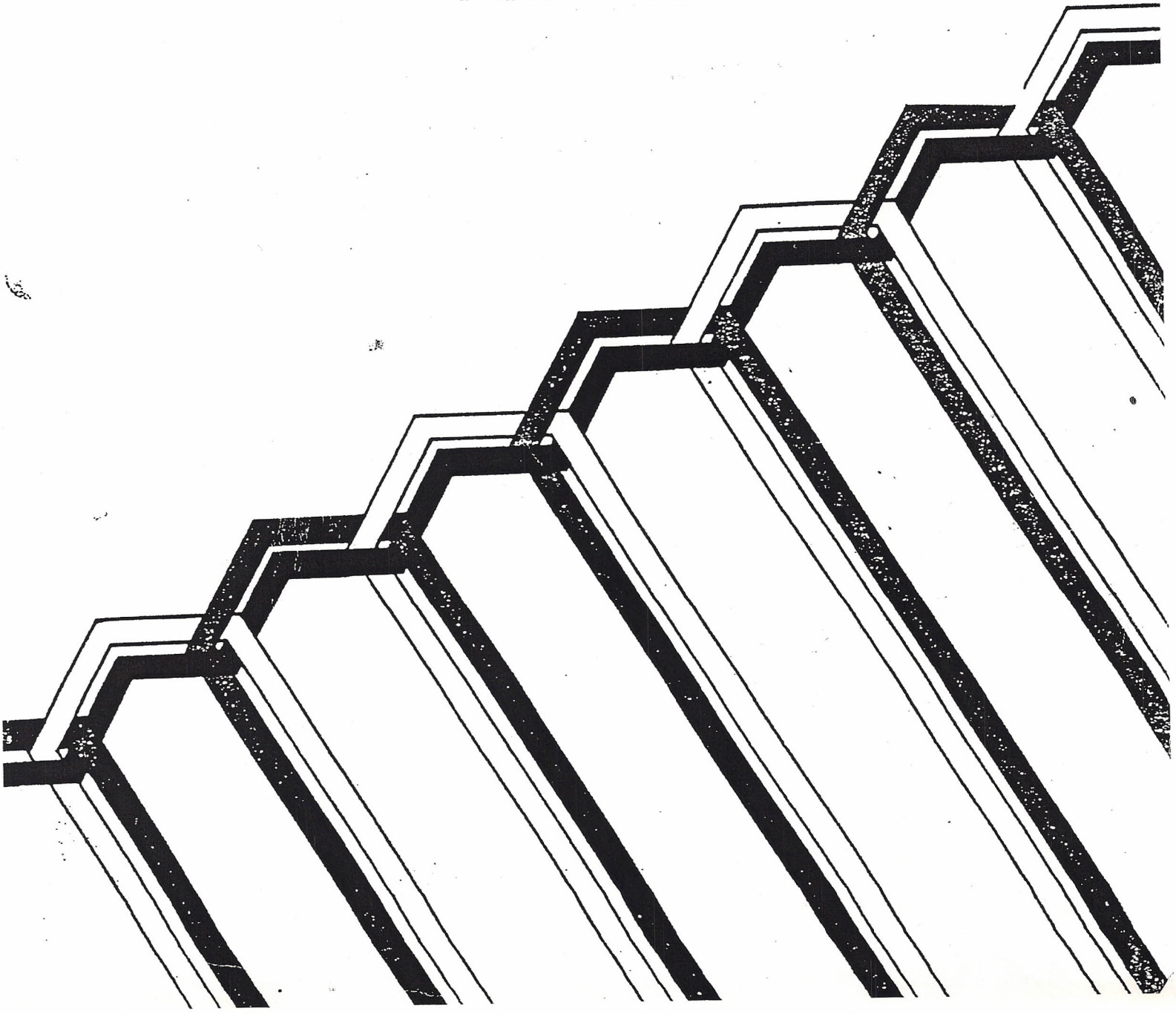
AVL LOOMS

AHRENS & VIOLETTE LOOMS, INC.

BUILDERS OF FINE HANDLOOMS
& PRODUCTION WEAVING EQUIPMENT

AUTO ADVANCE

MANUAL



AUTOMATIC CLOTH ADVANCE ASSEMBLY INSTRUCTIONS

There are two ways to receive the AVL Automatic Cloth Advance. One way is with your loom. The other way to receive it is as an addition to your present AVL loom.

If you bought you Automatic Cloth Advance separately from your loom, you'll need to follow these instructions carefully from step 1. Also, if the serial number on your loom is below #00300, some modifications will probably need to be made to your loom.

If you ordered your Automatic Cloth Advance along with your loom, some of these assemblies will have been done for you.

The following is a complete list of the parts and assemblies necessary for the Automatic Cloth Advance System. Depending on the loom you have now, you will receive all or only some of these parts and assemblies. If you see some items that are on this list that you didn't receive, don't worry, you probably already have them on your loom. These instructions are written so that anyone can put the Automatic Cloth Advance System together starting with any AVL Production Loom.

PARTS LIST:

- Left beater leg with eight pin holes (bottom swing beater only)
- Upper left cloth beam support
- Oilite bearing
- Cloth beam gear
- 1/8" Allen wrench
- Advancing mechanism with #18 pick wheel
- Advancing linkage with pin
- Top drive assembly
- Seven pick wheels (20, 22, 24, 26, 28, 30, and 32)

1. If your loom is equipped with a bottom swing beater, you will need to check and see that there are eight holes drilled through the tapered portion near the bottom of the leg. If these holes are not there, you will either have to drill the holes or replace the leg, depending upon the arrangements you have made with AVL.

2. Remove your present upper left cloth beam support and cloth beam from the loom.

3. If your present cloth beam has a one-inch wooden spacer on its left end, you'll need to remove the spacer by unscrewing the three screws. Orient the black cloth beam gear just as the one inch thick wooden spacer was oriented and, using the same screws and cloth beam holes, attach the gear to the cloth beam. If you ordered the Automatic Cloth Advance with your loom, this gear will already be attached to the cloth beam.

   If you received a new cloth beam with a black gear at one end and an aluminum ratchet on the other, orient it so that the black gear is toward the left side of the loom.

