

May 14, 1929.

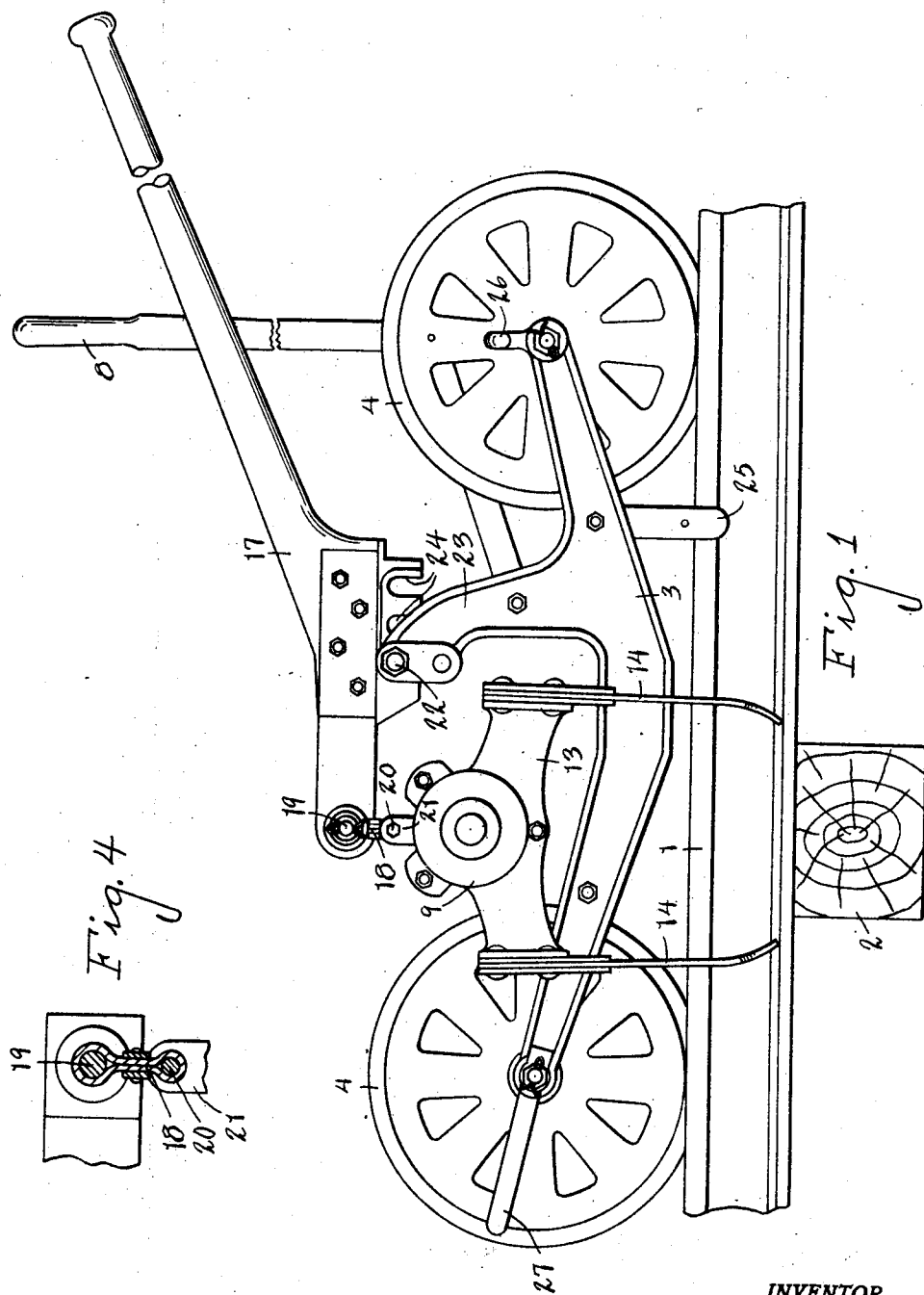
C. JACKSON

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BALLAST TAMPING MACHINE

Filed Jan. 25, 1928

2 Sheets-Sheet 1



INVENTOR
Corwill Jackson
BY *Chappell & Earl*
ATTORNEYS

