J. J. BRINK.

MEANS FOR AUTOMATICALLY LIFTING THE LIDS OF JOURNAL BOXES OF TRAINS.

APPLICATION FILED OCT. 11, 1919.

1,332,797.

Patented Mar. 2, 1920.

3 SHEETS—SHEET 1.

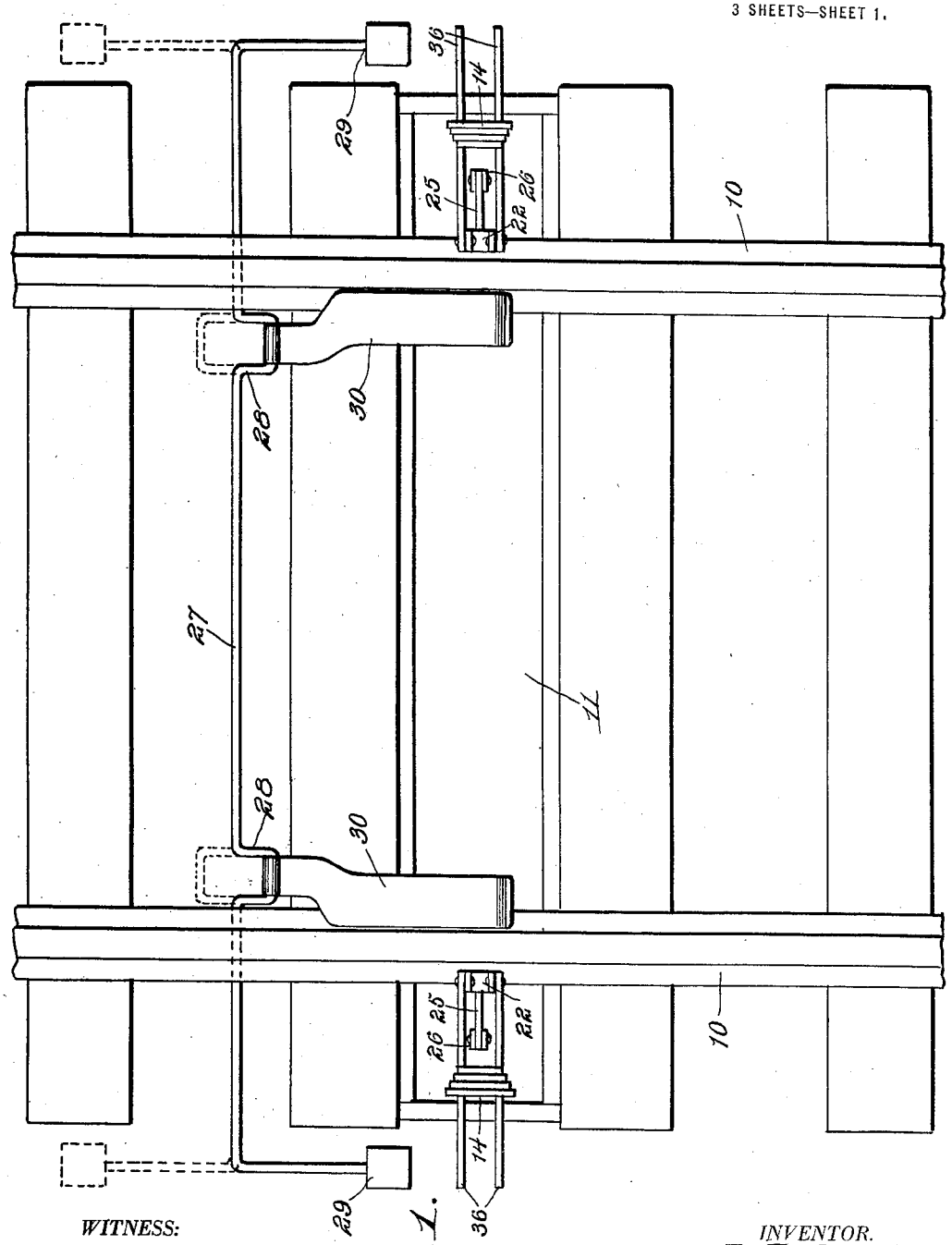


Fig. 1.

