

Oct. 14, 1958

J. G. HOLSTEN

2,855,693

CENTER PUNCH AND GAUGE

Filed Sept. 7, 1955

Fig. 1.

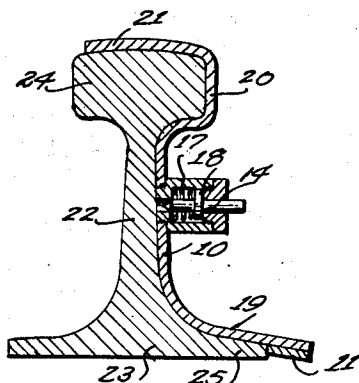


Fig. 2.

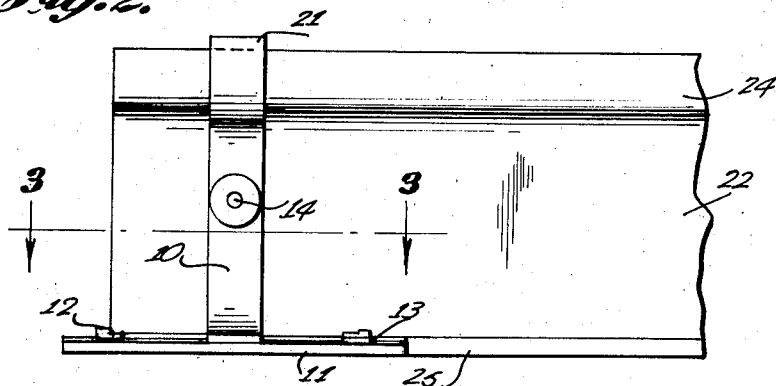


Fig. 3.

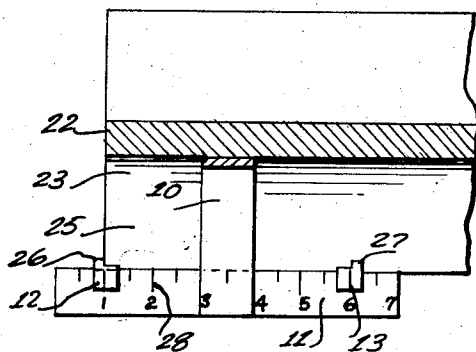
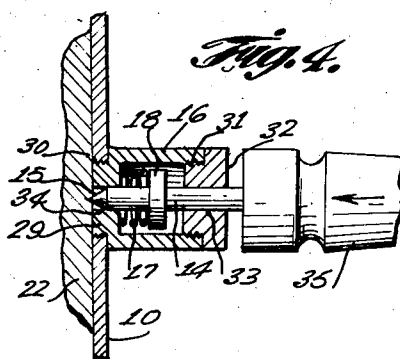


Fig. 4.



INVENTOR.

John G. Holsten

BY *Vietor J. Evans & Co.*

ATTORNEYS

1

2,855,693

CENTER PUNCH AND GAUGE

John G. Holsten, Cima, Calif.

Application September 7, 1955, Serial No. 532,867

1 Claim. (Cl. 33—189)

This invention relates to measuring tools and instruments used for accurately locating a center of a hole to be drilled or for cutting an end surface of a piece of material, such as a railroad rail, and in particular, a gauge having a center punch in combination therewith wherein with the gauge positioned on an end of a railroad rail the center of a bolt hole in the web of the rail may be accurately indicated by striking an extended end of the punch, and wherein by positioning the gauge at the end of a rail the rail may be accurately marked for sawing.

The purpose of this invention is to provide a gauge for accurately marking ends of railroad rails and which is also adapted to accurately locate the centers of the bolt holes particularly for the fish plates at the ends of rails.

Various types of gauges, stencils, templets, and the like have been provided for accurately locating centers of holes or openings, such as bolt holes, however, although such devices are particularly useful on flat surfaces, it is difficult to locate the position of a center on a surface, such as the web of a rail, where obstructions are provided on both edges. Owing to the cross section of a railroad rail, it is also difficult to position a square for marking a guide line by which a square surface may be cut at the end of a rail.

With these thoughts in mind, this invention contemplates a gauge having a bar formed to correspond with a side surface of a railroad rail with one end extended partly over the head of the rail and with the other extended beyond a flange at the side of the rail and carrying a steel bar adapted to be positioned against the edge of the flange of the rail to accurately position the bar positioned against the side of the rail, and a center punch mounted in the bar positioned against the side of the rail and having a spring for urging the punch outwardly whereby upon striking an extended end of the punch a center for a bolt hole is indicated in the surface of the web thereof.

The object of this invention is, therefore, to provide a gauge for accurately determining the position of centers of bolt holes of railroad rails.

Another object of the invention is to provide a gauge for accurately marking an end of a railroad rail to facilitate cutting the end of the rail perpendicular to the body thereof.

Another important object of the invention is to provide a gauge having a center punch in combination therewith for accurately indicating centers of bolt holes of railroad rails in which the gauge is provided with a scale bar adapted to be positioned against the edge of the flange of a rail whereby distances between bolt holes and also bolt holes and ends of rails may be accurately ascertained.

A further object of the invention is to provide a combination center punch and gauge for locating bolt holes of railroad rails and for cutting ends of rails in which the device is of a simple and economical construction.

2

With these and other objects and advantages in view, the invention embodies a gauge bar patterned to be positioned against a side surface of a railroad rail with an arm extended across the head of the rail and with a scale bar carried by the lower end of the gauge bar adapted to be positioned against the edge of a flange at one side of the rail, and a center punch carried by the gauge bar and adapted to be used for indicating centers of bolt holes to be drilled in the web of the rail.

