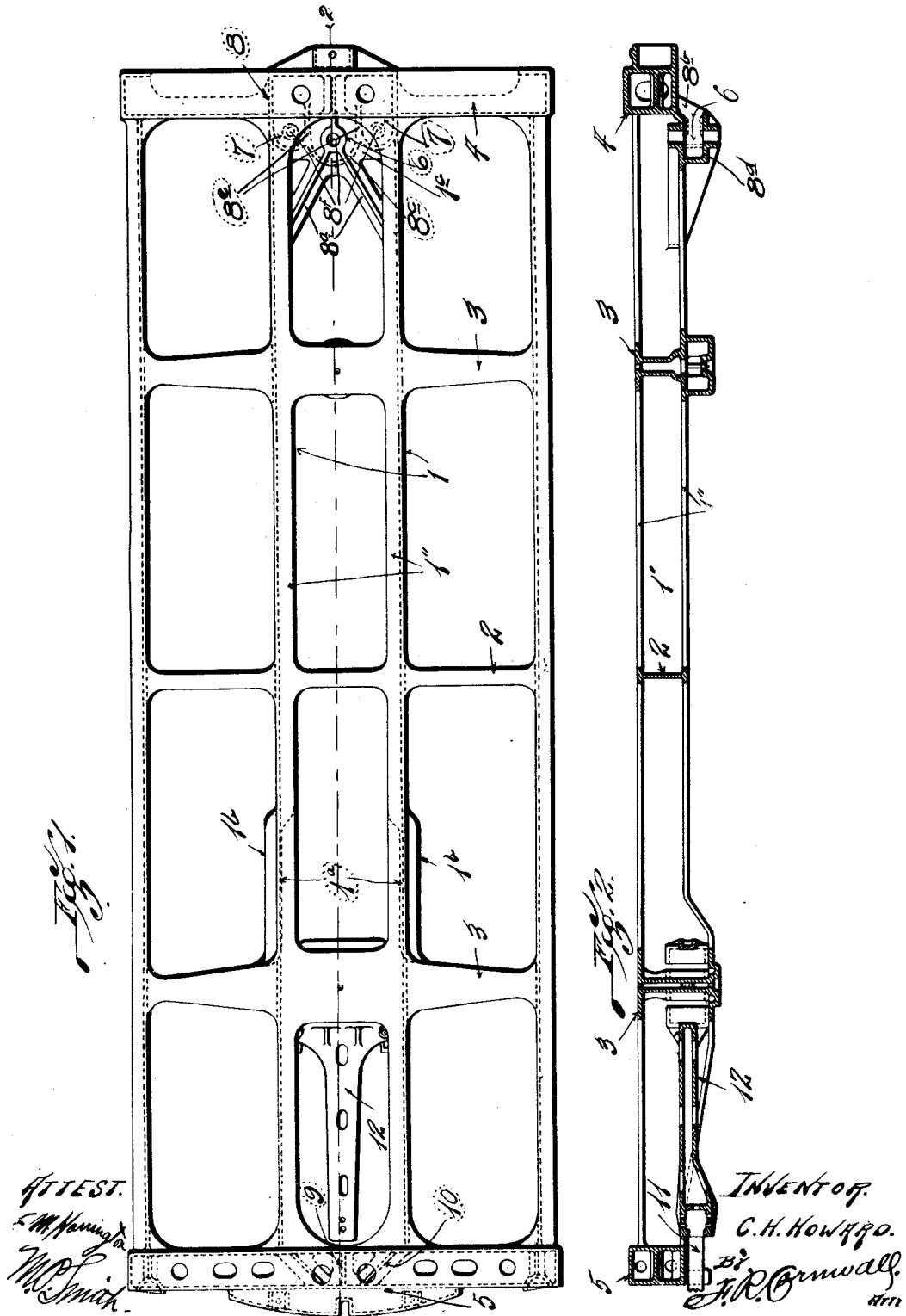


C. H. HOWARD.
 CAST STEEL UNDERFRAME FOR CARS.
 APPLICATION FILED JUNE 21, 1911.

1,039,403.

Patented Sept. 24, 1912.



UNITED STATES PATENT OFFICE.

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CAST-STEEL UNDERFRAME FOR CARS.

1,039,403.

Specification of Letters Patent.

Patented Sept. 24, 1912.

Application filed June 21, 1911. Serial No. 634,588.

To all whom it may concern:

Be it known that I, CLARENCE H. HOWARD, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Cast-Steel Underframes for Cars, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of the improved tender underframe; Fig. 2 is a longitudinal view through the same taken on line 2.