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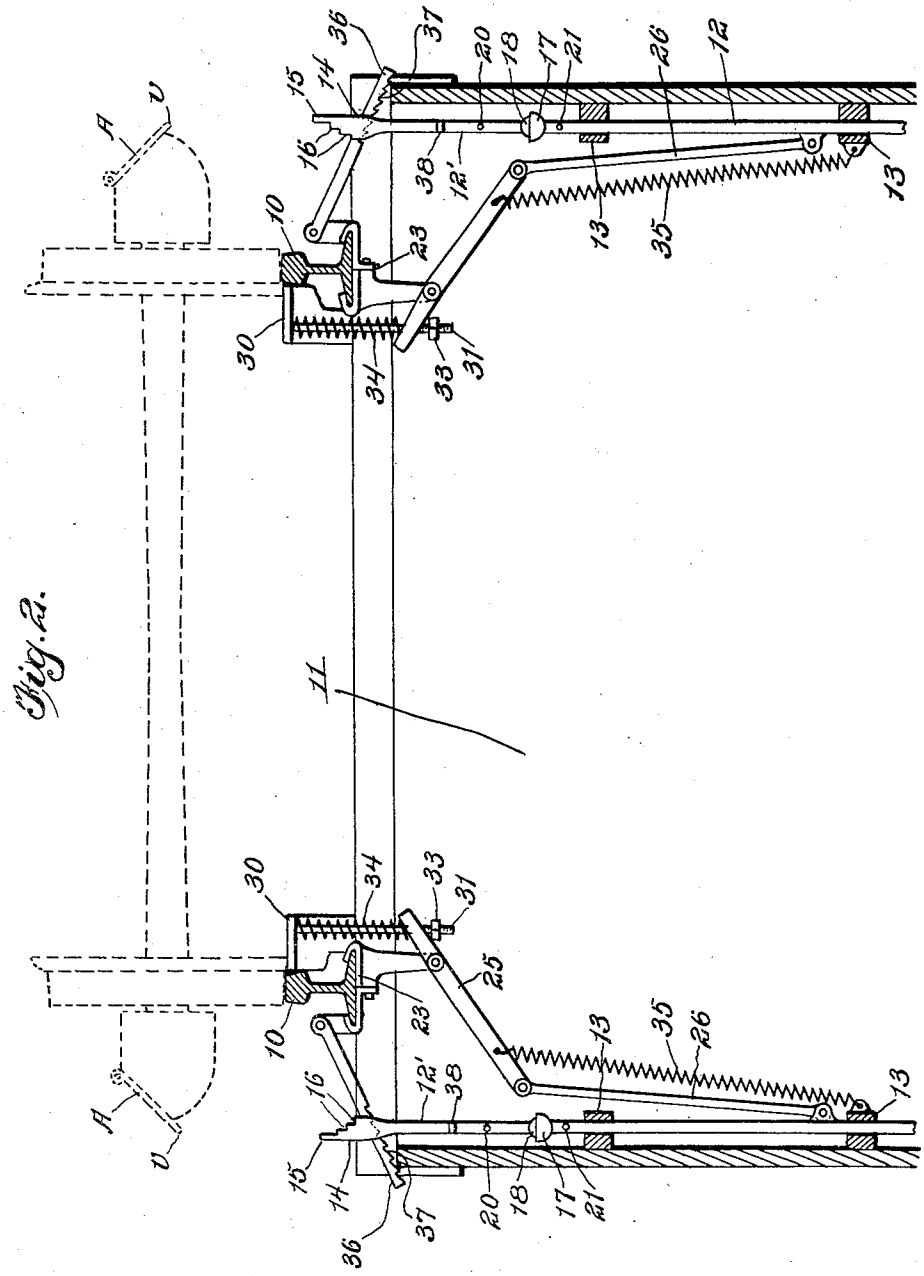
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3 SHEETS—SHEET 3.

Fig. 4.

