Aug. 30, 1932. N. R. LOVE 1,874,559

CONCRETE TAMPER

Original Filed July 25, 1930 2 Sheets-Sheet 1

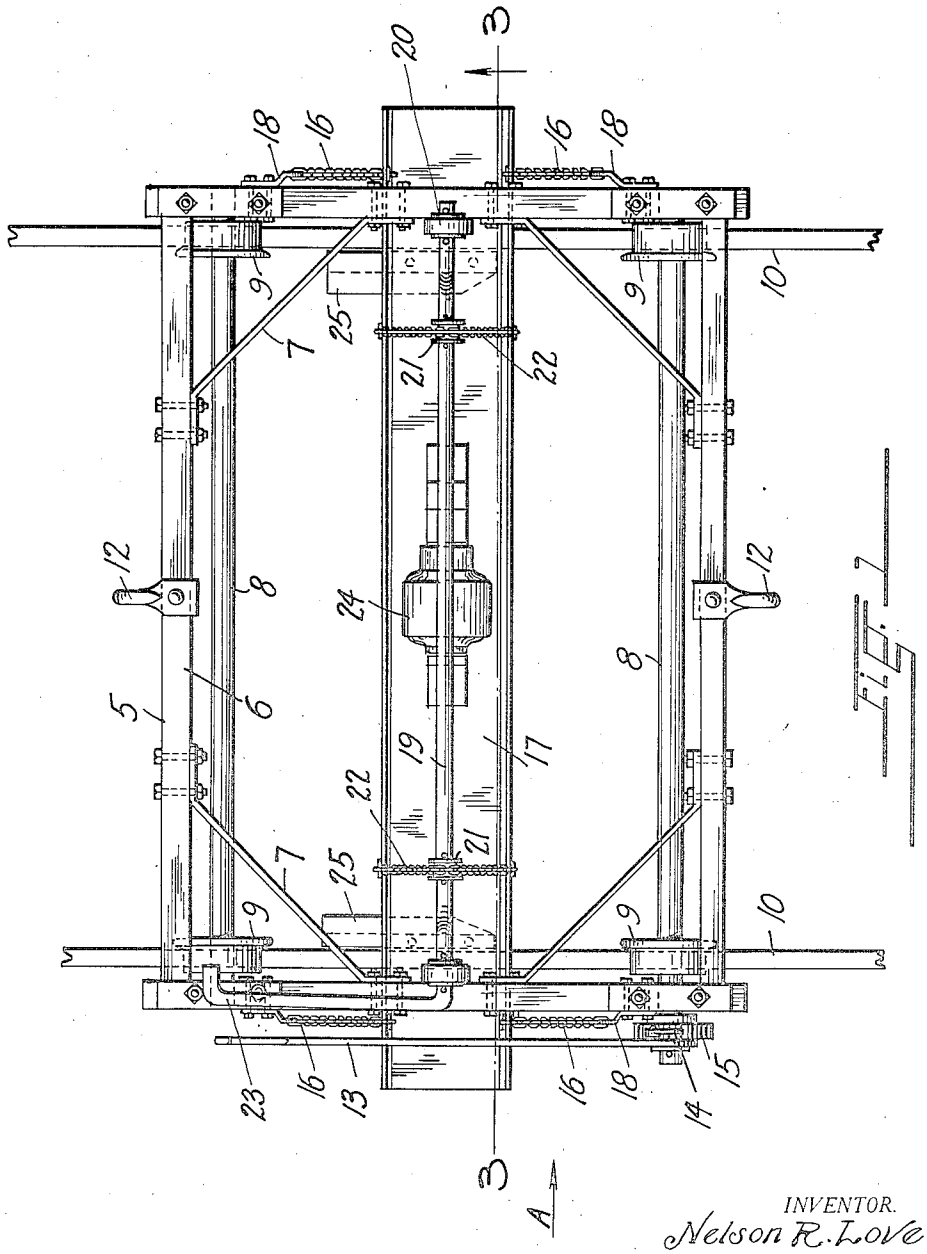


Fig. 1

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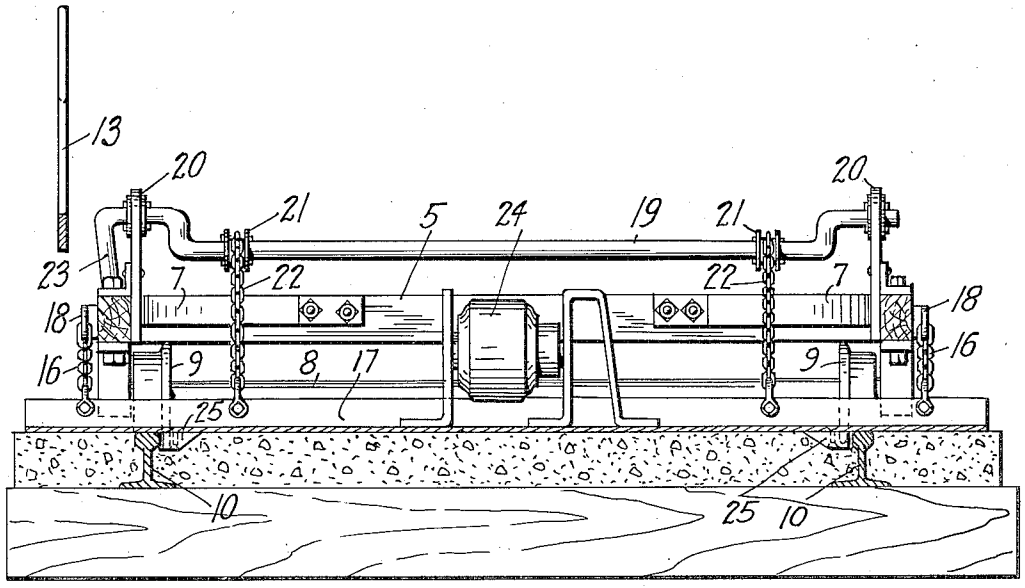


FIG. 1.

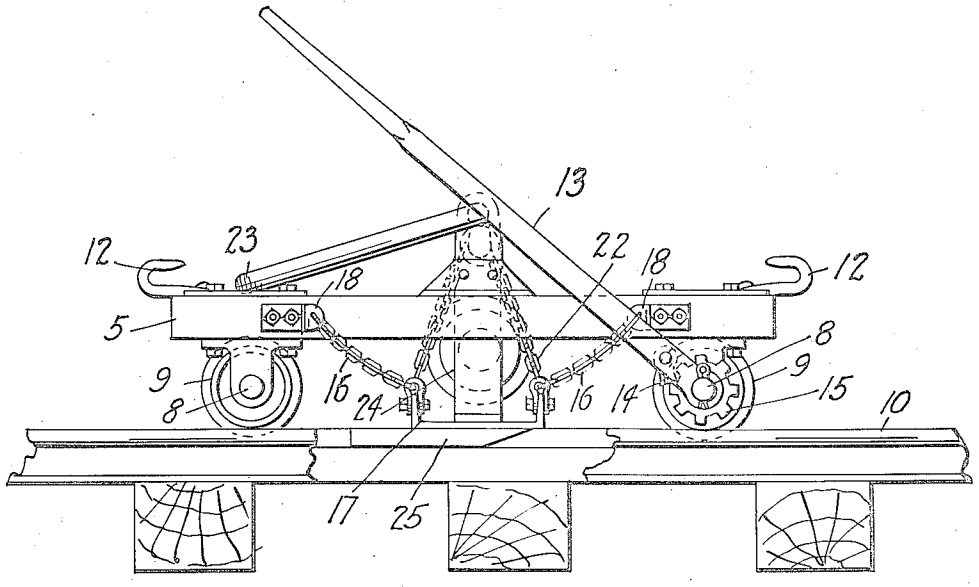


FIG. 2

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Patented Aug. 30, 1932 1,874,559

UNITED STATES PATENT OFFICE

NELSON R. LOVE, OF DENVER, COLORADO, ASSIGNOR TO ELECTRIC TAMPER & EQUIPMENT COMPANY, OF CHICAGO, ILLINOIS

CONCRETE TAMPER

Application filed July 25, 1930, Serial No. 470,653. Renewed February 10, 1932.

