

Wadkin

Electric Straight Line Edger Type P.U.

This machine has been specially developed to deal with all kinds of ripping at a high rate of output. It is capable of edging the stock accurately so that no further machining operations are required for glued joints.

There are two models available :—

P.U.1 will admit timber up to 24" × 4" section, between the saw and the inside of the arms.

P.U.2 will admit timber up to 24" × 4" section, and also up to 30" × 1½" section, between the saw and the arms.

PRINCIPAL DIMENSIONS AND CAPACITIES

Maximum diameter of Saw	...	...	...	...	...	...	...	...	...	17"
Minimum diameter of Saw	...	...	...	...	...	...	...	...	...	10"
Shortest Length of Cut	...	...	...	...	...	...	...	...	...	12"
Size of Table	...	...	...	...	...	...	...	...	...	6' 9" × 4' 11½"
Width of Table at right of Saw	...	...	...	...	...	...	...	...	...	2' 9"
Width of Table at left of Saw	...	...	...	...	...	...	...	...	...	2' 2½"
Height of Table	...	...	...	...	...	...	...	...	...	2' 11"
Standard Rates of Feed in feet per minute	...	...	...	...	...	...	...	...	...	50-75-100-150
Horse-power of Feed Motor	...	...	...	...	...	...	...	...	...	3
Speed of Saw Spindle in r.p.m. on 50 cycle supply	...	...	...	...	...	...	...	...	...	2,800
Standard Horse-power of Saw Motor	...	...	...	...	...	...	...	...	...	15
(Larger Motors up to 25 Horse-power for heavy work.)										
Net weight	...	...	...	...	...	...	...	...	...	46 cwts.

DETAILS INCLUDED WITH MACHINE

Saw jointing device. Fence for table. Lubricating Pump and tin of lubricant. One set of spanners. Dust collecting hopper and pipe connection. Oil Gun.

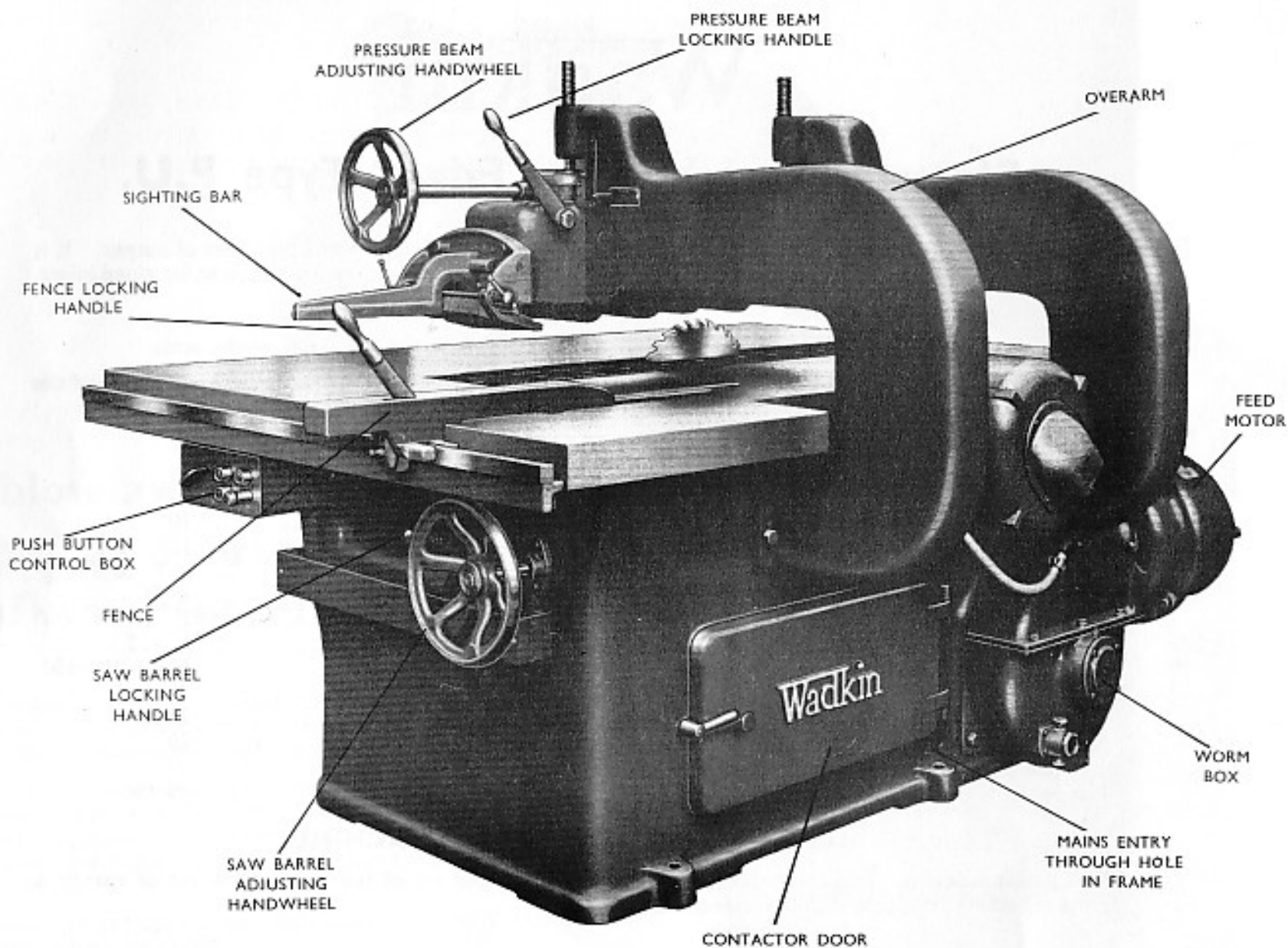
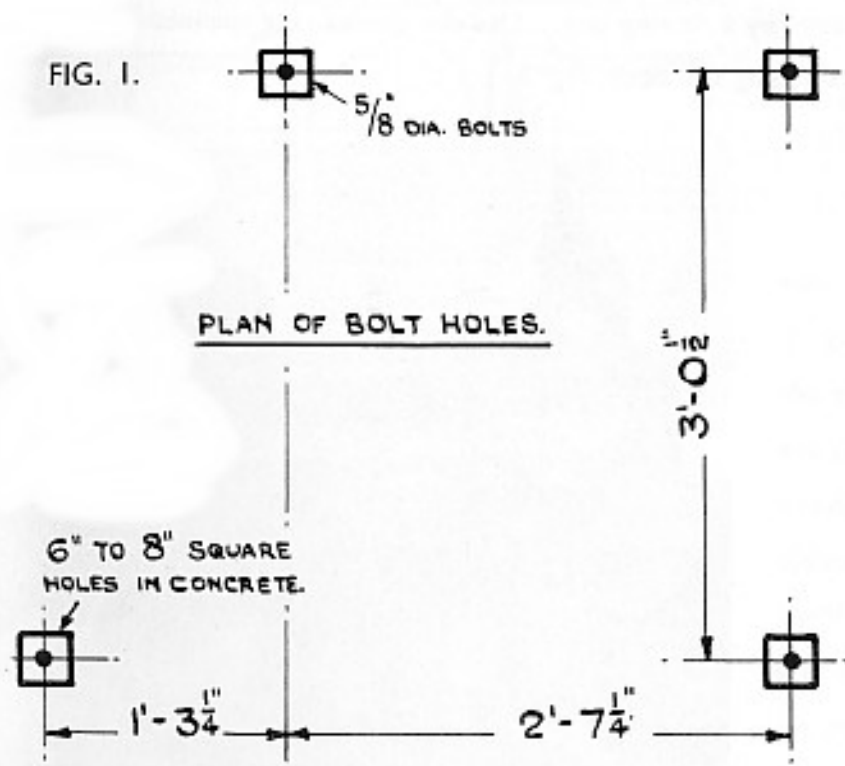


FIG. 1. Page 2

INSTALLATION



The machine is despatched from the Works with all bright surfaces greased to prevent rusting. This must be removed by applying a cloth damped in paraffin or turpentine.

FOUNDATIONS

$\frac{5}{8}$ " diameter foundation bolts should be used to bolt the machine down to the floor. If the mill floor consists of 6" solid concrete, no special foundation is necessary. Rag type holding down bolts may be used, and as shown on the foundation plan, 6" to 8" square holes should be cut in the concrete and the machine, after careful levelling, grouted in with liquid cement.

WIRING

It is necessary to fit a triple pole isolating switch adjacent to the machine to enable the electrical gear on the machine to be readily isolated for inspection purposes.

If desired it can be obtained from Wadkin Ltd. to special order. The mains entry is shown in the general view of the machine, Fig. 1, and the three mains wires should be connected to the terminals L1, L2, L3 as shown on the wiring diagram, Page 21, and connect the machine to earth.

For detailed cabling particulars see Page 18.

DUST EXTRACTION UNIT

The machine has a 7" x 3 $\frac{1}{2}$ " outside rectangular exhaust outlet for connecting to dust extraction piping, the exhaust hood being built in the machine.

SPECIAL NOTE.—Dust extraction equipment must be used with this machine. We cannot take any responsibility for the machine, if it is used without extraction equipment.

THE SAW

The saw is spigotted on the back saw collar and driven by a driving peg. Use the special ring spanner provided to lock up. Access to the spindle end is obtained by opening the door, Fig. 2.

SAW ADJUSTMENTS

The handwheel on the feeding in side of the main frame is used for raising and lowering the saw "B," Fig. 3, and the saw barrel should always be locked after adjusting, with the handle, Fig. 3. The best results are obtained with the saw teeth just projecting through the timber, always use the smallest diameter saw possible for cutting all timber including plywood. When cutting timber wider than 24" to right of saw, the saw must be set in its lowest position to bring the flat on the saw motor flange below the table level as shown in Fig. 3.

