INSTALLING THE AVL 16 AND 24 HARNESS COMPU-DOBBY
Dobby to Compu-Dobby Conversion

The first stage of this conversion is the disassembly of the Dobby head. Use Figure 1 to assist in identifying parts to be removed.

1. Remove the spring labeled -1-.

2. Remove the spring labeled -2-.

3. Unscrew and remove the screw labeled -3-. A pair of needle nose pliers will help here. They can be used to grip the portion of the screw that is inside the slot at the end of the index lever while loosening the screw. Push the screw post through the back until the cable loop can be disengaged. Hold the cable loop out of the way and reconnect the screw and screw post.

4. Remove the two phillips head screws found at the back edge of the Dobby head (see part labeled -4-).

5. With a pair of vise grips or pliers, crush and remove the black cap located at -5- (or remove the stop collar with an allen wrench).

6. Crush and remove the black cap located at -6- (or remove the stop collar with an allen wrench).

7. Remove the detent arm labeled -7-.

8. Disconnect the end of the spring labeled -8-.

9. Remove the Dobby hook assembly labeled -9-.

10. With a crescent wrench or socket, loosen the lock nuts located at the center of each retention bracket.

11. Remove the adjusting screws located in the center of the nuts in the retention bracket using a 1/8" allen wrench.

12. Using a phillips screwdriver, remove the two screws on each retention bracket (see Figure 2). Also remove the spring behind each pillow block. Keep the retention brackets close at hand, as you will be re-using them in a moment.

13. Pull cylinder assembly straight out toward you.

14. *Locate the retention brackets that you removed in step #12 and set them back in their previous location.* Do not use any hardware to hold them in place at this point. They will be held in place after completing the following step.

15. Install the two Compu-Dobby mounting brackets. These were packed with your Compu-Dobby and are marked "R" and "L". Position them as shown in Figure 3, placing them directly over the retention brackets that you just set in place. Start by using the four #8 x 1 1/2" pan-head screws that were used for the retention brackets removed in step 12.

    NOTE: In some cases, the mounting bracket screw holes on the sides of the Dobby may not be pre-drilled. If necessary, you must now make some small pilot-holes with either an awl or a drill bit approximately 1/8" diameter x 1/4" deep (be careful not to drill through, see Figure 3 for details).

16. Screw in the four #8 x 12" pan head screws included with the mounting brackets, two on each bracket.

17. Finger-tighten the two adjustment knobs about halfway into both sides of the Compu-Dobby (see Figure 3).

18. Slide the Compu-Dobby into the mounting brackets but do not tighten down the adjustment knobs with the large allen wrench. There is still an adjustment to be made later.