The main object of this invention is to provide a machine or apparatus for use in placing concrete, particularly in pavements, in relation to railway tracks.

A further object is to provide a machine or apparatus of this character which is capable of easy and rapid manipulation and one which is simple and durable in structure.

Objects pertaining to details and economies of my invention will definitely appear from the description to follow. The invention is defined in the claims.

A structure which embodies the features of my invention is clearly illustrated in the accompanying drawings, in which:

Fig. 1 is a plan view of my improved concrete placing machine shown in operative relation to the rails of a railway track, the rails being partially broken away.

Fig. 2 is an end elevation looking in the direction of the arrow at the left of Fig. 1, the machine being shown in operative relation on fragments of a track.

Fig. 3 is a vertical section on line 3—3 of Fig. 1.

Referring to the drawings, the reference numeral 5 designates a carriage comprising a rectangular frame 6 reinforced by pressed bars 7 and carried by wheeled axles 8. The carrying wheels 9 are flanged to travel on the rails 10 of a street or steam railway track. The carriage is provided at its ends with hooks 12 for convenience in attaching to a propelling unit.

I also provide means for manually propelling the carriage consisting of a lever 13 which is fulcrumed on one of the axles 8 and is provided with a pawl 14 coacting with a driving ratchet 15 fixed to the axle on which the lever is mounted.

The tamping plate 17 which is preferably of channel cross section is of such length as to extend crosswise of the frame and project at opposite sides of the rails. This plate is adjustably suspended and connected to the frame by means of the oppositely disposed pairs of draft chains 16 which are connected to the frame by means of the couplings 18 and the hanger chains 22 which are looped over the sheaves 21 on the crank shaft 19.

This crank shaft is supported by upwardly projecting standards or brackets 20 on the carriage and is provided with a handle 23 by means of which the crank shaft may be rocked, thereby raising and lowering the plate.

The means for vibrating the tamping plate or element illustrated is an electric motor designated by the numeral 24 mounted bodily on the plate 17 and provided with means such as an unbalancing weight for causing vibration.

In operation the carriage is drawn or propelled along the railway track in relation to which the pavement is to be laid. The concrete is placed between and at the sides of the rails and the tamping element lowered into engagement with the surface of the concrete. The plate is rapidly vibrated by the motor with the result that the concrete confined between the rails and at opposite sides thereof is subjected to high speed vibrations which cause the concrete to flow into position.

Ordinarily, when the operation begins, the plate will be supported entirely by the concrete, but as it continues it floats down to the position shown in Fig. 3, that is, in engagement with the rails, and it should be in this position during the finishing of the operation. The vibrations are also imparted to the rails so that the whole concrete mass is subjected to the vibrations and not only settled into place as desired, but a relatively dry mixture may be employed and placed so that there is no material excess moisture in the concrete.

The tamping element is supported to permit free vibration and may be moved along the track in either direction, although the groove forming members 25 are shown as beveled on one end only. These members are secured on the under side of the tamping plate and serve the double purpose of preventing longitudinal movement of the tamping plate and also forming the groove at the inner sides of the rails.

While I have illustrated and described my improvements in a machine designed by me for paving railway tracks, my improvements may be readily adapted and are desirable for

use in other paving operations and the laying of cement surfaces of substantial area.

I have not attempted to illustrate or describe my improvements in various embodiments which I contemplate as it is believed 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. A tamping machine comprising a supporting frame, a tamping element mounted to permit vibration thereof, a vibratory motor carried by the tamping element, and adjustable means to regulate the elevation of the element.

2. A tamping machine comprising a carriage wheeled to move along a track, a vibratile member mounted on the carriage and adapted to engage the rails of the track, a vibratory motor carried by the vibratile member, and scrapers on the member disposed for forming channels on the inside of the rails.

3. A tamping machine comprising a carsiage wheeled to move along a track, a vibratile member mounted on the carriage and adapted to engage the rails of the track, and projecting at opposite sides of the same, and a vibratory motor carried by the vibratile member.

4. A tamping machine comprising a carriage wheeled to move along a track, a tamping plate mounted on the carriage and extending across and beyond the rails of the track, and a vibratory motor carried by the tamping element.