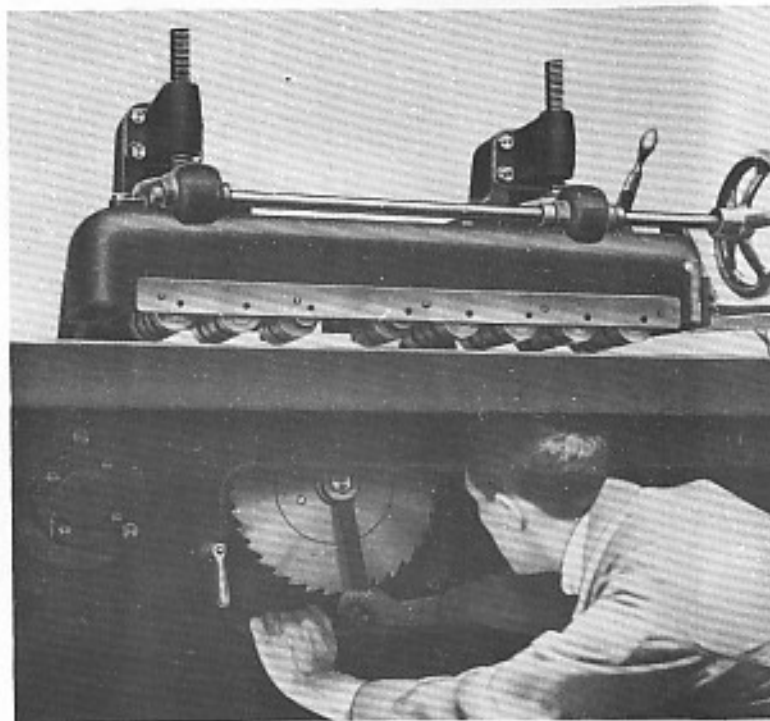


FIG. 2.

PRESSURE BEAM ADJUSTMENT

Adjust the pressure beam to suit thickness of timber by rotating handwheel, Fig. 1. Use the minimum pressure which gives satisfactory results. By setting the feed beam scale to the thickness of material being cut, an $\frac{1}{8}$ " pressure is automatically allowed in the setting of the beam, and this pressure should be sufficient.

Always lock after resetting by moving the handle A, Fig. 4, this lock can be adjusted by turning the nuts on the clamp arm screws, B Fig. 4, these nuts must be adjusted by an equal amount.

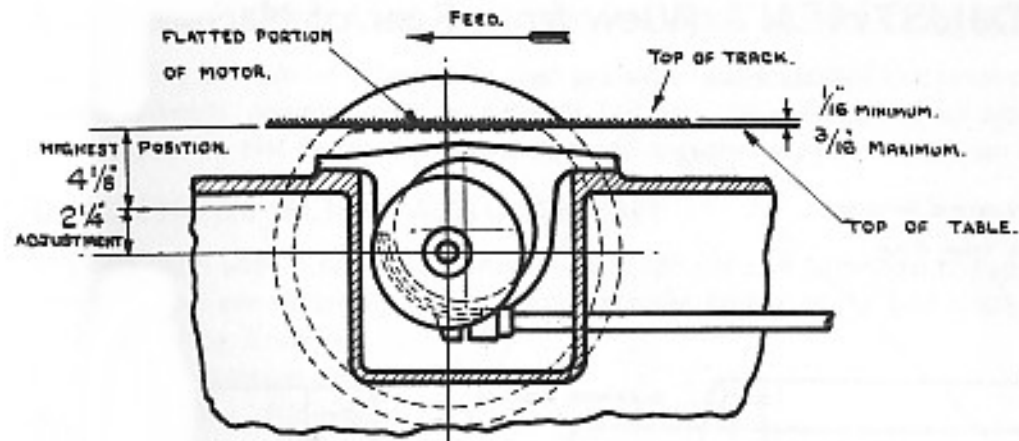
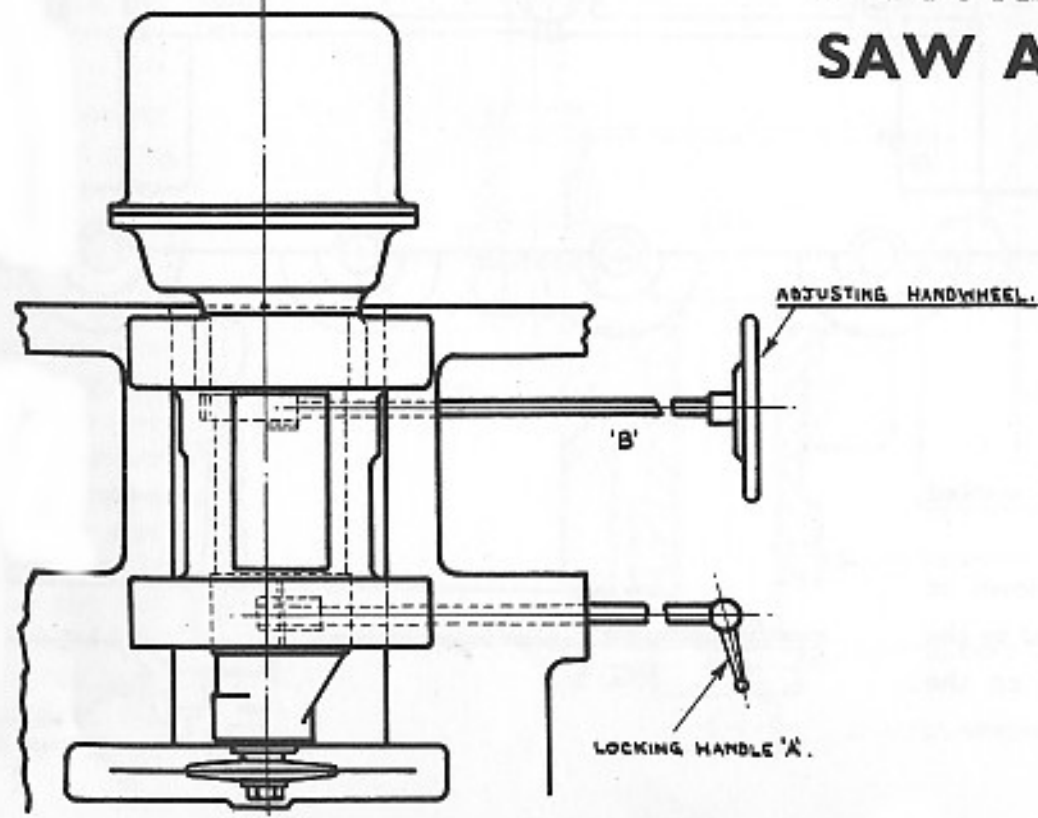


DIAGRAM OF SAW ADJUSTMENT

FIG. 3.



PRESSURE BEAM ADJUSTMENT (View from Rear of Machine)

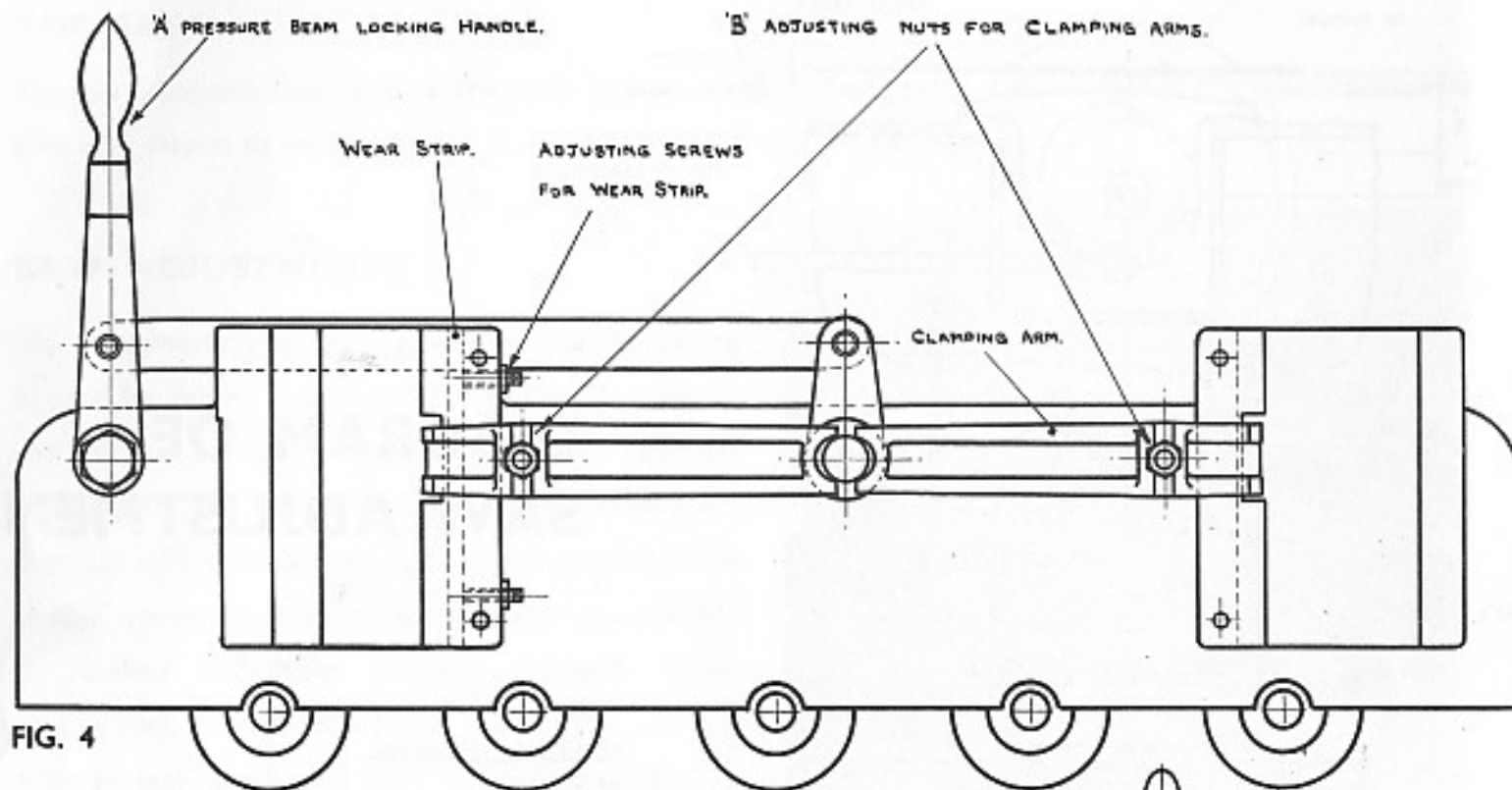


FIG. 4

THE FENCE

The fence may be set and worked either side of the saw.