19. Note the two center brace screws (see Figure 3). Remove only the right (or outermost) screw.

20. Slide the optical switch unit onto the pins at the side of the Dobby box as shown in Figure 4.

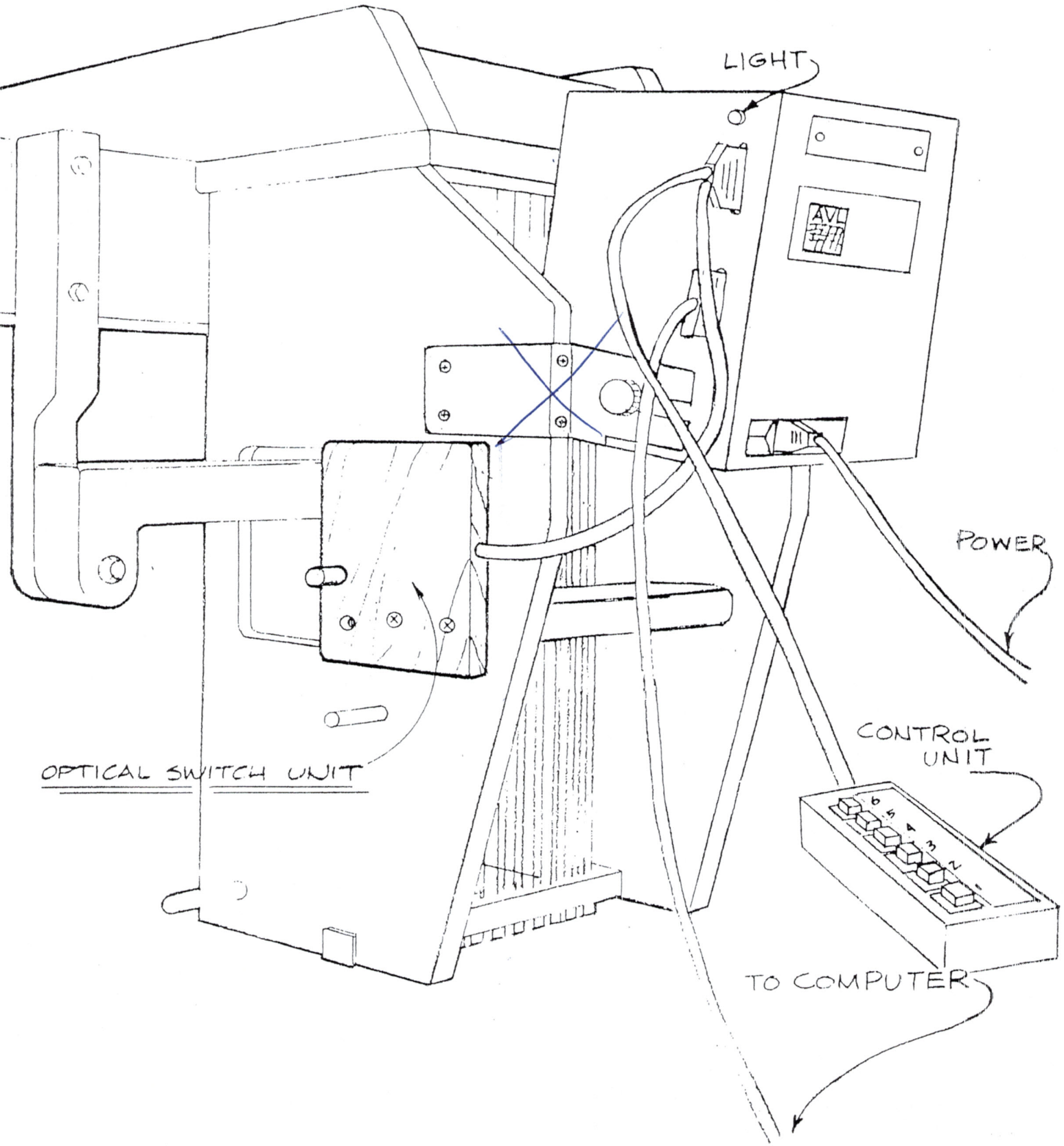
21. Using the #8 x 2 1/2" screw provided, attach the optical switch unit to the Dobby box and center brace.

22. Peel the green tape off the back of the squares on control unit and place the unit where you'll be able to easily reach it.

    On full-frame looms, this should be somewhere near the tool holder on the right front vertical. On the folding 40" looms, we recommend that you place it on the Dobby arm support bracket.

