N. C. STUDY.

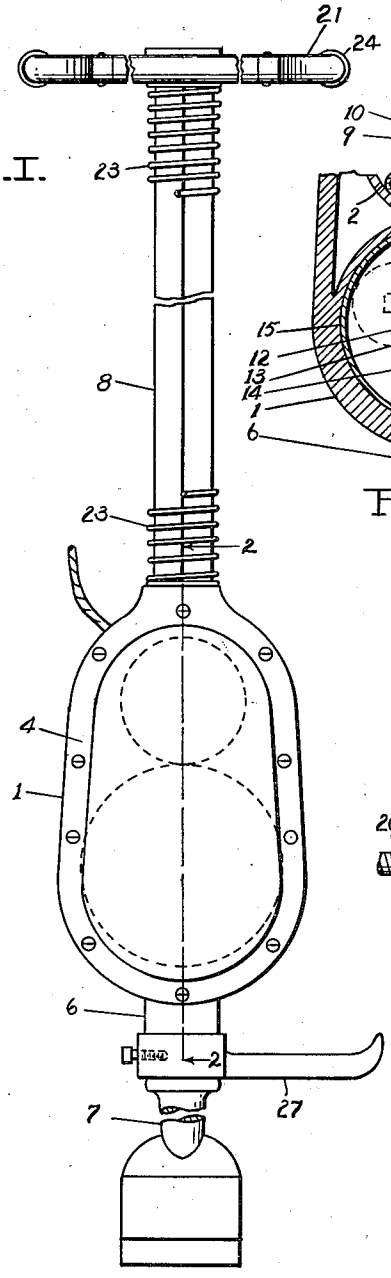
TAMPER AND THE LIKE IMPLEMENT.

APPLICATION FILED DEC. 23, 1919.

1,341,945. **Patented June 1, 1920.**

2 SHEETS—SHEET 1.

Fig. I.



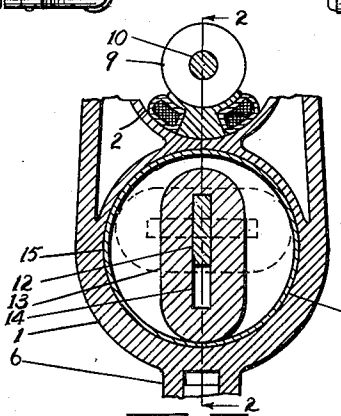
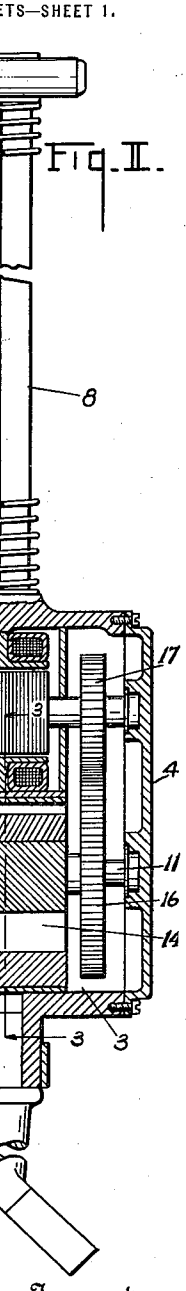


Fig. III.

Fig. II.