The locking handle as shown at "A," Fig. 5, can be adjusted by the square head screw "B" on the rocking lever.

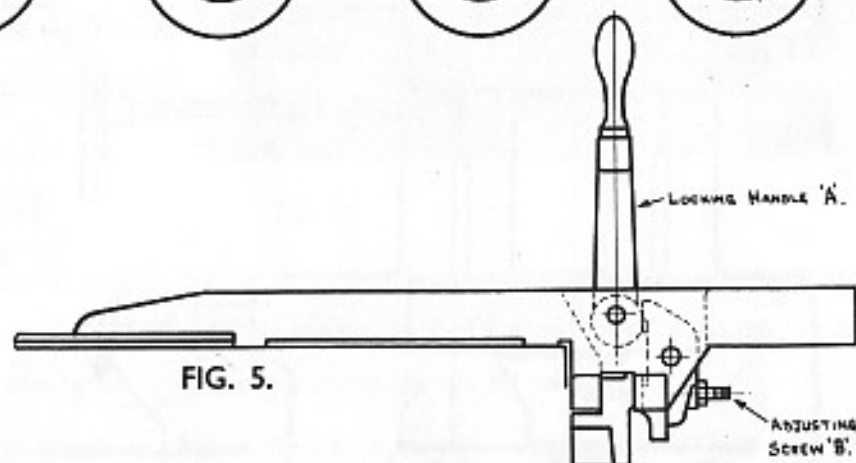


FIG. 5.

SIGHTING BAR AND FINGER GUARD ADJUSTMENT

The sighting bar can be adjusted by slackening the nut on top of the pressure beam and on the feeding in end of the pressure beam, moved either to right or left and the nuts locked up again.

The fingers on the finger guard are clamped together by the handle on the right hand side, Fig. 1.

BED CHAIN SLIDE ADJUSTMENT

The bed chain slide is set square with the saw spindle and bolted on to four sleeves "A," Fig. 6, in the main frame. These sleeves are vertically adjustable to vary the height of the bed chain above the table level. This adjustment,

as shown in Fig. 3, varies from $\frac{1}{8}$ " minimum to $\frac{3}{16}$ " maximum. Adjust all four points an equal amount by unlocking the nut "B," Fig. 6, and the clamping bolt "C"; rotate the sleeve "A" by inserting a tommy bar in the holes provided; finally locking the nut "B," and clamping bolt "C."

The "lead on" quadrants are set to give straight line cutting, and can be adjusted to give either round or hollow cuts as desired. Setting both quadrants to give right hand lead (Fig. 7) gives a round cut and setting to left hand lead gives a hollow cut, both when edging with the timber to the left of saw.

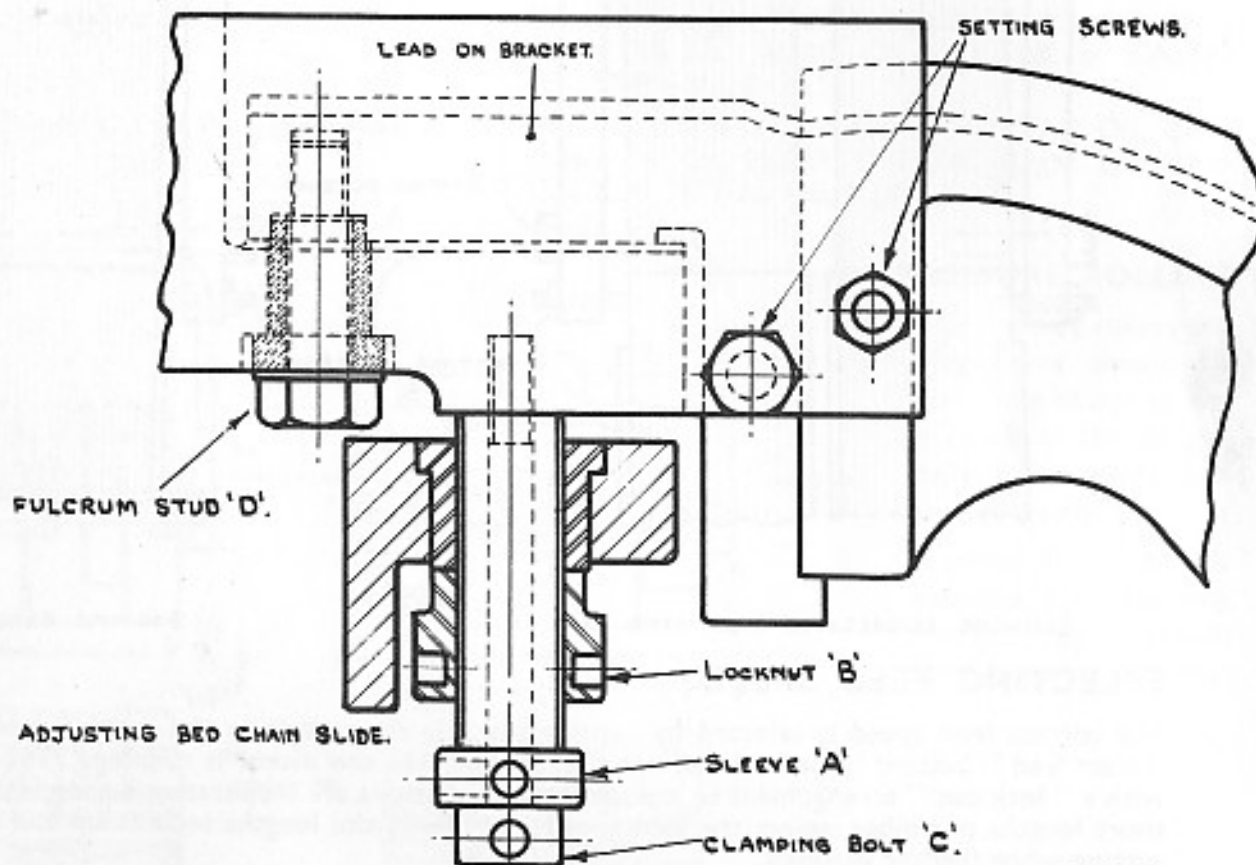
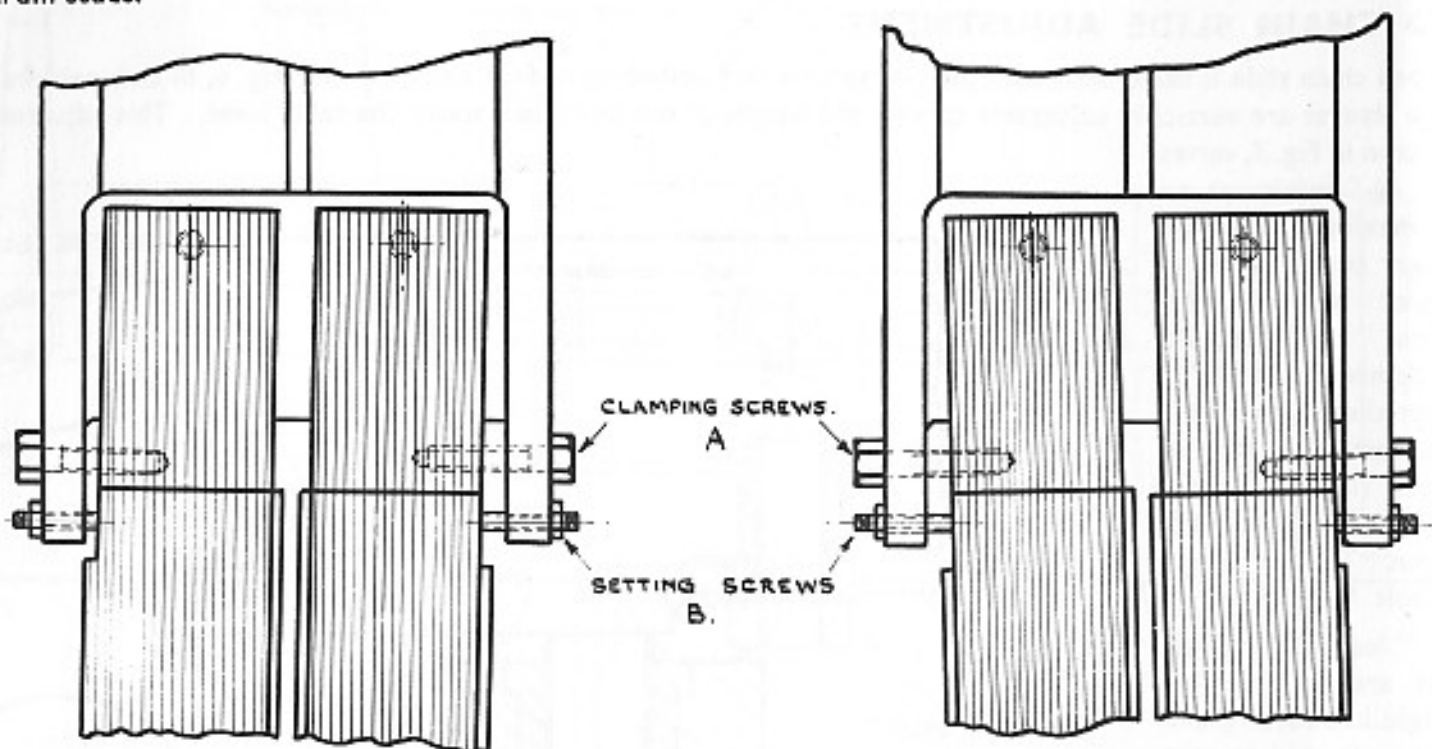


FIG. 6

BED CHAIN SLIDE ADJUSTMENT (continued)

The curvature is reversed if the timber is worked to the right of the saw. To adjust the quadrant, slacken fulcrum stud "D," Fig. 6, release the clamping screws "A," Fig. 7, and the locknuts on the square head screws "B," turn the square head screws until the desired lead is obtained and lock, then clamp with the screws "A" and lock the fulcrum studs.



