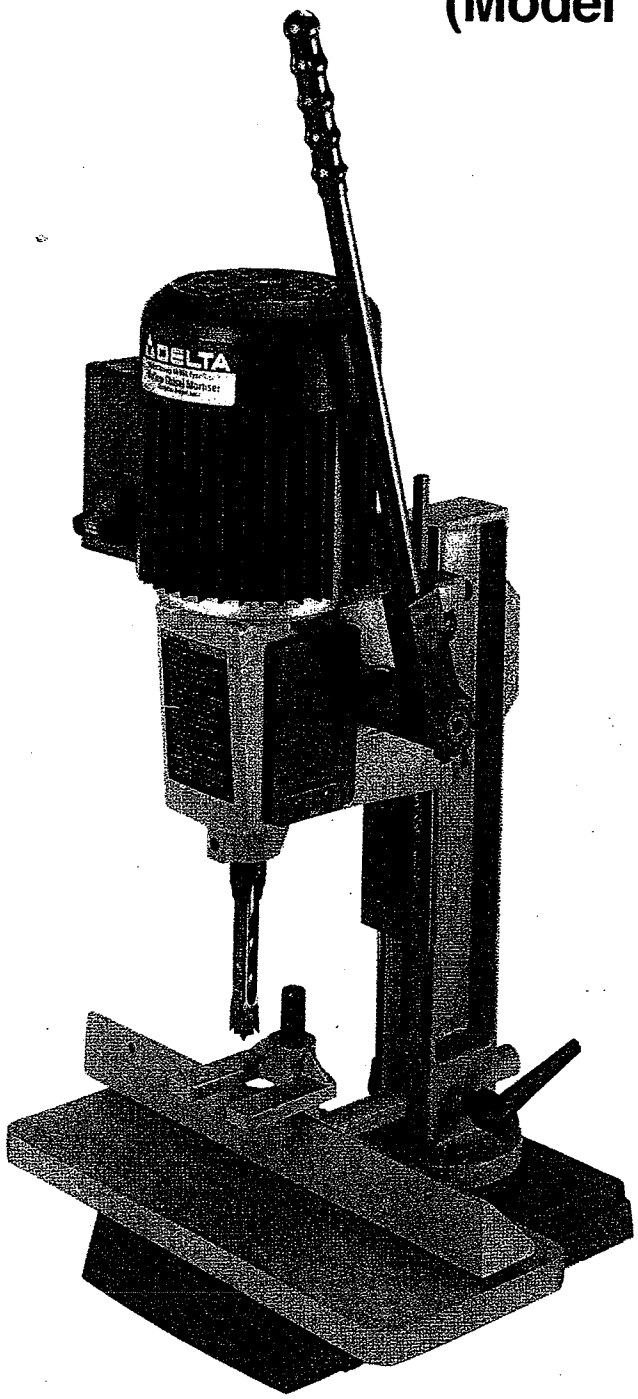
Hollow Chisel Mortiser

(Model 14-650 Type 2)

INSTRUCTION MANUAL



DATED 8-1-96

PART NO. 1349885

DELTA

ADDITIONAL SAFETY RULES FOR HOLLOW CHISEL MORTISERS

1. **WARNING: DO NOT** operate your mortiser until it is completely assembled and installed according to the instructions.

2. **IF YOU ARE NOT** thoroughly familiar with the operation of mortisers, obtain advice from your supervisor, instructor, or other qualified person.

3. **MAKE CERTAIN** the machine is fastened to a supporting surface to prevent it from tipping over during operation.

4. **NEVER** turn the mortiser **"ON"** before clearing the table of all objects (tools, scrap pieces, etc.).

5. **ALWAYS** keep hands, fingers and hair away from the rotating bit.

6. **DO NOT** attempt to mortise material that does not have a flat surface, unless a suitable support is used.

7. **ALWAYS** position holddown directly over workpiece to prevent workpiece from lifting during operation.

8. **ALWAYS** support workpiece securely against fence to prevent rotation.

9. **BE SURE** drill bit is sharp, not damaged, and properly secured in the chuck before operation.

10. **MAKE SURE** chuck key is removed before starting machine.

11. **NEVER** turn on the power with the drill bit or chisel contacting the workpiece.

12. **NEVER** perform layout, assembly, or set-up work on the table while the mortiser is operating.

13. **ADJUST** the depth stop to avoid drilling into the table.

14. **ALWAYS** turn off the power before removing scrap pieces from the table.

15. **SHUT-OFF** the power, remove the drill bit and chisel, and clean the table before leaving the machine.

16. **WARNING: For Your Own Safety** – Don't wear gloves when operating the machine.

17. **SHOULD** any part of your mortiser be missing, damaged, or fail in any way, or any electrical component fail to perform properly, shut off switch and remove plug from power supply outlet. Replace missing, damaged, or failed parts before resuming operation.

