March 11, 1930. S. F. CLAPP 1,750,506

BALLAST DRESSING MACHINE FOR RAILROADS

Filed Aug. 30, 1927 3 Sheets-Sheet 1

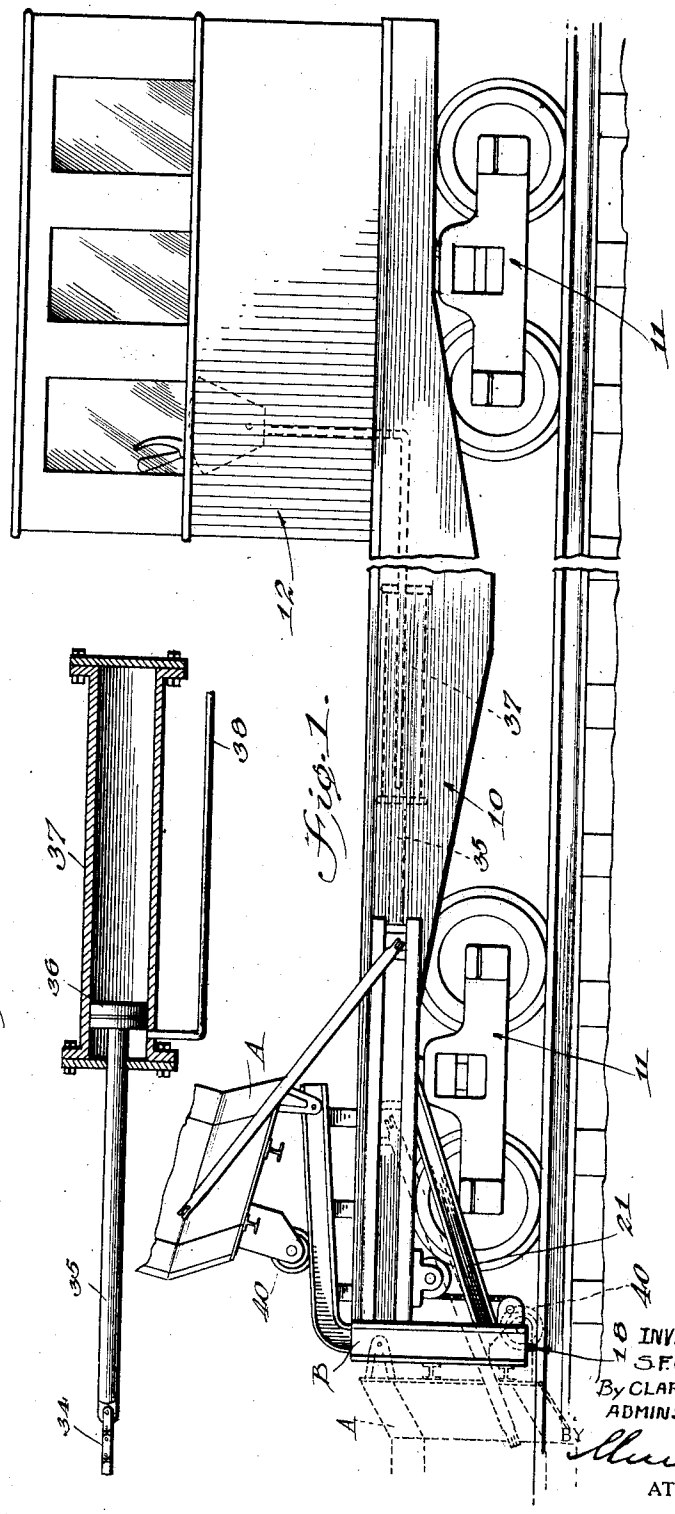


Fig. 1.

Fig. 6.

INVENTOR
S.F.CLAPP, DEC'D.
By CLARA CLAPP,
ADMINISTRATRIX.
BY
ATTORNEYS

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Filed Aug. 30, 1927 3 Sheets-Sheet 2

