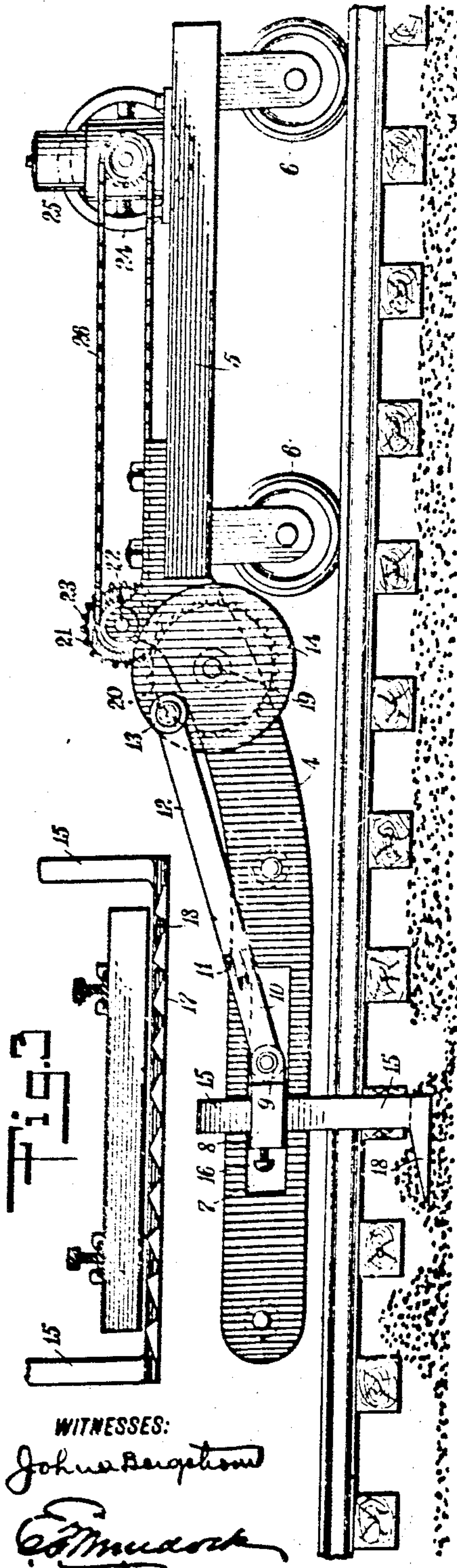


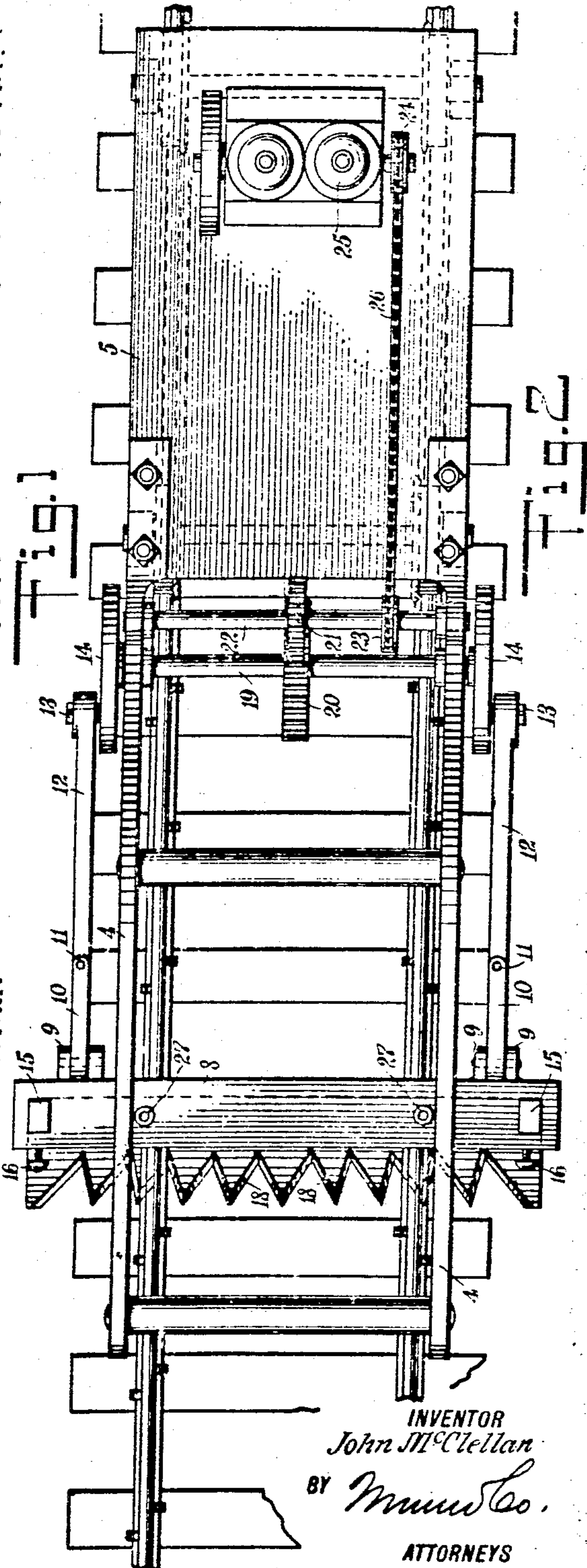
J. McCLELLAN.  
RAILROAD TAMPING MACHINE.  
APPLICATION FILED MAY 12, 1910.

