W. LLOYD.

MINE CAR.

APPLICATION FILED MAR. 27, 1911.

1,047,894. Patented Dec. 17, 1912.

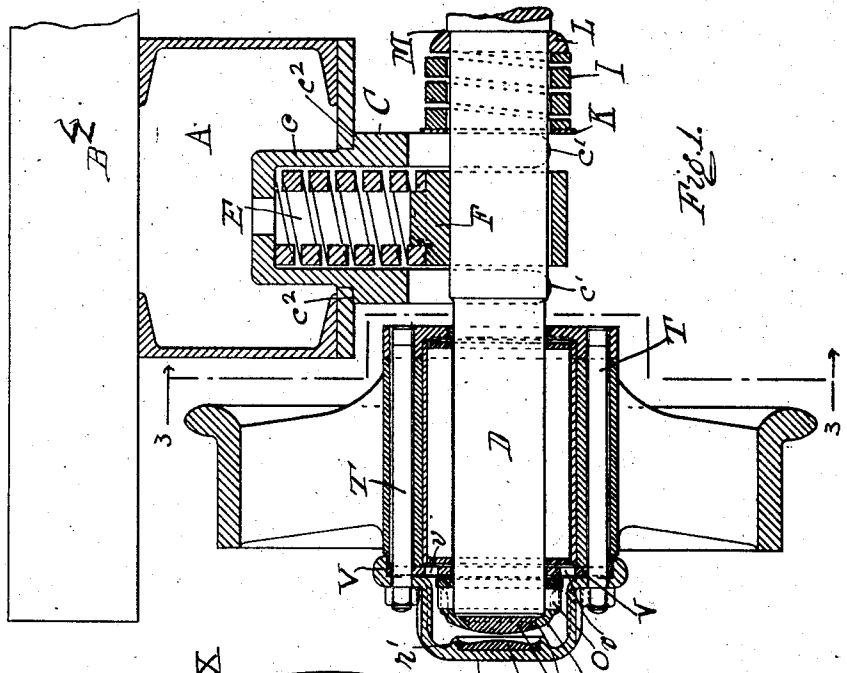

Fig. 1.

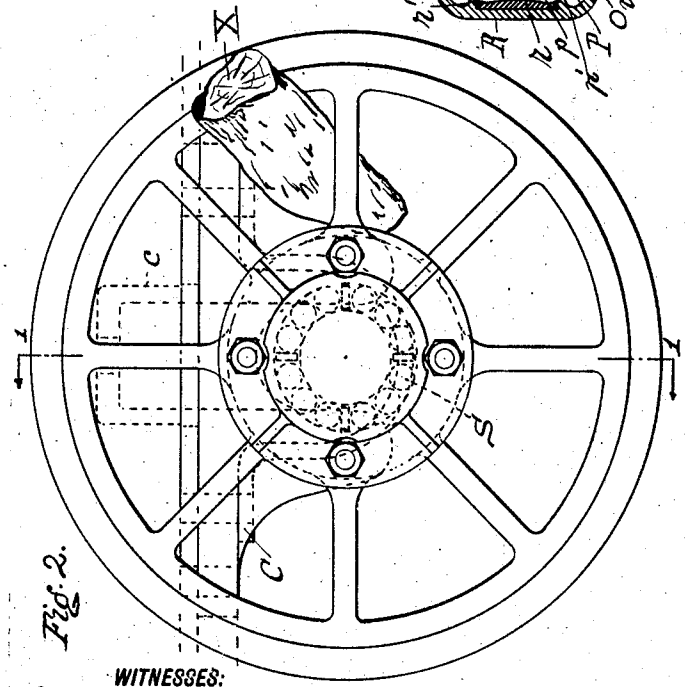

Fig. 2.