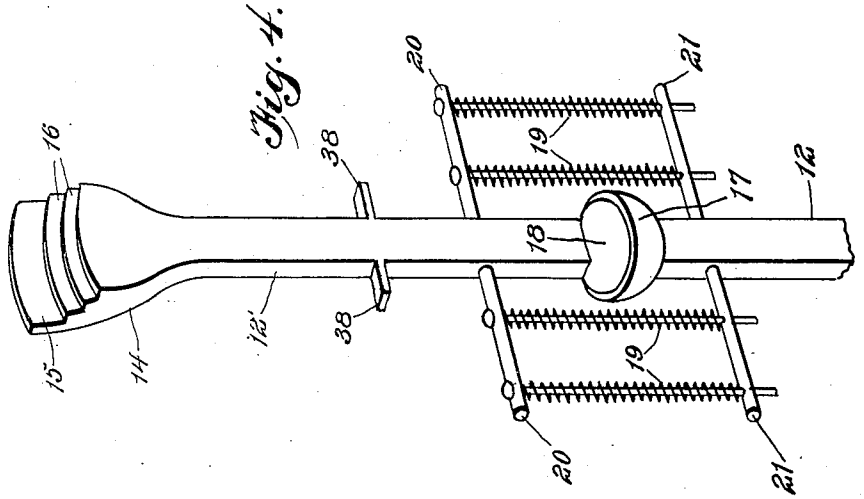
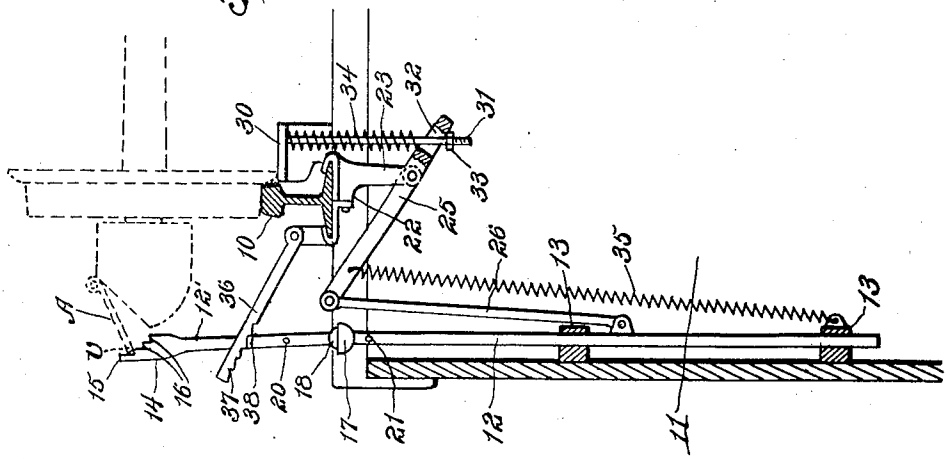


Fig. 3.



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UNITED STATES PATENT OFFICE.

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MEANS FOR AUTOMATICALLY LIFTING THE LIDS OF JOURNAL-BOXES OF TRAINS.

1,332,797. Specification of Letters Patent. Patented Mar. 2, 1920.

Application filed October 11, 1919. Serial No. 329,912.

To all whom it may concern:

Be it known that I, JOSEPH J. BRINK, residing at Wamac, in the county of Clinton and State of Illinois, have invented new and useful Improvements in Means for Automatically Lifting the Lids of Journal-Boxes of Trains of which the following is a specification.

This invention comprehends the provision of means for automatically lifting or raising the lids of journal boxes on a train as the latter pulls into a station for inspection thus providing for the inspection of a maximum number of cars during a predetermined length of time.

The nature and advantages of the invention will be better understood when the following detail description is taken in connection with the accompanying drawings, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawings forming part of this specification like numerals of reference indicate similar parts in the several views and wherein:

Figure 1 is a top plan view of a track showing the mechanism associated therewith.

Fig. 2 is a transverse sectional view.

Fig. 3 is a fragmentary side elevation showing the manner of raising the lid by means of the mechanism forming the subject matter of my invention.

Fig. 4 is an enlarged detail view of the lid engaging element.