5. A tamping machine comprising a carriage wheeled to move along a track, a tamping plate mounted on the carriage and extending across and beyond the rails of the track, a vibratory motor carried by the tamping element, and transverse scrapers on the plate adapted to form channels along the rails at the inside of the track.

6. In a tamping apparatus, the combination with the rails of a track, of a plate-like vibrating member supported by the rails, and a vibratory motor carried by the vibrating member.

7. In an apparatus of the class described, the combination of a wheeled frame, a crankshaft mounted on said frame and provided with pulleys on the crank portion thereof, a plate-like vibrating member, flexible hangers engaged over said pulleys and connected at their ends to said vibrating member, oppositely disposed flexible draft members connected to said frames and to said vibrating member, and a vibrating means mounted on said vibrating member.

8. In an apparatus of the class described, the combination of a wheeled frame, a crankshaft mounted on said frame and provided with pulleys on the crank portion thereof, a plate-like vibrating member, flexible hangers engaged over said pulleys and connected at their ends to said vibrating member, and a vibrating means mounted on said vibrating member.

9. In an apparatus of the class described, the combination of a supporting frame, a plate-like member adapted to rest on the surface of the concrete to be treated or upon the rails of a railway track, flexible hangers for said member, and a vibrating means mounted on said member.

10. In an apparatus of the class described, the combination of a wheeled carriage adapted to travel upon the rails of a railway track, a plate-like vibrating member mounted on said carriage in a transverse relation to a track, and a vibrating means mounted on said vibrating member, said vibrating member being provided with grooving elements on its under sides adapted to engage the inner side of the rails of a railway track.

11. In an apparatus of the class described, the combination of a wheeled carriage adapted to travel upon the rails of a railway track, a plate-like vibrating member mounted on said carriage in a transverse relation to a track to be adjusted into engagement with the rails, and a vibrating means mounted on said vibrating member.

12. In an apparatus of the class described, the combination of a wheeled frame, pulleys carried thereby, a plate-like vibrating member, flexible hangers engaged over said pulleys and connected at their ends to said vibrating member, oppositely disposed flexible draft members connected to said frames and to said vibrating member, and a vibrating means mounted on said member.

13. In an apparatus of the class described, the combination of a wheeled frame, pulleys carried thereby, a plate-like vibrating member, flexible hangers engaged over said pulleys and connected at their ends to said vibrating member, and a vibrating means mounted on said member.

14. In an apparatus of the class described, the combination of a supporting frame, a plate-like member adjustably mounted on said frame and adapted to rest on the surface of the concrete to be treated or upon a railway track to be adjusted into engagement with the rails, and a vibrating means mounted on said member.

15. A tamping machine comprising a supporting frame, a plate-like tamping element disposed transversely of the frame and suspended therefrom by flexible hangers, means for vertically adjusting said hangers, and a vibratory motor carried by said tamping element.

16. In an apparatus of treating plastic material, the combination of a vibrating member adapted to rest upon and to be pro-

pelled across the surface of the material to be treated, and means for vibrating said member in planes approximately parallel to the forward direction of travel of said member.

17. In an apparatus for treating plastic material, the combination of a carriage, a vibrating member adjustably mounted on said carriage transversely to the path of travel of the carriage by means permitting vibration of said vibrating member, and a vibrating means carried by said vibrating member and acting to vibrate the same in planes approximately parallel to the forward direction of travel of the carriage.

18. In an apparatus for treating plastic material, the combination of a carriage, a vibrating element mounted on said carriage transversely thereof, and a vibrating motor mounted on said vibrating element with its axis longitudinally thereof.

19. In an apparatus of the class described, the combination of a carriage, a plate-like vibrating member suspended from said carriage by flexible adjustable hangers, means for maintaining said vibrating member in upright position and propelling it across the material to be treated, and a vibrating means mounted on said vibrating member.

20. In an apparatus of the class described, the combination of a carriage, a plate-like vibrating member loosely mounted on said carriage, means for maintaining said vibrating member in upright position and propelling it across the material to be treated, and a vibrating means mounted on said vibrating member.

In testimony whereof I hereunto affix my signature.

NELSON R. LOVE.