

Dec. 5, 1950

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TRACK GAUGING APPARATUS

2,532,745

Filed May 19, 1945

Fig. 1.

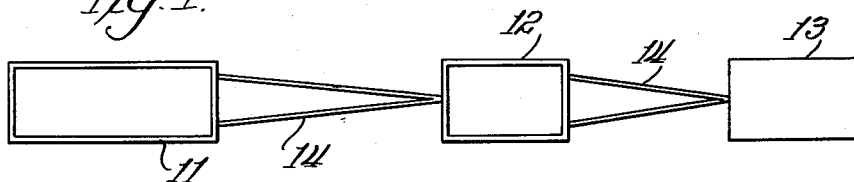


Fig. 2.

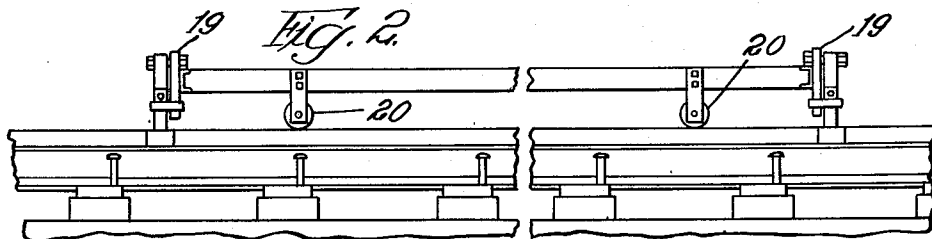


Fig. 3.

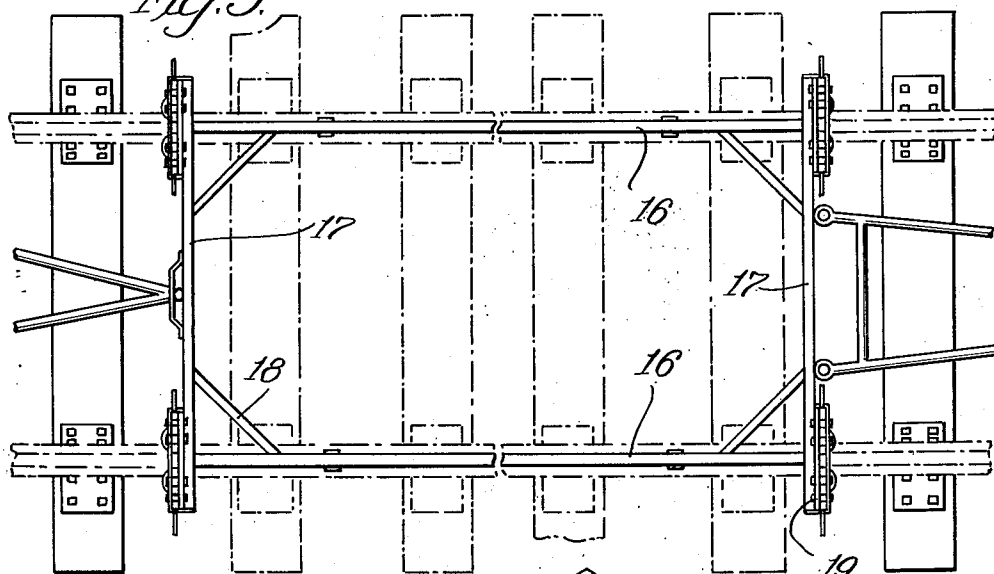
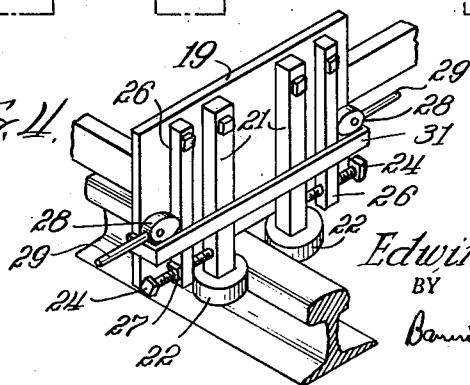


Fig. 4.



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2,532,745

TRACK GAUGING APPARATUS

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Application May 19, 1945, Serial No. 594,747

6 Claims. (Cl. 254-43)

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In laying track it is, of course, necessary that the two tracks be spaced apart quite accurately. The practice in the past has been to apply hand gages and to use hand tools to work the rail being laid to the correct position so that the hand gages would properly reach from the other rail to it.

According to the present invention, the process has been greatly speeded up by providing rolling gaging apparatus which accurately positions the second rail with respect to the first rail and holds it accurately positioned while it is being spiked.

