil Hole *                                  |
| 55 Justification Control Cam (Apply oil to bearing surface) (Self-quadder)† | 62 First Elevator Jaw Duplex Rail (Oil sparingly)‡        |
| 56 Vise Jaw Locking Toggle Adjusting Screw Cam Oil Hole (Self-quadder)†     | 63 First Elevator Jaw Duplex Rail Levers (Oil sparingly)‡ |
| 57 Justification Rods (2) (Apply oil to sides of Rods)*                     | 64 First Elevator Slide (Apply oil to bearing surfaces)*  |
|   | 65 Knife Wiper Operating Lever Oil Hole *                 |



66 Second Elevator Starting Spring Bolt Hinge Screw (Models 31 and 32)\*

67 First Elevator Cam Roll Oil Hole \*

68 Vise Jaw Locking Toggle Cam Roll Oil Hole (Self-quadder)\*

69 Vise Jaw Locking Cam Lever Bracket Support Oil Hole (Self-quadder)\*

70 Distributor Shifter Cam and Cam Rider \*

71 Pot Pump Lever Roll Oil Holes (2)\*

72 Vise Jaw Locking Toggle Cam Lever Extension Arm Oil Holes (2) (Self-quadder)\*

73 Vise Jaw Locking Toggle Cam Roll Lever Oil Hole (Self-quadder)\*

74 Pot Cam Roll Oil Holes (2)\*

75 Pot Lever Oil Holes (2)\*

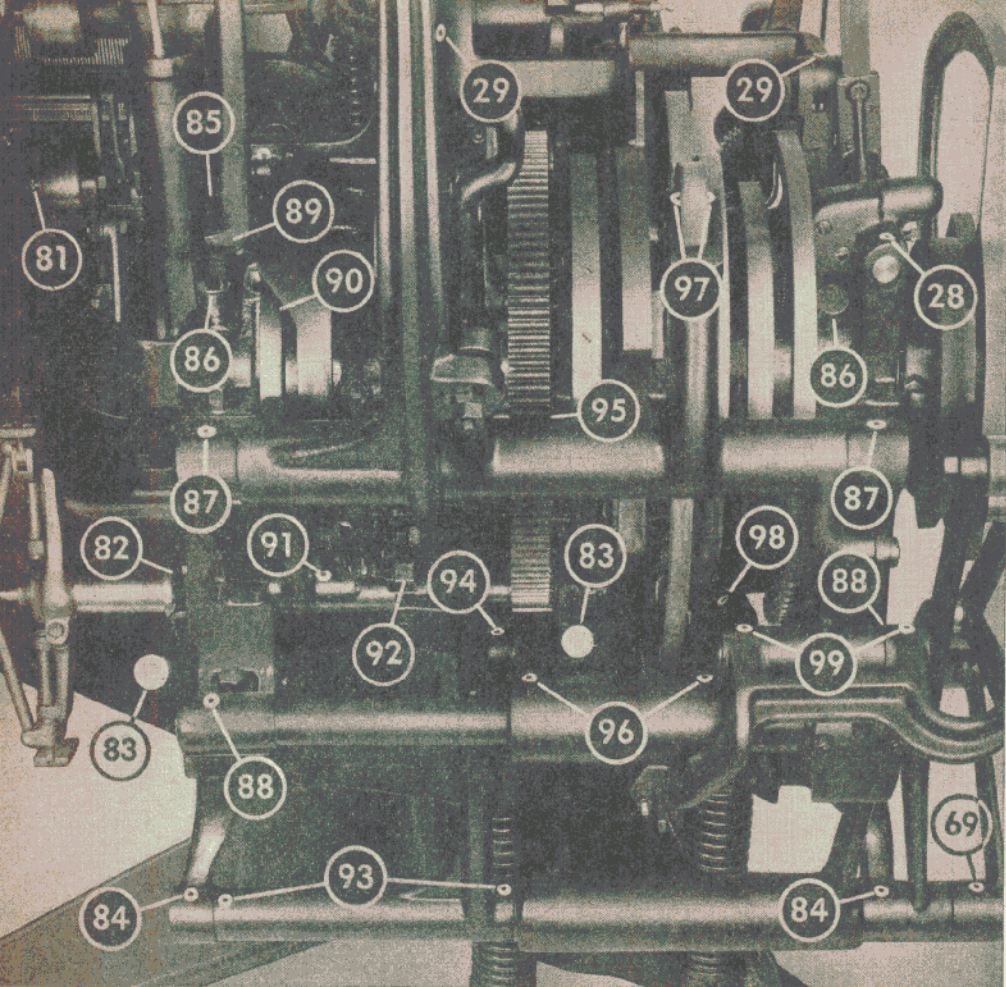
76 Vise Jaw Locking Toggle Lever Roll Oil Hole (Self-quadder)\*

