C. JACKSON.

TAMPER.

APPLICATION FILED FEB. 23, 1922.

1,431,808. Patented Oct. 10, 1922.

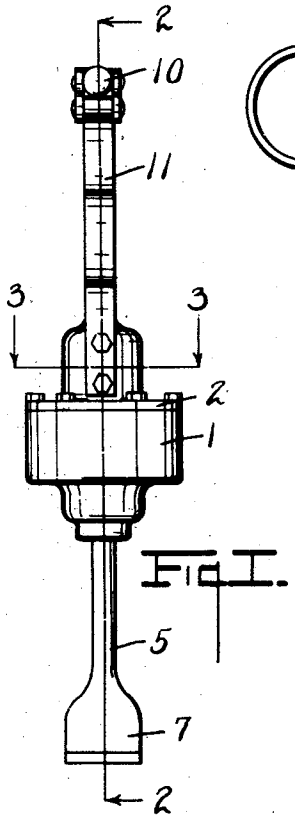


Fig. I.

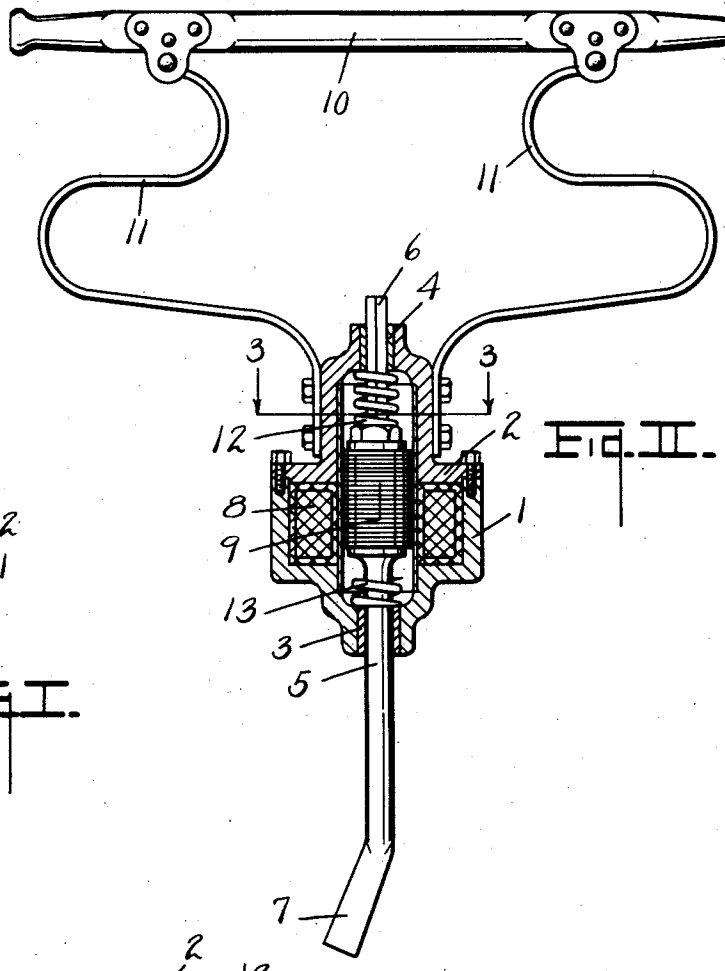


Fig. II.

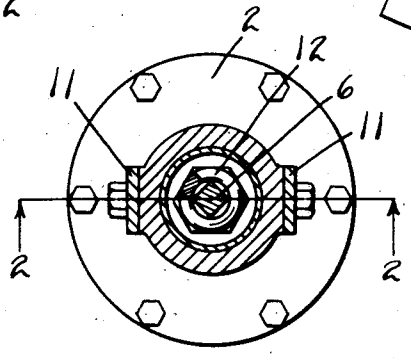


Fig. III.

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UNITED STATES PATENT OFFICE.

CORWILL JACKSON, OF KALAMAZOO, MICHIGAN.

TAMPER.

Application filed February 23, 1922. Serial No. 538,821.

To all whom it may concern:

Be it known that I, CORWILL JACKSON, a citizen of the United States, residing at the city and county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Tampers, of which the following is a specification.

This invention relates to improvements in tampers.

My improvements are especially designed for embodiment in tie tampers and the embodiment illustrated is especially adapted for that purpose. My improvements are of advantage and may be readily adapted for use in other relations.

The main objects of the invention are:

First, to provide an improved tamper for use in tamping ties and the like which is highly efficient and at the same time is light in weight and easily handled.

Second, to provide an improved tamper in which the tamping is effected by the series of vibratory or pressure impulses as distinguished from blows or percussion strokes.

Third, to provide an improved electrically driven tamper in which the movable parts are all of substantial size and not subject to wear in use.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

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

Fig. I is a front elevation of a tie tamper embodying the features of my invention.

Fig. II is a side elevation partially in vertical section on a line corresponding to line 2—2 of Figs. I and III, showing details and arrangement of parts, certain parts being shown conventionally.

Fig. III is a horizontal section on a line corresponding to line 3—3 of Figs. I and II.