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Attorneys

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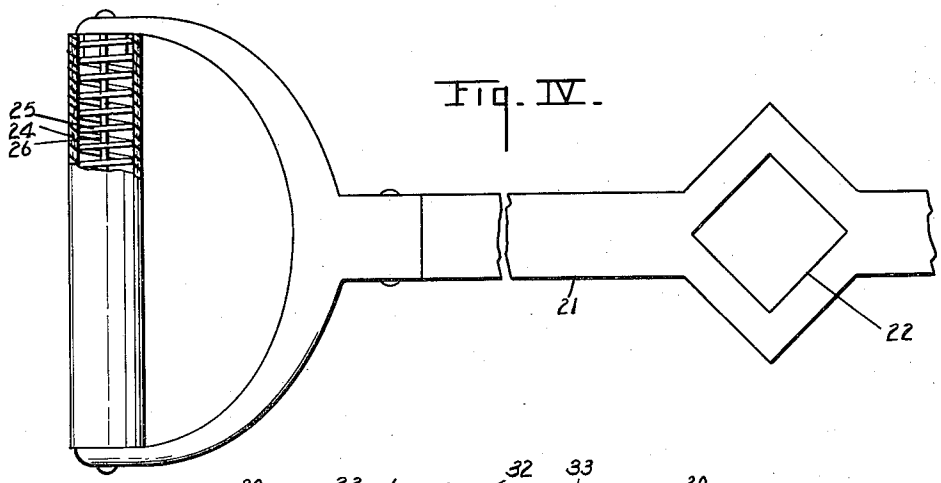
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2 SHEETS—SHEET 2.

Fig. IV.



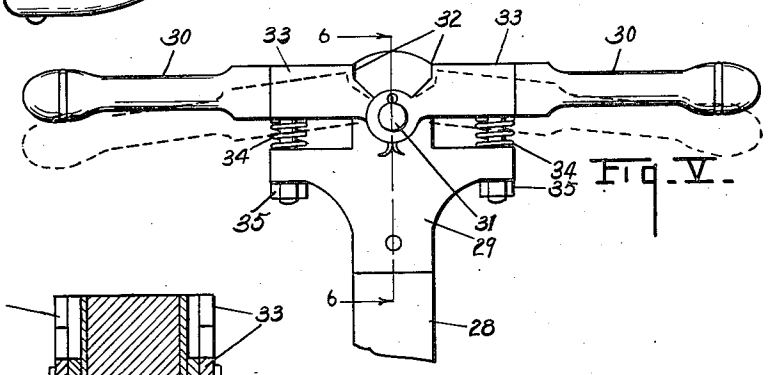


Fig. V.

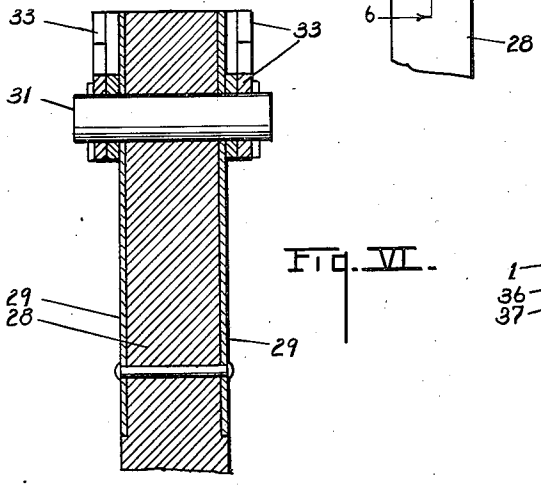


Fig. VI.

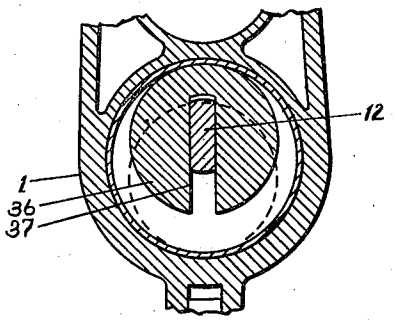


Fig. VII.

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UNITED STATES PATENT OFFICE.

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TAMPER AND THE LIKE IMPLEMENT.

1,341,945. Specification of Letters Patent. Patented June 1, 1920.

Application filed December 23, 1919. Serial No. 346,898.

To all whom it may concern:

Be it known that I, NATHANIEL C. STUDY, 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 and the like Implements, of which the following is a specification.

This invention relates to improvements in tampers and like implements.

The main objects of my invention are:

First, to provide an improved implement adapted as a tamper for tamping ties and the like, which enables the even tamping of the material about and under the ties providing a bed therefor which is not likely to settle or be washed out or disturbed by water.