18. **THE USE** of attachments and accessories not recommended by Delta may result in the risk of injuries.

19. **ADDITIONAL INFORMATION** regarding the safe and proper operation of this product is available from the National Safety Council, 1121 Spring Lake Drive, Itasca, IL 60143-3201 in the Accident Prevention Manual for Industrial Operation and also in the Safety Data Sheets provided by the NSC. Please also refer to the American National Standards Institute ANSI 01.1 Safety Requirements for Woodworking Machinery and the U.S. Department of Labor OSHA 1910.213 Regulations.

20. **SAVE THESE INSTRUCTIONS.** Refer to them frequently and use them to instruct other users.

EXTENSION CORDS

Use proper extension cords. Make sure your extension cord is in good condition and is a 3-wire extension cord which has a 3-prong grounding type plug and a 3-hole receptacle which will accept the tool's plug. When using an extension cord, be sure to use one heavy enough to carry the current of the machine. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Fig. 19 shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

TOTAL LENGTH OF CORD IN FEET	GAGE OF EXTENSION CORD TO USE
0 - 25	16 AWG
26 - 50	16 AWG
51 - 100	14 AWG
101 - 150	12 AWG

Fig. 19

ASSEMBLING CHISEL AND BIT

1. **WARNING: WHEN ASSEMBLING THE CHISEL AND BIT, MAKE CERTAIN THE MACHINE IS DISCONNECTED FROM THE POWER SOURCE.**

2. Insert bit (A) Fig. 20, into chisel (B). **NOTE:** The opening (C) on the side of the chisel should always be to the right or left, never to the front or rear. The opening allows chips to escape during operation.

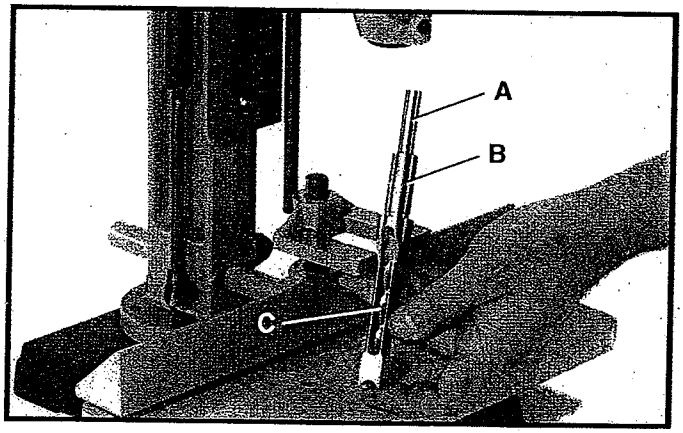


Fig. 20

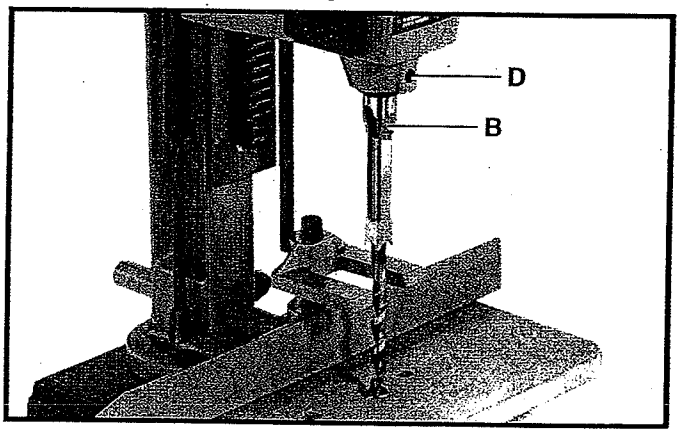


Fig. 21

3. Loosen screw (D) Fig. 21, and push chisel (B) up through hole in head as far as possible. Then lower chisel (B) 1/16″ to 3/16″ and tighten set screw (D). **IMPORTANT:** When inserting chisel (B) Fig. 22 into head, there must be a space of 1/16″ to 3/16″ clearance between the bushing (E) and shoulder (F) of chisel as shown. This assures having proper clearance between the cutting lips of the bit and points of the chisel after the bit is inserted into the chuck.