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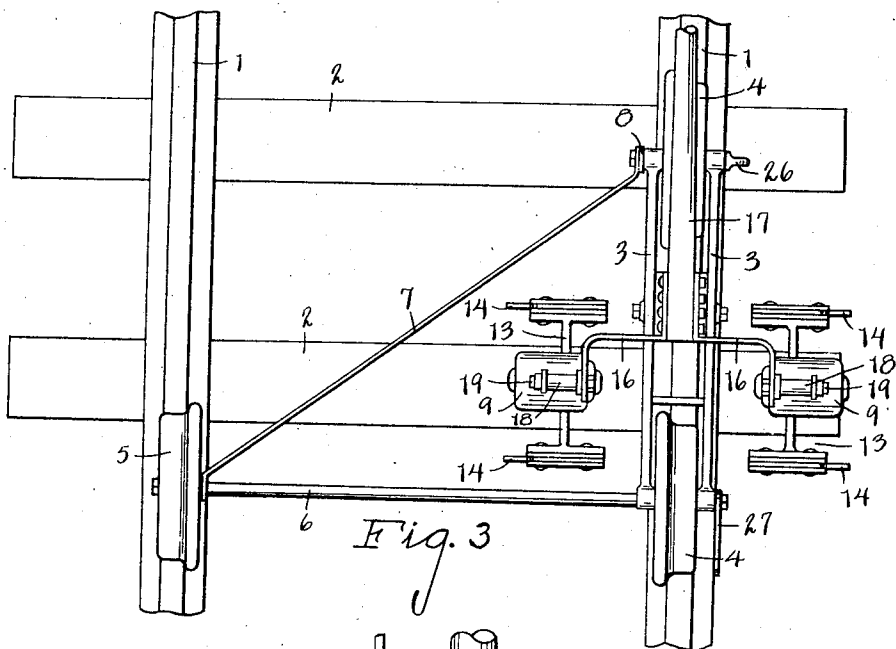


Fig. 3

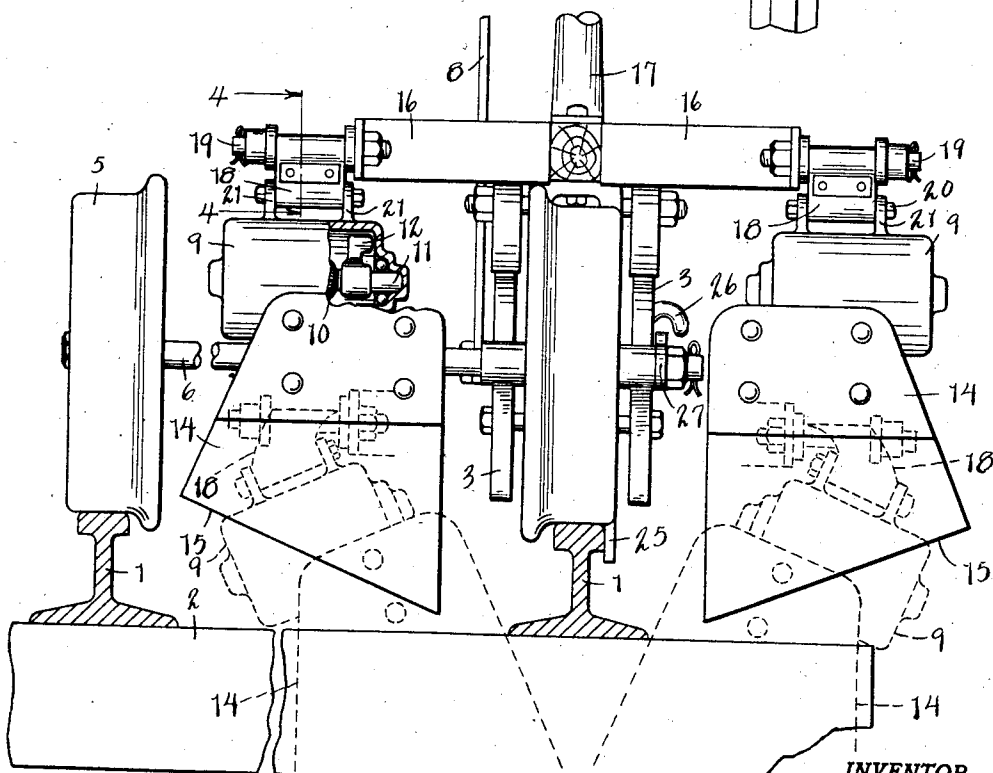


Fig. 2

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UNITED STATES PATENT OFFICE.

CORWILL JACKSON, OF CHICAGO, ILLINOIS.