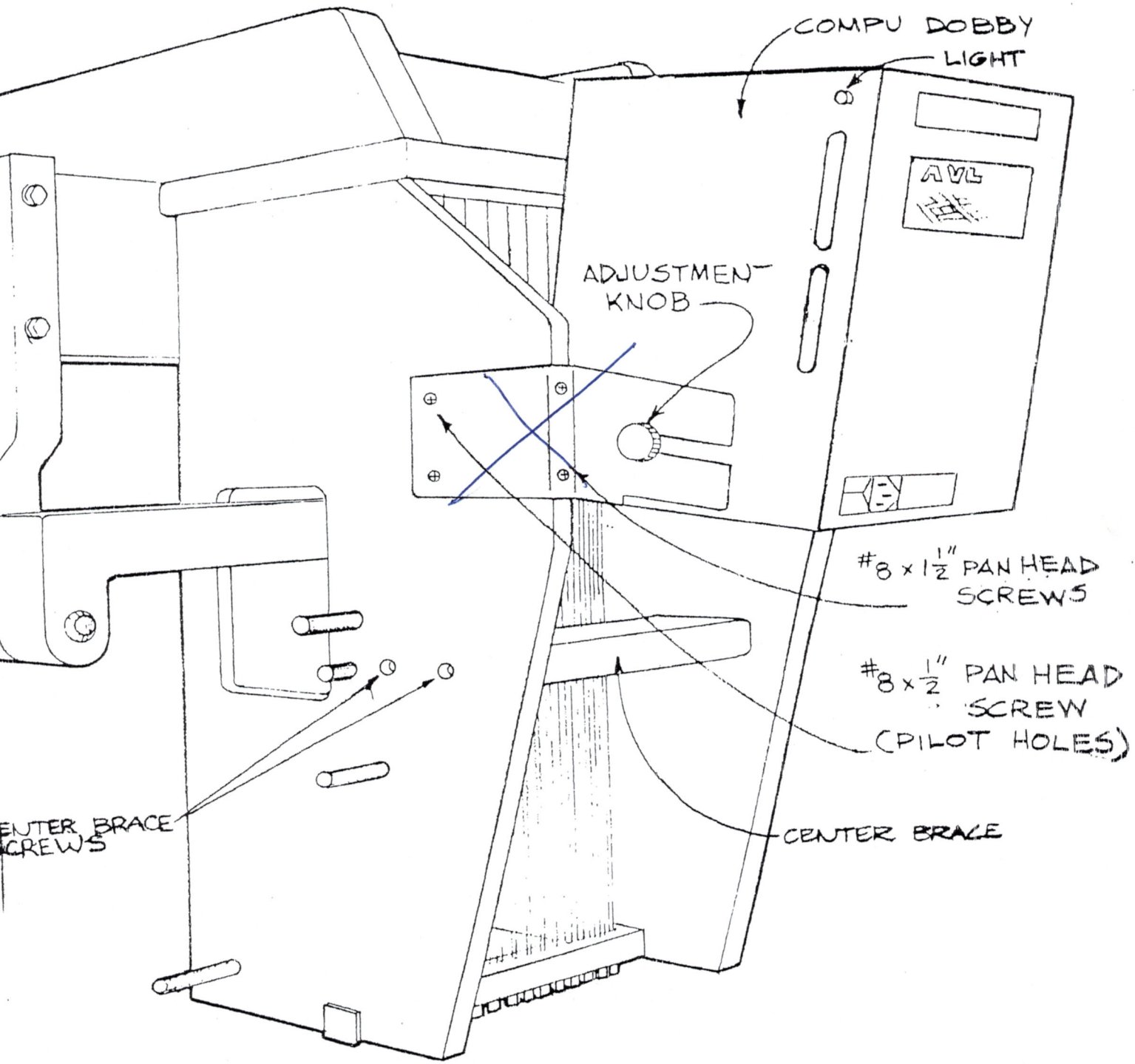
    There will be some extra wire when mounting the control unit on the 40" looms. We recommend that you wrap the wire three times around the upper right horizontal before sticking the unit on the Dobby arm support bracket. Tie off the triple-wrapped wire with a Dobby chain tie.

The Compu-Dobby must be adjusted with respect to the Dobby fingers prior to using it as a part of your weaving system. This adjustment involves the use of a weaving program that interfaces to the Compu-Dobby.



DOBBY HEAD SHOWING OPTICAL SWITCH UNIT

FIG 1



OBBY HEAD WITH

FIG 2

ADJUSTING THE COMPU-DOBBY

1. With your right hand, push the right end of the Dobby arm up against the rubber bumper and hold there (or tie the arm in its upmost position). See Figure 2 for identification of the Dobby arm.