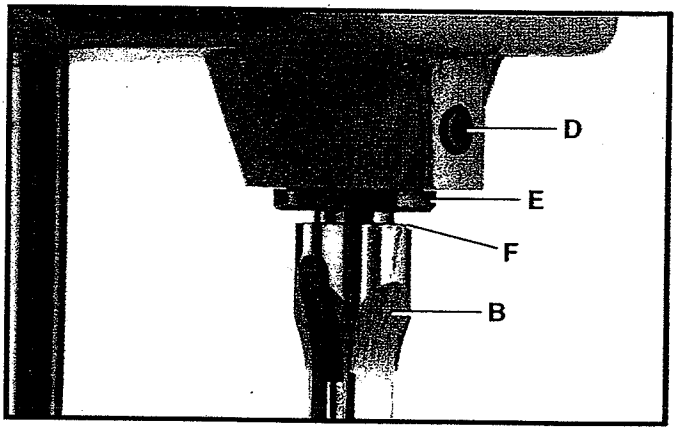


Fig. 22

4. Push bit (A) Fig. 23, up through chisel and into chuck (G) as far as it will go and lock bit in chuck using chuck key supplied.

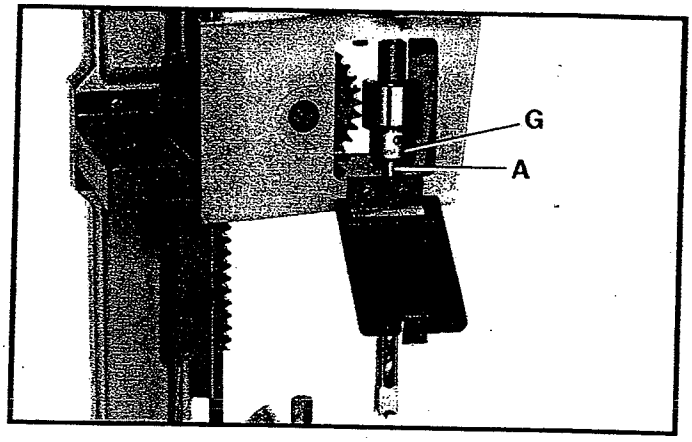


Fig. 23

5. Loosen set screw (D) Fig. 24, and push chisel (B) up against bottom of bushing (E), as shown, and tighten set screw (D). This should provide the proper distance between the cutting lips of the bit and the points of the chisel.

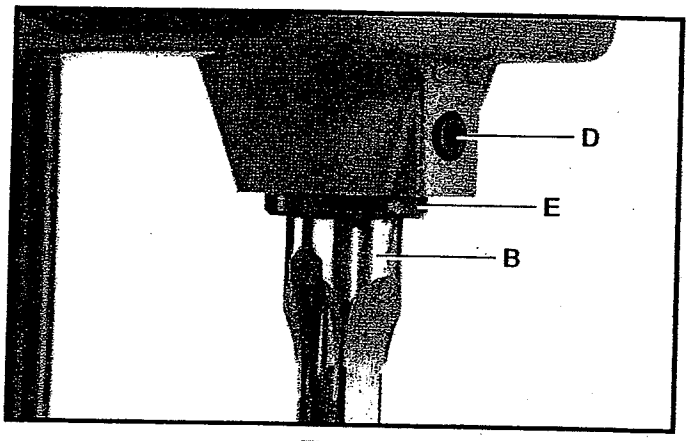


Fig. 24

6. The flat portion of the bit should be adjusted to a minimum of 1/16″ away from the bottom of the chisel, as shown in Fig. 25. For certain types of wood it may be necessary to increase this distance up to a maximum of 3/16″ clearance. This method assures having proper clearance between the cutting lips of the bit and the points of the chisel.