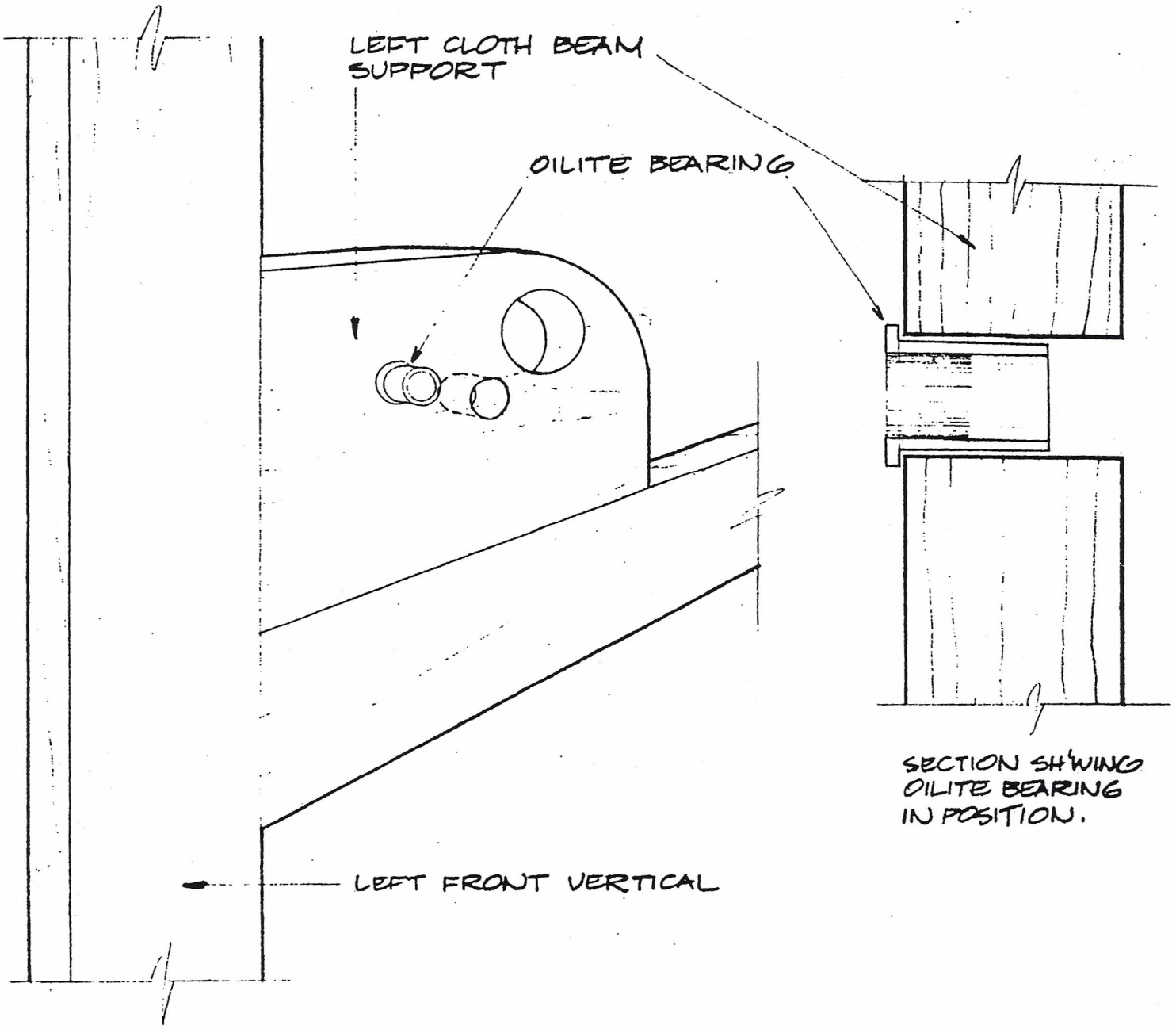
   Install the cloth beam on the loom by fitting the cloth beam handle and wooden washer on as they were before to the right axle of the beam. Slip the left end of the cloth beam into the corresponding hole in the cloth beam support. Insert the right end of the cloth beam into the hole in the right cloth beam support and fit the left upper cloth beam support back in place on the loom and bolt it to the side frame.

Locate the oilite bearing. It is a small copper colored sleeve with a flange on one end. Press or tap this bearing into the upper left cloth beam support as shown in Figure AA-1, with the flange on the outside of the loom.

4. Release the cloth beam ratchet pawls. This is done by pulling back on each pawl until it stops. The spring tension will hold it in place.

