Sept. 24, 1929. J. H. LINHARDT 1,729,113

MINE CAR

Filed March 17, 1927 2 Sheets-Sheet 1

Fig. 1.

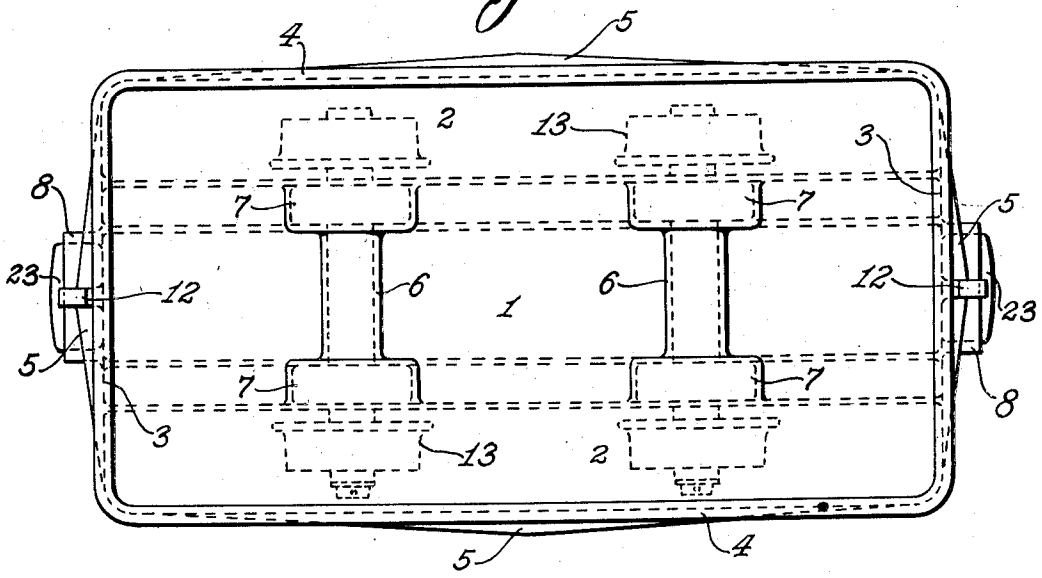
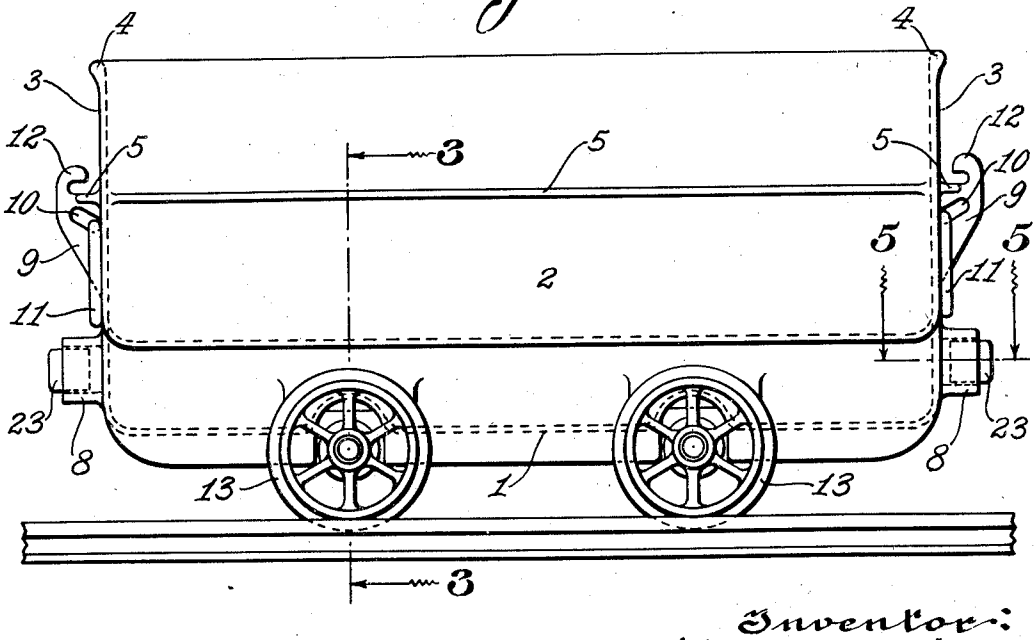


Fig. 2.



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Filed March 17, 1927 2 Sheets-Sheet 2

Fig. 3.