77 Magazine Locking Block Support Lever Shaft Oil Holes (2) (one at each end of shaft)\*

78 Mold Disk Pinion Shaft Oil Holes (2)\*

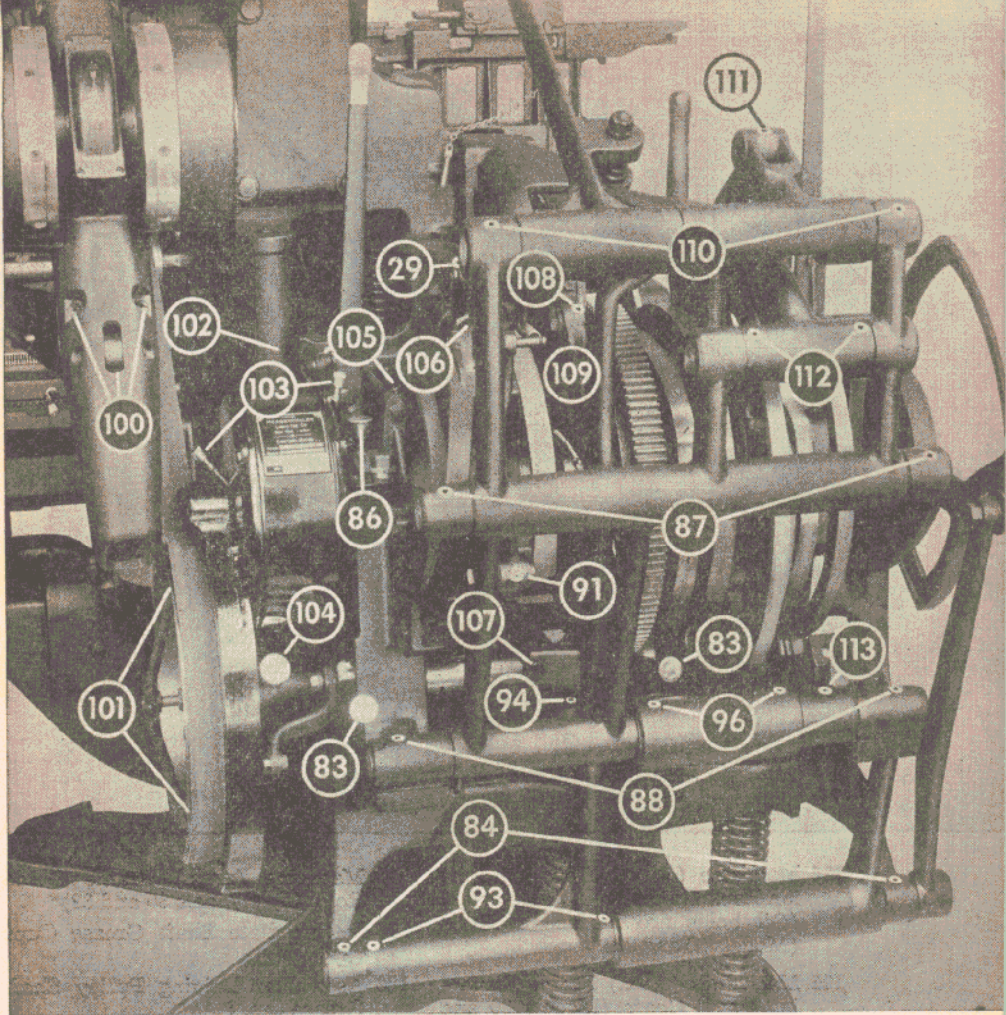
79 Mold Disk Guide Support Screw Grease Cup §