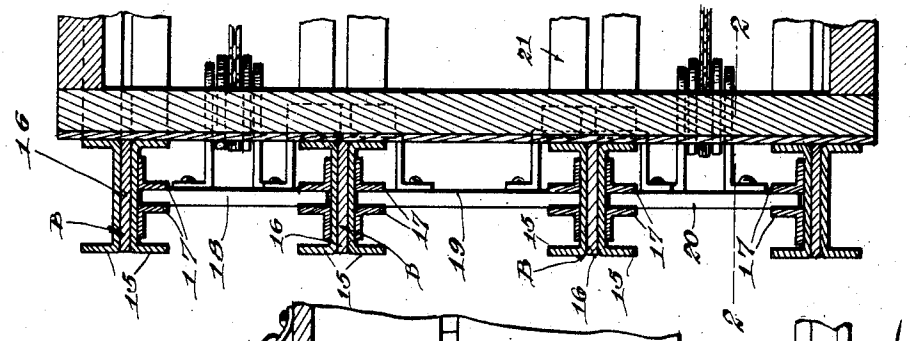


Fig. 3

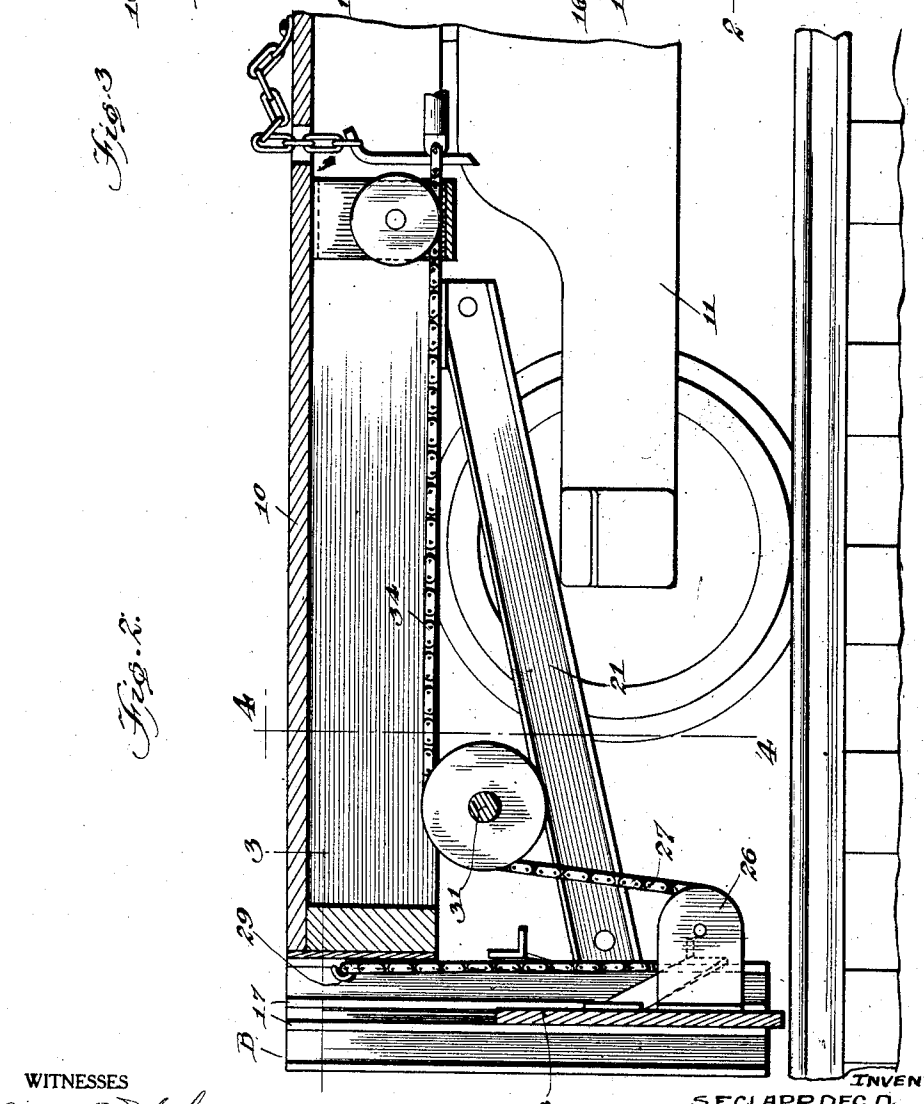


Fig. 2.

WITNESSES

Lawrence D. Manfuso

INVENTOR

S. F. CLAPP, DEC'D.,
By CLARA CLAPP
ADMINSTRATRIX.

Munn & Co.

ATTORNEYS

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Filed Aug. 30, 1927 3 Sheets-Sheet 3

Fig. 5.