SHOWING EXAGGERATED RIGHT HAND LEAD

FIG. 7.

SHOWING EXAGGERATED LEFT HAND LEAD.

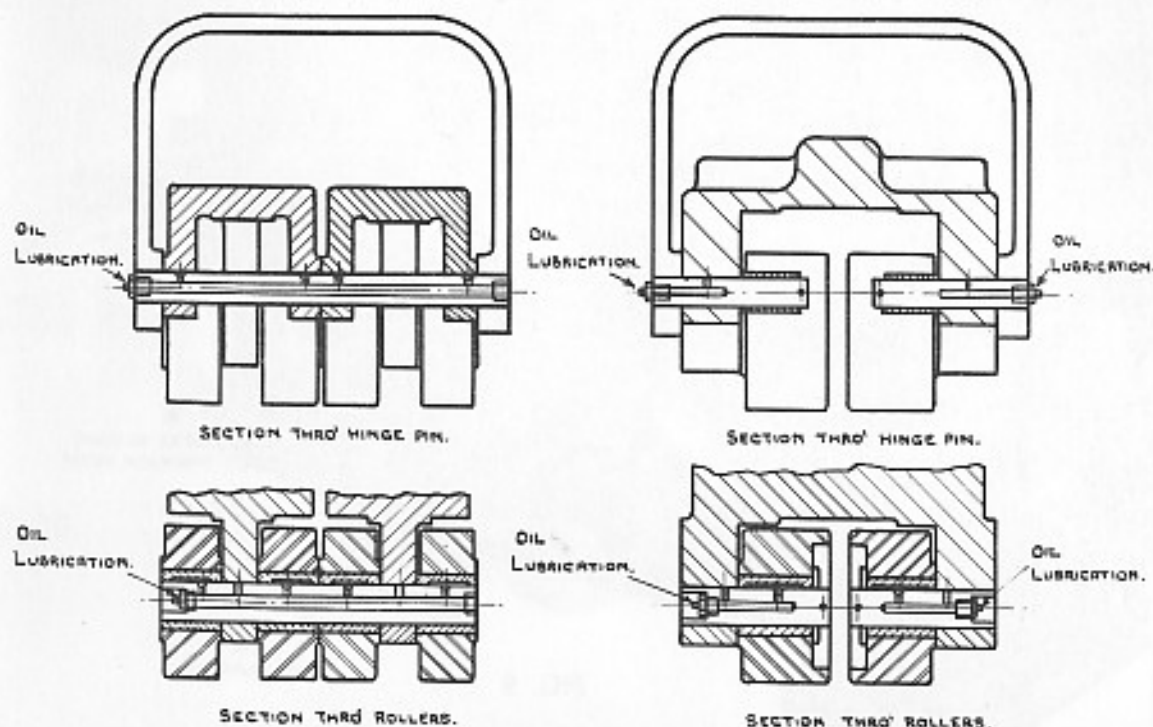
SELECTING FEED SPEED

The correct feed speed is selected by turning the selector switch to the desired speed and then depressing the "start feed" button. The feed will not operate until the saw motor is running. The master stop button is fitted with a "lock out" arrangement to ensure the start buttons are inoperative during setting up, etc. When cutting short lengths of timber, select the feed speed that allows the lengths to butt up end to end to allow continuous cutting when feeding through.

LUBRICATION

It is essential that only Wadkin recommended ball bearing Grease is used. The recommended lubricants are shown on the lubrication charts, Figs. 9 and 10. If however, it is desired to use lubricants other than Wadkin, the equivalents are listed below:—

Ball Bearing Grease	... ..	Wadkin Grade L6 or Shell "NERITA" GREASE 3 or Mobil Oil Co. MOBILUX GREASE No. 2 or CALTEX "REGAL STARFAK No. 2 GREASE".
Good Quality Machine Oil	... ..	Wadkin Grade L4 or Shell "VITREA" OIL 33 or Mobil Oil Co. "VACTRA" OIL (Heavy Medium) or CALTEX "ALEPH OIL".
Heavy Gear Oil	... ..	Wadkin Grade L2 or Shell "VITREA" OIL 69 or Mobil Oil Co. MOBIL OIL DTE, BB. or CALTEX "MEROPA No. 2 OIL".
Special Oil for Pressure Rollers	... ..	Wadkin Grade L1 or Shell "VITREA" OIL 27 or Mobil Oil Co. MOBIL DTE OIL (Light Special) or CALTEX "REGAL OIL B (R & O)".



PRESSURE ROLLERS

The pressure rollers and hinge pins should be given one charge or depression of the oil gun daily, at the points illustrated on Fig. 8.

A special box spanner is supplied for removing the oil nipples should they require cleaning.

LUBRICATION CHART

- A** Ball Bearings, give four to six charges of grease gun every three months, using Wadkin Grease, Grade L6.
- B** Give one charge of grease gun daily, using Wadkin Grease, Grade L6.
- C** Give one charge of grease gun monthly, using Wadkin Grease, Grade L6.
- D** Oil daily, three to four drops, using Wadkin Oil, Grade L4.
- E** Check daily and fill to oil level, using Wadkin Oil, Grade L4.
- F** Check monthly and fill to oil level, using Wadkin Oil, Grade L2.
- G** Give one charge or depression of the oil gun daily, using Wadkin Oil, Grade L1.