80 Pot Leg Bushing Oil Holes (2) (one on each leg)\*

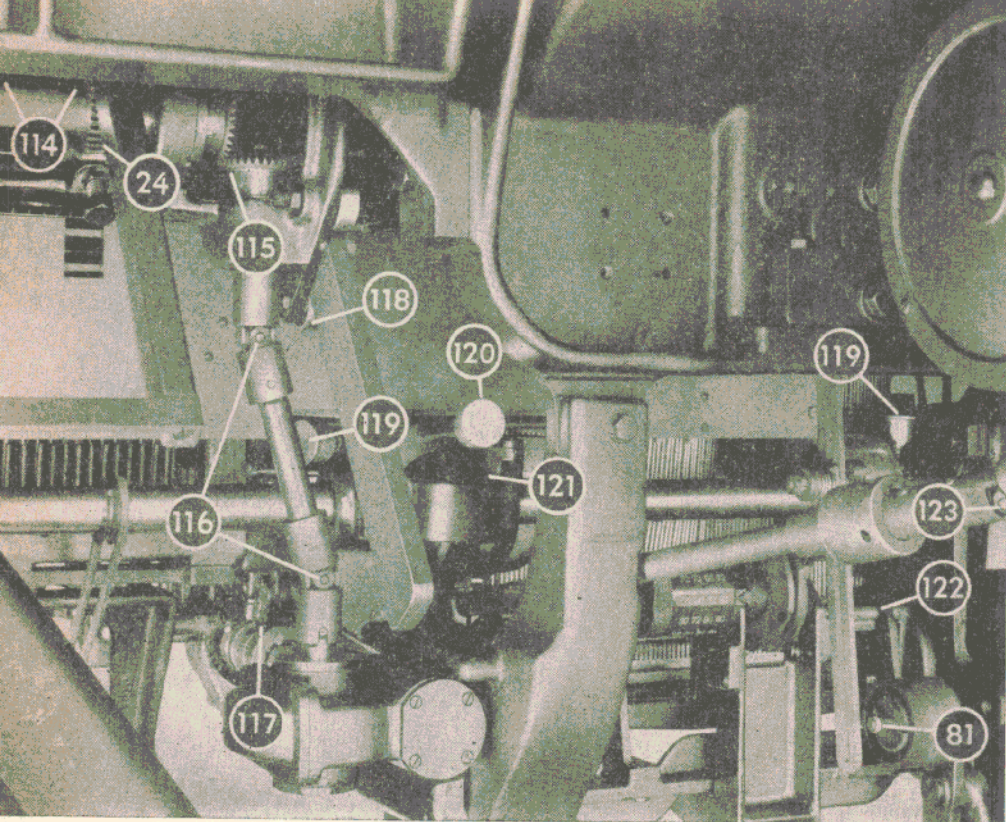


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| 81 Intermediate Shaft Driving Belt Idler Pulley Oil Cup (72-90 machines)* | 91 Second Elevator Safety Pawl Oil Hole *                        |
| 82 Driving Shaft Clutch Flange (Oil bearing surfaces)*                    | 92 Delivery Cam Shoe (Oil bearing surface)*                      |
| 83 Driving Shaft Bearing Grease Cups (2)§                                 | 93 Ejector Lever Oil Holes (2)*                                  |
| 84 First Elevator and Ejector Lever Shaft Oil Holes (2)*                  | 94 Vise Closing Lever Spring Rod Oil Hole *                      |
| 85 Delivery Lever Cam Roll and Pin *                                      | 95 Pot Return Cam (Oil bearing surface)*                         |
| 86 Cam Shaft Grease Cups (2)§   | 96 Justification Lever Oil Holes (2)*                            |
| 87 Second Elevator Lever Shaft Oil Holes (2)*                             | 97 Second Elevator Cam Roll Oil Holes (2)*                       |
| 88 Justification and Vise Closing Lever Shaft Oil Holes (2)*              | 98 Justification Lever Spring Rod Oil Hole *                     |
| 89 Elev. Transfer Cam Roll Oil Hole *                                     | 99 Justification Release Cam Lever Oil Holes (2) (Self-quadder)* |
| 90 Delivery and Elevator Transfer Cam (Oil bearing surface)*              |  |

