

Nov. 18, 1924,

G. S. CHILES
LOCOMOTIVE PILOT BEAM

1,516,080

Filed Nov. 23, 1923

2 Sheets-Sheet 1

Fig. 1.

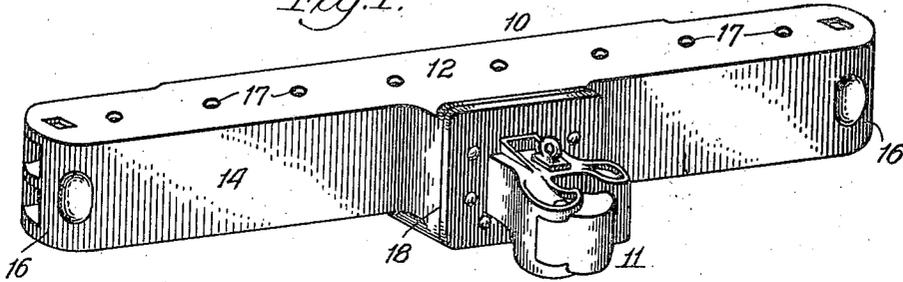


Fig. 2.

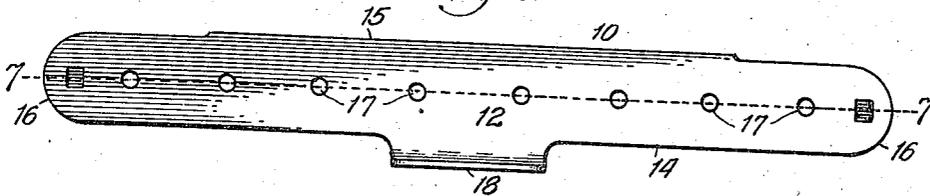


Fig. 3.

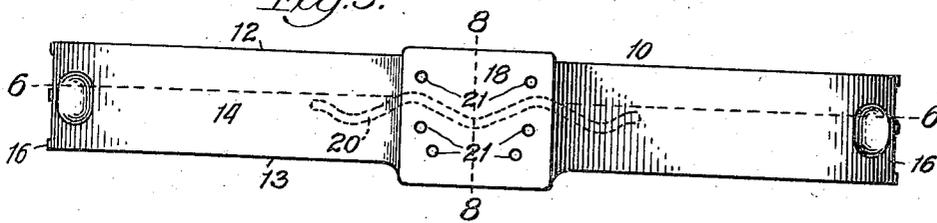


Fig. 4.

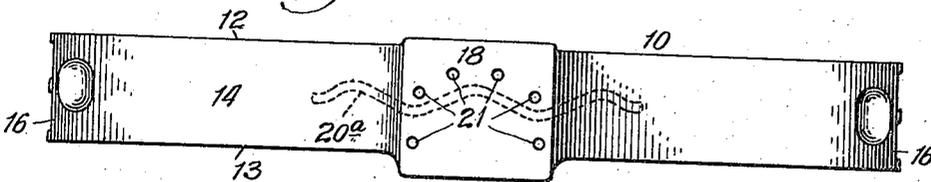
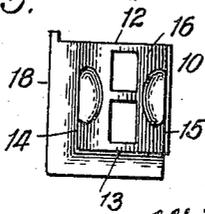


Fig. 5.