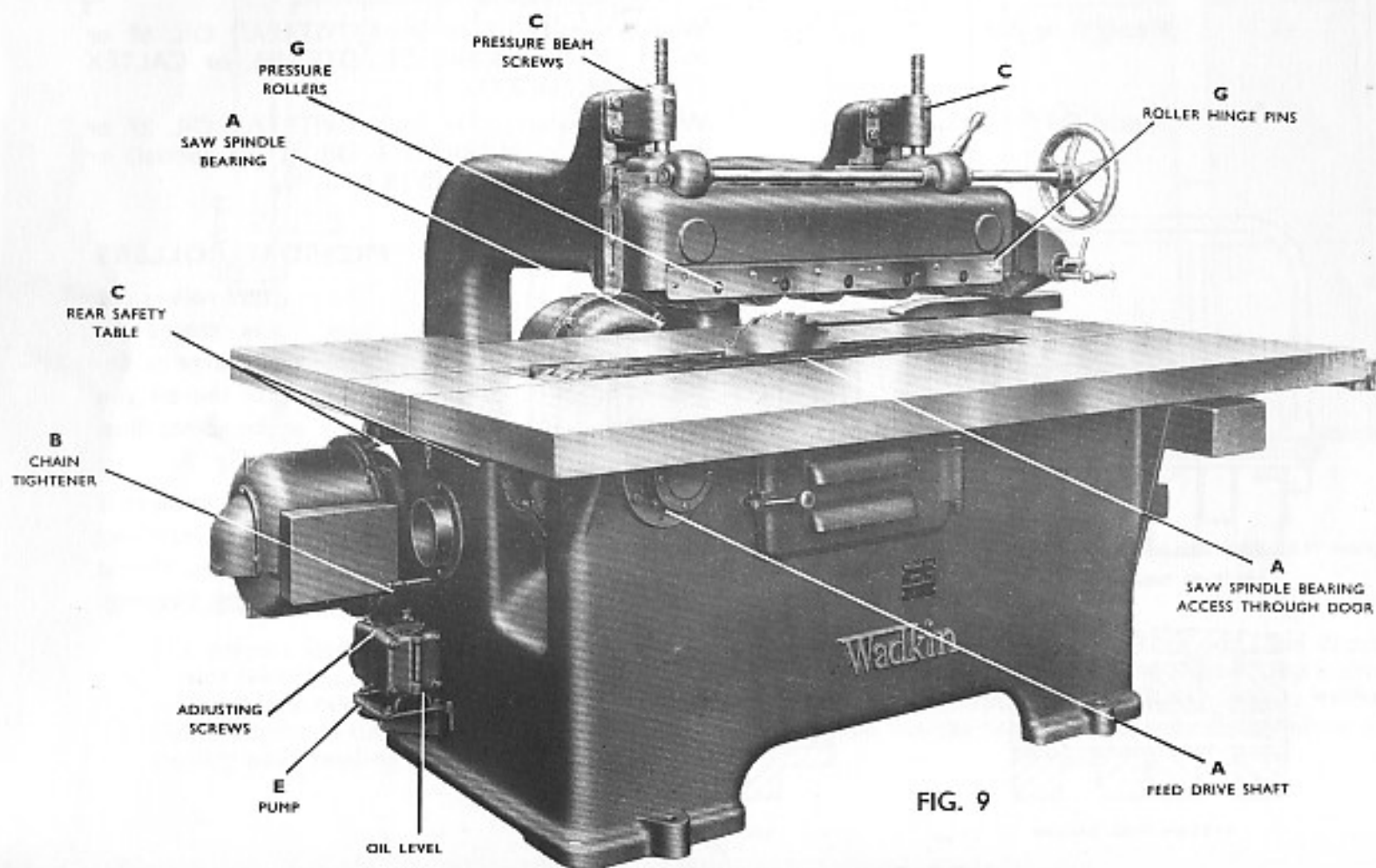


FIG. 9

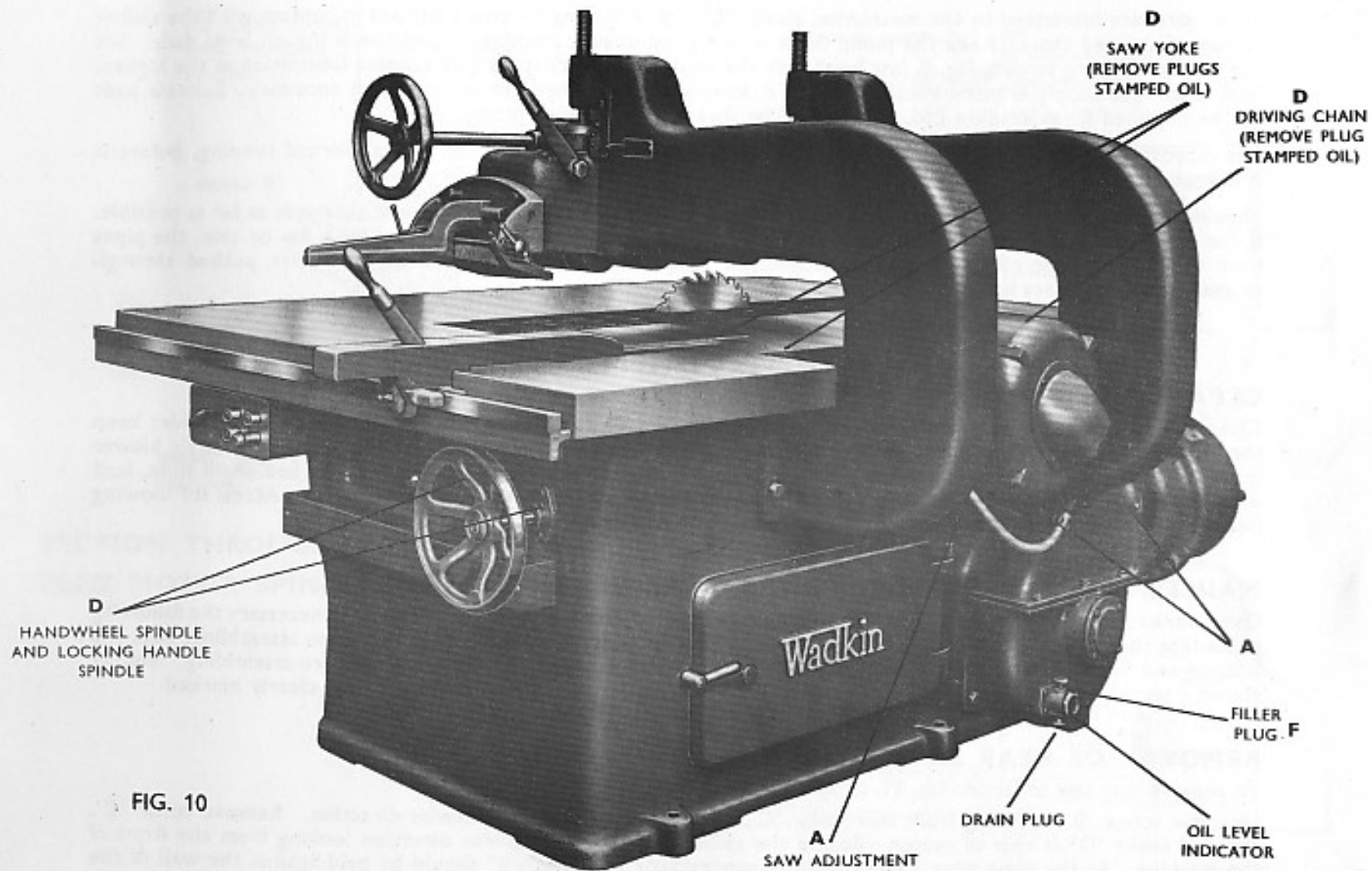


FIG. 10

LUBRICATION *(Continued)*

LUBRICATION OF BED CHAINS AND SLIDES

These parts are lubricated by the mechanical pump "E" Fig. 9, forcing oil into a felt pad in contact with the sliding surface of the bed chain. Keep the pump filled with a good quality machine oil and check the oil level daily. Set the supply adjusting screws, Fig. 9, just level with the small angle brackets to give suitable lubrication at the highest feed speed; the supply is automatically reduced at lower speeds. Renew the oil pad when necessary. Suitable pads can be obtained from Wadkin Ltd., and should be soaked in oil before fitting.

The capacity of the tank when full is equivalent to approximately two to three weeks' normal running, before it is necessary to refill.

Should it be necessary to stop the action of the pump, the adjusting screws are screwed outwards as far as possible. If, for any reason, the oil sump does not empty when the machine is normally working for a day or two, the pipes from the bottom side of the pump to the felt pad must be disconnected and a piece of wire pushed through to make sure the pipes are not blocked.

GENERAL MAINTENANCE

CLEANLINESS

Clean face of bed chain daily with a wire brush, and remove all dirt and saw dust from the chain and slide; keep the inside of the main frame clean and free from accumulation of saw dust. Use a Wadkin portable electric blower for cleaning the machine down. Wipe pressure beam slides and raising screws weekly. The bed chain slide, lead on quadrants, bed chain sprockets and bed chain should also be thoroughly cleaned every week. Access for blowing out top pressure rollers is provided by a covered hole in top of casting.

MAINTENANCE OF MOTOR SPINDLE BEARINGS

Over lubrication will cause the bearings to overheat and should dismantling of the bearings be necessary the following procedure should be carried out. Clean out the bearings and housings with petrol, and when assembling, pack the bearing and housing half full of new grease, the parts should be kept strictly clean while re-assembling. Fig. 11 shows a section through the saw spindle with the bearing positions and lubrication points clearly marked.