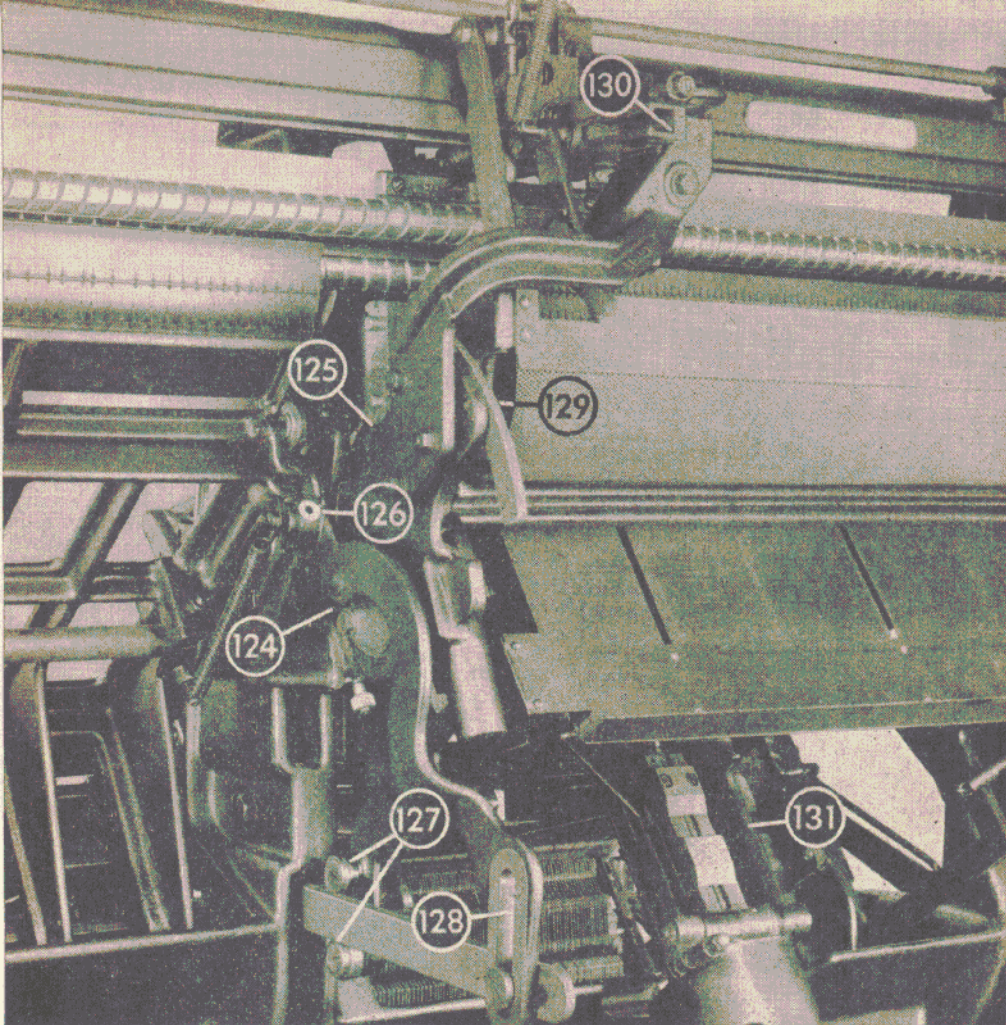




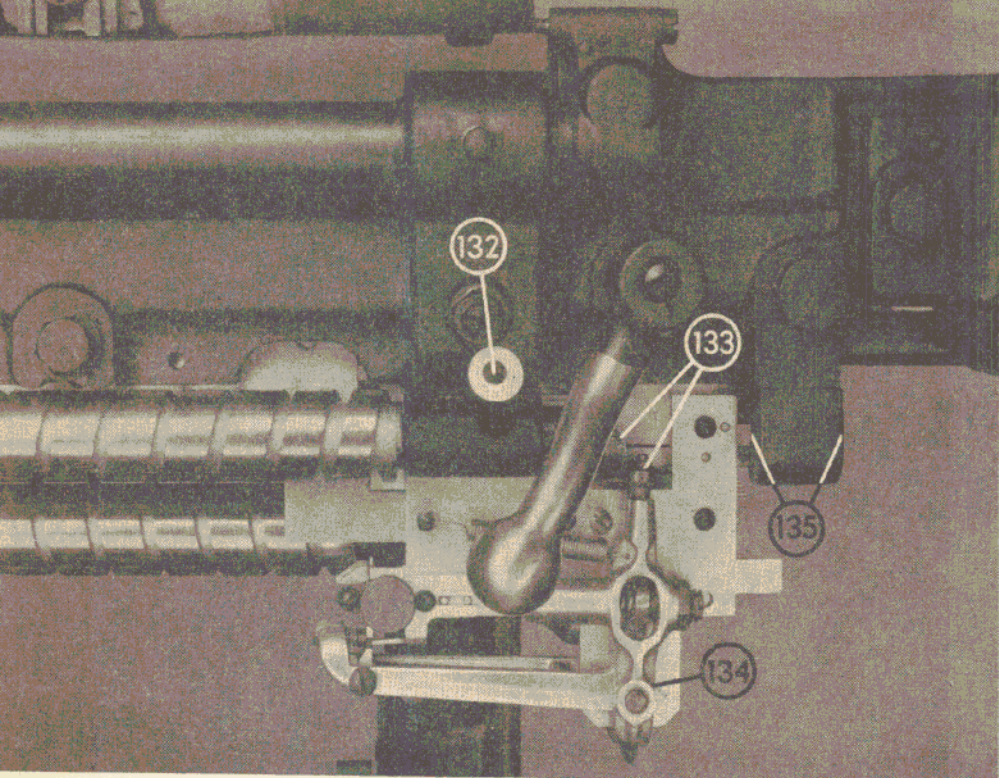
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| 100 Magazine Elevating Shaft Anti-Friction Rolls (6)*  | 107 Ejector Lever Shoe (Oil bearing surface)*                     |
| 101 Driving Shaft Friction Shoe Rods and Pins *  | 108 Ejector Lever Adjustable Pawl Plate (Oil bearing surface)*    |
| 102 Delivery Air Cushion Piston Fulcrum Screw *  | 109 Ejector Lever Adjusting Pawl Oil Hole *                       |
| 103 Motor Armature Bearing Oil Cups (2)*   | 110 Second Elevator Lever Shaft Oil Holes (2) (Models 29 and 30)* |
| 104 Motor Driving Pulley Grease Cups §   | 111 Second Elevator Lever Link Oil Holes (2) (Models 29 and 30)*  |
| 105 Vertical Starting Lever Shaft *  | 112 Second Elevator Cam Lever Oil Holes (2) (Models 29 and 30)*   |
| 106 Automatic Safety Pawl and Automatic Stopping Pawl (Oil bearing surfaces and hinge pins)* | 113 Vise Closing Lever Oil Hole *                                 |



- 114 Magazine (Aux.) Elevating Pinion Rack Guide Roll Oil Holes (2) (Oil holes are in face of Roll) (Models 30 and 32)\*
- 115 Magazines (Aux.) Frame Elevating Shaft Gears (Models 30 and 32)\*
- 116 Magazine (Aux.) Elevating Shaft Universal Joints (2) (Models 30 and 32)\*
- 117 Magazine Elevating Shaft Clutch (one on Models 29 and 31) (two on Models 30 and 32) (Oil bearing surfaces)\*