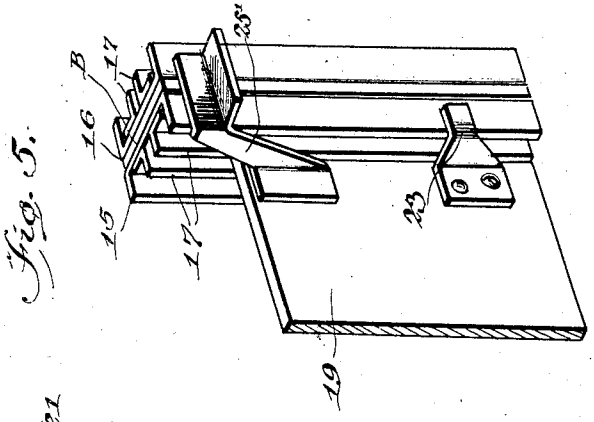
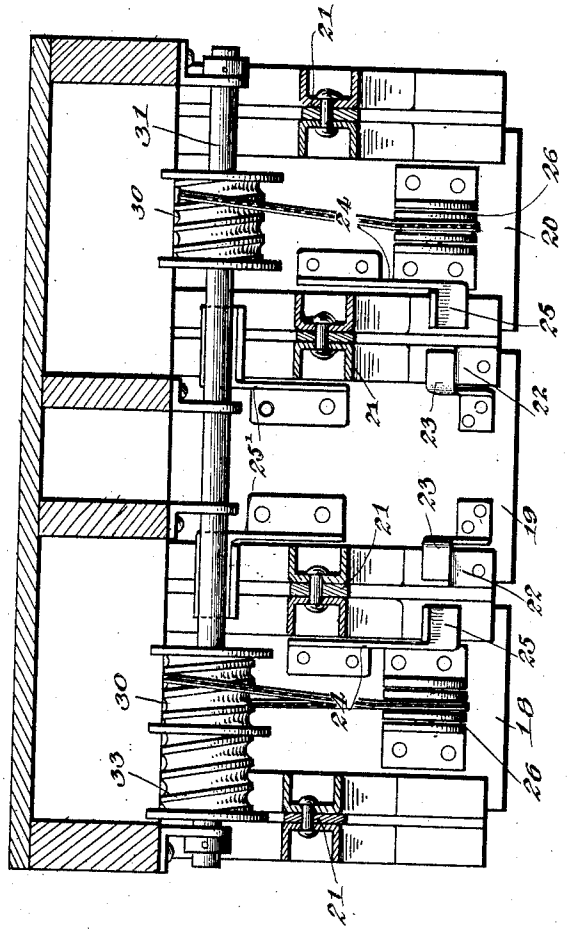


Fig. 4.



WITNESSES

INVENTOR
S.F.CLAPP, DEC'D.,
BY CLARA CLAPP,
ADMINSTRATRIX.
BY
ATTORNEYS

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UNITED STATES PATENT OFFICE

SOLON F. CLAPP, DECEASED, LATE OF TEMPLE, TEXAS, BY CLARA CLAPP, ADMINISTRATRIX, OF TEMPLE, TEXAS

BALLAST-DRESSING MACHINE FOR RAILROADS

Application filed August 30, 1927. Serial No. 216,480.

This invention relates to a ballast dressing machine for railroads, and more particularly to a preliminary ballast leveling and spreading apparatus.

When it is desired to ballast a railroad bed, the ballast is first dropped upon the railroad bed in piles which must be smoothed out before a train can pass thereover, and this preferably should be done before the ballast dresser is used.

With the above in view it is the purpose of this invention to provide a preliminary ballast spreading and leveling apparatus whereby ballast dropped upon a railroad in piles can be smoothed out or spread in an even and expeditious manner.

It is a further object of the invention to construct the preliminary ballast leveling or spreading apparatus so that it may be incorporated with the ballast dressing machine or apparatus shown in Patent No. 1,470,058.

Other objects and objects relating to details of construction, combination, and arrangement of parts will hereinafter appear in the detail description to follow.

The invention is illustrated by way of example in the accompanying drawings, in which:—

Figure 1 is a view in side elevation showing the form of leveling apparatus incorporated with the ballast dressing apparatus disclosed in Patent No. 1,470,058.

Figure 2 is a partial vertical longitudinal sectional view taken substantially on line 2—2 of Figure 3, and showing only the structure of the leveling apparatus.

Figure 3 is a horizontal sectional view taken substantially on the line 3—3 of Figure 2;

Figure 4 is a vertical sectional view taken substantially on the line 4—4 of Figure 2;

Figure 5 is a detail perspective view showing a leveling plate and a guide therefor, and

Figure 6 is a detail sectional view of a piston and cylinder structure employed for lifting the leveling plates.

Referring to the drawings more particularly, 10 indicates generally the body of a flat railroad car which is supported by trucks 11. The car 10 may carry an operator's cabin 12 from which place the leveler of the present invention as well as the ballast dressing apparatus shown in the patent heretofore referred to may be operated. As shown in Figure 1, the ballast dressing apparatus of Patent No. 1,470,058 includes a unit A which can be drawn upon the car for transportation as shown in full lines, and which can be lowered to its operating position as shown in dotted lines. The unit A serves the function of dressing the ballast between the rails of a railroad as well as the slopes adjacent the outer sides of the track. As before stated the preliminary leveling device of the present invention can be built with this ballast dressing apparatus without greatly changing the structure of said ballast dressing apparatus.