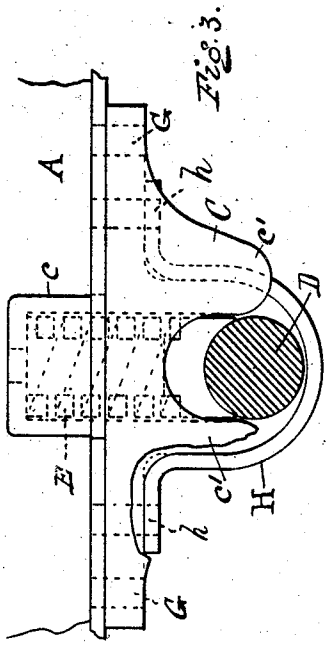

Fig. 3.

WITNESSES:

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WILLIAM LLOYD, OF DRIFTON, PENNSYLVANIA.

MINE-CAR.

1,047,894. Specification of Letters Patent. Patented Dec. 17, 1912.

Application filed March 27, 1911. Serial No. 617,131.

To all whom it may concern:

Be it known that I, WILLIAM LLOYD, a citizen of the United States of America, and residing at Drifton, in the county of Luzerne and State of Pennsylvania, have invented a certain new and useful Improvement in Mine-Cars, of which the following is a specification.

The present invention relates particularly to mine cars or the like, my object being to provide a suitable spring device for taking up the shocks to which cars of this type are ordinarily subjected by reason of the rough construction of the road bed and track and the hard usage to which these cars are at all times subjected.

A further and correlated object of my invention is to provide a suitable spring device which is not only inexpensively embodied in a mine car, but which also conforms to the mining laws which govern the construction of such cars as to certain features well known to builders of cars of this type.

Other novel features of construction are also hereafter mentioned.

In the accompanying drawings, Figure 1 is a vertical section through a car wheel and adjacent parts on the line 1—1, Fig. 2; Fig. 2 is a side elevation thereof; and Fig. 3 is a section on the line 3—3, Fig. 1.

In the construction of mine cars and the like, it is important that the car body be kept as low as possible since head room is an essential consideration in the mines, and to raise the car body materially above the axle renders it practically unavailable for mine use. Furthermore, the weight must be kept as low as possible, for the curves in the track are frequently abrupt and switch angles are sudden and sharp; so that unless the weight of the car is kept low accidents at switches and curves are sure to occur. Again it is the practice in the mining region to brake cars on inclines by means of "sprags" or heavy sticks of wood which are jammed in between the spokes of the car wheel and the car underframe and thus block one or more of the wheels as the car descends the incline. This is not only the common practice, but it is sanctioned by the mining laws and any construction of the car underframe or wheel which endangers the user of a sprag is prohibited by law. This practice results in many "flat" wheels, with a consequent pounding which not only injures the track but subjects the car frame to a very injurious jarring and racking. To obviate these injuries to the car frame and body, I now propose to mount the car on the wheel axles so that both vertical and lateral jars and shocks are to a large extent eliminated, while at the same time keeping the body of the car low and also permitting unimpeded spragging of the wheels.

In the form shown I have recessed the longitudinal under-frame beam A on which the car bottom B is supported, to receive the hollow shouldered thimble c of the yoke member C, the legs c^1 of which straddle the axle D forming a vertical guide slot for the latter. The shoulder c^2 of the thimble c engages the lower face of the beam A and the weight of the car is thus transmitted to the yoke piece C. Within the yoke I arrange a coil spring E one end of which bears against the upper end of the thimble c while the other end rests upon the bearing block F on the axle. Bolts G directly secure the yoke to the beam while the bolts h for the retaining strap H, passing through the yoke, reinforce the bolts G.

To take up the lateral thrust at switches and curves, I provide a coil spring I mounted on the axle D and interposed between a washer K adjacent the yoke C and a bearing piece L fitted against a shoulder M formed on the wheel axle. This end thrust at curves and switches causes considerable wear upon the axle bearings likewise, and I have also improved the old wheel construction in this connection by providing readily renewed coöperating bearing members carried by the axle and its dust cap respectively. Upon the end of the axle I secure by any readily disengageable means such as the pins O a cap P the overlapping flange p^1 of which holds a bearing member p on the end of the axle D. The inner face of the dust cap R which is bolted in place as usual, is provided with an annular flange r^1 which retains the coöperating bearing piece r. These two coöperating bearing pieces r and p may be made of chilled iron or other durable material, and may be readily renewed after wear, being independent of the cap and spindle respectively. The cap P affords convenient means for retaining the wheel on the axle. For this purpose a ring V, perforated at v to permit the passage of oil from the dust box to the bearing, and en-

gaging behind the cap P, is clamped to the wheel hub by the bolts T which hold the dust cap in position.