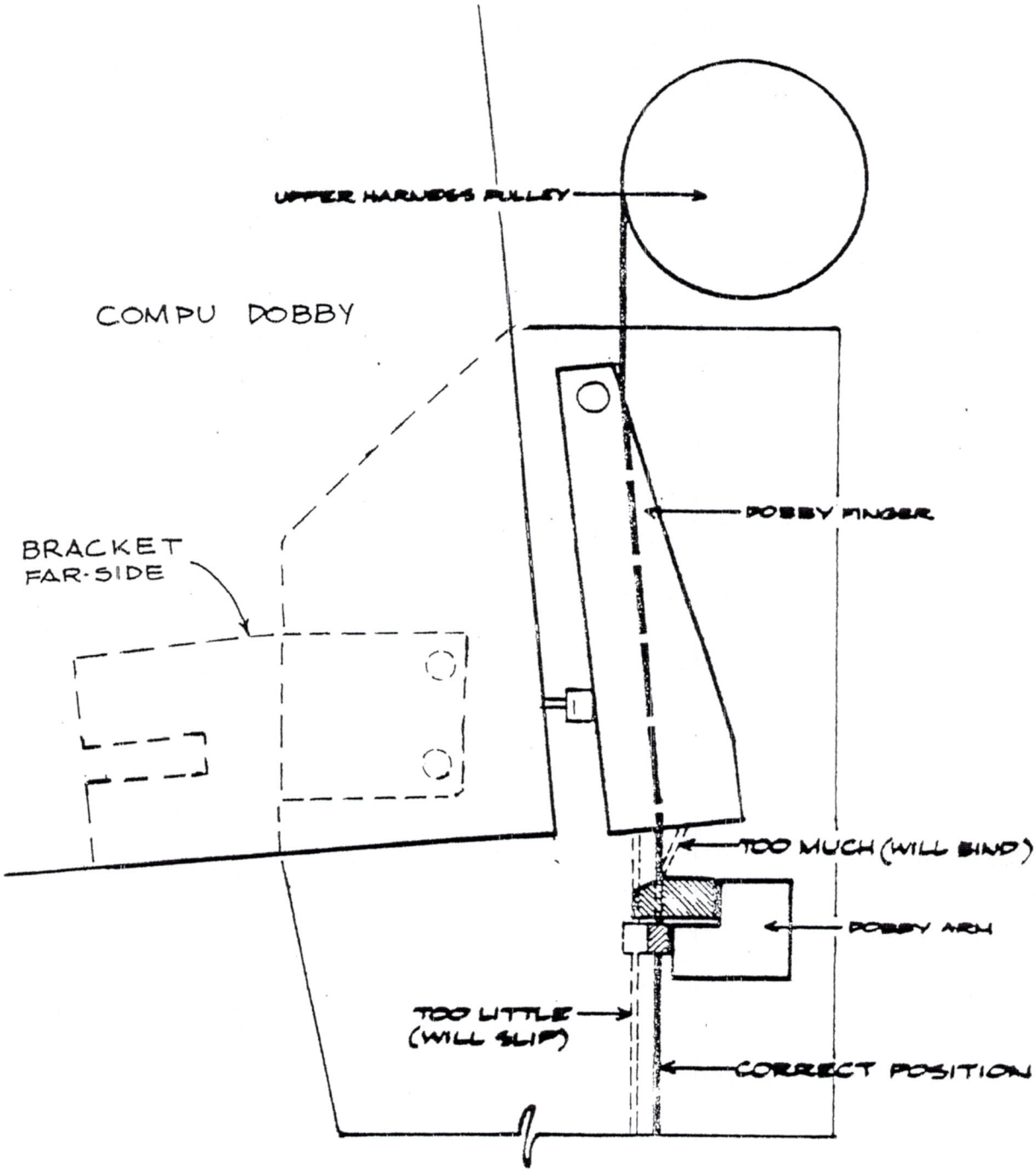
   Notice that the first (#1) and last (#16 or #24) solenoids are energized and pushed against the corresponding Dobby fingers after the Dobby arm is brought into its upmost position.

2. Press on the lower portion of the #1 Dobby finger (the one that sits closest to the front of the loom) until the finger stops. Do this several times so that you can feel the exact point at which it stops. Just so you understand what the Dobby finger is stopping against, look up at the Dobby head from underneath. The cable that rides in the slot in the Dobby finger is captured and stopped at the end of the slot in the metal insert portion of the Dobby arm (see Figure 5).

3. With both adjustment knobs loose, slowly slide the Compu-Dobby in towards the Dobby fingers until you can feel that first and last Dobby fingers have very little travel (about 1/8") before they are stopped by the wire. Now, very carefully adjust the left side so that Dobby finger #1 won't move in at all when lightly pushed. Tighten the left adjustment knob with the large allen wrench. Repeat this for the right side using the last Dobby finger. Double-check the left side. Double-check the right side. The cables should be just **barely** touching the back of the slot in the Dobby arm. Adjusting the cables too far in can lead to solenoid failure. If they're too far out, the cables will slip out of the slots thereby dropping harnesses. *However, it's better to err on the side of the Compu-Dobby being too far away rather than too close, i.e., don't adjust the unit too close to the fingers.*

4. Let go of or untie the right end of the Dobby arm.

   NOTE: *Do not plug in the Compu-Dobby when the switch is in the **ON** position.*



COMPU-DOBBY SOLENOID ADJUSTMENT

FIG 5

SOLENOID ADJUSTMENT

The following instructions are for all software that works with the AVL Compu-Dobby. Currently, this list includes: *Design & Weave* (AVL); *FiberWorks*; *Generation II* (AVL); *ProWeave*; *ScotWeave*; *SwiftWeave* (AVL); *WeaveMaker*; and *WeavePoint* (AVL).

Make sure that your software is properly configured. Now you will adjust the Compu-Dobby so that it contacts the Dobby fingers correctly. This adjustment is critical to the proper functioning of your loom and should be done with care.