967,033.

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# UNITED STATES PATENT OFFICE

JOHN McCLELLAN, OF MCGILL, NEVADA.

RAILROAD TAMPING-MACHINE.

967,033.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed May 12, 1910. Serial No. 560,958.

*To all whom it may concern:*

Be it known that I, JOHN McCLELLAN, a citizen of the United States, and a resident of McGill, in the county of White Pine and State of Nevada, have invented a new and Improved Railroad Tamping-Machine, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide a machine for leveling and tamping railroad beds and ballast; to provide a machine of the character described whereby the operation of spreading and tamping may be rapidly and continuously performed; to provide a machine of the character described operating to tamp backward to leave completed work in the rear of said machine, thereby providing clear operating headway; to provide a tamping bar for a machine of the character described, arranged to be detached and left in operative position while the machine for operating the same is removed to clear the track; and to provide a portable machine for mounting a tamping bar in horizontally guided relation.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a side elevation of a car truck provided with a machine of the character described, constructed and arranged in accordance with the present invention, and with driving mechanism therefor; Fig. 2 is a plan view of the same; and Fig. 3 is a detail view in fragmentary form and in front elevation, of the tamper bar.

The tamping machine illustrated in the accompanying drawings consists primarily in two parallel forwardly extended weighted arms 4, 4. The arms 4, 4 are constructed of heavy material, the purpose being to provide a durable, heavy and non-vibratory structure. The arms are secured to the body 5 of a flat car or truck of approved pattern, and mounted on flanged carrying wheels 6, 6, as shown particularly in Fig. 1 of the drawings. The forward ends of the arms are provided with slots 7, 7 arranged in extension parallel with the tracks of the roadbed. Within the slots 7, 7 is slidably disposed a carrying bar 8. The carrying bar 8 is provided with hinge lugs 9, 9 to which are pivotally secured short bars 10, 10. The bars 10,

10 are pivotally connected by vertically extended pins 11, 11 to pitmen 12, 12. The pitmen 12, 12 are secured to crank pins 13, 13 mounted on driving disks 14, 14.

By means of the pivotal connection between the bars 10 and the pitmen 12, the transmission mechanism represented by the said pitmen and bars is given a pliancy which permits of a lateral movement of the bar 8 and the tamping bar connected therewith.

The tamping bar is provided at each end with an upright standard 15, 15. The standards 15, 15 are extended through suitable perforations in the ends of the bar 8, and are there secured by set screws 16, 16. The bar 17 which constitutes the tamping head of the tamping bar is drawn to a forwardly disposed cutting edge and provided with a series of irregularly shaped pointed teeth 18, 18. The upper surface of the bar 17 is preferably downwardly inclined toward the forward edge of the teeth 18, to produce a downward pull on the bar 8 as the teeth are forced forward into the earth of the roadbed or the ballast therefor. The rear edge of the bar 17 is squared, as shown in Fig. 1 of the drawings.

The driving disks 14, 14 are fixedly mounted on a shaft 19 having bearings in the arms 4, 4. The shaft 19 is further provided with a heavy gear wheel 20, with which is meshed a second gear wheel 21 fixedly mounted on a countershaft 22, likewise mounted in bearings formed in the said arms 4, 4. The countershaft 22 is further provided with a sprocket wheel 23 laterally adjusted to aline with a sprocket wheel 24 on the driving shaft of a motor 25. The motor 25, as illustrated in the drawings, is mounted on the body 5 of the flat car or truck, and may be of any suitable form as to motive power, that is to say, it may be a gasoline, oil or steam engine. The sprocket wheels 23 and 24 are operatively connected by an endless chain 26.

When in operation, the machine is usually attended by a caboose and locomotive therefor, and is moved by the locomotive over the roadbed at a rate of speed commensurate with the work being performed. In some instances, as when a steam engine is employed mounted upon the body 5 of the truck, the steam is applied by any suitable form of duct from the boiler of the locomotive.



The ballasting of the road is performed in the usual manner, either by dump cars or hand spreaders. The ballast as delivered is deposited between the ties of the road, which ties rest upon the earth or are suspended between hummocks in the roadbed.

The machine having arrived at the scene of operation, the bar 17 is operatively connected to the bar 8. This is accomplished by passing under the rails and ties of the road the standard 15 at one end of the bar 17 in such manner that the bar 17 is extended below the ties and rails of the railway. The standards 15, 15 are then raised and threaded through the perforations in the bar 8 provided to receive the said standards. In the position desired, and wherein the upper side of the bar 17 clears the under surface of the ties of the railway, the set screws 16, 16 are upset to hold in fixed relation the standards 15, 15, and the bar 17 attached thereto. The machine is now in position to be operated.