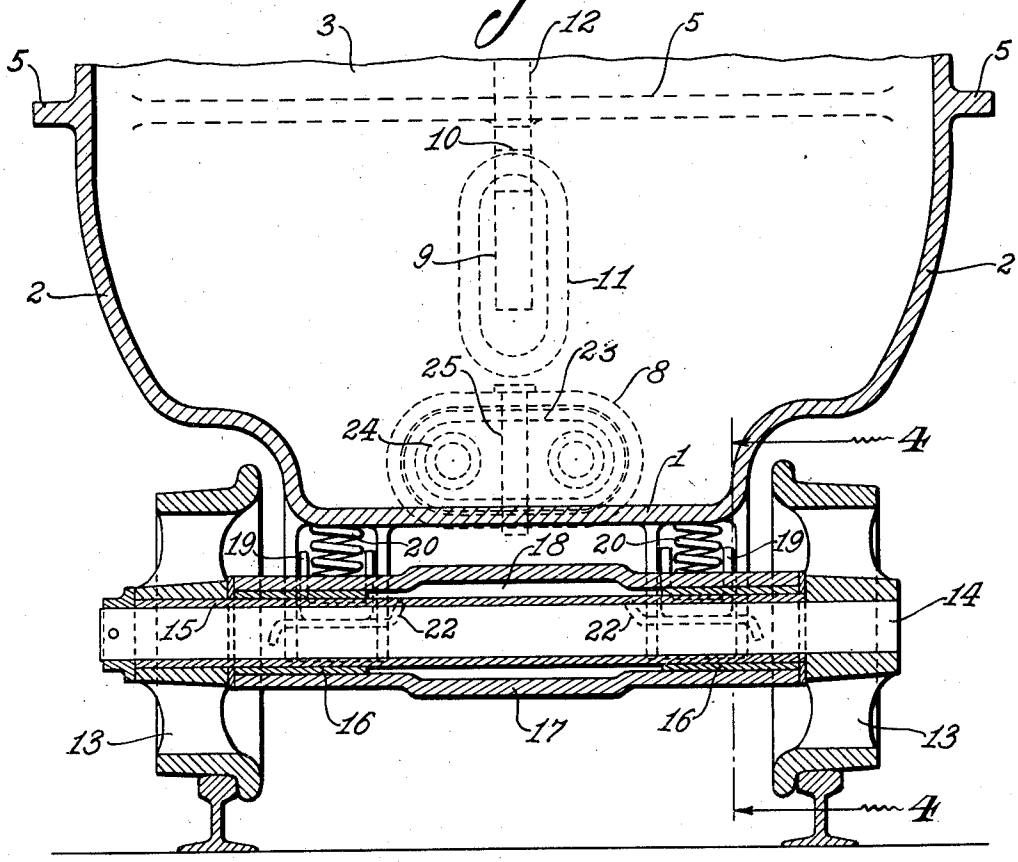


Fig. 4.

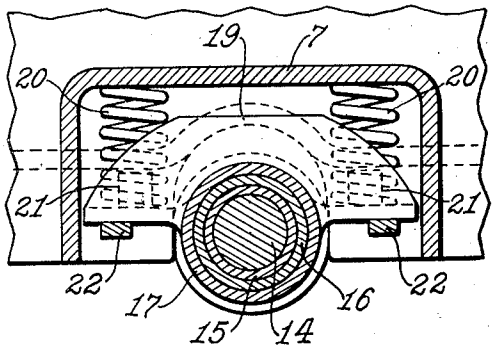
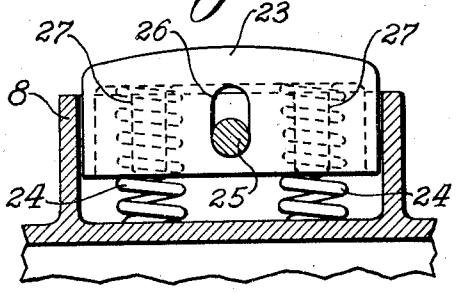


Fig. 5.



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UNITED STATES PATENT OFFICE

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MINE CAR

Application filed March 17, 1927. Serial No. 176,203.

This invention pertains to mine cars, such as are used in mines for hauling ores, coal, and the like.

The ordinary mine car is usually subjected to very rough usage. The materials handled are hard and abrasive and are handled without regard to their effect on the apparatus used. These cars are run in trains, back and forth through the mines, sometimes at high speeds, over rough tracks, and subjected to considerable jolting. It is the usual experience in the operation of such cars that frequent repairs are required on account of such rough handling.

One of the objects of this invention, therefore, is to provide a mine car, having improved strength of construction, and able to withstand harder usage.

Another object is to provide an improved mine car body of greater strength.

Another object is to provide an improved supporting structure which will be less subject to wear and easier to repair than the usual construction.

Further objects will appear from the following description, taken in connection with the accompanying drawings, in which

Figure 1 is a plan view of a car embodying this invention;

Figure 2 is a side view of the same;

Figure 3 is a section on line 3—3 of Figure 2, somewhat enlarged;

Figure 4 is a section on line 4—4 of Figure 3; and

Figure 5 is an enlarged section on line 5—5 of Figure 2.