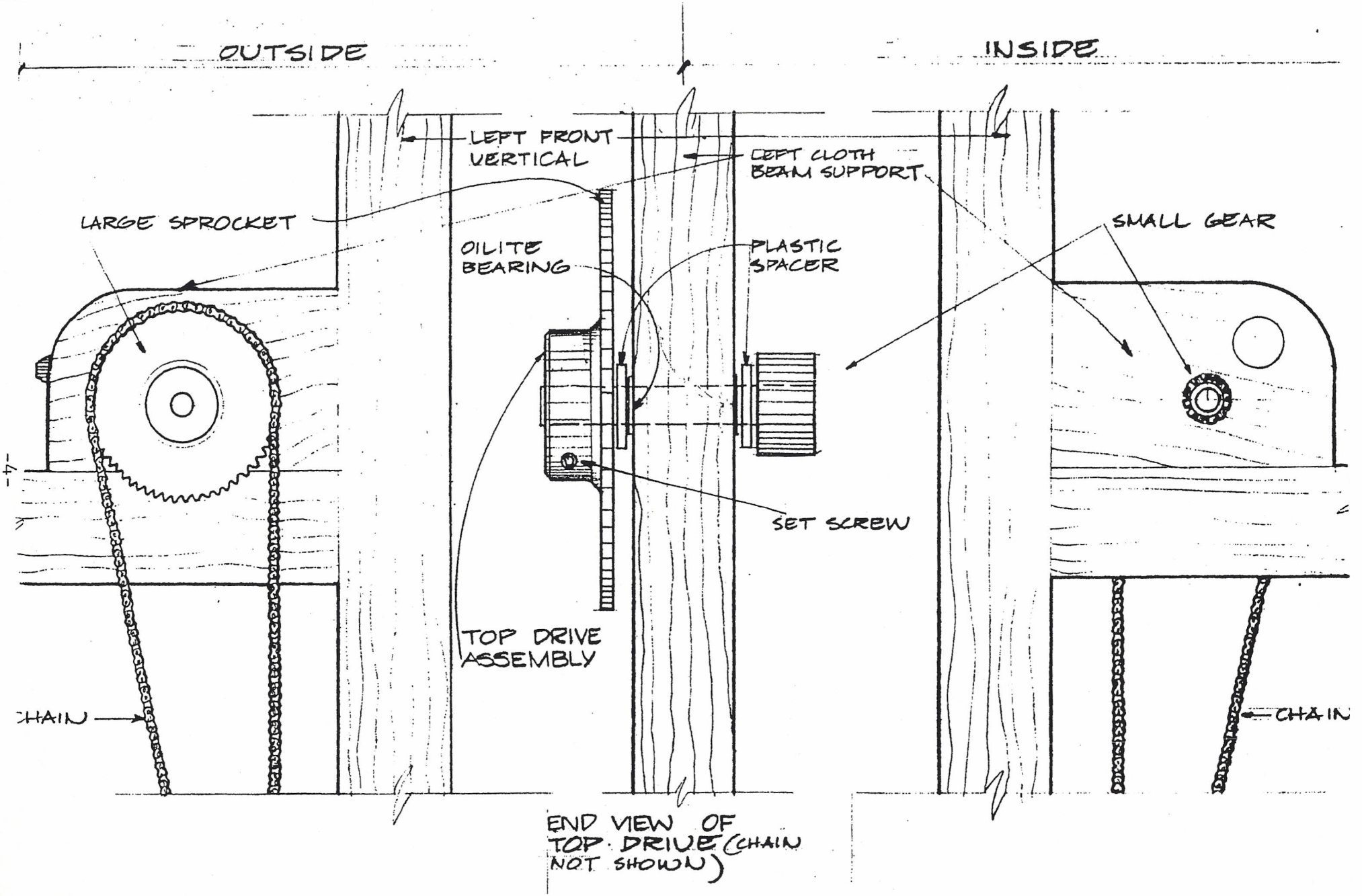
   NOTE: If your cloth beam ratchet system only has one pawl (no pawl on the cloth beam handle) you simply need to remove the pawl by unscrewing the hex nut on the outside of the cloth beam support and pulling the bolt/pawl assembly out from the inside.

5. Locate the top drive assembly (see Figure AA-2). Using the 1/8" Allen wrench provided, loosen the set screw in the large sprocket and remove it and one of the plastic spacers from the shaft. Insert this shaft, from the inside of the loom, into the oilite bearing in the left cloth beam support. Slip the plastic spacer and the large sprocket with the toothed side closest to the side frame onto the rod. Leaving about 1/32" between the plastic spacer and the oilite bearing, tighten down the large sprocket, making sure to locate the set screw on the flat portion of the shaft.



SECTION SH'WING OILITE BEARING IN POSITION.