In carrying out the present invention the vertical braces B employed in the ballast dressing apparatus are further utilized. The vertical brace members B are four in number, each comprising two channel beams 15 secured upon a plate 17. Angle irons 17 are secured to these vertical braces or supports to serve as guides for the leveling plates 18, 19 and 20. These plates are free for vertical movement. The verticals B are braced by members 21 each of which may comprise two channel members secured upon one another as shown to advantage in Figure 4. The downward movement of the leveling plate 19 is limited to lugs 22 which engage the Z-shaped members 23 secured to said plate as shown in Figure 4. The plates 18 and 20 each have depending therefrom a member 24 which is provided with a laterally extending lug 25 adapted to engage beneath the outer end or terminal of a Z-shaped member 25′ carried by the plate 19 and raise said plate 19 when the plates 18 and 20 are drawn upwardly.

Each plate 18 and 20 carries a flanged pulley 26 about which there is trained a chain or cable 27, said chain extending upwardly and having its one end connected to a hook 29 carried by a frame member of the car. Each chain 27 has its remaining end secured to a spiral groove drum 30 carried by a shaft 31 which is rotatably supported beneath the car frame as shown to advantage in Figure 4.

The shaft 31 also carries a third spiral groove drum 33 which has secured thereto one end of a chain 34, the other end of said chain being secured to connecting rod 35 to piston 36. The piston 36 is movable within a cylinder 37. The cylinder 37 has a pipe 38 communicating with the end thereof adjacent the drum 33 and this pipe is extended to the cabin 12 at which point suitable means may be provided to admit compressed air or steam for moving piston 36 to end of cylinder 37 opposite to that shown in Figure 6. There may also be provided suitable means (not shown) for exhausting steam or compressed air from the cylinder 37.

When it is desired to employ the present apparatus for leveling ballast upon a track, the plates 18, 19 and 20 should be permitted to drop to their lowered position as shown in Figure 4. The plates are of sufficient weight that the same will remain in their lowered position with the forward movement of the car and will serve to level the piles of ballast which may be upon the railroad track. It is, of course, assumed that during the last-named operation the unit A is in its dotted line position shown in Figure 1.

When it is desired to use the ballast dresser unit A, compressed air or steam may be admitted through pipe 38 to cylinder 37 which will cause piston 36 to move to the other end of cylinder. This movement of the piston 36 will cause rotation of shaft 31 which will rotate the drums 30 in a direction to raise the plates 18, and 20 and as previously described the raising of the last named plates will also raise plate 19. The plates 18 and 20 will be sufficiently elevated to allow the guide wheels 40 carried by the ballast dresser unit A to move therebeneath, as shown in Figure 1. This arrangement permits the ballast dresser unit to operate in its normal manner. As is apparent when steam or compressed air is exhausted from cylinder 37 the plates 18, 19 and 20 will pull the piston 36 to position shown in Figure 6, and the plates will be in position for leveling ballast upon the railroad track. It should be here noted that the length of chassis or cables 27 should be such that they will limit the downward movement of plates 18 and 20 the level shown in Figure 4.

The arrangement of the lugs 25 and 25′ carried respectively by the outer plates 18 and 20 and the intermediate plate 19 is designed so that the outer plates will be raised a predetermined distance so that they operate to lift the center or intermediate plate which is raised by the raising of the outer plate to a point just above the bottom or lower end of the vertical braces B in which plate 19 slides.

Having shown and described the preferred structure, combination, and arrangement of parts of the invention, it is to be understood that the same can be changed by those skilled in the art without departing from the spirit of the invention as indicated by the appended claims.

What is claimed is:

1. In combination, a railroad car, vertical guide members arranged in a plane transversely of the car, a central ballast leveling plate and two outside ballast leveling plates vertically and independently movable in said guides, and means to limit the downward movement of the plates.

2. In combination, a railroad car, vertical guide members arranged in a plane transversely of the car, a central ballast leveling plate and two outside ballast leveling plates vertically movable independently in said guides, means to limit the downward movement of the plates, means to raise the two outside plates, and means whereby the raising of the outside plates will after they reach a predetermined height raise the central plate.

3. In combination, a railroad car, vertical guide members arranged in a plane transversely of the car, a central ballast leveling plate and two outside ballast leveling plates vertically and independently movable in said guide, means to limit the downward movement of the plates, a shaft rotatable to control the movement of said plates, means whereby with rotation of the shaft in one direction the two outside plates will be raised, and means whereby with the raising of the outside plates the central plate will also be raised a predetermined distance.

4. In combination, a railroad car, channel members depending from the car to provide outer guideways and central guide-ways, and ballast leveling plates independently movable in said guide-ways.

CLARA CLAPP,
Administratrix of the Estate of Solon F. Clapp, Deceased.