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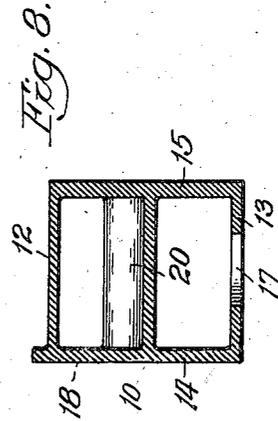
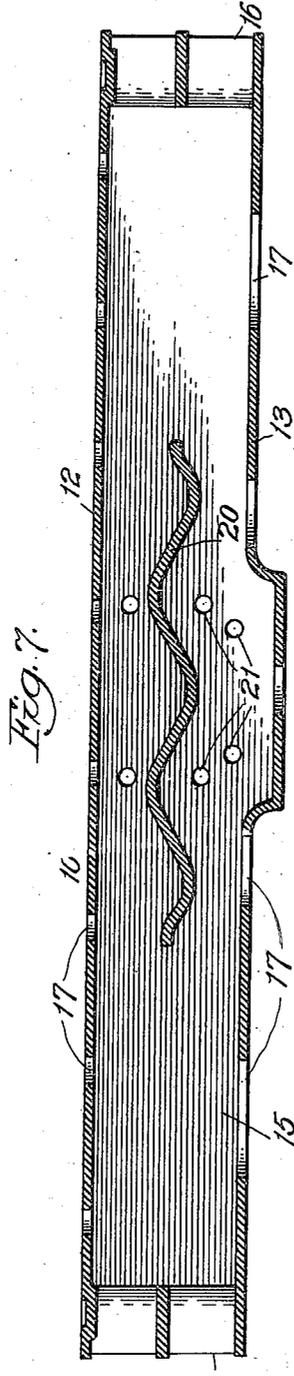
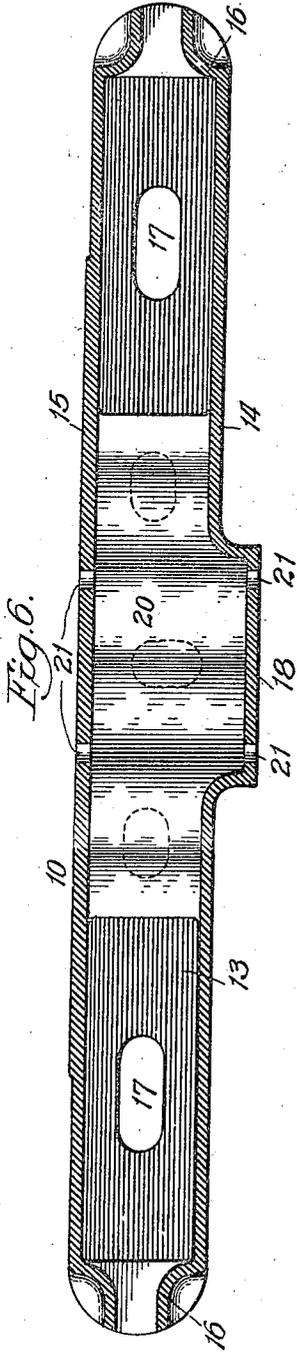
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

GEORGE S. CHILES, OF LIMA, OHIO, ASSIGNOR TO THE OHIO STEEL FOUNDRY COMPANY, OF LIMA, OHIO, A CORPORATION OF OHIO.

LOCOMOTIVE PILOT BEAM.

Application filed November 23, 1923. Serial No. 676,470.

To all whom it may concern:

Be it known that I, GEORGE S. CHILES, a citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Locomotive Pilot Beams, of which the following is a specification.

This invention relates to improvements in pilot beams or bumper bars for locomotives, and has for its principal object to produce an improved construction, imparting strength and rigidity, to devices of the character described. My invention is particularly applicable to cast beams, and an improved method of manufacturing the same, whereby a novel form of reinforcing member may be provided at the middle portion where the locomotive coupling is secured, this reinforcing member permitting variation in the position of such coupling and its securing bolts.

The invention may best be understood by reference to the accompanying drawings, in which—

Figure 1 is a view in perspective of a pilot beam constructed in accordance with my invention;

Figure 2 is a plan view of the beam shown in Figure 1;

Figure 3 is a front view of the beam, showing the reinforcing member in dotted lines;

Figure 4 is a view similar to Figure 3, but with the reinforcing member in inverted position;

Figure 5 is an end view of the beam;

Figure 6 is an enlarged section taken on line 6—6 of Figure 3;

Figure 7 is an enlarged section taken on line 7—7 of Figure 2; and

Figure 8 is an enlarged section taken on line 8, 8 of Figure 3.