1. Turn **OFF** the computer. Next, plug the power cord into the power connection on the left corner of the Compu-Dobby. Plug the other end of the cord into a surge protector or a grounded outlet. Finally, turn **ON** the Compu-Dobby by pushing the power switch located next to the power cord to the "1" or **ON** position.

2. After a few seconds, the Compu-Dobby will begin testing all of the solenoids, one after the other, at about two per second. If you pay attention, you should be able to count all sixteen (or twenty-four) turn on and off.

3. When this is done, or if nothing happens, look to see if the red light above the connectors is off. If it is, contact AVL Looms for repair instructions.

4. Load your software and enter a peg plan that only activates the two outside harnesses (i.e., #1 and #16) or (#1 and #24). If you have *Generation II*, go to the Diagnostic Menu and choose Adjustment Routine.

5. **Remember**: *The red light should be on after you turn on the Compu-Dobby. If it's not, contact AVL.*

6. Now go into the Loom Control part of your program. See your manual for instructions.

7. Start the weaving process according to the on-screen prompts and the two outside solenoids (i.e., harnesses one and sixteen) should be activated.

   NOTE: Remember: The red light should be on after you turn on the Compu-Dobby. If it's not, contact AVL.

To complete the adjustment process, please turn to **Adjusting the Compu-Dobby** (see page 7).

COMPU-DOBBY TO DOBBY CONVERSION

Follow the steps outlined below to restore your loom to the Mechanical Dobby configuration.

1. Disconnect the cables from the side of the Compu-Dobby.

2. Loosen the Compu-Dobby adjustment knobs and gently pull out the Compu-Dobby.

3. Remove the Compu-Dobby mounting brackets.

4. Remove the screw located in the optical switch and disengage from the Dobby box side. Insert and tighten the screw that originally came with the loom.

5. Insert one end of the chain guide axle into the right side of the Dobby head in the hole provided (see Figure 2). Push the axle half way into the Dobby box. Slip on parts in the order described below:

   - four (4) washers
   - one (1) chain guide (with the small diameter toward the inside)
   - two (2) stop collars (these came in your Compu-Dobby package and are tightened with an allen wrench)
   - one (1) chain guide (with the small diameter toward the inside)
   - four (4) washers

   Now push the rod through the corresponding hole in the left side of the Dobby box. This is a press fit so you may need to tap lightly with a hammer. Separate the stop collars by pushing one of the left and one to the right. Tighten them, leaving about 1/16" between the stop collar and the chain guide. Your chain guide assembly should now look like the one in Figure 2, except that your stop collars are bigger than the snap rings that come standard on the loom.

6. Insert the cylinder assembly with the index wheel toward the left. Be certain that the order of this assembly, from left to right, is as follows:

   - index wheel
   - pillow block
   - wooden spacer
   - cylinder
   - wooden spacer
   - pillow block

7. Check to see that the springs are in place behind the pillow blocks (see Figure 2).

8. Reinstall the retention brackets (see Figure 2).

9. Fit the Dobby hook assembly (labeled 9 in Figure 1) onto the left side of the Dobby box.

10. Hook the small spring up to the pin labeled 8.

11. Slip the detent arm over the pin labeled 6 with the roller to the right and the flat side down (as shown).

12. Slip the two 1/4" stop collars that came in the Compu-Dobby package over the pin labeled 6 and the pin labeled 5 in Figure 1. Tighten with an allen wrench leaving approximately 1/16" between the stop collars and the wood.

13. Using the two phillips head screws that came with the loom, secure the reverse cord stop to the back of the loom. Orient it so that the counter sinks for the screws heads are facing away from the Dobby head and the reverse cord button is lying in the relative position shown in #4 in Figure 1.

14. Loosen the screw post (labeled #3) until you can slip the cable loop around it and tighten it up again.

15. Install the spring labeled -2-.

16. Install the spring labeled -1-.

17. Insert pegs in one Dobby bar in holes #1, #16 (or #24). Position the bars into the Dobby head with the pegged bar in the selecting position (as shown in Figure 6).

18. Adjust the Dobby cylinder (see Figure 6).

    A. With your right hand, push the right end of the Dobby arm up against the rubber bumper and hold it there (you can tie the arm in its upmost position if that's most convenient). See Figure 2 for identification of the Dobby arm.