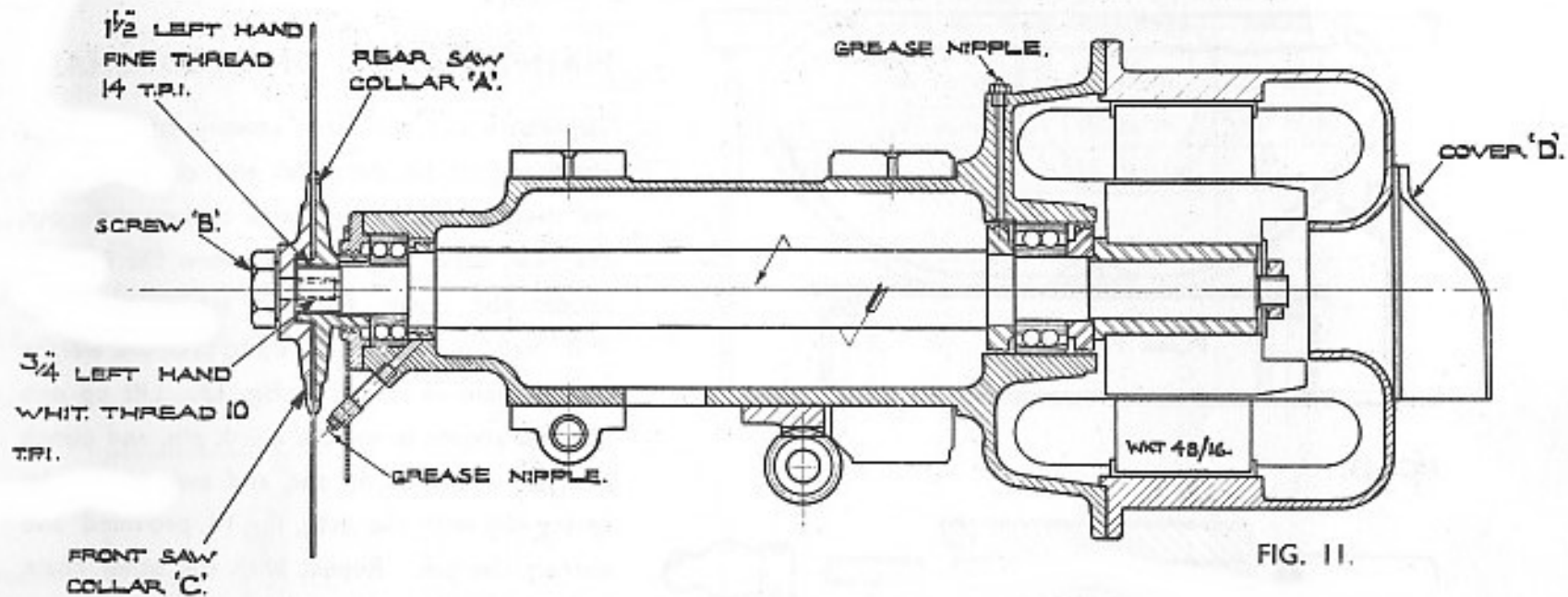
REMOVAL OF REAR SAW COLLAR

To remove rear saw collar 'A' Fig. 11, proceed as follows:—

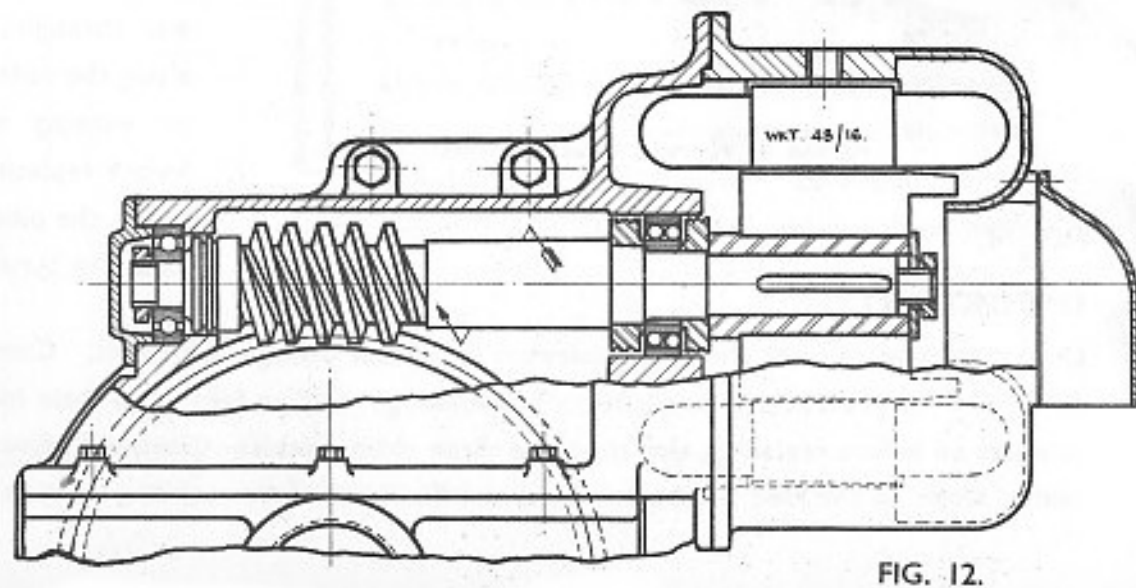
Unscrew screw 'B', securing front saw collar 'C', by turning in an anti-clockwise direction. Remove collar 'C', saw and cover 'D' at rear of motor. Rotate the spindle in an anti-clockwise direction looking from the front of the machine. At the same time a piece of steel approximately $12" \times 2" \times \frac{1}{4}"$ should be held against the wall of the saw cavity so that the saw peg in the collar 'A' strikes the piece of steel sharply. After two or three such tappings the collar 'A' should be loose enough to be easily UNSCREWED.

NOTE:—Rear saw collar 'A' has left hand fine thread and screw 'B' has left hand Whit. thread.

SECTION THROUGH SAW SPINDLE
FOR STANDARD MACHINE WITH 15 H.P. MOTOR



SECTION THROUGH
FEED MOTOR SPINDLE



GENERAL MAINTENANCE (Continued)

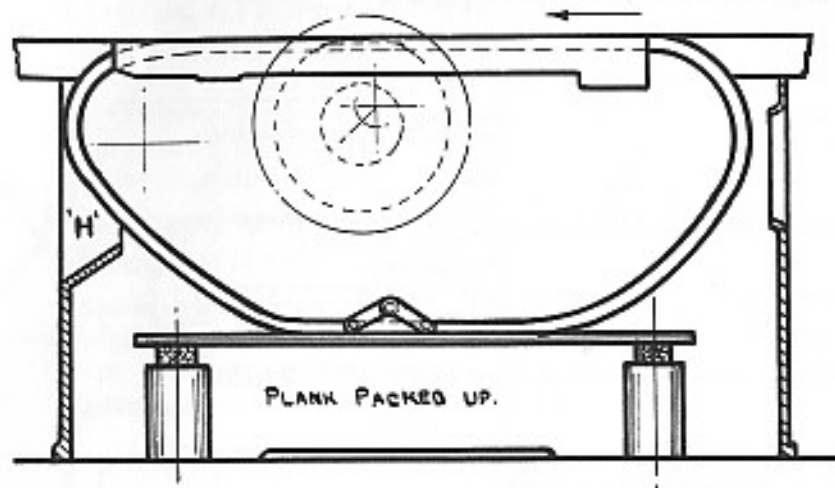


FIG. 13.

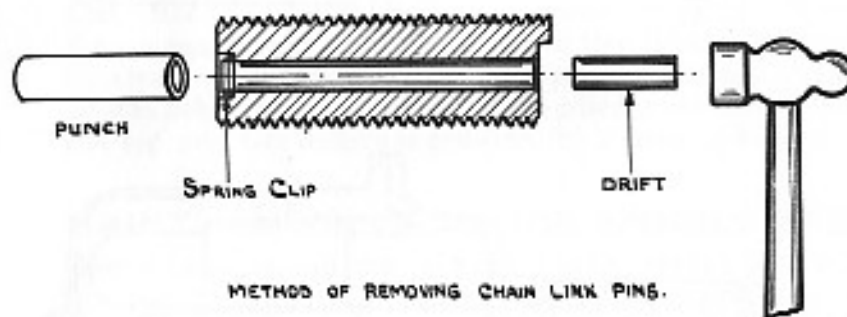


FIG. 14.

IMPORTANT

Do not attempt to twist the chains sideways or serious damage will result. Carry each chain extended on a plank 12' 0" x 9" to prevent any possibility of mishandling. Detach feed drive chain monthly, clean with petrol and soak in warm oil before replacing, also clean the three chain wheels. Clean and adjust the chain driving the mechanical pump, access to the feed and pump chains can be obtained through the door in the rear of the frame.

MAINTENANCE OF FEED CHAIN

To ensure the minimum amount of wear the chain should be detached and cleaned every six months. To detach the chains, slide out the rear safety table, and remove the oil box inside the main frame; insert a plank 4' 0" x 9" x 1" and pack up to take the weight of the chain as shown in Fig. 13. Lift up one chain as shown to expose a link pin, and punch the pin outwards on the end away from the spring clip with the drift, Fig. 14, provided and extract the pin. Repeat with the other chain and then take out chains by lifting rear end through the frame at "H" and pulling along the slides. Take particular care to smear all wearing surfaces and link pins with oil before replacing. On reassembly of the links, insert the pins and drive into the recess of the links the spring clips with the punch supplied.

BEARING LIST

POSITION ON MACHINE	MAKER'S No.	QUANTITY	BORE	OUTSIDE DIAM.	THICKNESS
Saw Spindle (Saw end)	SKF 2308	1	40 m/m	90 m/m	33 m/m
Saw Spindle (Motor end)	SKF 2310	1	50 m/m	110 m/m	40 m/m
Worm Shaft	SKF RMS 11	1	1 1/8"	3 1/2"	3/8"
Worm Shaft (Motor end) and 2 Worm Wheel Shaft	SKF RM 16	3	2"	4 1/2"	1 1/16"
Feed Chain Driving Shaft	Pollard F 1425	2	2"	3 1/2"	4"
Tail End Bearing on 18 and 25 h.p. Saw Spindles only	SKF RM 12	1	1 1/2"	3 3/4"	1/8"

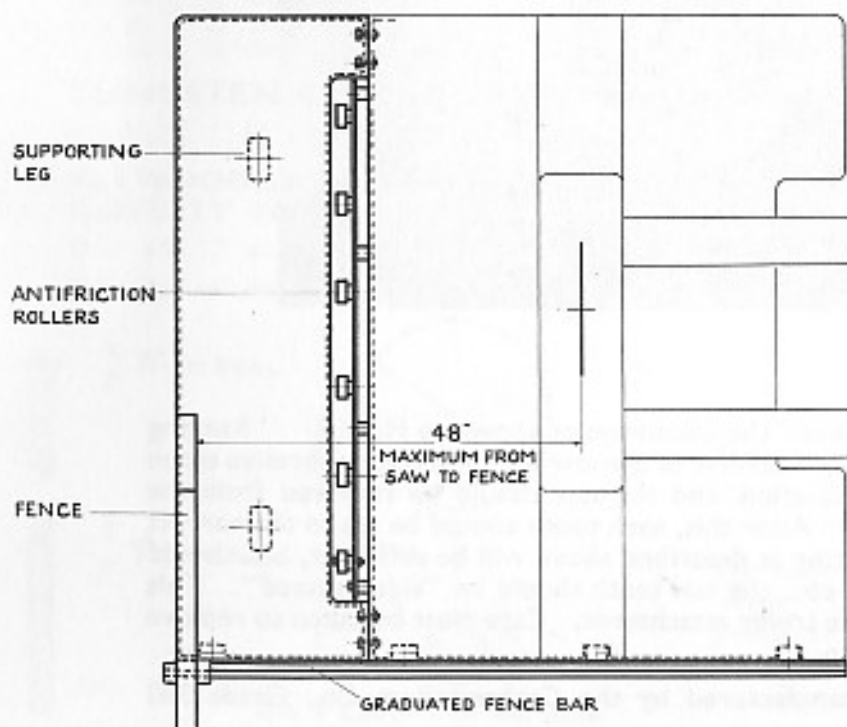


FIG. 15.

EXTENSION TABLE

When the machine is to be used continually for cutting wide plywood sheets, laminated boards, etc., the roller extension table shown in Fig. 15 provides additional support for the boards and prevents the sheets sagging over the normal table edge.