OILITE BEARING INSERTION FIG. AA-1



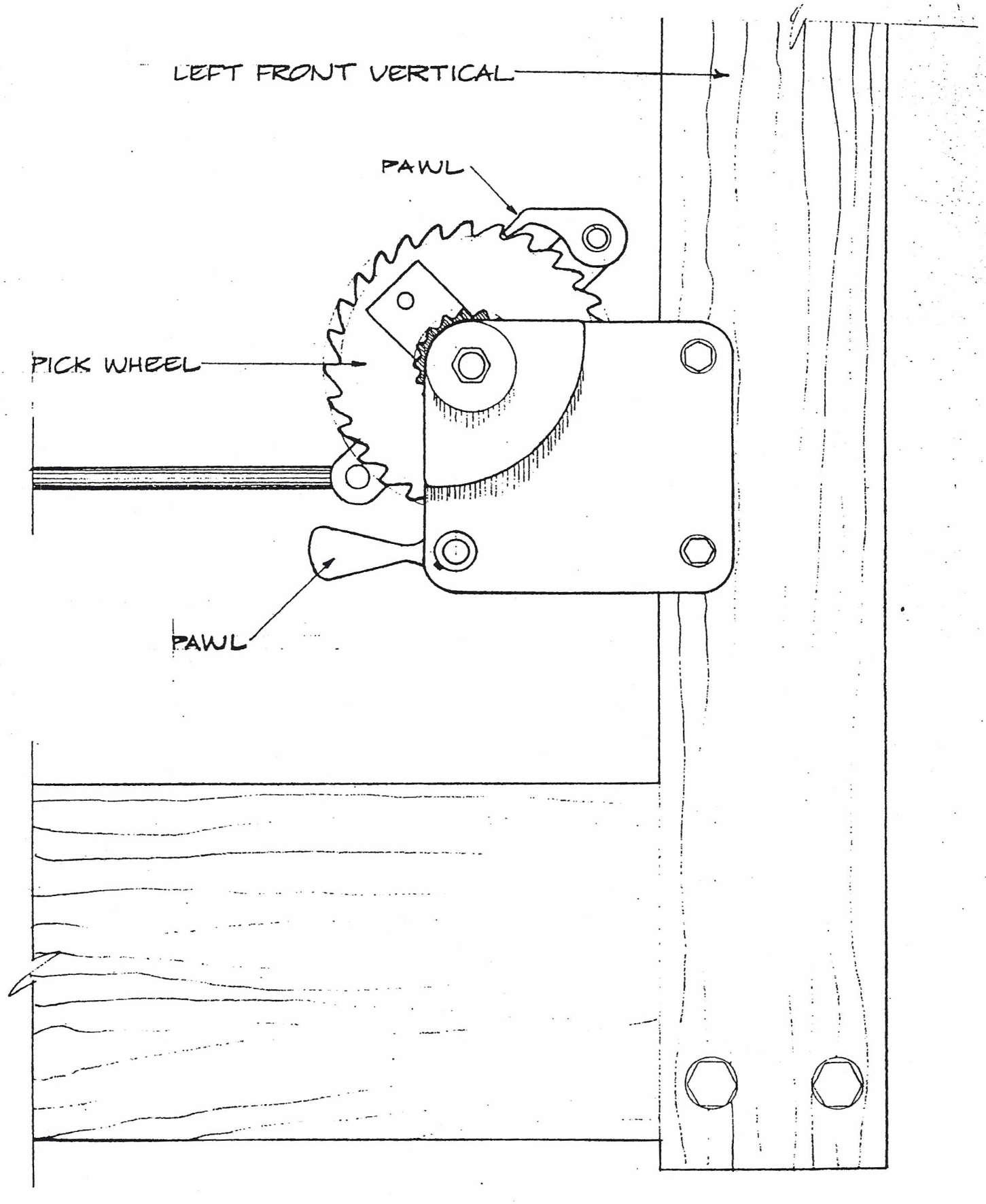
TOP DRIVE ASSEMBLY

FIG. AA-2

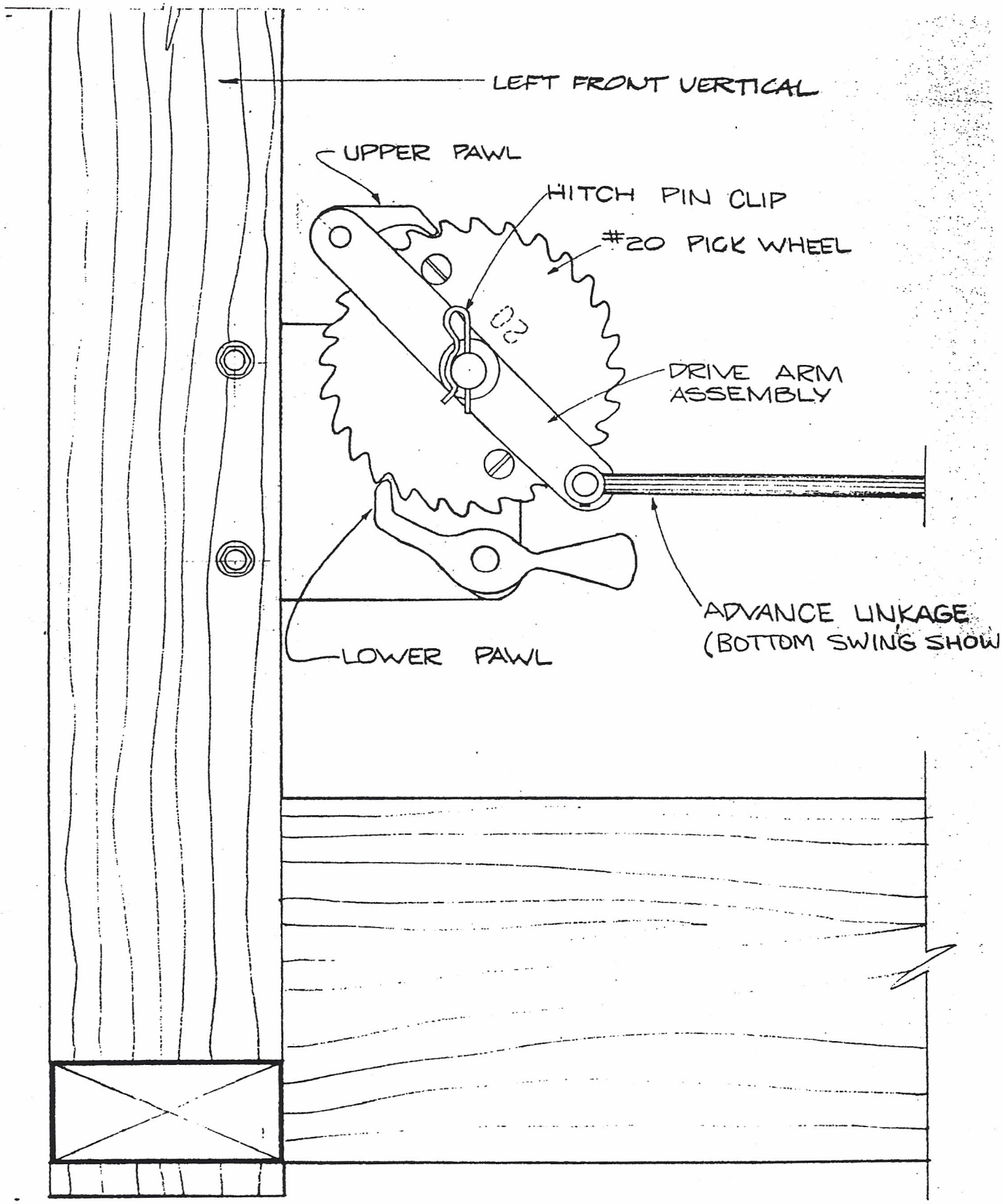
6. Locate the advancing mechanism (see Figure AA-3 and AA-4). Orient it as shown to the outside of the left front vertical. There should be two holes in your left front vertical to accommodate the bolts of the advancing mechanism. If there are no holes there, refer to Figure AA-5 for dimensions of the holes and diameter of the holes. There can be drilled on the loom.

   Run the chain over the top of the large sprocket in the top drive assembly and down around the small sprocket located in the advancing mechanism.

   Line up the slots of the advancing mechanism with the holes in the left front vertical and fasten them together with the bolts provided.



ADVANCING MECHANISM FROM OUTSIDE FIG. AA-3



ADVANCE MECHANISM FROM INSIDE FIG. AA-4

7. In your Automatic Cloth Advance System the picks per inch are determined by two factors – the pick wheel used and the leg pin position on either the beater leg or the tilting arm.

   Look at the PICK TABLE at the end of these instructions to determine which wheel and leg pin position is required for the picks per inch you need.