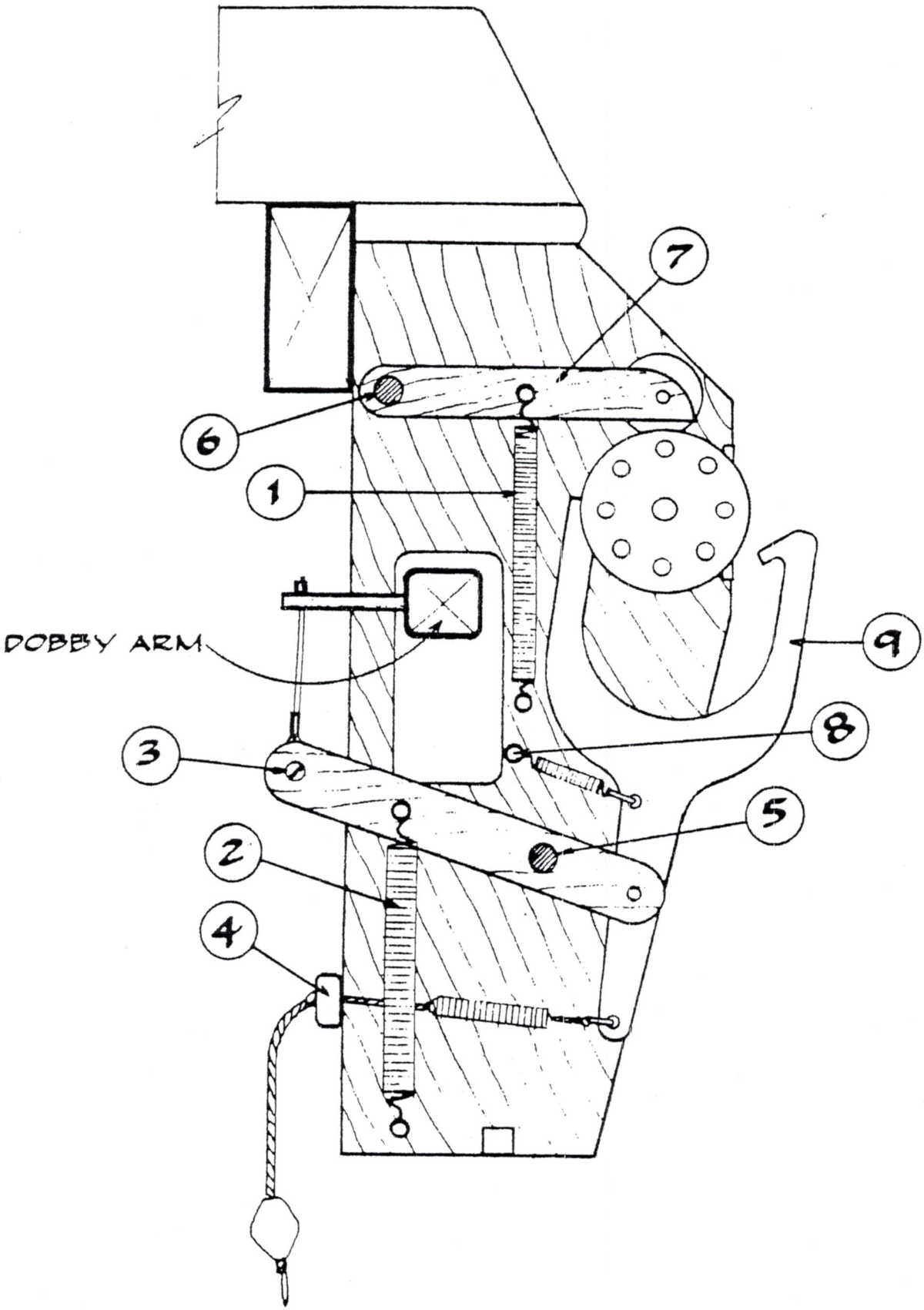
    B. Press on the lower portion of the #1 Dobby finger (the one that sits closest to the front of the loom) until the finger stops. Do this several times so that you can feel the exact point at which it stops. Just so you understand what the Dobby finger is stopping against, look up at the Dobby head from underneath. The cable that rides in the slot in the Dobby finger gets captured and stopped at the end of the slot in the metal insert portion of the Dobby arm (see Figure 6).

C. Insert the 1/8" allen wrench into the adjusting screw located in the left cylinder retention bracket. Turn the allen wrench in a clockwise direction until you can feel that the Dobby finger has very little travel before it stops. Repeat this for the right side using the #16 (or #24) Dobby finger. Now adjust the left adjusting screw so that the finger won't move in at all when lightly pushed. Repeat this for the right side. The cable should be just **barely** touching the back of the slot in the Dobby arm. The cable will bind if it is adjusted too far in. If it's too far out, the cables will slip out of the slots thereby dropping harnesses.

