This invention relates to rail straightening machines and more particularly to auxiliary apparatus for turning the rail in the straightening machine.

It is among the objects of this invention to provide a rail turning machine which shall be of simple and compact mechanical construction and which shall be adapted to handle rails in a simple and efficient manner.

The customary practice in straightening rails is to employ a press having a vertically movable ram which acts upon the bent portion of the rail to take out the bends or kinks, this being termed the “straightening” operation.

The workman manipulates the rail back and forth lengthwise and turns it axially by means of a hook which is positioned on the edge of the rail and which is provided with a handle for pushing the rail lengthwise, and also to turn it. The straightener sights along the length of the rail until he sees a bend or kink and moves the rail until such bend or kink is beneath the reciprocating ram. When he brings the rail to rest another workman inserts a gag between the rail and the ram and when the ram is reciprocated the rail is bent in the opposite direction to the kink or bend and is thereby straightened at that particular point.

The weight and length of rails have been so increased that there are two or more workmen now employed to assist the straightener in moving the rail during the straightening operation, and the present invention is designed to reduce the labor necessary for handling the rails during the straightening operation, and also to speed up the operation so that a large number of rails may be handled in a given time.

The invention will be more clearly understood in connection with a description of the accompanying drawings in which like reference characters designate like parts and in which Figure 1 is a top plan view of a rail turning machine embodying the principles of this invention; Figure 2 a front elevational view thereof; Figure 3 a horizontal cross section taken through the gear housing; Figure 4 a vertical section thereof; and Figure 5 a sectional elevational view of the tong or hook for engaging the rail.

In Figure 1 a bed plate 1 is anchored to a suitable support such as a concrete base and a reversible motor 2. A plurality of pillow block bearings 3 and an adjustable spring 4 are mounted on the bed plate. A countershaft 5 is journalled in the bearing 3 and a housing 6 is supported at one end on the shaft 5 and at its other end it is both supported on the spring stop 4 and suspended by a counterweight 7 to which it is fastened by a cable 8, the counterweight being confined in a vertical guide frame 9. A guide 10 having a slotted opening 11 (Fig. 1) engages the gear housing 6 to maintain it in proper working alignment.

The tong for engaging the rail comprises a pair of rollers 13 which are journalled in brackets 14 that are secured to and adapted to rotate with a ring gear 15. The ring gear is journalled in a bronze bearing strip 16 as shown in Figure 3, the strip being fastened to the housing 6. The ring gear 15 is rotated through a plurality of gear wheels 17 and 18, the latter being mounted on the countershaft 5 which in turn is driven by a gear wheel 19 connected through a chain 20 to a pinion on the shaft of the reversible motor 2.

The operation of the rail turning machine is briefly as follows: The rail to be straightened is pushed between the rollers 13 in line with the reciprocating ram of the straightening machine and the straightener sights the rail to locate the bend or kink to be straightened. After all of the bends or kinks have been removed while maintaining the rail in one position, the straightener turns the ring gear by operating the reversible motor 2 through a foot switch control (not shown) and the rail is turned a one-fourth or one-half turn, or at any angle desired, and is straightened all along its length for the new position which it has assumed.

Due to the movement of the rail between the rollers back and forth underneath the ram of the straightening machine, the gear housing 6 would be subjected to considerable strain if it did not cooperate with the vertical guide 10, but by means of the guide, the
strain on the countershaft and gear housing is relieved, and the rollers may be subjected to severe jolts without damage to the machine.

By means of the adjustable spring stop 4, the gear case 6 and the ring gear carrying the rollers may be adjusted to accommodate it to varying heights of rails that are to be straightened, and by employing the counterweight 7 in the guide 9, it is quite simple to adjust the frame by advancing the spring stop which is operative in the manner of a screw jack to raise and lower the gear frame 6.

It is evident from the foregoing description of this invention that rail turning machines made in accordance therewith, provide simple and efficient means for handling rails to turn them during the straightening operations.

Although one embodiment of the invention has been herein illustrated and described, it will be obvious to those skilled in the art that various modifications may be made in the details of construction without departing from the principles herein set forth.

I claim:

1. In a rail turning machine a support, a housing having one end pivotally mounted on said support to permit a vertical swinging movement of said housing, means for supporting the other end of said housing, including an adjustable spring stop beneath said housing and a fixed guide member having side flanges between which said housing is free to move vertically and which are adapted to receive the side thrust of said housing when said housing is forced sidewise by the rail engaging said housing or the parts carried thereby and a rotary rail turning member carried by said housing.

2. In a rail turning machine a support, a housing having one end pivotally mounted on said support to permit a vertical swinging movement of said housing, means for supporting the other end of said housing including an adjustable spring stop beneath said housing and a fixed guide member having side flanges between which said housing is free to move vertically and which are adapted to receive the side thrust of said housing, a rotary rail turning member carried by said housing and a pair of rollers mounted on said rail turning member and adapted to be engaged by the rail to be turned.

In testimony whereof, I have hereunto set

my hand.

JOHN W. FORSYTHE.