   To change the pick wheel, here's all you need to do:

   A. Pull off the hitch pin clip shown in Figure AA-4.

   B. Pull the drive arm assembly off.

   C. Unscrew the two screws holding the pick wheel to the bracket.

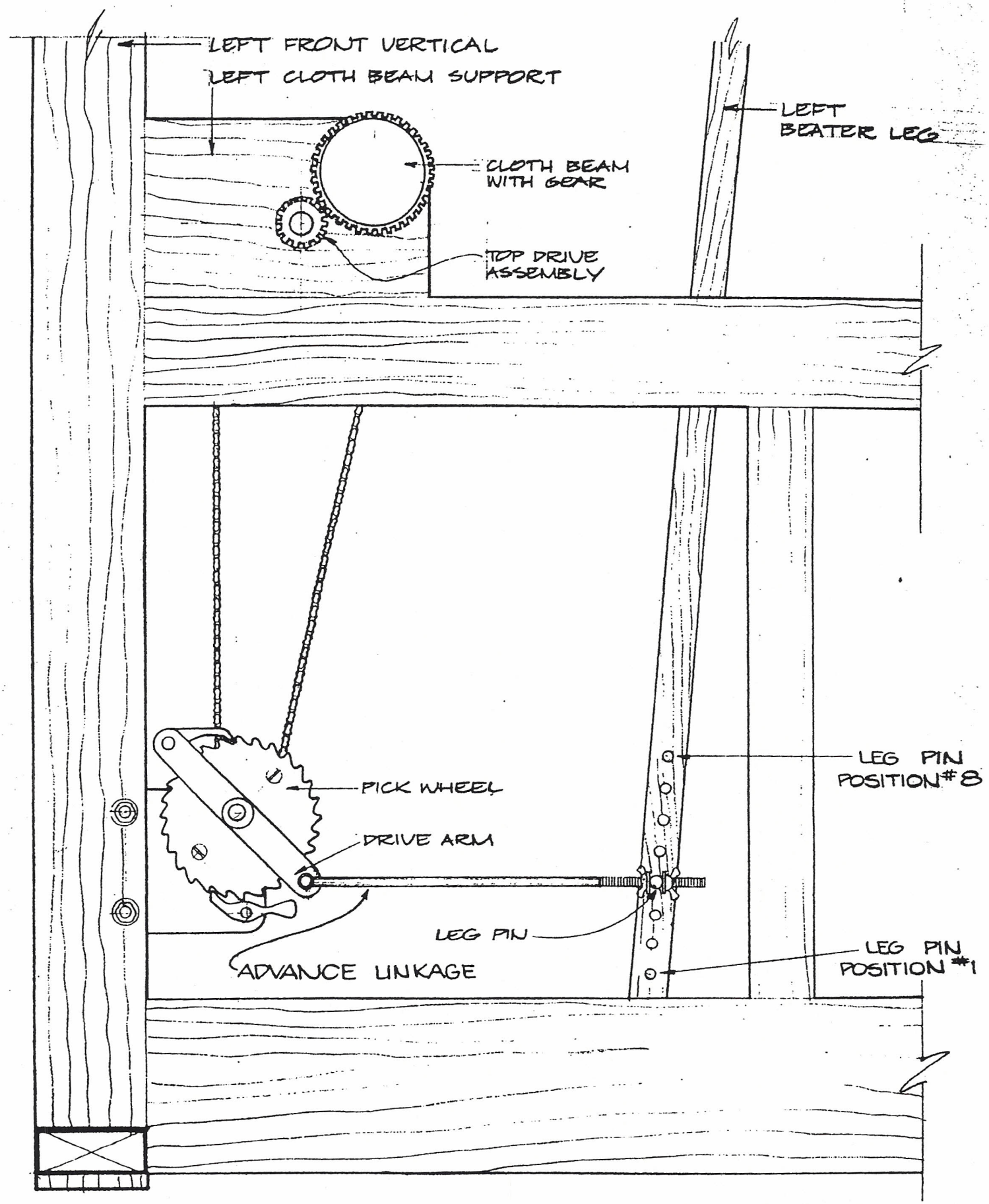
   D. Put on the new pick wheel, with the number facing the inside of the loom. Screw each screw in loosely then tighten.

   E. Slip the drive arm assembly back on. Slip the hitch pin clip back over the rod.

8. Slip the advance linkage bearing end over the pin on the drive arm assembly while inserting the linkage pin into the desired hole in the left leg (see Figure AA-7A) or tilting arm on overhead beaters (see Figure AA-7B). The advance linkage is held in place on the pin by tightening the set screw on the stop collar.

