

J. J. McGUIRL.
RAIL.
APPLICATION FILED APR. 24, 1912.

1,032,846.

Patented July 16, 1912.

FIG. 1

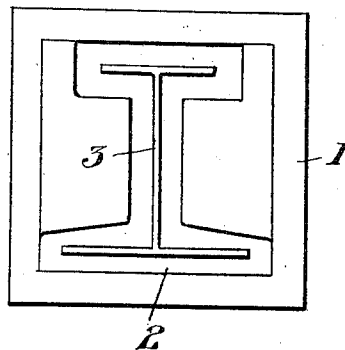


FIG. 2

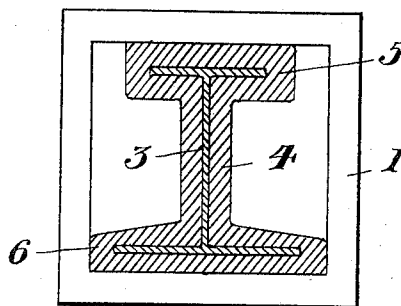
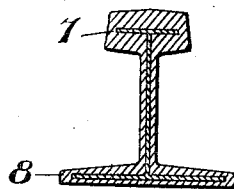


FIG. 3



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN J. McGUIRL, OF MONACA, PENNSYLVANIA.

RAIL.

1,032,846.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN J. McGUIRL, a citizen of the United States of America, residing at Monaca, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Rails, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to rails, and the primary object of my invention is to provide a rail with a soft metal core that increases the longevity of the rails from a practical standpoint owing to the fact that 15 the soft metal core will compensate, to a certain degree, for vibrations and stresses that would otherwise have a tendency to crack and break the rails if it were not for the yieldable soft metal center or core.

20 Another object of this invention is to provide a billet with a soft metal core which maintains its form during a rolling process to which the billet is subjected. While maintaining its form, the soft metal core or 25 center is fused to a certain degree whereby the finished product is practically one piece.

A further object of this invention is to provide a rail that has a longitudinal reinforcement embedded therein that prevents 30 the parts of a cracked or injured rail from becoming separated, thereby maintaining the rail in such form for use until the same can be renewed.

I attain the above objects by a mechanical 35 construction that will be hereinafter specifically described and then claimed.

Reference will now be had to the drawing, wherein:—

40 Figure 1 is a plan of a mold in accordance with this invention, showing the soft metal core located therein, Fig. 2 is a similar view showing the formation of a billet in accordance with this invention, and Fig. 3 is a 45 cross sectional view of a rail in accordance with this invention.

50 In the drawing there is illustrated a mold 1 that has a cavity 2. Located within the cavity 2 is an I-beam 3 and the cavity 2 receives molten metal to produce a billet 4 in which the I-beam 3 is embedded and extends from one end thereof to the opposite end.

The I-beam 3 is of the ordinary type made

of soft metal, and in some instances this beam can be made of malleable metal. The beam constitutes a soft metal core, center or 55 reinforcement for the billet 4, which has a cross sectional area corresponding to the cross sectional area of the cavity 2, which is somewhat in the form of an eye having a large web and large head of unusual thick- 60 ness. The billet, as illustrated in Fig. 2, has heads 5 and 6, the latter of greater width than the former. These heads eventually terminate in the head 7 of the rail and the base flanges 8 thereof, as illustrated in 65 Fig. 3. The billet assumes this shape after numerous rolling processes, and it is these rolling processes that cause the two metals to combine whereby practically a one-piece rail is provided. 70

With the rail provided with a cross metal core or center and hard outer shell or casing, it is impossible for the parts of a broken rail to separate, should the rail be cracked or broken. In other words, the rail is main- 75 tained in shape until it can be renewed, thereby not interfering with the passage of rolling stock or causing wrecks.

From the foregoing it will be observed that I have devised a rail possessing lasting 80 qualifications that are essential for the heavy rolling stock now used in connection with steam railroads. The soft metal center or core does not impair the strength or rigidity of the rail, but adds that degree of 85 flexibility that is essential to maintain a rail as a unit, particularly when cracked or broken. As the soft metal center or reinforcement is added to the rail during the initial step of its formation, comparatively 90 little expense is incurred and the billet can be manipulated between the rolls just the same as though producing an ordinary rail.

What I claim is:—

As a new article of manufacture, a rail 95 rolled from a billet that conforms to an I-beam and has a soft metal core embedded therein in the form of an I-beam.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN J. McGUIRL.

Witnesses:

WILLIAM J. FISCHER,
JOHN H. EMMET McMILLAN.