Referring to the drawing in detail, 10 indicates the rails of a track, while 11 indicates a pit arranged beneath the rails of a track and in which the lid engaging element for lifting the lids of the journal boxes of a train operate.

The mechanism forming the subject matter of my invention essentially consists of a lid engaging element in the nature of a relatively long arm 12 which is normally positioned in the pit 11 and adapted to be moved vertically into engagement with the lid A of the journal box for lifting the latter to permit inspection of the brass. It might here be stated that the arm 12 is yieldably maintained in inactive position within the pit, and is moved to an operative position by a car actuated means which will hereinafter be more fully described, it being understood that the lids of the journal boxes are opened in successive order while the train is in motion or pulling into a station for inspection. The arm 12 slides through guides 13 which maintain the arm in proper position within the pit and directs the latter in its movement toward and away from the journal boxes. As shown the arm is preferably provided with an enlarged or relatively wide upper extremity 14 terminating to provide a finger 15 and having a plurality of teeth 16 which insures its proper association or engagement with the lip V of the lid of the journal box when the arm is elevated to raise the latter. The arm is preferably made in two sections, the main section 12 which is formed with sockets 17 at the upper end thereof and a relatively movable section 12′ which is provided with a ball 18 at the lower end thereof, the ball and socket connection between the respective sections permitting the arm to be flexed when the occasion requires. A plurality of springs 19 having their corresponding terminals connected with a cross pin 20 carried by the movable section 12′, while the opposite end of these springs are secured to a similar pin 21 on the arm 12, the springs functionating to maintain the movable section 12′ normally in alinement with the main section 12 of the arm. Should the lid engaging element be elevated for the purpose of raising the lid of a journal box, and instead of coming in contact with the lid engage some stationary part of the car the movable section 12′ could be swung upon its ball and socket connection with the main section 12 to disengage the lid engaging element from the obstruction and arrange it so it would engage the lid A. Manifestly, the springs 19 would immediately return the movable section 12′ into axial alinement with the main section 12, subsequent to the release of the movable section.

As illustrated, there are two of these arms used at the opposite sides of the track so that the journal boxes for each pair of wheels have their lids elevated or opened simultaneously. The car operated mechanism for elevating the lid engaging element at each side of the track is identical and the brief description of one will suffice for both.

Engaging the base of each rail is a clamp 22 terminating at one end to provide an extension 23 depending from the clamp in the

direction of the pit 11. The extension 23 is bifurcated at its lower end, and pivoted between the separated portions 24 defined by said bifurcation, is a lever 25. The lever is pivoted adjacent one of its ends, while the lever proper extends beneath the rail and has its opposite end connected with the lid engaging element or section 12 thereof by means of a link 26. A shaft 27 is journaled beneath the rails of the track and arranged transversely thereof, the shaft being formed to provide spaced track portions 28. Each end of the shaft projects an appreciable distance beyond the ends of the ties and terminates to provide a manipulating portion 29 for rotating the shaft. Carried by each crank portion 28 of the shaft is a plate 30 which in active position as shown by full lines in Fig. 1 has its free end overlying the adjacent end of the levers 25. A rod 31 rises from one end of the lever 25, and in the active position of parts, this rod 31 terminates immediately beneath the adjacent end of the plate 30. The rod 31 is susceptible of sliding movement relative to the lever through an opening 32 therein, for a purpose to be presently set forth. The rod has a nut associated therewith which is indicated at 33 and adapted to engage the underside of the lever 25 to hold the rod associated with the lever, the spring 34 encircling the rod and having one end bearing against the lever and the opposite end connected with the rod to hold the latter in active position with relation to the plate 30. The plates 30 are adapted to be depressed by the wheels of the car as the latter passes over the plate, and as the plates are depressed, they are brought into engagement with the rod 31, which imparts a rocking movement to the lever 25 in a direction to elevate the lid engaging element 12 to a position whereby the lids of the journal boxes are automatically raised to an open position. During this operation, the springs 34 provide for a rigid connection between the plate 30 and the lever 25 being properly tensioned for this purpose. However, should the arm or lid engaging element 12 strike a rigid part of the car while it is being elevated retarding the movement of the arm, the spring 34 will yield under the weight of the car allowing the rod 31 to slide through the opening in the lever 25, and thus preventing breakage of any part of the mechanism. After the wheels have passed from the plates 30, a spring 35 connected with one of the guiding elements 13 and with the lever 25, functions to automatically return the parts to normal position for effecting operation.