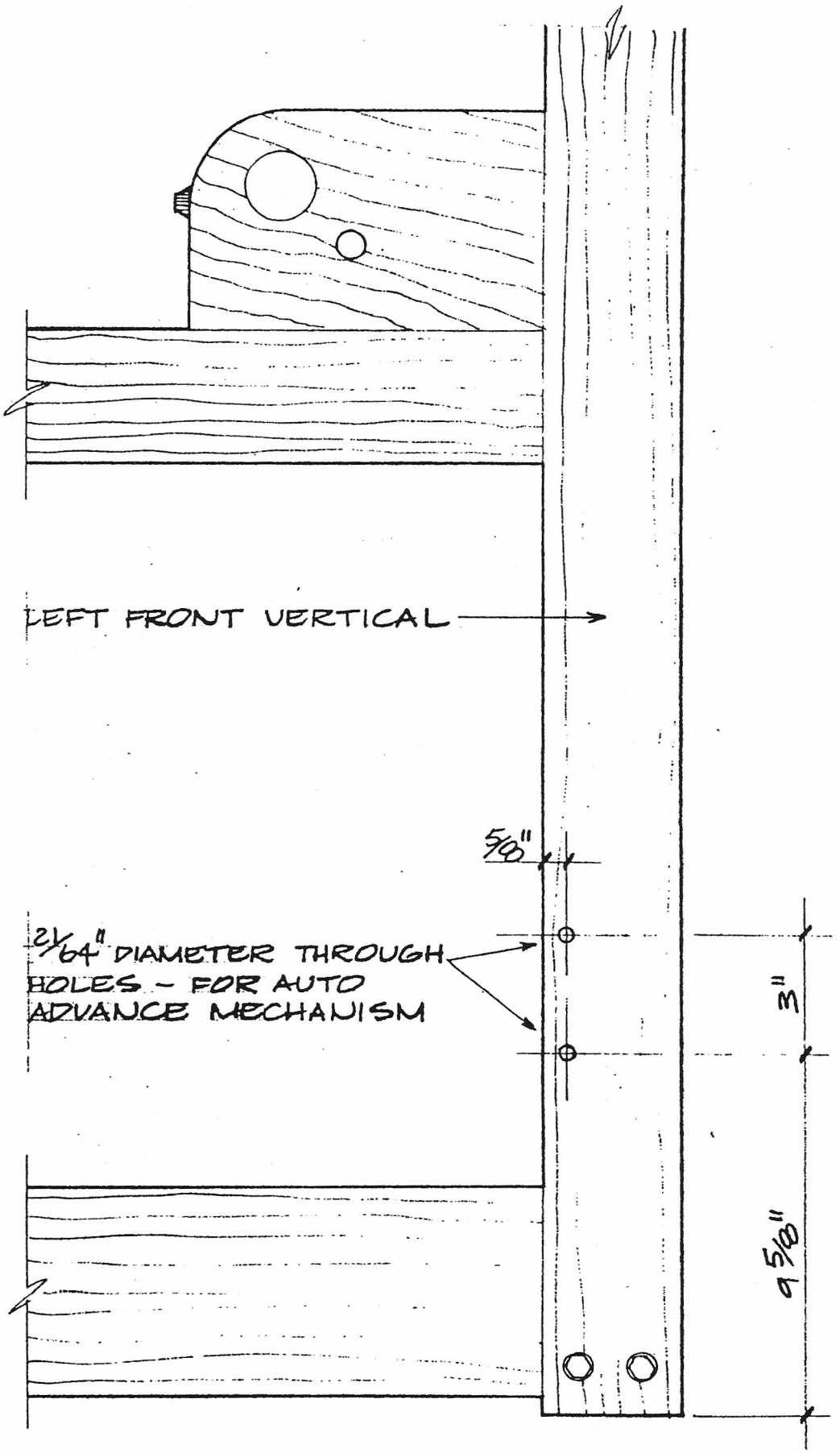
9. Turn the drive arm assembly in such a way that the round end of the upper pawl is no less than ½" from the inner edge of the left front vertical (see Figure AA-4). Seat the pointed end of the pawl into the gullet between two of the pick wheel teeth as shown.