BALLAST-TAMPING MACHINE.

Application filed January 25, 1928. Serial No. 249,451.

The main objects of this invention are to provide an improved tie or ballast tamping machine for railway beds which is highly efficient in that it rapidly and effectively tamps the ballast around and under railway ties and is very easily manipulated.

Objects relating to details and economies of my invention will appear from the detailed description to follow. The invention is defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is illustrated in the accompanying drawing, forming a part of this application, in which:

Fig. 1 is a side elevation of a tamping machine embodying the features of my invention, the carriage manipulating handle and the tool manipulating lever being partially broken away.

Fig. 2 is a fragmentary front elevation. Fig. 3 is a fragmentary plan view.

Fig. 4 is a detail section on a line corresponding to line 4—4 of Fig. 2.

In the accompanying drawings, 1 represents the rails and 2 the ties of a railway track.

In the embodiment illustrated, my machine comprises a carriage or truck consisting of a frame designated generally by the numeral 3 and carrying wheels 4 and 5, the wheel 4 traveling on one rail and the wheel 5 on the second rail.

The frame 3 is centered relative to the wheels 4, the axle 6 of the forward wheel 4 being common to the wheel 5.

A diagonal brace 7 extends from the axle 6 adjacent the wheel 5 to the rear of the frame 3.

The carriage is provided with an upwardly projecting handle bar 8 by means of which the carriage may be pushed along on the track and manipulated thereon with an oscillating movement for purposes which will hereinafter appear.

The operating parts of the machine comprise a pair of vibrating elements which, in the embodiment illustrated, consist of the motor housings 9 having electric motors 10 enclosed therein, the shafts 11 of these motors being provided with an unbalancing weight 12 so that rotation of the shafts sets up a rapid vibratory movement of the housing.

The housings are provided with crossheads 13 on the ends of which are mounted tamping blades 14 in opposed relation. The lower

ends of these tamping blades are preferably curved inwardly as shown in Fig. 1, the blades being spaced so as to embrace a railway tie, as shown in Fig. 1.

The lower edges 15 of the blades are laterally inclined, the same being inclined outwardly or away from the rail so that when the blades are lowered to the work or material to be tamped, the inner corners of the blades first engage the material which tends to carry the blades inwardly, as shown by dotted lines in Fig. 2, thereby tamping under the rails and insuring that the ballast be tamped at the most vital point, that is adjacent to the rail.

The motor housings 9 are connected to the cross arm 16 on the lever 17 by means of flexible links 18, belting being found satisfactory for this purpose, the link being engaged upon the pins 19 carried by a cross arm and pins 20 carried by the ears 21 on the motor housing.

This arrangement normally supports the blades in alignment on opposite sides of the tie, that is, it permits the carriage being manipulated to properly present them on opposite sides of the tie; at the same time when the blades are lowered into the work, the flexible connections yield to permit lateral swinging and traveling movement of the blades.

The lever 17 is manually manipulated and is supported on a fulcrum pin 22 carried by the upwardly projecting bracket 23 on the frame 3. The lever is provided with a plurality of downwardly opening notches 24 which may be selectively engaged with the fulcrum pin.

By this means the operator may easily raise and lower the blades to and from operative position, the flexible connection also serving to minimize vibration on the lever.

In use, the operator positions the blades relative to a tie, as shown in Fig. 1, and lowers the blades in engagement with the ballast, the vibrating elements imparting a series of tamping blows to the material. The operator, during this tamping period, may manipulate the carriage with an oscillating movement, thus more effectively bringing the blades into engagement with the material to be tamped and effectively working or tamping it under the tie.

My improved tamping machine is highly effective and efficient. In order to assist in

retaining the machine upon a track, I provide a downwardly projecting rail engaging arm 25 which engages the rail below the frame 3 and on the opposite side to the flange of the wheels 4. This is found effective in preventing the wheels being worked from the rails by the vibration. For convenience in manipulating the machine, that is, lifting it to and from the track, I provide hand holes 26 and 27.

I have illustrated and described my improved tamping machine in an embodiment which has been found to be very practical. I have not attempted to illustrate or describe various modifications and adaptations which I contemplate as it is believed that this disclosure will enable those skilled in the art to embody or adapt my improvements as may be desired.