This invention relates to new and useful improvements in cast steel underframes for locomotive tenders and other railway rolling stock, the object being to construct a device of the character described which can be cast in one piece and which embodies a novel arrangement of flanges bars and reinforcing webs, all as will hereinafter be described and pointed out in the claims.

In the drawings 1 indicates the longitudinal sills, 2 the middle cross sill, 3 the bolster members, 4 the front sill, and 5 the rear end sill. In this form of tender underframe the pocket 6 is located below the plane of the lower flange of the longitudinal sills, being reinforced, as shown by rearwardly extending webs and flanges 8^a. In the present construction, however, there is a pocket 7 on each side of the central pocket, these lateral pockets receiving the safety chains. The side walls of these lateral pockets 7 are substantially downward extensions of the vertical webs of the longitudinal members 1 and are also substantially in the longitudinal plane of the reinforcing webs 8 of the end sills.

The rear end sill 5 before referred to, extends slightly above the plane of the longitudinal members, as shown in Fig. 2, and is braced at its center by a longitudinally disposed strengthening web 9 and diagonally disposed strengthening webs 10. The diverging inner ends of these latter are connected to the inner end of the sill opposite the vertical webs of the longitudinal members 1 which are converged at their rear extremities to meet the diagonal strengthening members.

In the present construction, which is in-

tended to be used in connection with transom draft gear, of which 11 indicates the draw-bar and 12 the yoke, it is desirable to introduce these parts from underneath, and in order to utilize a yoke of the proper span, when springs of different dimensions are required, it is necessary to provide an opening between the longitudinal members of appropriate size to receive the yoke.

Ordinarily, the longitudinal members between the bolsters are provided with inwardly presented flanges which are channel-shape in cross-section. In the present instance, the vertical webs of the longitudinal members continue in a straight line, but the lower flanges 1^a thereof are made narrower near the bolster point, and coincident with the narrowing of these inwardly presented flanges of the longitudinal members, it is preferable to arrange outwardly extending flanges 1^b which outwardly extending flanges connect with the bottom flanges of the bolster members and materially assist in strengthening the lower edges of the longitudinal members.

The narrowing of the flanges 1^a is of such length as to enable the yoke 12 to be introduced therebetween, and then moved outwardly with its lugs projecting through the bolster web, said lugs being connected to the draw bar in a well known manner.

The longitudinal sills 1 are cast steel members having a vertical web 1' and top and bottom horizontal flanges 1''. At the front end, portions of the bottom flanges are cast to form a continuous strengthening web 1^c extending from one sill to the other and forward to the end sill. On the draft sills 1 are formed downward projecting webs 8^b below the horizontal flanges 1'', which downward extending webs are substantially continuations of portions of the web 1' of the draft members. Near the rear edge of the horizontal web 1^c is formed thereon a web 8^c projecting downward therefrom to form a rear wall extending continuously between the downwardly extending webs 8^b. At the bottom of the downwardly extending webs 8^b and the rear wall 8^c is formed integrally therewith a bottom wall 8^d which extends transversely between the downwardly projecting webs 8^b and forward from the rear wall 8^d any convenient distance. It will thus be seen that the horizontal strengthening web 1^c, the downward pro-

jecting webs 8^b, the rear wall 8^c and the bottom flange 8^d form a housing or casing which lies between the webs of the draft members and below the lower flanges thereof. This housing is divided into a plurality of pockets, shown as a central pocket 6 and lateral pocket 7, by means of vertical webs 8^e extending forwardly from the rear wall 8^c and connected at their upper and lower edges with the strengthening web 1^c and the bottom portion 8^d. Near the rear extremities of these pockets are formed openings 8^f for the reception of attaching means.

15 I claim:

1. In a cast steel underframe for cars the combination of an end sill and longitudinal members, flanges of the latter forming a horizontal strengthening web, pocket walls

depending from said strengthening web to form a central pocket and lateral pockets on each side of the central pocket. 20

2. In a cast steel underframe for cars the combination of an end sill, longitudinal sills, the vertical webs of the latter being extended forwardly to form reinforcing webs for the end sill, and downwardly to form pocket walls, the bottom flanges of said longitudinal sills being connected to form a horizontal strengthening web which constitutes the top wall of a plurality of pockets. 25 30

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 13th day of June, 1911.

C. H. HOWARD.

Witnesses:

HAL C. BELLVILLE,
B. L. CROWLEY,