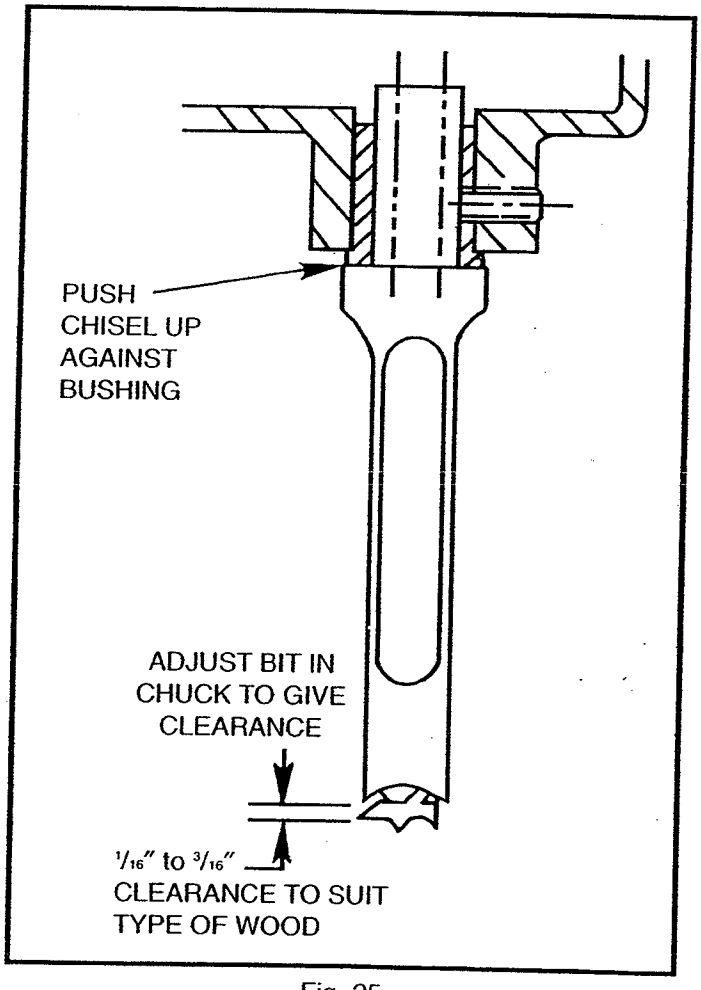


Fig. 25

OPERATING CONTROLS AND ADJUSTMENTS

SWITCH

The switch (A) Fig. 26, is located on the side of the motor. To start the mortiser, move the switch (A) to the up position. To turn the mortiser "OFF" move the switch to the down position

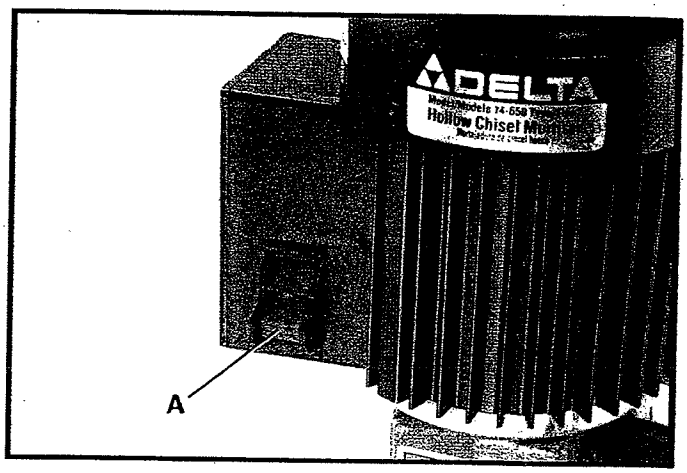


Fig. 26

LOCKING SWITCH IN THE "OFF" POSITION

We suggest that when the mortiser is not in use, the switch be locked in the "OFF" position. This can be done by grasping the switch toggle (B) Fig. 27, and pulling it out of the switch, as shown. With the switch toggle (B) removed, the switch will not operate. However, should the switch toggle be removed while the machine is running, the switch can be turned "OFF" once, but cannot be restarted without inserting the switch toggle (B).

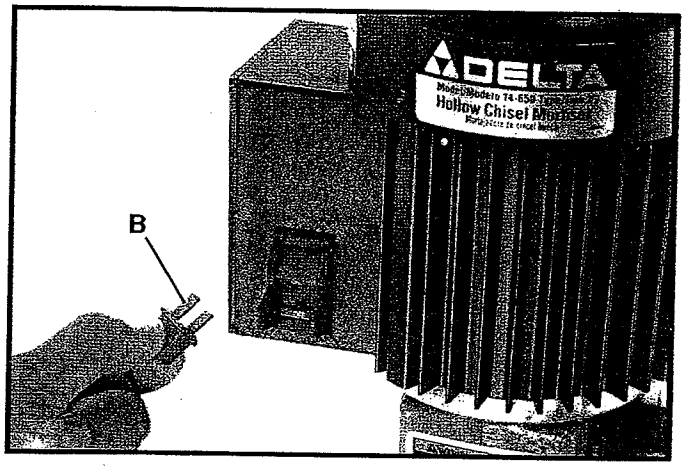


Fig. 27

RAISING AND LOWERING THE HEAD

1. The head (A) Fig. 28, is raised and lowered by means of the lever (B). For maximum leverage during the mortising operation, the lever (B) can be repositioned by pulling out the hub (C) of the lever assembly and repositioning hub on the pinion shaft.