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

1. In a machine of the class described, the combination of a carriage adapted to travel upon a railway track and provided with means whereby it may be manually manipulated on the track with an oscillating movement, a manually operated lever provided with a cross arm and with a plurality of spaced downwardly opening pivot engaging slots, a lever supporting bracket on said carriage provided with a pivot with which said pivot slots may be selectively engaged whereby the lever is supported in the vertical plane of one of the rails, motors having shafts provided with unbalancing weights, housings for said motors and their shafts, links of flexible material suspending said motor housings from the ends of said lever cross arm, and tamper blades mounted on said motor housings in spaced relation.

2. In a machine of the class described, the combination of a carriage adapted to travel upon a railway track and provided with a handle whereby it may be manually manipulated on the track with an oscillating movement, a manually operated lever mounted on said carriage and provided with a cross arm, motors having shafts provided with unbalancing weights, housings for said motors and their shafts mounted on said lever cross arm, and tamper blades mounted on said motor housings in spaced relation.

3. In a machine of the class described, the combination of a carriage adapted to travel upon a railway track and provided with a handle whereby it may be manually manipulated on the track with an oscillating movement, a manually operated lever provided with a cross arm and with a plurality of spaced downwardly opening pivot engaging slots, a lever supporting bracket on said carriage provided with a pivot with which said pivot slots may be selectively engaged whereby the lever is supported in the vertical plane of one of the

rails, vibrating units suspended from said lever cross arm, and tamper blades mounted on said vibrating units in spaced relation.

4. In a machine of the class described, the combination of a carriage adapted to travel upon a railway track, a manually operated lever mounted on said carriage, vibrating units, links flexible material suspending said vibrating units from said lever, and tamper blades mounted on said vibrating units in spaced relation, said blades having outwardly inclined bottom edges.

5. In a machine of the class described, the combination of a carriage adapted to travel upon a railway track and provided with a handle whereby it may be manually manipulated on the track with an oscillating movement, a manually operated lever on said carriage, vibrating units mounted on said lever in spaced relation, and tamper blades mounted on said vibrating units in spaced relation.

6. In a structure of the class described, the combination of a carriage adapted to travel on a railway track, a pair of motors provided with housings and with unbalancing elements, vertically movable manually operated supporting means for said motors, said motors having a flexible link connection to said supporting means, and blades mounted on said motor housings in spaced relation to embrace a railway tie, said motors being supported on opposite sides of a rail of the track on which the carriage travels, said blades having outwardly inclined bottom edges whereby engagement with the track ballast tends to swing them towards the rail.

7. In a structure of the class described, the combination of a carriage adapted to travel on a railway track, a pair of motors provided with housings and with unbalancing elements, vertically movable manually operated supporting means for said motors, and blades mounted on said motor housings in spaced relation to embrace a railway tie, said motors being supported on opposite sides of a rail of the track on which the carriage travels.

8. In a structure of the class described, the combination of a carriage adapted to travel on a railway track and to be oscillated thereon, vibrating units, vertically movable manually operated supporting means for said vibrating units, said vibrating units having flexible connections to said supporting means, and blades mounted on said vibrating units in spaced relation to embrace a railway tie, said vibrating units being supported on opposite sides of a rail of the track on which the carriage travels, said blades having outwardly inclined bottom edges whereby engagement with the track ballast tends to swing them towards the rail.

9. In a structure of the class described, the combination of a carriage adapted to travel on a railway track and to be oscillated there-

on, vibrating units, vertically movable manually operated supporting means for said vibrating units, and blades mounted on said vibrating units in spaced relation to embrace a railway tie, said vibrating units being supported on opposite sides of a rail of the track on which the carriage travels.

10. In a structure of the class described, the combination of a carriage, a lever pivotally mounted on said carriage, a motor, a pair of vibrating elements mounted on said lever in spaced relation, and a pair of blades carried by each vibrating element and spaced to embrace a railway tie, the lower edges of said blades being outwardly inclined, said vibrating elements being flexibly connected to said supporting lever to permit tilting movement thereof.

11. In a structure of the class described, the combination of a carriage, a lever pivotally mounted on said carriage, a motor, a pair of vibrating elements mounted on said lever in spaced relation, and a pair of blades carried by each vibrating element and spaced to embrace a railway tie.

12. In a structure of the class described, the combination of a carriage, a lever pivotally mounted on said carriage, a motor, a pair of vibrating elements connected to said lever in spaced relation, and a pair of tamping blades carried by each vibrating element and spaced to embrace a railway tie.