The invention has proved itself exceptionally valuable where the rails forming one side of a track are being replaced over a substantial length of trackage, the other rail being left intact.

Additional objects and advantages of the invention will become apparent from the following description and from the drawings, in which:

Figure 1 is a diagrammatic showing of one form of the invention including two gaging frames and a self-propelled pusher;

Fig. 2 is a side elevation of one of the gaging frames;

Fig. 3 is a top view of one of the gaging frames; and

Fig. 4 is a fragmentary view showing a corner of the gaging frame and the details of the gaging unit thereon.

Although the law requires a full and exact description of at least one form of the invention, such as that which follows, it is, of course, the purpose of a patent to cover each new inventive concept therein no matter how it may later be disguised by variations in form or additions of further improvements; and the appended claims are intended to accomplish this purpose by particularly pointing out the parts, improvements, or combinations in which the inventive concepts are found.

As seen in Fig. 1, the preferred form of the invention includes a preliminary or leading gaging frame 11, a second or final gaging frame 12 and a pusher 13 which may desirably be a self-propelled air-compressor car. In extensive track work it is desirable for such a compressor car to be at hand anyway for supplying compressed air to drive the spike-driving air-hammers. Each of the frames may be pushed by a hitch 14.

As seen in Figs. 2 and 3, each frame may be made up of channel irons including longitudinal channel irons 16 and transverse channel irons 17. These latter may also be called gage bars. The channel irons may be welded together and braced at their corners by braces 18 welded to the channel irons. Wheels 20 support the frames on the track.

Each gage bar 17 has welded to it at its ends

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a gage plate 19, seen best in Fig. 4. The gage plate 19 carries a pair of gage arms 21 which are pivoted at their upper ends to the gage plate 19. The lower end carries gage rollers 22 which are pivoted to the lower end of the gage arms 21 as by a bolt threaded into the gage arm.

Each of the gage arms 21 is adjusted by a screw 24 which bears on the gage arm and is threaded through a hanger 26. A lock nut 27 is provided for locking the screw 24 in its adjusted position. The hanger 26 is normally accurately positioned by clamp locks 28 which are eccentrically pivoted to gage plate 19 as shown and provided with handles 29 for releasing them. One of these locks is released when it is necessary to release the gage roller to pass an obstruction such as a bond wire connecting the ends of two rails. When they are locked back in place, they return the hanger 26 to its previous position and hence accurately position the gage rollers 22. In the locked position illustrated in Fig. 4, the eccentric portion of the lock is turned either approximately to or just beyond the dead center position so that there is no tendency for it to vibrate to a different position. Its movement in the locking direction is limited by engagement between handle 29 and strap 31. The weight of the handle serves to bias the lock to this position. The strap 31 serves as a guide for the pivoted arms 21 and hanger 26 or as a guard to prevent their being displaced longitudinally of the rail in case any obstruction is encountered. The bolts for pivoting the locks 28 may extend through the strap 31 and into the gage plate 19, though the locks have been shown a little higher for clarity.

It is desirable that the frame 12 which is located rearwardly of the frame 11 be fairly short, 8 feet having been found to be a satisfactory length. The spikes which position the rail are driven while this frame is holding the rails to gage. Eight feet will allow ample room for working while being a short enough span so that there is no danger that the intermediate part of the rail will have flexed appreciably from accurate gage spacing. The leading gaging frame 11 may be considerably longer (say 15 feet) since this gage is used only for the initial setting of the spikes, for which it is not necessary to be quite so accurate.

It is not meant by this that the leading gauge bars are less accurate, but only that the spacing between them may allow the rail to flex slightly.

It may be helpful to anyone building this apparatus to have the following additional data, although, of course, wide departures may be made from this data while still using the invention: The frame is made up of 3-inch channel irons, the length of the longitudinal members being as stated above and the length of the transverse

members or gage bars 11 being appropriate for the gage of track, 5 feet or a little over being suitable for standard gage. The longitudinal members 16 should lie directly over the rail heads to give access to the spikes. The hangers 26 may be $1\frac{1}{4}'' \times \frac{3}{4}'' \times 8''$. The gage arms 21 may be $1\frac{1}{4}'' \times 1\frac{1}{4}'' \times 9\frac{1}{2}''$. The strap may be formed of $1'' \times \frac{1}{2}''$ stock. The end plates 18 may be $8''$ high $\times 12''$ by $\frac{3}{4}''$. Each gage may be pushed by a V-shaped welded pipe coupling as illustrated, 14 feet having been found to be a suitable spacing between the gage frames and 10 feet for the spacing between gage frame 12 and pusher 13.