Rollers S may be arranged between the wheel bearing and the axle; but this forms no part of my present invention.

It is obvious that the construction illustrated does not raise the body of the car appreciably above its present relation to the wheel axles and also that it does not interfere with the spragging of the wheels. A sprag *x* is shown in part in Fig. 2, in the position it would occupy when the wheel is blocked.

The construction shown for a single wheel is repeated for each wheel of the car.

Various modifications of the arrangement illustrated will readily suggest themselves which do not depart from the scope of my invention, and I do not limit myself to the precise details shown.

I claim as my invention:—

1. In a mine car, a car under-frame member, a wheel with hub, spoke and rim members, and a spring pedestal for said wheel rigid with said frame member, said pedestal comprising a yoke member embracing the wheel axle and confined substantially within the hub area of the wheel beneath the car frame, whereby the spoke area of the wheel remains substantially unobstructed for spragging together with a bearing block on the wheel axle and a spring confined between said block and pedestal, as described.

2. In a mine car, a car under-frame member, a wheel with hub, spoke and rim members, and a spring pedestal for said wheel rigid with said frame member, said pedestal comprising a yoke member embracing the wheel axle and confined substantially within the hub area of the wheel beneath the car frame, whereby the spoke area of the wheel remains substantially unobstructed for spragging, together with a retaining strap passing under the car axle and lying substantially within the yoke area of the pedestal, a bearing block on the wheel axle, and a spring confined between said block and the pedestal, as described.

3. In a mine car, a car under-frame member, a wheel with hub, spoke and rim members, and a shouldered pedestal having a yoke embracing the wheel axle, bolts passing through the shoulders of said pedestal to secure the same to said frame member, a retaining strap passing under the car axle and secured by said bolts, said yoke and strap being confined substantially to the hub area of the wheel beneath said under-frame member whereby the spoke area of the wheel remains substantially unobstructed for spragging together with a bearing block on the wheel axle and a spring confined between said block and pedestal, as described.

4. In a mine car, a car under-frame member, a wheel with hub, spoke and rim members, and a spring pedestal for said wheel rigid with said frame member, said pedestal comprising a yoke recessed on opposite sides of the car axle, and a retaining strap passing under the axle and lying within the recesses of said yoke, both strap and yoke being confined substantially within the hub area of the wheel beneath the frame member, whereby the spoke area of the wheel remains substantially unobstructed for spragging together with a bearing block on the wheel axle and a spring confined between said block and pedestal, as described.

5. In a mine car or the like a car axle and an end thrust bearing thereon comprising a centrally apertured cap mounted on the axle and having a flange overlapping the end of the latter and an independent end bearing piece retained and axially positioned on the axle by said cap, substantially as described.

6. In a mine car or the like, a car axle and an end thrust bearing thereon comprising a centrally apertured cap mounted on the axle and having a flange overlapping the end of the latter and an independent end bearing piece retained and axially positioned on the axle by said cap, in combination with a closed dust cap carried by the car wheel and an independent end thrust bearing piece removably mounted on the inner face of the latter in line with said axle to coöperate with the end bearing mounted thereon, as above described.

7. In a mine car or the like, a car axle, a removable end thrust bearing member mounted thereon, a dust cap with coöperating bearing piece bolted to the wheel hub, in combination with a wheel-retaining ring clamped between the dust cap and the wheel hub and engaging the rear face of the end thrust bearing member on the axle, for the purpose described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

WILLIAM LLOYD.

Witnesses:
HOWARD W. WEYHENMEYR,
JOHN ROHLAND.