SAW TRUING ATTACHMENT

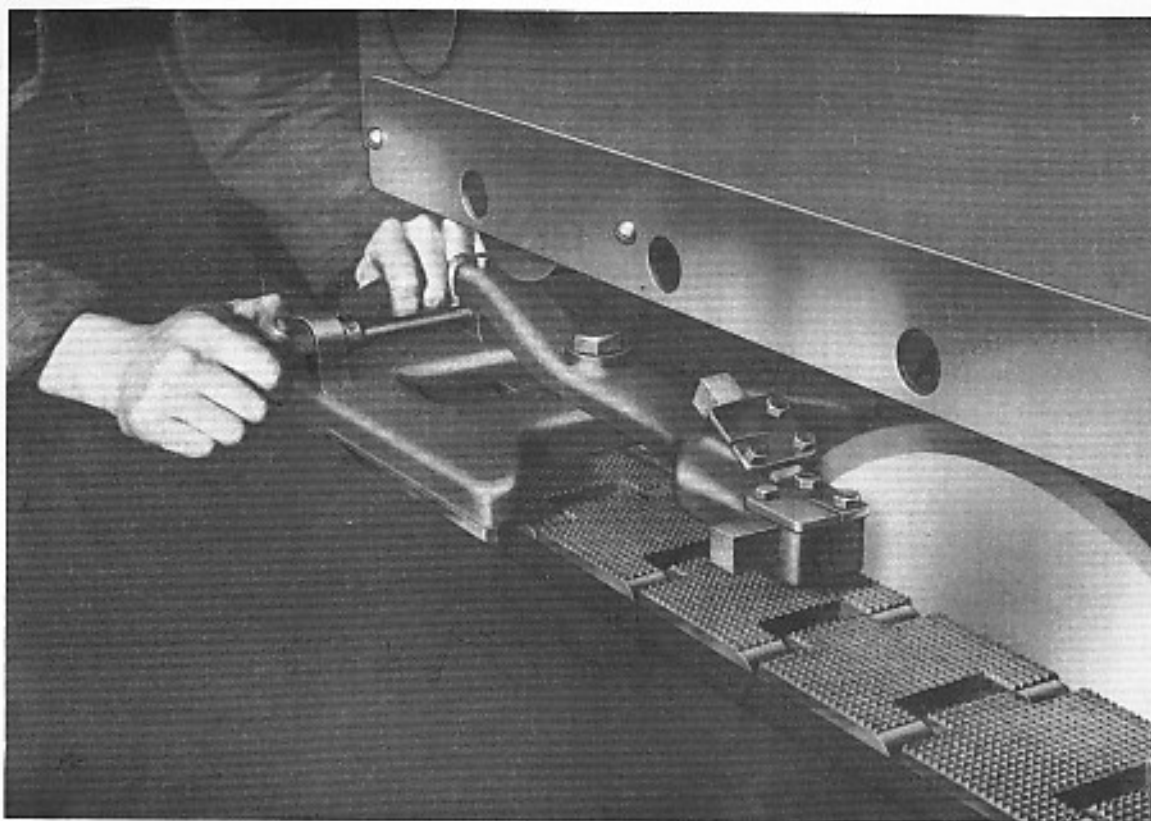


FIG. 16.

The saw truing attachment fits in the slideways between the chainways as shown in Fig. 16. "Ranging down" of the saw is performed by touching the outside diameter of the saw with the centre abrasive stone only. A flat will be left on each tooth with this operation, and the saw should be removed from the machine and each tooth filed until this flat disappears. After this, each tooth should be set to the correct angle with a saw gauge. For all general work the setting as described above will be sufficient, but should a very fine cutting edge be required for glue jointing, etc., the saw teeth should be "side dressed". This is done on the machine using the side stones only in the truing attachment. Care must be taken to remove the minimum amount of metal during this operation.

The abrasive stones used in the attachment are manufactured by the Carborundum Co., Grade 383 (Medium) $\frac{3}{4}$ " square \times 3" long.

SAWS FOR USE ON STRAIGHT LINE EDGER

Use only the best quality saws. They should be perfectly concentric with the bore, which should be a close fit on the spindle nose. All saws should be specially tensioned to run at 3,000 r.p.m. Ensure that the saw collars are kept true and free from burrs.

The following saws are stocked for use on Straight Line Edgers.

STANDARD RIP SAWS FOR GENERAL PURPOSES

Q.S. 16	12" Dia.	12 Gauge
Q.S. 14	15" Dia.	12 Gauge
Q.S. 143	15" Dia.	14 Gauge.
Q.S. 17	17" Dia.	11 Gauge
Q.S. 15	18" Dia.	11 Gauge

THIN GAUGE RIP SAWS

Q.S. 64	14" Dia.	16 Gauge
Q.S. 65	15" Dia.	16 Gauge
Q.S. 66	16" Dia.	16 Gauge

TUNGSTEN CARBIDE TIPPED SAW

Q.S. 17/TC 17" Dia. 5/32" kerf 34 teeth.

PLYWOOD SAW (HOLLOW GROUND) NOVELTY TOOTH

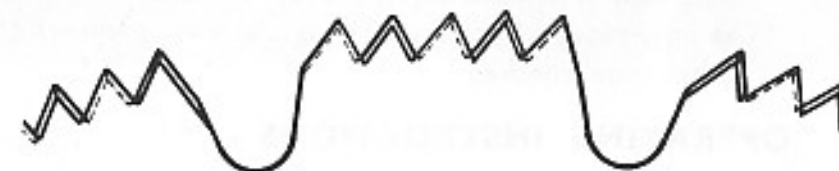
Q.S. 68	12" dia.	12 Gauge at tooth.
Q.S. 91	16" dia.	11 Gauge at tooth.



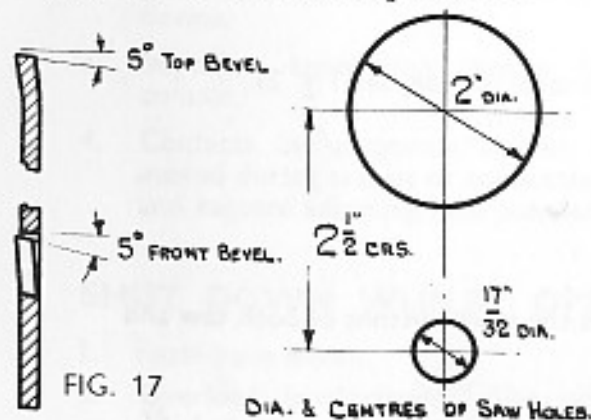
TOOTH PROFILE. STANDARD RIP SAW.



TOOTH PROFILE. THIN GAUGE RIP SAW.



TOOTH PROFILE. NOVELTY TOOTH.



The aim in maintaining straight line edger saws should be to keep the teeth as straight as possible. We recommend a top angle of 5° and a front face angle of 5° as shown in Fig. 17.

The majority of saw failures on this machine are due to excessive bevel. This causes the saw to break down quickly due to the points of the saw teeth collapsing, and causing a rubbing action instead of cutting.

ELECTRICAL INSTRUCTIONS

INSTALLATION

The whole of the cabling between the motors and control gear is carried out by Wadkin Ltd. It is only necessary to bring line cables to the machine for it to be put into service. This should be done as follows :—

1. Fit triple pole isolating switch near the machine, unless this has been supplied to special order by Wadkin Ltd., when it will be fitted and connected up at the machine.
2. Connect the line leads to the appropriate terminals, see diagram D 221/3. The cable should be taken to the machine in steel conduit and secured by locknuts to the entrance shown in Fig. 18. Note access to the control gear is obtained by the door, shown in Fig. 18.
3. Fill the starter with switch oil to the tank level indicated, with the can provided.
4. Connect the machine solidly to earth.
5. When carrying out the operations detailed below, check that the saw motor rotates in the correct direction before starting the feed. If it does not, interchange any two incoming lines. The machine is now ready to start providing the rust preventing grease has been removed and oil levels and lubrication checked.

OPERATING INSTRUCTIONS

1. Close triple pole isolating switch.
2. Select feed speed required by means of speed selector switch at control station, see Fig. 21.
3. Press saw motor start button.
4. After the saw motor is up to speed, press the feed start button.
5. The feed can be stopped independently of the saw.
6. To stop machine, press master stop button.
7. To lock off, use master stop button, press and turn. This renders the start buttons of both saw and feed inoperative for setting up and other purposes.

ELECTRICAL INSTRUCTIONS *(Continued)*

FAILURE OF SAW TO START

1. Electric supply is not available.
2. Fuses have blown or not fitted.
3. Isolating switch has not been closed.
4. Stop button is locked off.
5. Imperfect connections causing faulty contact.
6. Contacts on automatic starter have moved during transit and require adjusting into position.

FAILURE OF FEED MOTOR TO START

1. Saw is not running. Note the saw is interlocked with the feed and must be running before the feed can be started.
2. The saw starter has not changed over from star to delta. Attend to timing device.
3. Imperfect connection causing faulty contact.
4. Contacts on automatic starter have moved during transit or connecting up and require adjusting into position.

SHUT DOWN WHILST OPERATING AND FAILURE TO RESTART

1. Fuses have blown.
2. Overloads have tripped. They will reset automatically after a short time, and machine can be restarted in the usual manner.

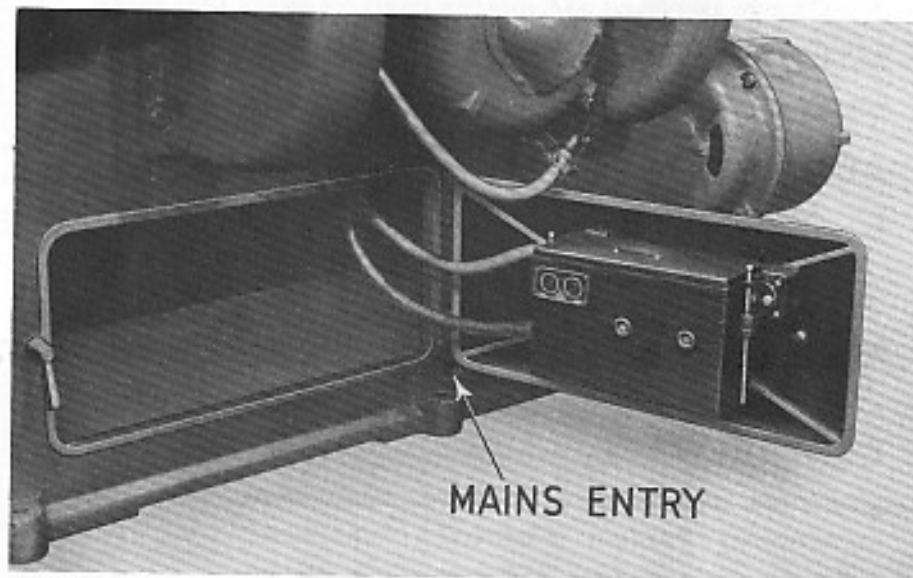


FIG. 18.