From the foregoing, it is seen that a very simple and satisfactory form of rolling gaging apparatus is provided. As the apparatus is pushed along the track intermittently, it brings the rail to be spiked accurately to gage with respect to the spiked rail and yet leaves the spikes freely accessible for driving by hand or by air hammer. The speed of the work is immensely increased as compared to the old hand-gage methods.

I claim:

1. A rolling gage for tracks including a gage bar adapted to extend between the two rails of the track and a pair of rollers carried by the gage bar adjacent each rail, adapted to engage the two sides of the head of each rail and accurately and positively spaced with respect to the other rollers to bring the rails to a predetermined spacing with a predetermined degree of accuracy, at least one of the rollers being mounted for movement away from the rail, and means for locking it in a predetermined position and for releasing it to permit the passage of an obstruction.

2. Gaging apparatus for accurately positioning one rail of track with respect to the other rail while the apparatus is moving along the rails, including at least three gage bars, means for moving the gage bars along the track each perpendicular to the track and with a spacing between them appropriate for driving rail spikes between the gage bars as the gage bars are moved along the track, a pair of rollers carried by each gage bar adjacent each rail adapted to engage the two sides of the rail head and accurately and positively spaced with respect to the other rollers carried by the same gage bar to bring the rails to a predetermined spacing with a predetermined degree of accuracy, at least one of the rollers being mounted for movement away from the rail, and means for locking it in a predetermined position and for releasing it to permit the passage of an obstruction.

3. Gaging apparatus for accurately positioning one rail of track with respect to the other rail while the apparatus is moving along the rails, including at least three gage bars, means for moving the gage bars along the track each perpendicular to the track and with a spacing between them appropriate for driving rail spikes between the gage bars as the gage bars are moved along the track, a pair of rollers carried by each gage bar adjacent each rail adapted to engage the two sides of the rail head and accurately and positively spaced with respect to the other rollers carried by the same gage bar to bring the rails to a predetermined spacing with a predetermined degree of accuracy, at least one of the rollers being mounted for movement away from the rail, and means for locking it in a predetermined position and for releasing it to permit the passage of an obstruction; at least some of the rollers on each gage bar being adjustably carried by the

gage bar; and gage adjustment means for adjusting said adjustable rollers to vary said predetermined position, the setting of said gage adjustment means being unaffected by the releasing of said locking means.

4. A rolling gage for tracks including a gage bar, a pair of rollers carried by the gage bar adjacent each rail adapted to engage the two sides of the rail head and accurately and positively spaced with respect to the other rollers carried by the gage bar to bring the rails to a predetermined spacing with a predetermined degree of accuracy, at least one of the rollers being mounted for movement away from the rail, and means for locking it in a predetermined position and for releasing it to permit the passage of an obstruction; at least some of the rollers on the gage bar being adjustably carried by the gage bar; and gage adjustment means for adjusting said adjustable rollers to vary said predetermined position, the setting of said gage adjustment means being unaffected by the releasing of said locking means.

5. A rolling gage for tracks including a gage bar adapted to extend between the two rails of the track, a roller holder shiftably carried by the gage bar, a roller carried by said holder and positioned to engage the outside of one rail head, means for locking said roller holder in a gaging position, said means being releasable to permit said roller to move outwardly from said gaging position to clear an obstruction, gage adjustment means associated with the locking means for adjusting the gaging position of said roller, additional rollers carried by the gage bar for engaging the opposite side of said rail head and the two sides of the head of the other rail, at least one of said additional rollers being adjustable with respect to the gage bar for adjusting the gage, and means adjusting such of said additional rollers as are adjustable.

6. Gaging apparatus for accurately positioning one rail of track with respect to the other rail while the apparatus is moving along the rails, including at least three gage bars, means for moving the gage bars in tandem along the track each perpendicular to the track and with a spacing between the last two appropriate for a worker to walk between the rails while driving rail spikes between the gage bars as the gage bars are moved along the track, two pairs of rollers carried by each gage bar, with the pairs on each bar spaced apart to engage the two rails of one track and with a first roller of each pair positively positioned on the gage bar and accurately spaced from the similarly positioned roller of the other pair on said bar, the second roller of each pair being firmly positioned to move the rail to within a predetermined proximity of the first roller, as the apparatus is moved along, to bring the rails to a predetermined spacing with a predetermined degree of accuracy.

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