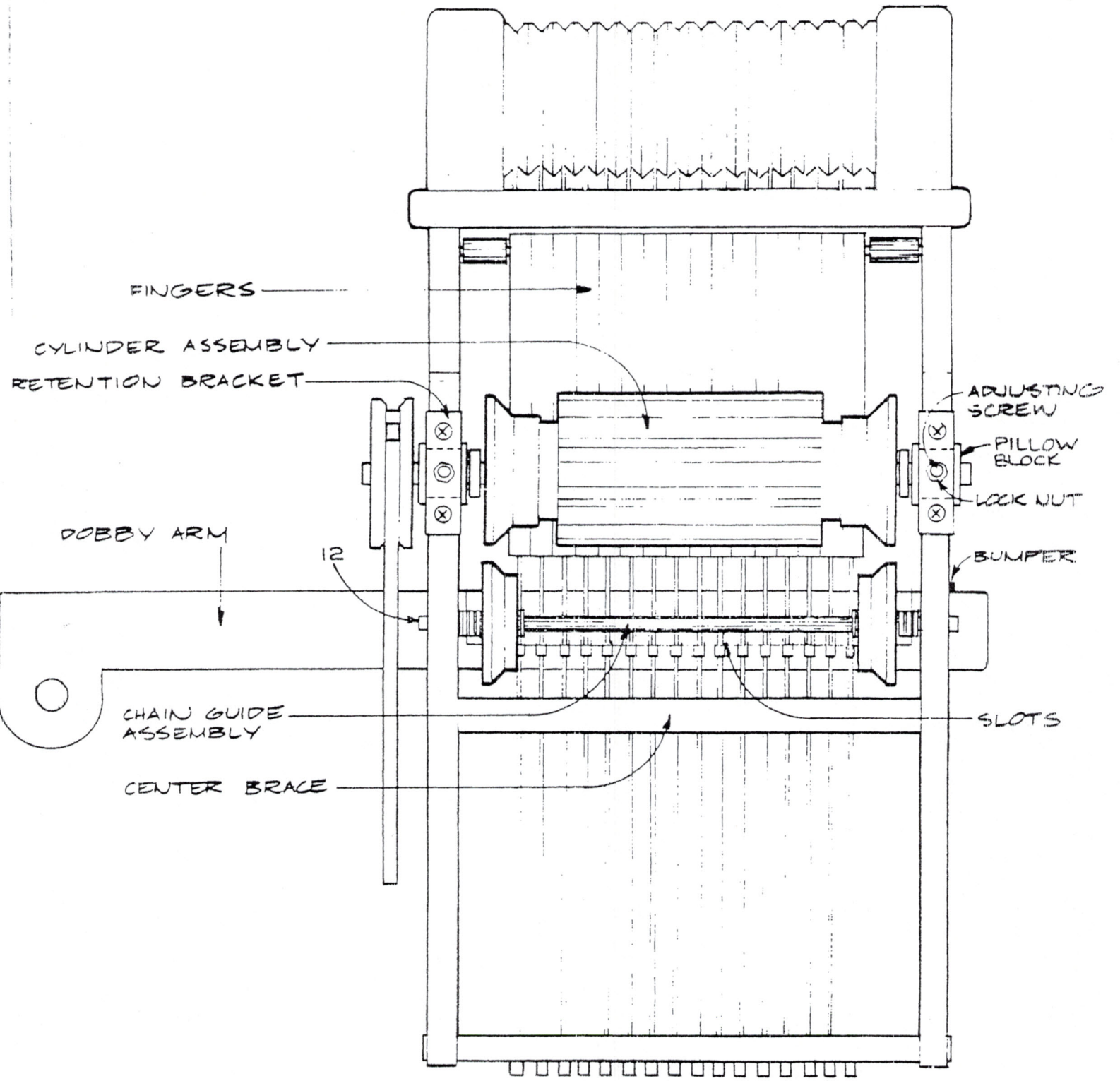
D. Tighten the lock nut while preventing the adjusting screw from moving. You can do this by inserting the allen wrench and holding it firmly while turning the lock nut in a clockwise direction. Repeat for the other side. Tighten very securely so that you're certain it won't come loose.