- 118 Magazine (Aux.) Frame Guide Rolls (4) (Models 30 and 32)\*
- 119 Intermediate Shaft Grease Cups (2)§
- 120 Assembler Driving Pulley Shaft Grease Cup §
- 121 Intermediate Shaft Bevel Gear and Assembler Driving Belt Gear \*
- 122 Keyboard Rod Lever Slide Link and Cam Roll Lever Shaft Oil Holes (3) (Models 31 and 32 [72-90])\*
- 123 Magazine Elevating Shaft Universal Joints \*



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| 124 Distributor Screw Guard Safety Lock (Oil bearing surfaces) (Models 31 and 32 [72-90])†                          | 128 Channel Entrance Control Lever Link (Long) (Oil bearing surfaces) (Model 32 [72-90])*                         |
| 125 Channel Entrance Revolving Block (Oil bearing surfaces) (Models 31 and 32 [72-90])†                             | 129 Channel Entrance Revolving Cams (Oil bearing surfaces) (Models 31 and 32 [72-90])†                            |
| 126 Channel Entrance Frame Control Lever Link Oil Holes (2) (one hole on front of Link) (Models 31 and 32 [72-90])* | 130 Distributor Bar Shifter Guide (Oil bearing surfaces) (Models 31 and 32 [72-90])†                              |
| 127 Channel Entrance Control Lever Link Guide Rolls (Oil studs) (Model 32 [72-90])*                                 | 131 Magazine Frame (Lower) Guide Rails (2) (one on each side of frame) (Oil bearing surfaces) (Models 31 and 32)* |