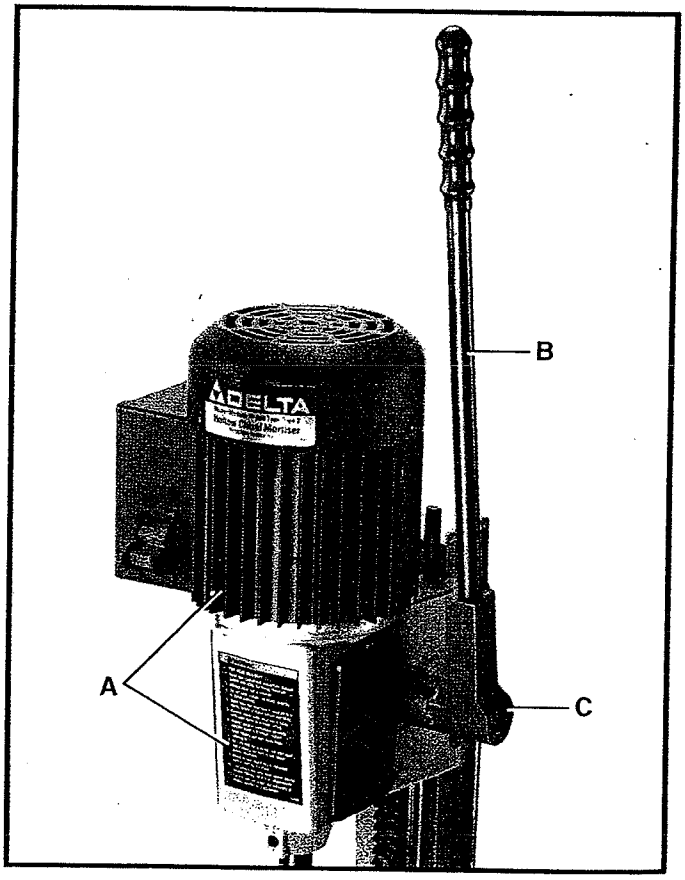


Fig. 28

ADJUSTING DEPTH STOP ROD

1. A depth stop rod (A) Fig. 29, is provided to limit the depth of the chisel (B). To adjust the depth stop rod (A), loosen screw (C) and lower head until the chisel (B) is at the desired depth. Lower depth stop rod (A) until it contacts base (D) and tighten screw (C).

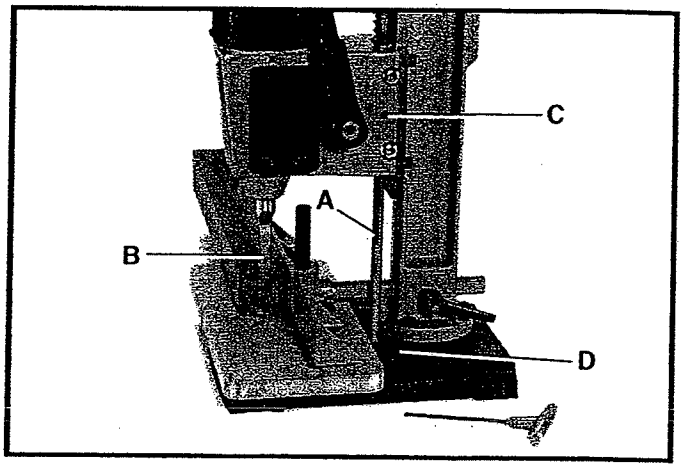


Fig. 29

ADJUSTING FENCE

The fence (A) Fig. 30, can be moved in or out by loosening lever (B), sliding fence to the desired position and tightening lever (B). **NOTE:** Lever (B) is spring-loaded and can be repositioned by pulling out on the lever and repositioning it on the serrated nut located underneath the lever.

ADJUSTING HOLDDOWN

The purpose of the holddown (C) Fig. 30, is to prevent the workpiece (E) from lifting as the chisel (D) is raised up, out of the hole. The holddown (C) should be adjusted so it just touches the top of the workpiece (E) and allows the workpiece to slide left or right. The holddown (C) can be turned upside down to accommodate thicker workpieces. To adjust the holddown (C), loosen screw (F), position holddown, and tighten screw (F).

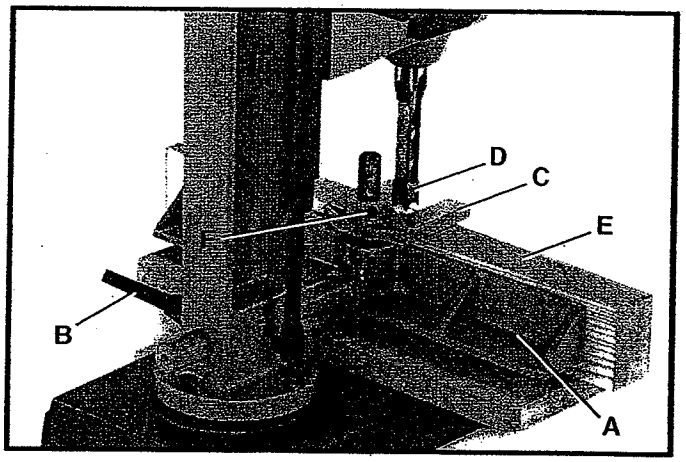


Fig. 30

ADJUSTING CHISEL PARALLEL TO WORKPIECE

The chisel (A) Fig. 31, can be adjusted parallel to the workpiece by loosening screw (B) and rotating chisel until the back surface of the chisel is touching workpiece. Then tighten screw (B).