ELECTRICAL INSTRUCTIONS (Continued)

MAINTENANCE

1. Change the switch oil twice a year. Use class B switch oil B.S.S. 148.
2. Change the fixed and moving contacts every two years. Do not file contacts. See Figs. 19 and 20.
3. Blow motor down weekly with electric blower.
4. Check earth connection from time to time.

ADJUSTMENTS

1. OVERLOAD settings can be varied by means of adjustment pointers provided. This is normally done by Wadkin Ltd., but if the setting is found to be too fine for the work normally done on the machine, the setting can be increased.
2. TIMING DEVICE on saw starter. To reduce the time of change over from the star to delta, screw down the red knob at starter.

GENERAL. Users are recommended to display in an appropriate position in maintenance department, Wadkin Electrical Maintenance Instruction Card No. 356, which is issued gratis on application.

CONTACTS

Showing method of removal.



FIG. 19.

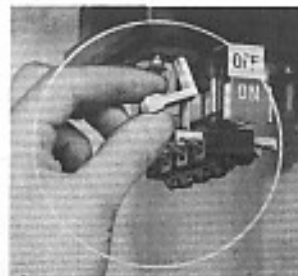


FIG. 20.

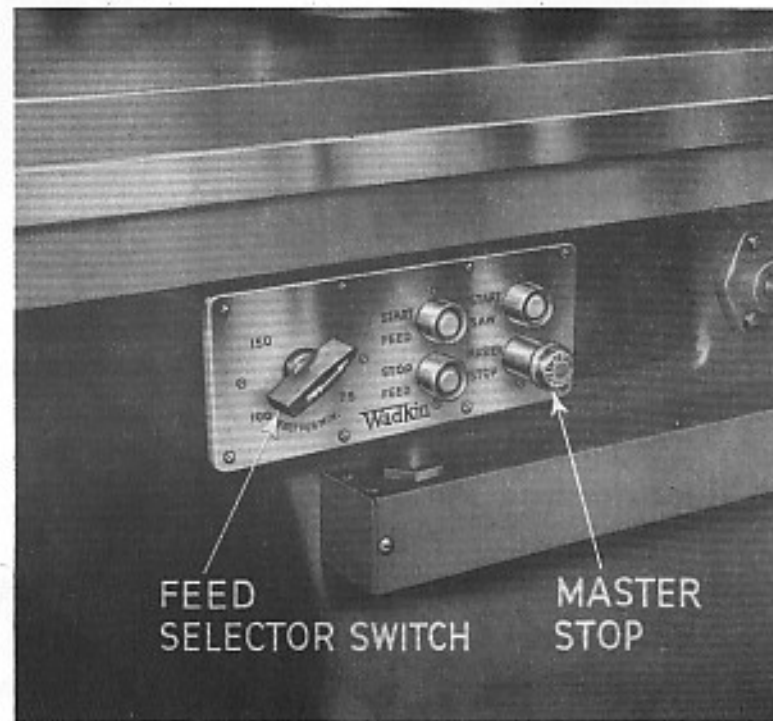
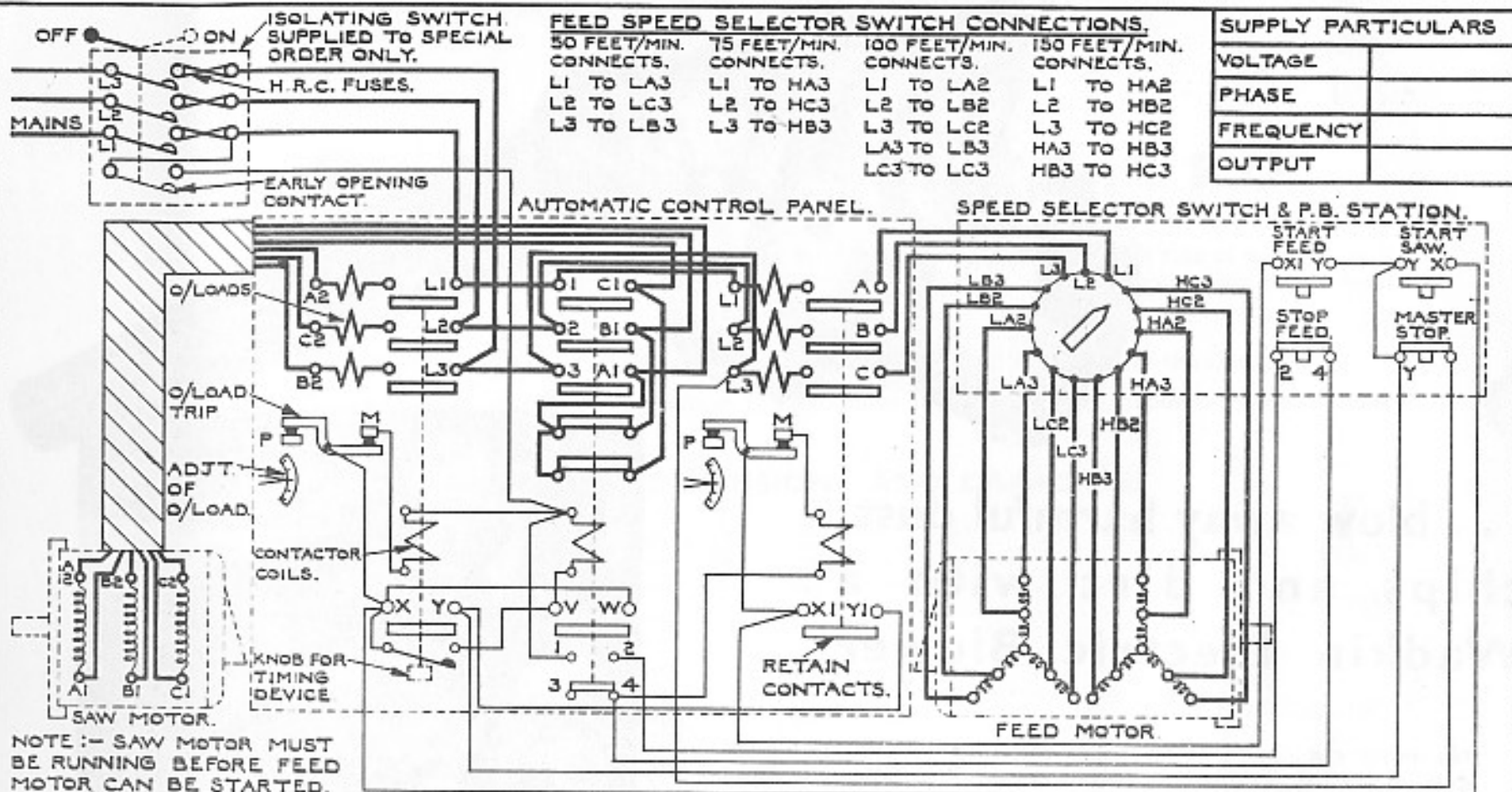


FIG. 21.

RETAIN THIS DIAGRAM FOR FUTURE REFERENCE.



INSTALLATION INSTRUCTIONS. FIT TRIPLE POLE ISOLATING SWITCH NEAR MACHINE UNLESS SUPPLIED BY WADKIN LTD. TO SPECIAL ORDER, SO THAT THE ELECTRICAL GEAR MAY READILY BE ISOLATED FOR INSPECTION PURPOSES. BRING LINE CABLES TO ISOLATING SWITCH AND TO L1 - L2 - L3 AT CONTACTOR THROUGH CONDUIT WHICH SHOULD BE SECURED TO THE APPARATUS BY MEANS OF LOCKNUTS. FILL STARTER TANK TO INDICATED LEVEL WITH OIL PROVIDED. ENSURE THAT THE DIRECTION OF ROTATION IS CORRECT BEFORE PUTTING MACHINE INTO SERVICE. TO REVERSE ROTATION INTERCHANGE L1 AND L2 AT CONTACTOR.

OVERLOAD. THE SETTING OF THE OVERLOADS MAY BE VARIED BY MEANS OF THE ADJUSTMENT POINTERS, NORMAL SETTING IS TO THE MARKS CORRESPONDING TO THE FULL LOAD MOTOR CURRENTS. SHOULD THE MOTORS STOP DUE TO OVERLOAD WAIT FOR A SHORT TIME TO ALLOW THE OVERLOADS TO COOL, THEN START IN THE USUAL MANNER.

ADJUSTMENT OF TIMING DEVICE. SHOULD THE CONTACTOR CHANGE OVER FROM STAR TO 'DELTA' BEFORE THE MOTOR IS UP TO SPEED, TURN THE RED ADJUSTING KNOB IN ANTICLOCKWISE DIRECTION, & VICE-VERSA TO DECREASE THE TIME.

MASTER STOP BUTTON. THIS IS FITTED WITH A 'LOCKOFF' FEATURE & MUST BE RELEASED BEFORE A START CAN BE MADE.

MAINTENANCE. 1. RENEW OIL YEARLY. 2. RENEW CONTACTS AND SPRINGS EVERY TWO YEARS.

WADKIN LTD.
LEICESTER.

DIAGRAM OF CONNECTIONS.

D. 221/3.