Second, to provide an improved tamping implement which enables the performance of a very large amount of work with comparatively little effort on the part of the user.

Third, to provide an improved motor driven tamper in which the parts are comparatively simple in structure and arrangement and not likely to get out of repair 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 specification, in which:

Figure I is a front view of a tamper embodying the features of my invention parts of the handle and tamping bar being broken away.

Fig. II is a detail view mainly in longitudinal section on a line corresponding to line 2—2 of Figs. I and III.

Fig. III is a detail section on a line corresponding to line 3—3 of Fig. II.

Fig. IV is an enlarged detail plan view of the handle bar, one of the grips being shown partially in section.

Fig. V is a detail elevation of a modified form of handle, the handle grips being shown in one position by dotted lines.

Fig. VI is an enlarged detail section on a line corresponding to line 6—6 of Fig. V.

Fig. VII is a detail section corresponding to that of Fig. III, of a modified embodiment of my invention.

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 designated generally by the numeral 1 having a motor chamber 2 at its upper end and an impact member chamber 3 at its lower end. For convenience in manufacture and assembling of parts, the end 4 of the casing or housing is removable, a removable end plate 5 being also provided for the other end of the motor chamber or housing. At its lower end the casing is provided with a tool holder 6 in which the tool, such as the tamping bar 7, is mounted.

At its upper end the casing is provided with a handle 8. Within the motor chamber of the structure illustrated is an electric motor designated generally by the numeral 9, its shaft 10 being supported in bearings in the end walls of the casing.

The impact member shaft 11 is disposed eccentrically of the impact member chamber 3. This impact member is provided with a non-circular impact member driving portion 12. The impact member 13 is slotted at 14 to engage this non-circular driving portion of the shaft so as to reciprocate thereon transversely of the shaft as the shaft revolves and in sliding contact with the wall of the chamber. With the parts thus arranged the blow or shock is downward. The wall of the chamber is preferably provided with a bushing 15 which may be renewed when it becomes worn.

The shaft 11 is connected with the motor shaft by means of the gears 16 and 17. With the parts thus arranged when the shaft 11 revolves, the impact member is reciprocated and delivers a blow or shock to the casing on each revolution, the blow or shock being transmitted to the tool or tamping bar.

To adapt the implement where an electric current is not available, I provide the shaft 11 with a coupling member 18 adapted to receive a coupling member 19 of a flexible driving shaft 20.

To relieve the operator of the shocks of the implement, I mount the handle bar 21 loosely upon the handle 8, the handle bar

being provided with an opening 22, as shown in Fig. IV, slidably engaging the handle. The shock absorbing spring 23 is arranged between the casing and the handle bar to absorb the shocks from the casing. The grips of the handle bar 21 are preferably in the form of pieces of resilient tubing 24 mounted on the coiled springs 25 carried by the rods 26 extending between the arms of the handle grip. The tool holder is preferably provided with a foot rest 27 by means of which it may be urged against the work as well as by the impact.

In the modification shown in Figs. V and VI, the handle 28 is provided with a head 29 on which the handle grips 30 are pivoted at 31, the shoulders 32 engaging stops 33 on the head to limit the upward movement of the grips. Shock absorbing springs 34 are supported by the bolts 35 on the head to engage the handle grips.

In the modification shown in Fig. VII, the impact member 36 is cylindrical in form, being slotted at 37 to engage the driving portion 12 of the impact member shaft, the action being substantially the same as that of the embodiment shown in Fig. III.

My improved tamper is simple and economical in structure, it is highly efficient and enables the performance of a large amount of work with comparatively little effort on the part of the operator.

I have not attempted to illustrate certain modifications or 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 desired.

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 a cylindrical impact member chamber, an impact member shaft disposed eccentrically of said chamber having a non-circular impact member driving portion, an impact member slotted to engage said non-circular driving portion of said shaft and to reciprocate thereon in sliding contact with the wall of the chamber as the shaft revolves, a tool holder on the lower end of said housing, a tamping bar mounted in said tool holder, a handle at the upper end of said casing, a handle bar provided with grips at its ends slidably mounted on said handle, and a spring mounted on said handle to engage said handle bar.