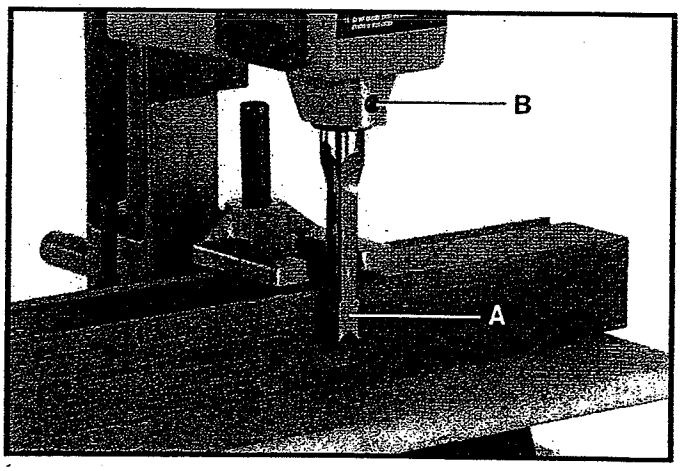


Fig. 31

ADJUSTING SLIDING FIT BETWEEN HEAD AND COLUMN

A dovetail gib (A) Fig. 32, is provided on the rear of the head to insure a good sliding fit between the head and the column when the head is raised and lowered. Adjustment is made by loosening the two screws (B) and turning adjusting screws (C). Then tighten two screws (B). **NOTE:** Correct adjustment is when a good snug sliding fit is obtained without any side movement between the gib and the column. This adjustment should not be too tight that it restricts the sliding movement or too loose that it affects accuracy.

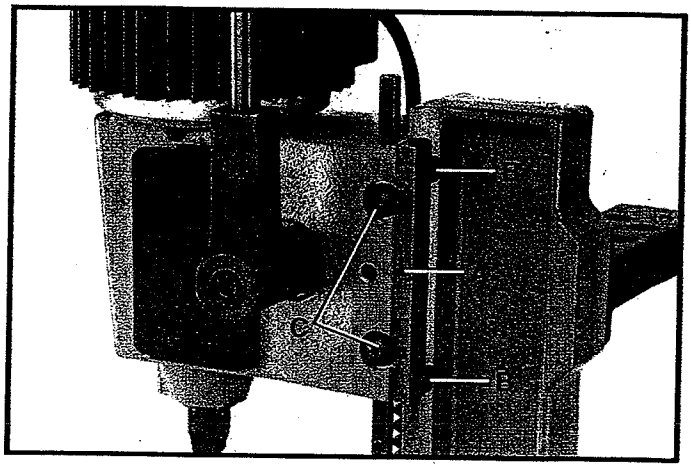


Fig. 32

OPERATION

1. Make sure that chisels and bits are sharp.

2. Fig. 33, illustrates a typical mortising operation. Note that the opening (A) in the chisel is to the right. This means that after the first incision is cut, the workpiece should be moved to the right for subsequent cuts. This allows chips to escape freely through the opening in the chisel.

3. Make sure the workpiece is held firmly against the fence when cutting and that the holddown (B) Fig. 33, is properly adjusted.The rate of penetration of the chisel must be fast enough to prevent burning at the tip of the bit, but not too fast as to stall the motor. You may encounter smoke from the bit or material once the chisel has engaged the material. The smoke created is a natural operating occurrence in hollow chisel mortising and is caused by material chip friction and the resins in the stock being burned off. Bluing of the chisel after initial use is not indicative of a dull chisel, but a combination of friction and resin buildup on the cutting faces of the chisel. A dull chisel can be detected by the amount of excess force required to complete a cut.

4. When performing a through mortise, a thin piece of wood should be placed between the workpiece and the table. This prevents "chip-out" at the bottom of the mortise and also prevents damage to the table.