Other features and advantages of the invention will appear from the following description, taken in connection with the drawing, wherein:

Figure 1 is a cross section through the center punch and gauge showing the device positioned upon a railroad rail, the rail also being shown in section.

Figure 2 is a side elevational view showing the end of a railroad rail with the gauge and center punch set to locate the center of a bolt hole spaced from the end of the rail.

Figure 3 is a sectional plan taken on line 3—3 of Figure 2 illustrating the position of the scale bar of the gauge for locating the center punch a predetermined distance from the end of the rail.

Figure 4 is a cross section through the center punch of the gauge with the parts shown on an enlarged scale and with the punch shown in the position of swedging a center opening in the surface of the web of a rail, a hammer shown in the striking position against the outer end of the punch being indicated in broken lines.

Referring now to the drawing, wherein like reference characters denote corresponding parts, the improved center punch and gauge of this invention includes a gauge bar 10, a scale bar 11, guides 12 and 13 are positioned on and welded to the upper surface of the scale bar for retaining the gauge bar and center punch in accurate positions for definitely locating the center of a bolt hole, and a center punch 14 having a point 15 slidably mounted in a cup shaped casing 16 and resiliently urged outwardly by a spring 17 positioned between the base of the casing and a collar 18 on the shank or stem of the punch.

The gauge bar 10 is provided with a lower inclined section 19 on the end of which the scale bar 11 is secured, such as by rivets or welding, and an upper section 20 with an arm 21 on the upper end whereby with the intermediate part of the gauge bar positioned against a web 22 of a rail 23 the arm 21 extends over a head 24 of the rail with the lower portion 19 upon a flange 25 at one side of the rail.

With the guides 12 and 13 positioned on the upper surface of the scale bar 11 they may be extended over the edge of the flange 25 of a rail while the longitudinal edge of the scale bar is in engagement with the edge of the flange 25 and with the inner edge of a projection 26 of the guide 12 aligned with the end surface of the rail and with the remainder of the guide 12 and the entire guide 13 in contact with the surface of the flange 25 the gauge may be accurately positioned and definitely retained in position as the center punch is driven into the surface of the web of the rail. The guide 13 is provided with a projection 27 similar to the projection 26 whereby the gauge is adapted to be used on either end of the rail. The scale bar 11 is provided with graduations 28 to facilitate measuring distances between bolt holes or between the end of the rail and the first bolt hole. The gauge bar is adapted to be provided in different sizes to correspond with rails of different weights.

The casing 16 of the center punch is provided with a threaded boss 29 that is threaded into an opening 30 of the gauge bar 10 and the outer end of the casing is provided with internal threads 31 in which a closure or nut 32 is threaded and, as illustrated in Figure 4, the nut

is provided with a bore 33 in which the stem of the center punch is slidably mounted. The base of the casing 16 is provided with an opening 34 which is in alignment with the opening 33 whereby the center punch is free to slide longitudinally and after being driven inwardly by a tool, such as a hammer 35, it is immediately returned to the outer position by the spring 17. With the parts assembled as illustrated and described, a gauge for a railroad rail of a particular weight is placed against the side of the rail as shown in Figures 1 and 2 with the distance of the first bolt hole indicated on the scale bar 11, as illustrated in Figure 3, and with the parts in position the center punch is driven inwardly by a hammer or the like whereby the center of the first bolt hole is accurately indicated on the web of the rail. The gauge is adapted to be moved along the rail with the distances between the bolt holes measured by the scale bar so that the bolt holes are adapted to be accurately positioned.

With the conventional method of measuring and marking centers of bolt holes, it is appreciated that some holes may be high and some low and some to one side of the center and with the holes inaccurately positioned shear stresses are placed in bolts causing rail joints to break or spread.

With the scale bar retained against the edge of the flange, the gauge bar is adapted to be used as the blade of a square for accurately marking the position of a saw cut at the end of a rail so that ends of rails may be in meeting relation with the ends of both rails perpendicular to the base surfaces of the flanges.

It will be understood that modifications, within the scope of the appended claims, may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

In a gauge and center punch for use on a railroad rail, the combination which comprises a gauge bar shaped to conform to the side surface of a railroad rail with one end positioned on the head of the rail and the other on a flange at one side of the rail, a scale bar having guides thereon and carried by the lower end of the gauge bar, said guides each having a projection thereon which is positioned in relation to the scale bar so that the inner edge of the projection will be alined with the edge of the flange of a rail against which the gauge bar is positioned, a cylindrical casing mounted on and extended from the gauge bar, a center punch slidably mounted in the casing, and a spring in the casing positioned between the base of the casing and a collar on the center punch for urging the punch outwardly away from the web of the rail, said casing being positioned in the intermediate part of the gauge bar and the distance of the center thereof from the upper surface of the head of the rail corresponding to the distance from the upper surface of the head of bolt holes to be formed through the web of the rail.

References Cited in the file of this patent

UNITED STATES PATENTS

532,265	Cornell	Jan. 8, 1895
724,185	Hughes	Mar. 31, 1903
888,377	Wood	May 19, 1908
921,488	Virtue	May 11, 1909
1,046,187	Hernlund	Dec. 3, 1912
1,469,395	Richard	Oct. 2, 1923
1,525,355	Anderson	Feb. 3, 1925
2,560,756	Bollons	July 17, 1951