13. In a structure of the class described, the combination of a carriage, a supporting member thereon, a vibrating element connected to said supporting member by a flexible link of sufficient rigidity to return said vibrating element to its initial position relative to said support, and a pair of spaced blades on said vibrating element having inclined bottom edges which tend to impart a lateral motion thereto on engagement with the material operated upon.

14. In a structure of the class described, the combination of a carriage, a supporting member thereon, a vibrating element connected to said supporting member by a resilient connection, and a pair of spaced blades on said vibrating element.

15. In a machine of the class described, the combination of a carriage adapted to travel upon a railway track and provided with means whereby it may be manually manipulated on the track with an oscillating movement, a manually operated lever provided with a plurality of spaced downwardly opening pivot engaging slots, said carriage being provided with a lever supporting pivot with which said slots may be selectively engaged, a motor having a shaft provided with an unbalancing weight, a housing for said motor suspended from said lever, and a tamper blade mounted on said motor housing.

16. In a machine of the class described, the combination of a carriage adapted to

travel upon a railway track, an adjustable support on said carriage, a motor having a shaft provided with an unbalancing weight, a housing for said motor, a flexible link suspending said motor housing from said support, and a tamper blade mounted on said motor housing, said blade having an inclined bottom edge whereby a lateral movement is imparted thereto upon engagement with the material tamped.

17. In a machine of the class described, the combination of a carriage adapted to travel upon a railway track, an adjustable support on said carriage, a motor having a shaft provided with an unbalancing weight, a housing for said motor, resilient means suspending said motor housing from said support, and a tamper blade mounted on said motor housing.

18. In a structure of the class described, the combination of a carriage, a lever pivotally mounted on said carriage, a vibrating element mounted on said lever, and a pair of tamping blades carried by said vibrating element and spaced to embrace a railway tie, the lower edges of said blades being laterally inclined, said vibrating element being flexibly connected to said supporting lever to permit tilting movement thereof.

19. In a structure of the class described, the combination of a carriage, a lever pivotally mounted on said carriage, a vibrating element mounted on said lever, and a pair of tamping blades carried by said vibrating element and spaced to embrace a railway tie.

20. In a structure of the class described, the combination of a carriage, a supporting member thereon, a vibrating element flexibly connected to said supporting member, and a blade on said vibrating element having an inclined bottom edge which tends to impart a lateral motion thereto on engagement with the material operated upon.

21. In a structure of the class described, the combination of a carriage, a supporting member thereon, a vibrating element resiliently connected to said supporting member, and a blade on said vibrating element having an inclined bottom edge which tends to impart a lateral motion thereto on engagement with the material operated upon.

22. In a structure of the class described, the combination of a support, a vibrating element connected to said support by a flexible link, and a pair of spaced blades mounted on said vibrating element and having inclined bottom edges which tend to impart a lateral motion thereto on engagement with the material operated upon, the lower ends of said blades being inwardly curved.

23. In a structure of the class described, the combination of a support, a vibrating element connected to said support by a flexible link, and a pair of spaced blades mounted on said vibrating element.

24. In a structure of the class described, the combination of a supporting member, a vibrating element resiliently connected to said supporting member, and a pair of opposed spaced blades on said vibrating element having laterally inclined bottom edges which tend to impart a lateral motion thereto on engagement with the material operated upon.

10 25. In a structure of the class described, the combination of a vibrating element, a pair of spaced blades having laterally inclined bottom edges mounted on said vibrating element, a hand lever for manually manipulating said blades, and a flexible connection for
15 said vibrating element to said lever.

26. In a structure of the class described, the combination of a support, a vibrating element connected to said support by a flexible
20 link, and a blade mounted on said vibrating element and having an inclined bottom edge which tends to impart a lateral motion thereto on engagement with the material operated upon.

27. In a structure of the class described, the combination of a supporting member, a vibrating element resiliently connected to said supporting member, and a blade on said vibrating element having a laterally inclined bottom edge which tends to impart a lateral motion thereto on engagement with the material operated upon. 30

28. In a structure of the class described, the combination of a vibrating element, a blade having a laterally inclined bottom edge mounted on said vibrating element, a hand lever for manually manipulating said blade, and a flexible connection for said vibrating element to said lever. 35

29. In a structure of the class described, the combination of a vibrating element, a blade having a laterally inclined bottom edge mounted on said vibrating element, and a hand lever for manually manipulating said blade. 40 45

In witness whereof I have hereunto set my hand.

CORWILL JACKSON.