

Shay Truck Pivot and Rollers

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Note: The truck pivots were initially grouped with the truck brakes. Later I decided to split the pivot and rollers and group with the trucks. The brakes were then grouped with the other parts of the brake system.

The pivots and rollers are the interface between the trucks and the frames.

The photos at right show the pivot and rollers installed on the upper spring plank of a truck. A brass pivot pin connects between the bolster on the frame and the hole in the pivot block on the truck. The brass pin allows rotation of the truck and maintains alignment in the horizontal plane.

The pin is a loose fit in the vertical direction. The weight of the frame rests on the rollers on each side of the pivot block as shown in enlarged photo on lower right. This arrangement is different from at least some of the full sized shays I've examined; they depended on the pivot pin to carry the weight of the frame. These full sized shays used pads rather than rollers to supplement the pivot pin if the frame leans too far to one side as shown in photo below.



The set of six rollers is shown on the right. The roller holders were machined from rectangular bars stock. The first step was saw out the notches on the ends and to use a drill to rough cut the slot. The mill was then used to finish the holder to the correct dimensions.

Kenneth suggested a 10-32 screw for the roller axel. I didn't have any 10-32 screws long enough to have an unthreaded part near the top. Instead, I used a 3/16" rod as an axel. Each axel is held in position by a 1/16" expansion pin. The holes for these pins were drilled through the holders so that the pins can be punched out to remove the axel and roller.



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