The Ford engineers did some clever design work with the front brakes on a Model A. This may not be understood by the average car owner who works on his own car.

The front brakes are activated by a wedge that is pushed by the operating pin through the king pin. As the wedge moves down it expands the shoes and slows the car. The wedge pushes on shoe rollers that are attached to the shoes with a roller pin.

The wedge has three sections with different slopes at each side where the shoe rollers ride. When the shoes are retracted the shoe rollers ride on the lower part, the narrower part of the wedge. There are bumps on both edges of the wedge, see Figure 1. As the rollers hit these bumps the shoes are put in contact with the drums. Further movement of the wedge puts more force on the shoes for more braking action. The last section of the wedge has different slopes that are at less of an angle. These slopes have more of a mechanical advantage than the other slopes so they really push on the shoes in case of a panic stop.

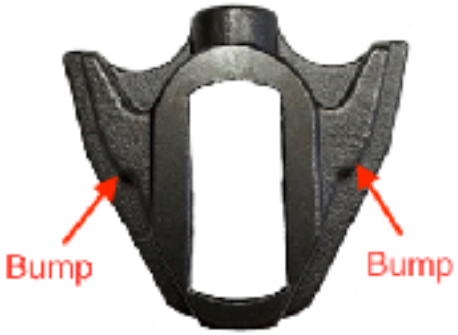

Figure 1, showing location of bumps

So the three sections have different jobs. The first section assures that the shoes are retracted where the shoe rollers are below the bumps, See Figure 2. The next section puts the shoes in contact with the drums and puts some force on the shoes, see Figure 3. The last section is reserved for a panic stop, See figure 4.

Figure 2, Rollers at section 1, retracted position

Figure 3, Rollers at section 2.
in contact with drums

Figure 4, Rollers at section 3.
panic stop

When rebuilding the brakes and adjusting them it is good to keep these sections in mind. With the drums off, watch the actions of the shoes at different angles of the arms at the top. Have the rods disconnected when you do this. All slop should be taken up with the arms 15 degrees forward and more movement of the arms to the rear will start the shoes moving. The wedge should be in the full upper position and the shoe rollers should be riding on the lower section 1. Adjust the 15 degree angle by adding a shim, using a new operating pin, or welding onto the end of the operating pin.

Move the arm to the rear and note when the shoe rollers are at section 2. Make a note of where the arm is when this is happening. On my car the arms are vertical when the shoe rollers are at section 2 of the wedge. Now move the arm further towards the rear and note when the shoe rollers are on the third section of the wedges. Keep notes and make diagrams or take photos.

Now assemble the hubs and drums to the axle. If these are newly lined shoes and they are dragging with the brake adjusting wedge screwed all the way out, then there is some work to do before proceeding.

Check that the shoes fit the drums by placing them in the drums. If they do not fit, fix that by having them arced or sand them. Check that the shoes are centered and if not fix that. If the shoes still drag then make sure the brake adjustment shafts are not binding in their holes.

Make sure the shafts are the same lengths for each wheel and check the angle. Gauges are available at the usual part supply houses. You may have to shorten the shafts by one mm (0.040 inch).

Once the shoes are not dragging, assemble the drum to the axle and adjust the axle nut correctly. Insert the cotter pin but do not bend the end. Adjust the brake so that it just starts to drag and then back it off two clicks on the brake adjusting wedge. Now move the arm to the rear using a wrench for leverage to the point where you cannot move it further. Take note of this position. Compare that position to the position where the shoe rollers are at section 2 on the wedge. If things are working correctly it should be about the same position.

Next adjust the length of the brake rod and connect it to the arm so that the arm is in the position where all slack is taken up (15 degrees forward). Insert the clevis pin but do not install the cotter pin at this time.

If you are happy with the way things went and do not need to remove the drum or make further adjustments to the brake rods, then bend over the cotter pins on the axle nuts and install the cotter pins on the clevis pins.

When both front brakes are assembled, use your notched board or other means to depress the brake pedal until you cannot move the front wheels. Note the position of the arms. On my car they are straight up and down which corresponds to the section 2 on the wedges.

Continue to adjust the brakes to your liking. I highly recommend that you bias the brakes to the front 60/40 or at least 50/50. Then take the car for a test drive. Make slight adjustments to the front brakes to correct any tendency to swerve left or right. When you get back to the shop, check that the front brakes are not dragging and if they are, loosen both brake adjusting wedges one click or two clicks each and go for another test drive. Repeat this until the brakes are performing well. Do not adjust the brakes by changing the length of the rods.

To obtain front bias on the brakes, use the notched board or another means to push on the brakes, but instead of having the rear brakes start to drag first, adjust so that the front brakes start to drag first.

If the linings are new the shoes will bed in and multiple adjustments will be needed in the first few hundred miles. On my car I have the brakes biased to the front so I usually just adjust the front brakes when adjustment is needed.

If after all this you find that the shoes are dragging and no amount of adjustment fixes it, you will need to take the brakes apart and determine what is binding. In my car I found that the brake adjusting shafts were binding in their holes. I slightly ground the OD of the shafts and shortened them by 1 mm and this fixed the problem.