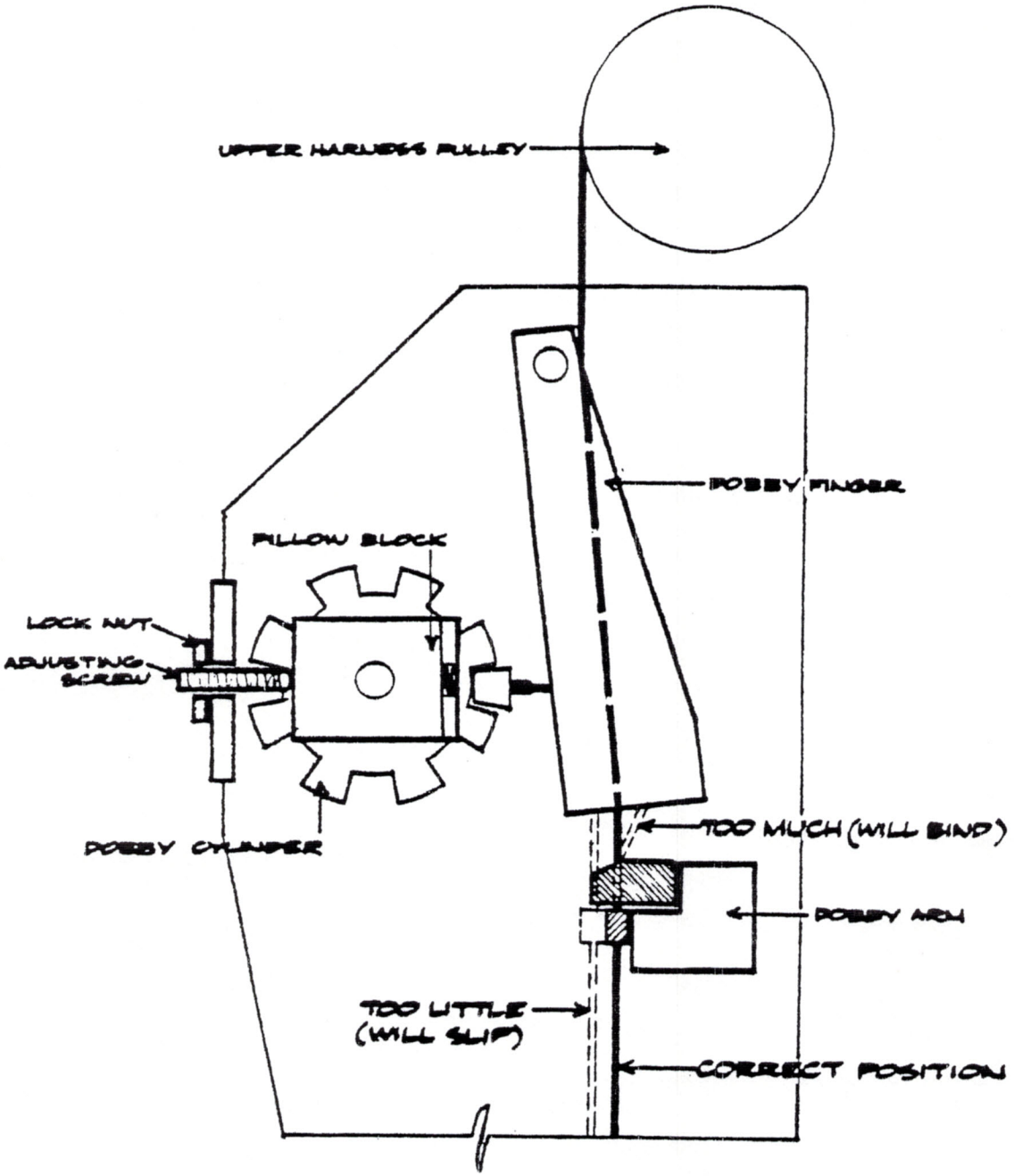
E. Let go of (or untie) the right end of the Dobby arm.

This completes the Compu-Dobby to Dobby conversion.



DOBBY HEAD - SIDE VIEW FROM FRONT


FINGERS
CYLINDER ASSEMBLY
RETENTION BRACKET
ADJUSTING SCREW
PILLOW BLOCK
LOCK NUT
DOBBY ARM
12
BUMPER
CHAIN GUIDE ASSEMBLY
SLOTS
CENTER BRACE



DOBBY CYLINDER ADJUSTMENT

FIG 6