In the drawing, similar reference characters refer to similar parts throughout the several views and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, I provide a casing comprising a bottom section 1 and a top or cap section 2. This casing is provided with bearings 3 and 4 at the top and bottom thereof for the tool bar or shaft 5. The upper portion 6 of this tool bar is squared or of other non-circular form, the bearing 4 being conformed to it so that the bar is supported against rotation. The bar in the structure illustrated is provided with a tamping foot 7 disposed at an angle to the bar.

A coil 8 is arranged in the housing between the bearings to coact with the armature or core 9 mounted on the tool bar. The casing itself is preferably formed of magnetic steel, while the coil 8 is housed thereby.

The electrical connections are not illustrated but in practice a low frequency single phase current is employed for alternately energizing the coil.

The handle 10 is connected to the casing by the spring arm 11. A coiled spring 12 is arranged above the armature to receive the upward thrust of the tool bar. A buffer 13 is disposed in the bottom of the casing to receive the impact of the tool bar when the tool bar is not held in engagement with the work.

With the parts thus arranged, the action of the machine is as follows: The tamping tool rests against the ballast to be compacted and when the coil 8 is not energized the weight and thrust of the parts counter to the tool, that is, the weight of the casing and the thrust upon the handle, moves the armature or core from its normal or actuated position. When energized the core or armature tends to instantly assume its normal or actuated position resulting in a downward pulsation of the tamping bar against the ballast, likewise a lifting upward of the casing against the handle and its resilient connection. The casing thus tends to float or vibrate under the magnetic pull and the pressure on the handle, a series of rapid pulsations being transmitted to the ballast. It is intended in use that the tamping bar shall remain against the ballast to be compacted as distinguished from the method of tamping in which a series of blows or percussions are delivered to the ballast. The result in applicant's device might be said to be a series of pulsations of pressure.

My improved tamping machine is comparatively light in weight and may be used with the expenditure of comparatively little effort by the operator and at the same

time is of large capacity and requires but little current to operate the same.

I have illustrated and described my improvements in an embodiment which I consider very practical. I have not illustrated or described certain modifications and adaptations which I contemplate as I believe the disclosure made will enable those skilled in the art to which my invention relates to embody or adapt the same as may be required. I have shown certain parts in conventional form as such parts are well known to those skilled in the arts to which they relate.

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

1. In a tamper, the combination of a casing provided with aligned bearings at its upper and lower ends, a coil disposed in said casing intermediate said bearings, an armature coacting with said coil, a tamper bar on which said armature is mounted to reciprocate in said bearings and non-rotatably supported thereby, a handle comprising spring arms connected to said casing, a yielding buffer for said armature disposed at the lower end of said casing, and a coiled spring arranged on said tool bar above said armature whereby with the coil de-energized and the tamper bar resting against the work the armature is moved from its actuated or normal position by the weight of the parts and pressure through the handle.

2. In a tamper, the combination of a casing provided with aligned bearings at its upper and lower ends, a coil disposed in said casing intermediate said bearings, an armature coacting with said coil, a tamper bar on which said armature is mounted to reciprocate in said bearings and non-rotatably supported thereby, a handle comprising spring arms connected to said casing, and a coiled spring arranged on said tool bar above said armature whereby with the coil de-energized and the tamper bar resting against the work the armature is moved from its actuated or normal position by the weight of the parts and pressure through the handle.

3. In a tamper, the combination of a casing provided with aligned bearings at its upper and lower ends, a coil disposed in said casing intermediate said bearings, an armature coacting with said coil, a tamper bar on which said armature is mounted to reciprocate in said bearings and non-rotatably supported thereby, a handle comprising spring arms connected to said casing, whereby with the coil de-energized and the tamper bar resting against the work the armature is moved from its actuated or normal position by the weight of the parts and pressure through the handle.

4. In a structure of the class described, the combination of a casing, a tool bar reciprocatingly mounted in said casing, a coil in said casing, an armature connected to said tool bar and coacting with said coil, a handle having a resilient connection to said casing, a buffer for said armature disposed at the lower end of said casing, and a coiled spring above said armature whereby when the coil is de-energized the armature is moved from its actuated position by the thrust upon the tool bar.

5. In a structure of the class described, the combination of a casing, a tool bar reciprocatingly mounted in said casing, a coil in said casing, an armature connected to said tool bar and coacting with said coil, a handle having a resilient connection to said casing, and a coiled spring above said armature whereby when the coil is de-energized the armature is moved from its actuated position by the thrust upon the tool bar.

6. In a structure of the class described, the combination of a casing, a tool bar reciprocatingly mounted in said casing, a coil in said casing, an armature connected to said tool bar and coacting with said coil, and a handle having a resilient connection to said casing, whereby when the coil is de-energized the armature is moved from its actuated position by the thrust upon the tool bar.

7. In a structure of the class described, the combination of a casing, a tool bar reciprocatingly mounted in said casing, a coil in said casing, an armature connected to said tool bar to coact with said coil, and a handle for said casing whereby when the coil is de-energized the armature is moved from its actuated position by the thrust upon the tool bar.

In witness whereof, I have hereunto set my hand and seal.

CORWILL JACKSON. [L. S.]