5. Fig. 34, illustrates the mortising operation completed.

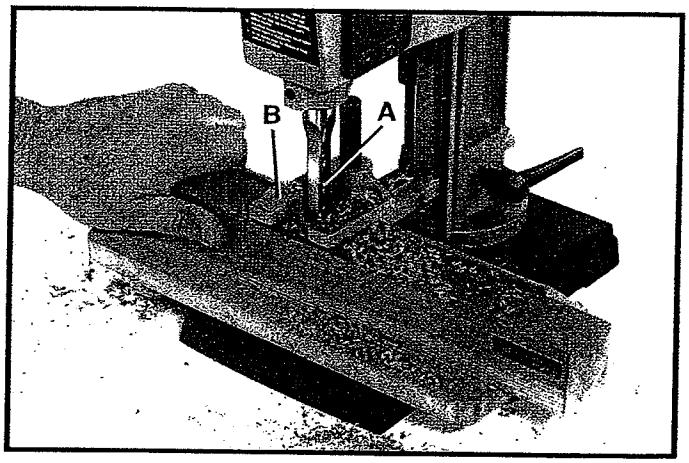


Fig. 33

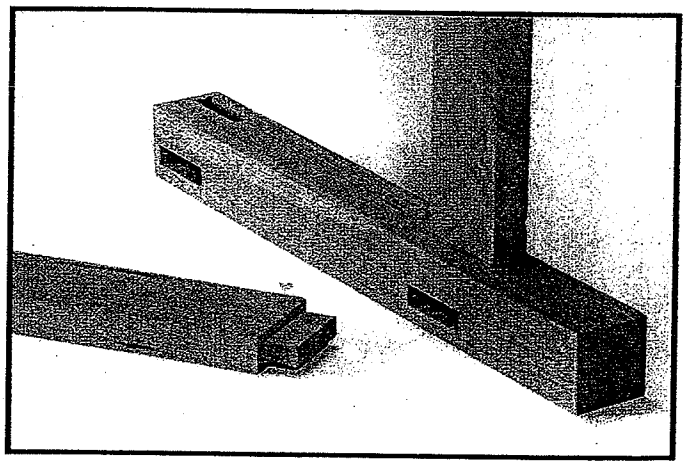


Fig. 34

USING AUXILIARY WOOD FENCE

When mortising extra high workpieces (A) Fig. 35, an auxiliary fence (B) can be fastened to the fence (C) with wood screws (D) through the two holes in the fence. This provides additional support for the workpiece during the mortising operation. Note that the holddown (E) can be turned upside down to accommodate the extra height of the workpiece.

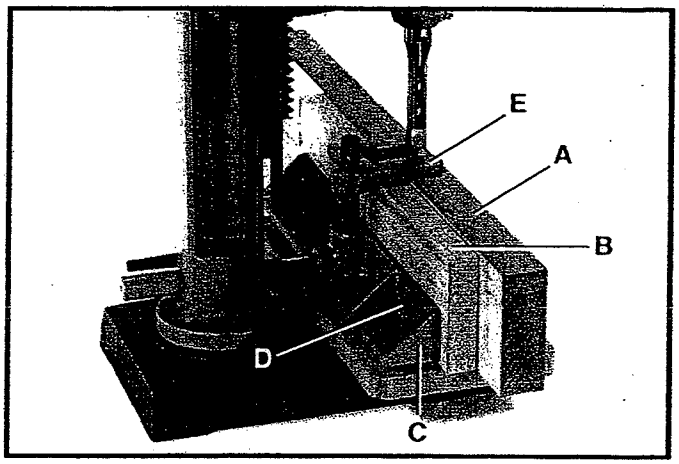


Fig. 35

ROTATING COLUMN 180 DEGREES

The column (A) Fig. 36, can be rotated 180 degrees, as shown, if it is desired to use workpieces off the table. To rotate the column, remove three screws, two of which are shown at (B), rotate column (A) 180 degrees and replace the three screws (B).