10. Warp up your loom if you have not already done so and apply the desired warp tension.

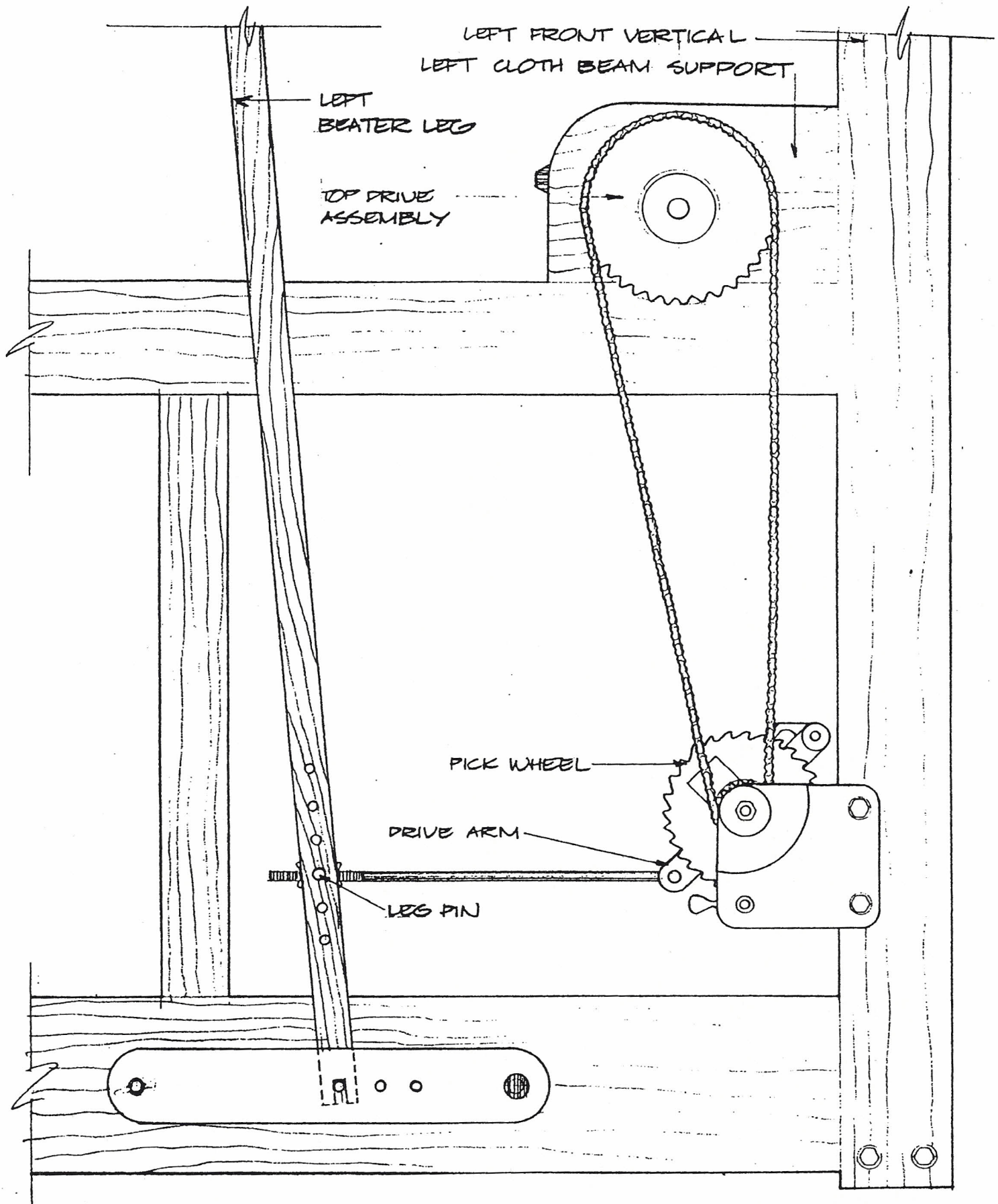


COMPLETE AUTO ADVANCE MECHANISM FROM INSIDE FIG. AA-7A

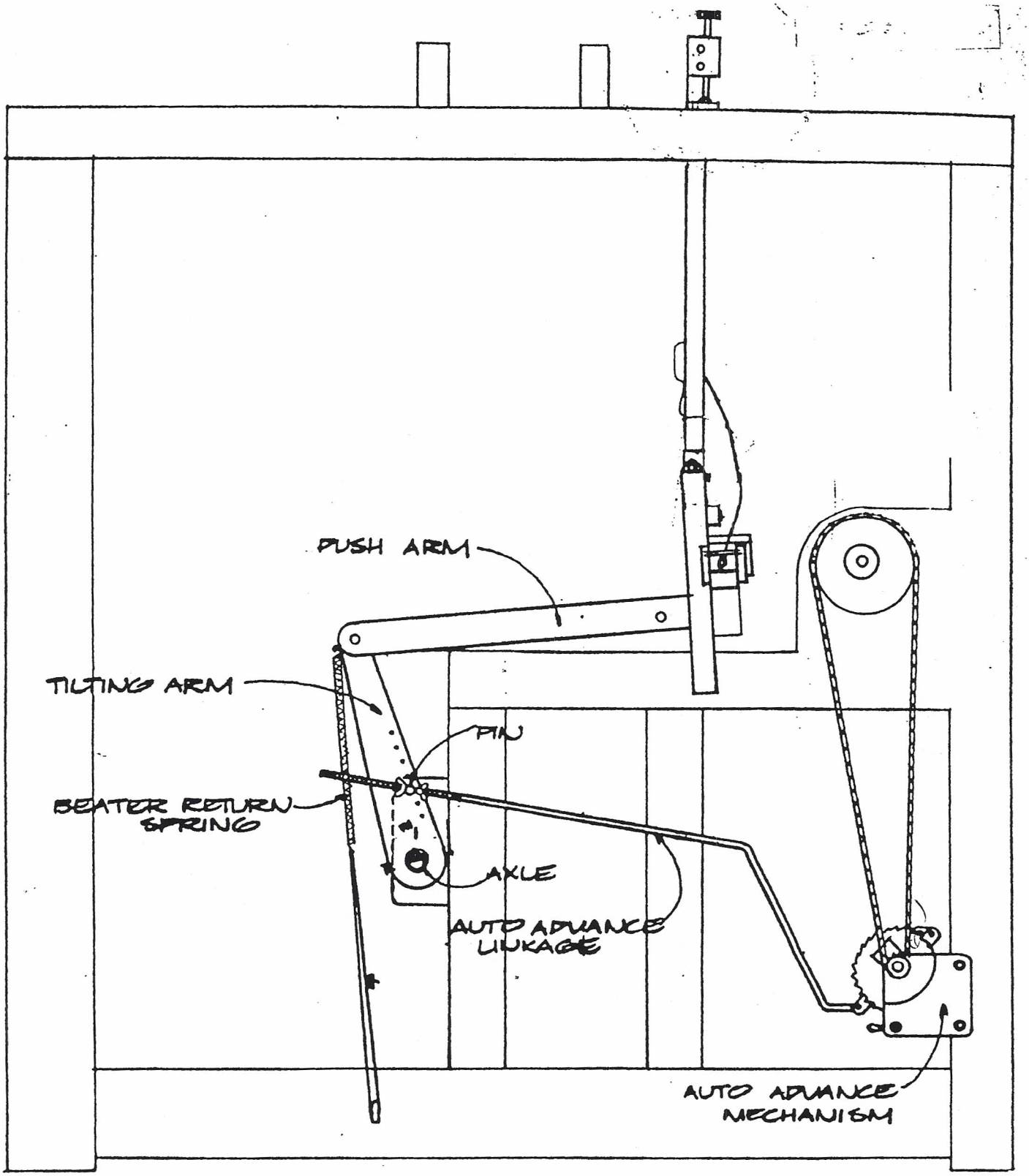
11. The next step is to adjust the upper pawl so that it sits properly between the teeth of the pick wheel. The pawl is adjusted by moving the advance linkage wing nuts along the advance linkage. The proper starting pawl adjustment can be seen in figure AA-4. This must be done whenever the pick wheel is changed or the linkage pin is moved. If you've adjusted everything properly and you aren't getting the correct picks per inch you'll need to place the pawl into a gullet further forward and readjust. Once you set the pawl located where you want it, tighten both wing nuts against the linkage pin.



LEFT FRONT VERTICAL HOLES FIG. AA-5



COMPLETE AUTO ADVANCE MECHANISM FROM OUTSIDE FIG AA-6



OVERHEAD BEATER WITH AUTO ADVANCE MECHANISM
SHOWN FROM LEFT SIDE

FIG. AA-7B

Automatic Cloth Advance
Pick Chart (inch)

Regular Automatic Advance Mode
Sprocket Configuration: 48 Tooth x 13 Tooth with Short Chain

Picks Per Inch	Pick Wheel #	Pin Position	Increment Click
3.5	18	8	6
3.5	22	8	6
3.75	26	8	7
4	20	8	5
4	24	8	6
4	32	8	8
4.25	30	7	7
4.5	22	7	5
4.75	24	7	5
4.75	28	7	6
5.25	26	5, 6	5
5.25	32	6	6
5.5	28	5	5
6	18	5, 6	3
6	30	4, 5	5
7.25	22	4, 5	3
8	24	3, 4	3
8	32	4, 5	4
8.5	26	3	3
9	18	2, 3, 4	2
9.25	28	3	3
10	20	4, 5	2
10	20	1, 2	2
10.5	32	2, 3	3
15	30	2	2
16	32	1	2
22	22	1	1
24	24	1	1
26	26	1	1
28	28	1	1
30	30	1	1

USING THE AUTOMATIC CLOTH ADVANCE SYSTEM

The AVL Automatic Cloth Advance System is an efficient means by which you can automatically advance your warp as you are weaving. It allows you to maintain an absolutely consistent beat throughout your warp even after changing weft material.