Referring to the drawings, a pilot beam 10 is shown in Figure 1, with a coupler 11 of standard construction secured thereto. Beams are usually provided for use with couplings of different makes having securing bolts varying in position. Such couplings also may vary somewhat in their vertical position on the beam depending upon the design of the locomotive. It is further more desirable to reinforce the beam at the center where the coupling is secured, this reinforcement being preferably in horizontal alignment with the approximate center of draft of the coupling. In the present inven-

tion I provide a reinforced beam which may be standardized for wide variations in construction and arrangement of couplings, as will now be described in detail.

The beam 10 comprises upper and lower walls 12 and 13, front and rear walls 14 and 15, and end walls 16, 16. The arrangement of these walls may vary widely, respective to each other, but in the form shown form a substantially rectangular hollow casing. In the preferred form shown the beam comprises an integral casting, although certain novel structural features may be utilized in fabricated beams, as will hereafter more fully appear. Certain apertures 17, 17, may be provided at suitable places for supporting the casting cores and facilitating the cleaning of the casting. A flat portion is located centrally of the front wall 14, forming a seat 18 to which the coupling 11 may be secured.

Referring now more particularly to the reinforcing construction at the center of the beam, I provide a horizontally disposed web 20 rigidly connecting the front and rear walls 14 and 15 respectively, and extending laterally beyond but behind the coupler seat 18, to provide a solid reinforcing member at the point of maximum stress due to the draft on the coupling.

It will especially be noted, that the reinforcing web 20 is waved or corrugated in transverse section, as shown in Figs. 3 and 7. This feature presents several advantages. It provides a stronger and more rigid construction than ordinary flat webs, especially in withstanding stresses or loads at an angle to the normal horizontal stresses. It affords support for a relatively wide vertical portion of the coupling seat so that the desired reinforcement will be afforded in several positions of the coupling and its center of draft, when shifted vertically respective to the beam. It also affords considerable latitude in accommodating the variously positioned securing bolts of couplings which may be used with the beam, as may be seen by comparison of Figs. 3 and 4, illustrating varying positions of bolt holes 21, 21, necessary for different styles of standard couplings. It will be observed in these figures that the corrugated web 20^a in Figure 4 is reversed or inverted with respect to the web 20 in Fig. 3. This inverted form of web

permits variation in the position of the bolt holes 21, especially those falling near said web.

5 The rearrangement of the web 20 in inverted position as shown may be readily provided in the manufacture of the beam, when required by design. In the case of castings, this is accomplished merely by inverting in the sand making up the central core, that
0 portion of the pattern corresponding to this corrugated web, as will be readily understood by those skilled in foundry practice. Similarly, when the beam is fabricated, the reinforcing web portion is simply inverted
15 when desired.

Although I have shown and described one specific form in which my invention may be embodied it will be understood that other arrangements and constructions may be used
20 without departing from the scope of my invention. Therefore, I do not wish to be understood as limiting myself to the construction illustrated, excepting in so far as specifically defined in the appended claims.

25 I claim:

1. A pilot beam having rear and front walls, the latter wall provided with a cou-

pling seat, and a reinforcing member rigidly connecting said rear and front walls in longitudinal alignment with said coupling seat
30 and comprising a corrugated web extending in a general horizontal plane.

2. A pilot beam having rear and front walls, the latter wall provided with a coupling seat, and a reinforcing member rigidly connecting said rear and front walls in longitudinal alignment with said coupling seat and comprising a corrugated web extending in a general horizontal plane, said
40 coupling seat having bolt holes therethrough for the coupling bolts, some of said holes being within the vertical boundaries of said corrugated web.

3. A pilot beam comprising a casting including rear and front walls, the latter wall
45 provided with a coupling seat, and an integral corrugated reinforcing member extending in a generally horizontal plane between said rear and front walls behind said coupling seat.
50

In witness whereof, I hereunto subscribe my name this 16 day of November, A. D., 1923.

GEORGE S. CHILES.