The operation of the driving disks 14 through the pitmen 12 is to reciprocate the bar 8 in the slots 7, 7. The reciprocation of the bar 8 when the bar 17 is attached thereto results in reciprocating the said bar 17. The path of reciprocation of the bar 17 is controlled by the slots 7, 7. The reciprocations are produced by the rotation of the shaft 19 through the transmission mechanism embodying the gears 20 and 21, the wheels 23 and 24 and the chain 26. The speed of reciprocation may be varied, as is obvious, by changing the wheels 20 and 21 to vary the ratio in diameter between the two wheels.

With each forward thrust of the bar 17 the teeth 18 are forced through the intervening earth or rock ballast or bed, lifting and loosening the same, and depositing the same to the rear of the said bar 17 and in the path of the cleared shoulder thereof. With the return of the bar 17, the said loosened ballast or earth is drawn rapidly and forcibly back and packed under the rearwardly disposed tie. The reciprocations are at sufficiently short intervals to produce a comparatively constant action, thereby performing the best work by tamping or packing under the ties the ballast or earth in small quantities at each operation, much in the manner of hand tamping.

The leveling of the rails and ties connected therewith is the same as at present performed; and it will be noted that the weight of the car body 5, and mechanism carried thereby, also the weight of the locomotive advancing the said machine, rests upon the tamped portion of the bed, the leveled and untamped portion of the bed being constantly forward of the body 5 and beneath the arms 4, 4 of the tamping machine.

If, in the course of operation it becomes necessary to clear the track of the machine for the purpose of giving the right of way to a passing train, the tamping bar 17 may be permitted to remain by lowering the standards 15, 15 thereof from engagement with the bar 8. In this position the tamping machine would be drawn to a siding, possibly located at some distance, to permit the passing of the train having the right of way, and thereafter returned to the bar 17, which would be again raised in operative position and secured to the bar 8 by means of the set screws 16. Thereafter the tamping would proceed as if uninterrupted.

It is obvious that in the operation of this machine the humping or grounding of the roadbed is avoided.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A railroad tamping machine, comprising a wedge-shaped bar disposed beneath the railroad ties; supporting members for said bar; and a power driven reciprocating mechanism operatively connected with said bar.

2. A railroad tamping machine, comprising a wedge-shaped saw-toothed bar disposed beneath the railroad ties; supporting members for said bar; and a power driven reciprocating mechanism operatively connected with said bar.

3. A railroad tamping machine, comprising a bar having a squared vertical rear edge and a series of forwardly disposed wedge-shaped teeth; supporting members for said bar; and a power driven reciprocating mechanism operatively connected with said bar.

4. A railroad tamping machine, comprising a bar having a vertical squared rear edge and a series of forwardly disposed wedge-shaped teeth, said bar extending below and beyond the ends of the railroad ties and there provided with upwardly extended standards; a reciprocating mechanism embodying a carrying bar guidably mounted in a frame to operate parallel with the railroad tracks; and a driving mechanism to reciprocate said bar.

5. A railroad tamping machine, comprising a bar having a vertical squared rear edge and a series of forwardly disposed wedge-shaped teeth, said bar extending below and beyond the ends of the railroad ties and there provided with upwardly extended standards; a reciprocating mechanism embodying a carrying bar guidably mounted in a frame to operate parallel with the railroad tracks; and a driving mechanism to reciprocate said bar, embodying a plurality of pitmen and universal joints connecting said pitmen and said carrying bar.

6. A railroad tamping machine, comprising a platform, wheel-mounted on railroad



- tracks and having a forwardly extended operating frame, said frame having oppositely disposed guide slots to control the operation of a tamping bar; a tamping bar  
5 suspended from and mounted in said guide slots and having a section extended under the ties and rails of the railroad; and a reciprocating mechanism mounted on said platform for reciprocating said tamping bar.  
10 7. A railroad tamping machine, comprising a platform, wheel-mounted on railroad tracks and having a forwardly extended operating frame, said frame having oppositely disposed guide slots to control the operation  
15 of a tamping bar; a tamping bar suspended from and mounted in said slots and having a section extended under the ties and rails of the railroad; a reciprocating mechanism

mounted on said platform for reciprocating said tamping bar; and means for varying 20 vertically the adjustment of said tamping bar in said slots.

8. A railroad tamping machine, comprising a tamping bar having a forwardly disposed cutting edge and a rearwardly dis- 25 posed tamping wall; and a reciprocating mechanism operatively connected with said tamping bar.

In testimony whereof I have signed this specification in the presence of two subscrib- 30 ing witnesses.

JOHN McCLELLAN.

Witnesses:

W. A. LEONARD,

Mrs. J. S. HARVILLE.