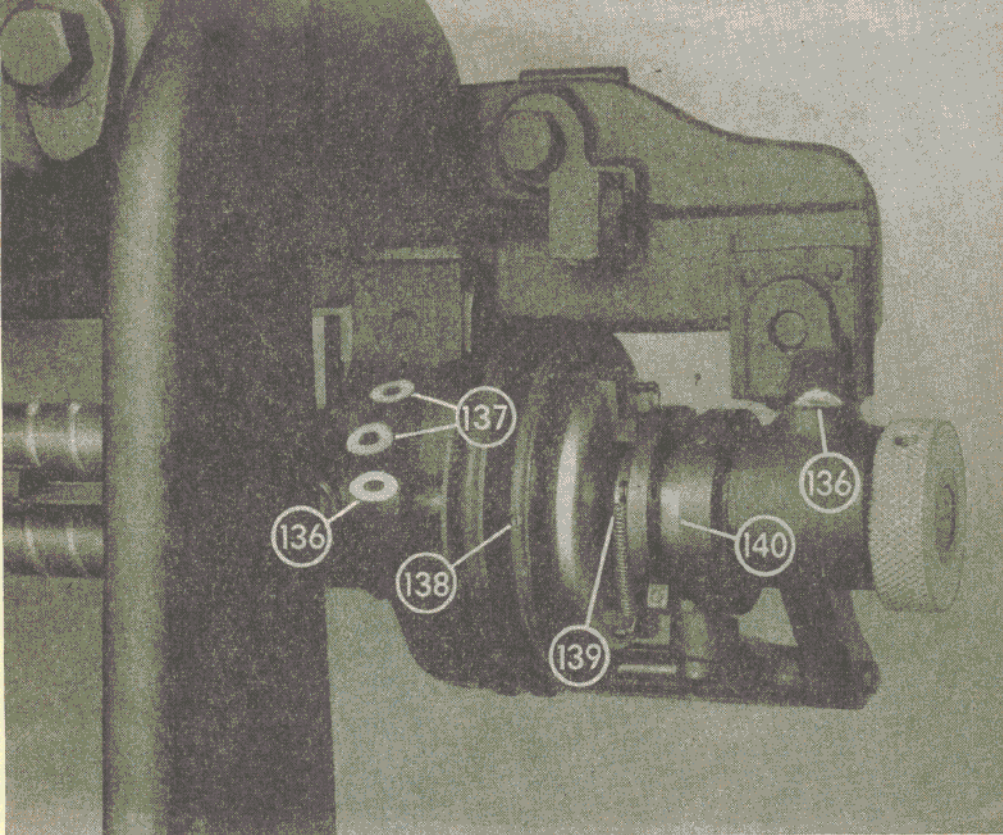


**132** Distributor Back Screw Oil Holes (2) (one hole at other end of screw) (Models 31 and 32)†

**133** Distributor Box Matrix Lift Cam and Roll (Models 31 and 32)†