2. In a tamper, the combination of a casing provided with a cylindrical impact member chamber, an impact member shaft disposed eccentrically of said chamber having a non-circular impact member driving portion, an impact member slotted to engage said non-circular driving portion of said shaft and to reciprocate thereon in sliding contact with the wall of the chamber as the shaft revolves, a tool holder on the lower end of said housing, a tamping bar mounted in said tool holder, and a handle for said casing provided with shock absorbing means.

3. In a tamper, the combination of a casing provided with a cylindrical impact member chamber, an impact member shaft disposed eccentrically of said chamber having a non-circular impact member driving portion, an impact member slotted to engage said non-circular driving portion of said shaft and to reciprocate thereon in sliding contact with the wall of the chamber as the shaft revolves, a tool holder on the lower end of said housing, a tamping bar mounted in said tool holder, a foot rest on said tool holder, and a handle for said casing provided with shock absorbing means.

4. In a tamper, the combination of a casing provided with a motor chamber and a cylindrical impact member chamber, an impact member shaft disposed eccentrically of said chamber having a non-circular impact member driving portion, an impact member slotted to engage said non-circular driving portion of said shaft and to reciprocate thereon in sliding contact with the wall of the chamber as the shaft revolves, a motor disposed in said motor chamber and having a driving connection with said impact member shaft, a tool holder on the lower end of said housing, a tamping bar mounted in said tool holder, and a handle for said casing provided with shock absorbing means.

5. In a tamper, the combination of a casing provided with an impact member chamber, an impact member shaft disposed eccentrically of the chamber and having a non-circular driving portion, an impact member slotted to engage said non-circular driving portion of said shaft and to reciprocate therein in sliding contact with the wall of the chamber, and a tamping bar mounted on said casing.

6. In a structure of the class described, the combination of a casing provided with an impact member chamber, an impact member shaft disposed eccentrically of the chamber and having a non-circular driving portion, an impact member slotted to engage said non-circular driving portion of said shaft and to reciprocate therein in sliding contact with the wall of the chamber, a tool mounted on said casing, and a handle for said casing provided with shock absorbing means.

7. In a structure of the class described, the combination of a casing having a cylindrical impact member chamber, an impact member shaft disposed eccentrically of said chamber, an impact member having a loose driving connection with said shaft whereby the impact member reciprocates transversely

of the shaft in sliding engagement with the wall of the chamber as the shaft revolves, a tool mounted on the casing, and a handle for said casing provided with a shock absorbing means.

8. In a structure of the class described, the combination of a casing, an impact member shaft, an impact member having a driving connection with the shaft permitting reciprocating movement of the impact member transversely of the shaft as the shaft revolves, a tool connected to the casing, and a handle for the casing having a shock absorbing means.

9. In a structure of the class described, the combination of a casing, an impact member shaft, an impact member having a driving connection with the shaft permitting reciprocating movement of the impact member transversely of the shaft as the shaft revolves, and a tool connected to the casing.

10. In a structure of the class described, the combination of a casing, an impact means within said casing, a foot rest connected to said casing, a handle at the upper end of said casing, a handle bar slidably mounted on said casing, and a shock absorbing spring for said handle bar.

11. In a structure of the class described, the combination of a casing, a driven impact means within said casing, a handle at the upper end of said casing, a handle bar slidably mounted on said casing, and a shock absorbing spring for said handle bar.

12. In a structure of the class described, the combination of a casing, an impact means within said casing, a foot rest connected to said casing, and a handle at the upper end of said casing provided with shock absorbing means.

13. In a structure of the class described, the combination of a casing, an impact means within said casing, a handle at the upper end of said casing, and a foot rest connected to said casing.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

NATHANIEL C. STUDY. [L. S.]

Witnesses:
MARGARET L. GLASGOW,
LORENA G. SUMMERS.