Projecting from the other side of each clamp 22 are spaced parallel arms 36 each provided with teeth 37 which are adapted to be engaged by a pin 38 carried by the adjacent section of the lid engaging element. In other words, when the lid engaging element is elevated to raise or open the lid of the journal box, the pin 38 engages the teeth 37 of the arms 36 and is thereby held in a position so that when the lid engaging element is retracted to normal position it is out of the path of the opened lid and will not close the latter when the arm is retracted. It will be noted from an inspection of Fig. 1, that the shaft 27 may be rotated to position the plate 30 in the manner indicated by dotted lines, which is the inactive position of the plate, so as to permit the movement of the train over the track without effecting an operation of the lid of the mechanism.

While I have shown and described what I consider the preferred embodiment of the invention, I desire to have it understood that the same is merely illustrative, and that I do not limit myself to the exact construction and arrangement of parts disclosed, and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What I claim is:—

1. Means for automatically lifting the lids of journal boxes of a train in motion, including a lid engaging element, and train operated means for actuating said element.

2. Means for automatically lifting the lids of journal boxes of a train while in motion, including lid engaging elements arranged adjacent each rail of the track, and car operated means for simultaneously actuating said element.

3. Means for lifting the lids of journal boxes of a train in motion, including a lid engaging element, car operated means for actuating the element to raise the lid, and means for automatically returning the element to normal position at a predetermined interval.

4. Means for lifting the lids of journal boxes of a moving train, including a reciprocating lid engaging element, a car operated means for actuating said element, including a yieldable member and a connection between said element and actuating means therefor.

5. Means for automatically lifting the lids of journal boxes of a moving train, including a lid engaging element normally arranged below the track and capable of vertical movement, car operated means for elevating said element to active position, and means for automatically returning the element to normal position at a predetermined interval.

6. Means for automatically lifting the lids of journal boxes of a train in motion, and a vertically movable lid engaging element normally disposed beneath the track, said element including a fixed section and a relatively movable section, means for nor-

mally holding said sections in alinement and car operated means for actuating said element.

7. Means for automatically lifting the lids of journal boxes of a train while in motion, including a vertically movable lid engaging element, said element comprising a fixed section and a relatively movable section adapted to be swung at an angle with respect to the fixed section, yieldable means for normally holding said sections in axial alinement, and car actuated means for actuating said element.

8. Means for automatically lifting the lids of journal boxes of a train while in motion, including a lid engaging element arranged beneath the track and capable of vertical adjustment, means for actuating said element including a car actuated element, a connection between the actuating element and the lid engaging element for raising the latter, and yieldable means for automatically returning the parts to normal position at a predetermined interval.

9. Means for automatically lifting the lids of journal boxes of a train while in motion, including a vertically movable lid engaging element, means for actuating said element including a member adapted to be depressed by the wheels of the car, a connection between said member and lid engaging element for elevating the latter when said member is depressed, and means for automatically returning the parts to normal position at a predetermined interval.

10. Means for automatically lifting lids of journal boxes of a train while in motion, including a vertically movable lid engaging element, a car actuating element arranged adjacent the track and adapted to be depressed by the wheels of the car, a connection between said member and lid engaging element for elevating the latter when said member is depressed, and said connection including yieldable means to permit said member to be depressed independently of movement of the lid engaging element.

11. Means for automatically lifting the lids of journal boxes of a train while in motion, including a vertically movable lid engaging element, car operated means for actuating said element, including a member arranged adjacent the track and adapted to be depressed by the wheels of the car, a shaft journaled beneath the track and having a crank portion, said member being connected with said crank portion, and means for simultaneously actuating said elements.

In testimony whereof I affix my signature.

JOSEPH J. BRINK.