In accordance with the present invention, the mine car body is constructed of cast steel, or similar material capable of being cast, but having great strength, elasticity and toughness. The body is cast in one piece as a single casting. Making the body as a single casting provides that it shall consist of a single piece of metal, without seams or joints and, therefore, of increased strength, since there are no connected parts to work loose or get out of order.

Referring to the drawing, the body has a bottom, or base portion, 1, somewhat contracted laterally in the embodiment illustrated, and flared sides 2. The bottom and sides merge into vertical ends 3. The sides 2 and the ends 3 are relatively deep, so as to form a deep body, having a considerable capacity. An enlarged bead 4 may be formed around the upper edge of the sides and ends, so as to stiffen the same and provide a wearing edge. The sides and ends may be further reinforced and stiffened by means of longitudinal ribs 5, formed intermediate the top and bottom of the sides and ends. These ribs, being integral with the sides and ends, form strong reinforcing members, which, together with the top bead 4, greatly stiffen and strengthen the sides and ends of the body.

Formed in the contracted bottom portion 1 of the body are transverse channels 6 adapted to provide axle sockets and having formed at their ends bearing sockets 7. These axle and bearing sockets are cast into the car body when the latter is formed. A bumper socket is also cast integral with the car body at the ends thereof.

In order to provide for coupling cars together in a train, coupling brackets 9 are cast on the ends 3 at the time the body is cast. These brackets are each provided with a slot 10, adapted to receive a loose coupling link 11, which is placed in the mold and cast into the slot 10. Each bracket 9 is provided with a hook 12 adapted to receive the coupling link 11 of the next car of a train.

The wheels 13 are fixed, one upon a shaft 14 and the other upon a sleeve 15 within which the shaft is journaled. The sleeve 15, in turn, is adapted to run in bearings 16, mounted in a quill or casing 17. The casing 17 may be provided with an internal chamber 18 surrounding the sleeve 15 and adapted to receive lubricant for lubricating the bearings 16. A bearing bracket 19 is cast on each end of the casing 17.

The wheels are assembled on the car by placing the body upon the axles formed by the casings 17 in such a way that the casings 17 are received within the sockets 6, while the bearing brackets 19 fit into the sockets 7. A pair of springs 20 is mounted on each bracket 19 so as to be interposed between said bracket and the socket 7. Lugs 21

on the bracket 19 keep the springs 20 in place thereon. The springs 20 support the car body and are, in turn, supported by the brackets 19 and the casing 17. After inserting the brackets 19 in the sockets 7, the same may be retained therein by inserting pins 22 through suitable perforations in the sides of the sockets 7 and bending over the ends of these pins, as illustrated in Fig. 3. These pins pass underneath the brackets 19 and retain the same in their sockets.

A bumper 23 is seated in each of the pumper sockets 8, springs 24 being inserted therebetween. Each bumper is held in place by a pin 25, passing through an elongated slot 26 in the bumper. This slot permits play of the bumper in and out in the performance of its function as a bumper. Lugs 27 may also be provided to keep the springs in place.

It will be seen, therefore, that this invention provides an improved mine car construction. The car body, while being deep and of large capacity, is cast in a single piece, so that it will be solid and free from joints or seams, which are liable to open under hard service. The sides and ends are securely reinforced with integral ribs.

The axle is simply set loosely in the axle socket and supported therein on springs. The arrangement of the shaft 14 and the sleeve 15 permits the wheels to turn independently of each other in rounding curves and, at the same time, forms what is practically a unitary axle therefor. Casting the axle and bearing sockets, as well as the bumper sockets, in one piece with the body renders the same of increased strength and, therefore, cheaper to maintain.

It is obvious that various changes may be made in the details of construction without departing from the spirit of this invention; it is to be understood, therefore, that this invention is not limited to the specific details shown and described.

Having thus described the invention what is claimed is:

1. A mine car body consisting of a single steel casting, reinforced with integral ribs along the sides thereof.

2. A mine car body of cast metal, having bearing sockets cast integral therewith.

3. A mine car body of cast metal, having bearing and shaft sockets cast integral therewith.

4. A mine car body having a transverse axle socket with bearing sockets at the ends thereof, said sockets being cast integral with said body.

5. A mine car body of cast metal, having bumper sockets cast integral therewith.

6. A mine car body consisting of a single casting and having a loose coupling link cast therein.

7. A mine car body, consisting of a single casting and having a bumper socket cast integral therewith and a loose coupling link cast therein.

8. A mine car body, consisting of a single casting and having bearing and bumper sockets cast therein.

In testimony whereof I affix my signature this 29th day of July, 1926.

JOHN H. LINHARDT.