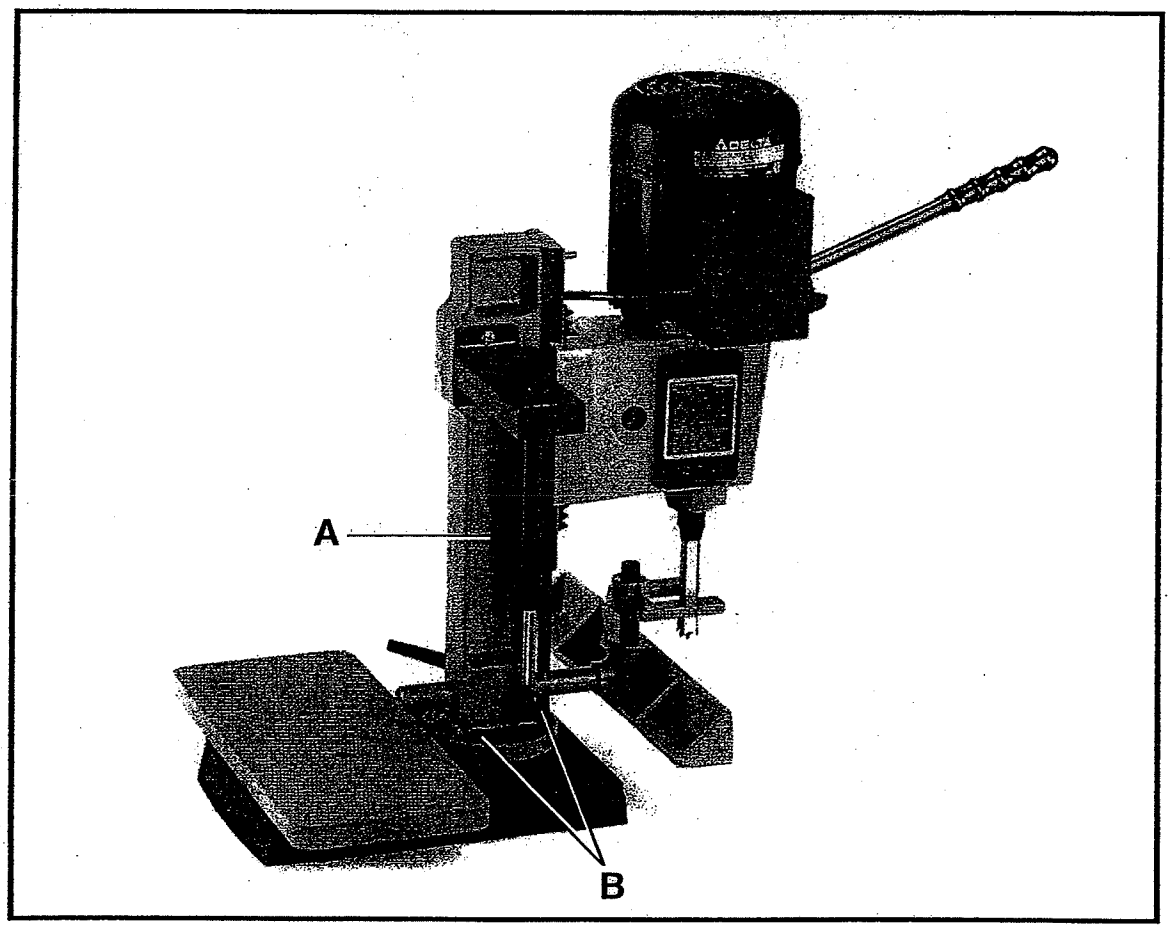


Fig. 36

USING BITS WITH EXTRA LONG SHANKS

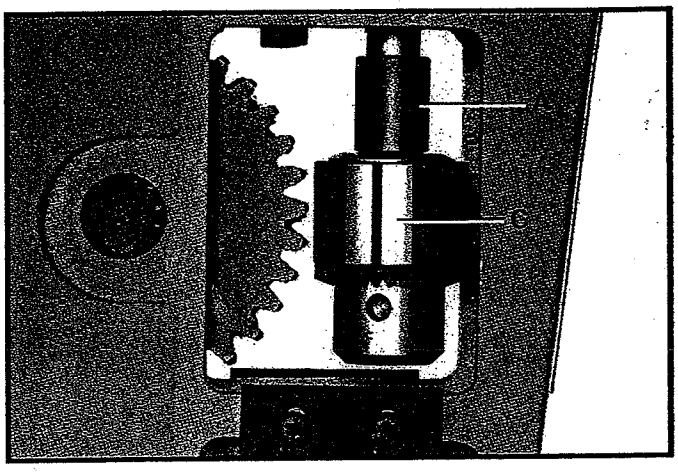


Fig. 37

When using bits with extra long shanks, it will be necessary to remove the extension (A) Fig. 37. This can be accomplished by inserting screwdriver into center hole of motor end cap (B) Fig. 38, and into slot in end of armature shaft. Then using chuck key, unscrew and remove chuck (C) Fig. 37, and extension (A). Remove extension (A) from chuck (C) and replace chuck (C) on end of motor armature.

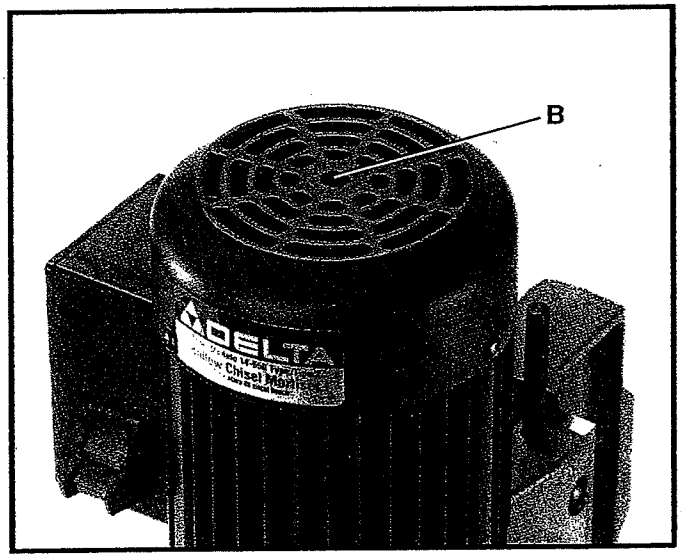


Fig. 38