NOTE: Due to the fact that the picks per inch vary according to the diameter of the front cloth beam, the rear cloth storage is highly recommended for use in conjunction with the Automatic Cloth Advance System.

For this reason also, a long apron should be used so that you can start your warp directly on the rear cloth storage roller.

With your loom warped and tensioned and the Automatic Cloth Advance System adjusted, pull your beater forward so that it lightly contacts the front bumpers. Now bring it back so that it contacts the rear bumpers. (This full swing of the beater is crucial to the proper functioning of the Automatic Cloth Advance System.) Repeat this sequence slowly a few times checking to see that the "increment clicks" are the same as those listed on the Pick Table for your desired picks per inch. Increment clicks are the number of pick wheel teeth passed with every beat.

The Pick Table is a guideline for your convenience. It lists only one way to obtain the desired picks per inch. There is a simple formula that you can use to determine the amount of picks per inch available from any pick wheel. You simple take the number of the wheel (which is the number of teeth on the wheel) and divide it by the available number of increment clicks (between 1 and 4). The number of increment clicks that you will get is determined by which hole you put the linkage pin in. The higher the pin gets, the more increment clicks you will get. The amount will vary from wheel to wheel.

Let's use the #24 wheel as an example. If you use the #24 wheel with one click, you will get 24 p.p.i. If you then raise the linkage pin until you get two clicks, you will get 12 p.p.i. (24 divided by 2 equals 12). Raising the linkage pin even higher until you get three clicks will result in 8 p.p.i. (24 divided by 3 equals 8). Finally, if you raise the linkage pin to where you get four clicks you will get 6 p.p.i. with each beat (24 divided by 4 equals 6). This formula works on all of the pick wheels. The only difference being that some of the lower numbered pick wheels will not get a full four clicks.

If you want to back up your cloth for any reason here's what you'll need to do. Engage the pawl on the cloth beam handle and pull the warp tension forward slightly. Now reach down to the Automatic Cloth Advance System and disengage the lower pawl by applying upward pressure on the large end. Flip the upper pawl away from the pick wheel. You cloth beam is now free to turn. Once you know where you want it, advance the cloth beam with the manual handle until the beater is in a forward position (against the front bumpers) your last shot is in contact with the reed. Put the upper and lower pawls back into their proper position and continue weaving.

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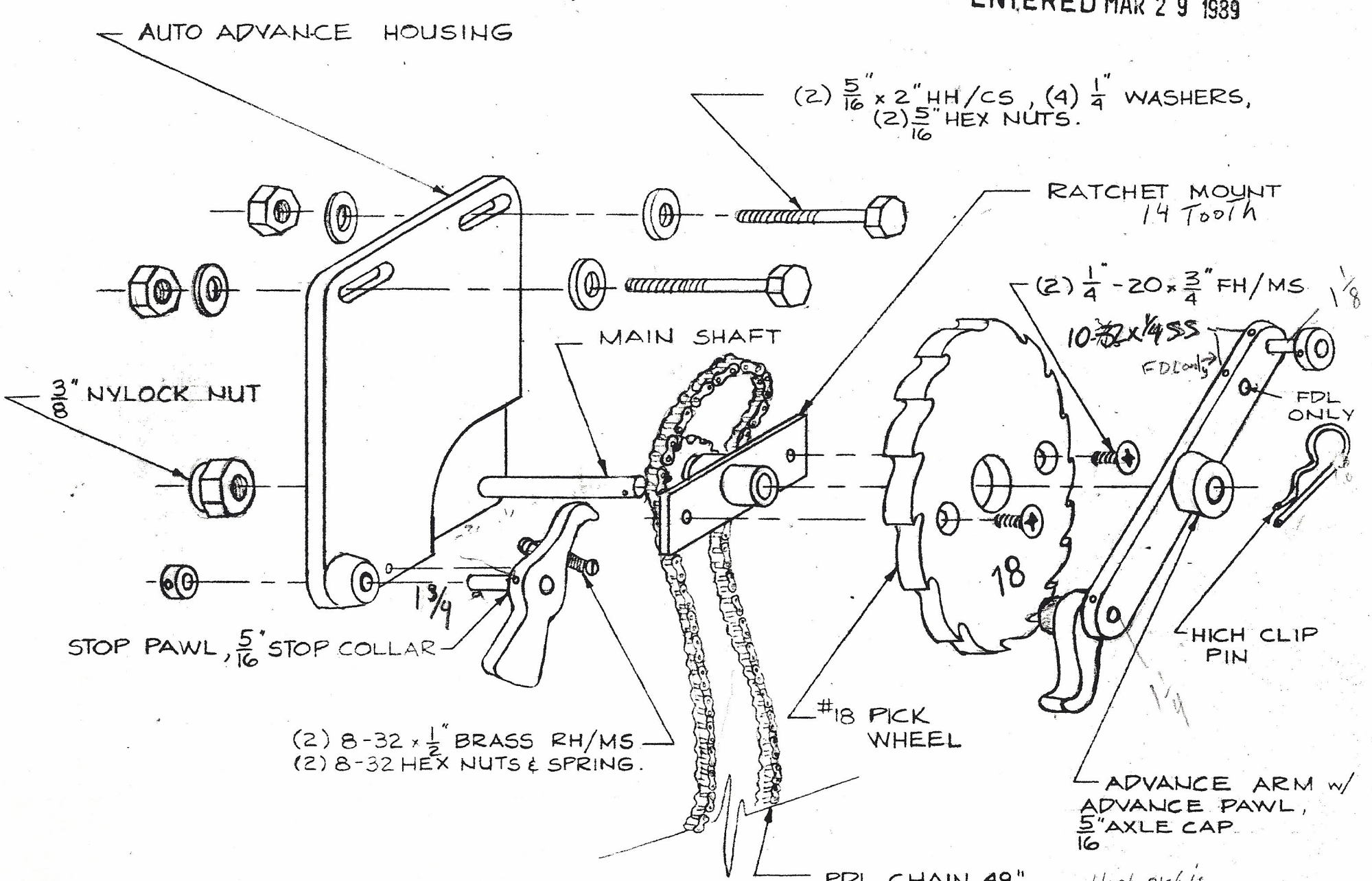

AUTO ADVANCE ASSEMBLY