**134** Distributor Box Matrix Lift Cam Lever Oil Holes (2) (Models 31 and 32)†

**135** Second Elevator Guide (Upper) (Oil bearing surfaces)†



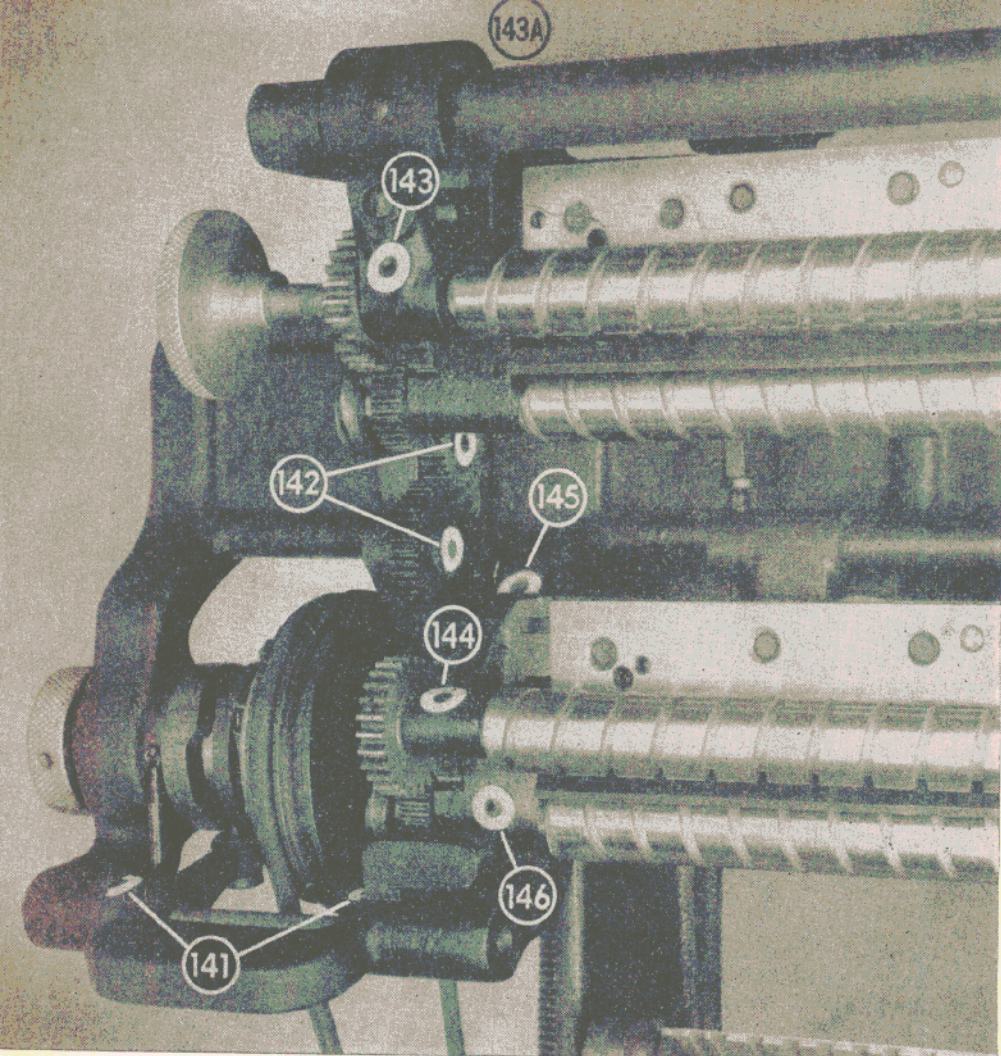
136 Distributor Clutch Shaft Oil Holes (2)†

137 Distributor Front Screw Oil Holes (4) (one hole at other end of each screw) (Models 31 and 32)†

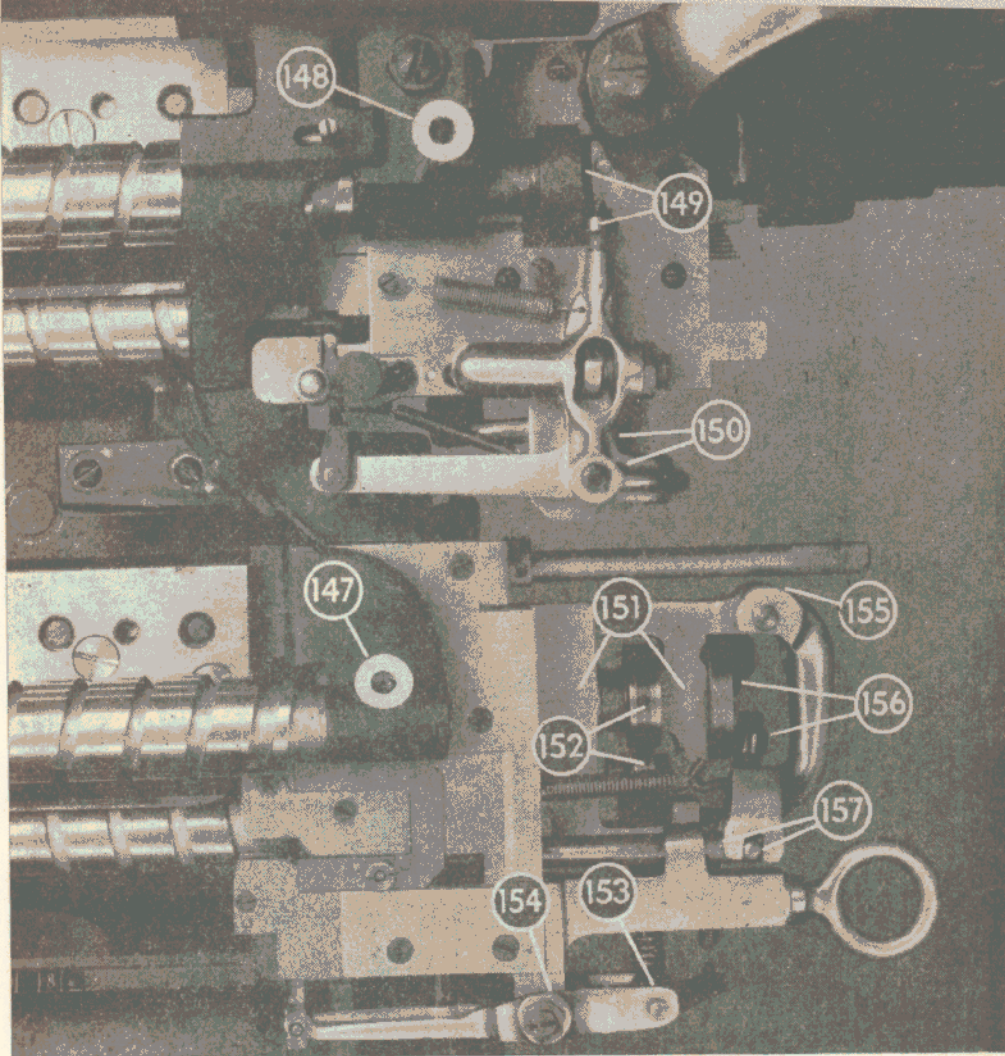
138 Distributor Clutch Pulley Oil Hole (Remove screw to oil)†

139 Distributor Clutch Pulley Washer Flange Oil Hole †

140 Distributor Clutch Flange Collar (Oil bearing surface)†



- 141 Distributor Clutch Lever Oil Holes (2) (Models 29 and 30)†
- 142 Distributor Screw Idler Gear Stud Oil Holes (4) (holes in head of each stud) (Models 29 and 30)†
- 143 Distributor Back Screw (Upper Set) Oil Holes (2) (one hole at other end of screw) (Models 29 and 30)†
- 143a Distributor Front Screw (Upper Set) and Distributor Lower Screw (Upper Set) Oil Holes (4) (one hole at each end of each screw—
- visible from top of machine) (Models 29 and 30)†
- 144 Distributor Back Screw (Lower Set) Oil Holes (2) (one hole at other end of screw) (Models 29 and 30)†
- 145 Distributor Front Screw (Lower Set) Oil Tube (one hole at other end of screw) (Models 29 and 30)†
- 146 Distributor Lower Screw (Lower Set) Oil Holes (2) (one hole at other end of screw) (Models 29 and 30)†



- 147 Distributor Back Screw (Lower Set) Oil Holes (2) (one hole at other end of screw) (Models 29 and 30)†
- 148 Distributor Back Screw (Upper Set) Oil Holes (2) (one hole at other end of screw) (Models 29 and 30)†
- 149 Distributor Box (Upper) Matrix Lift Cam and Roll (Models 29 and 30)†
- 150 Distributor Box (Upper) Matrix Lift Cam Lever Oil Holes (2) (Models 29 and 30)†
- 151 Distributor Box (Lower) Cam Shaft Bearing Oil Holes (2) (holes are in front of box) (Models 29 and 30)†
- 152 Distributor Box (Lower) Matrix Lift Cam and Roll (Models 29 and 30)†
- 153 Distributor Box (Lower) Matrix Lift Lever Oil Hole (Models 29 and 30)†
- 154 Distributor Box Matrix Lift Lever Fulcrum Screws (2) (Models 29 and 30)†
- 155 Distributor Box (Lower) Matrix Pusher Slide Lever Oil Hole (Models 29 and 30)†
- 156 Distributor Box (Lower) Matrix Pusher Slide Lever Cam and Roll (Models 29 and 30)†
- 157 Distributor Box (Lower) Matrix Slide Lever Fulcrum and Pusher Rods (Models 29 and 30)†