March 1, 1932. L. GERDERES 1,847,557

CORE CAPPING MACHINE

Filed Dec. 24, 1930 2 Sheets-Sheet 1

Fig. 1.

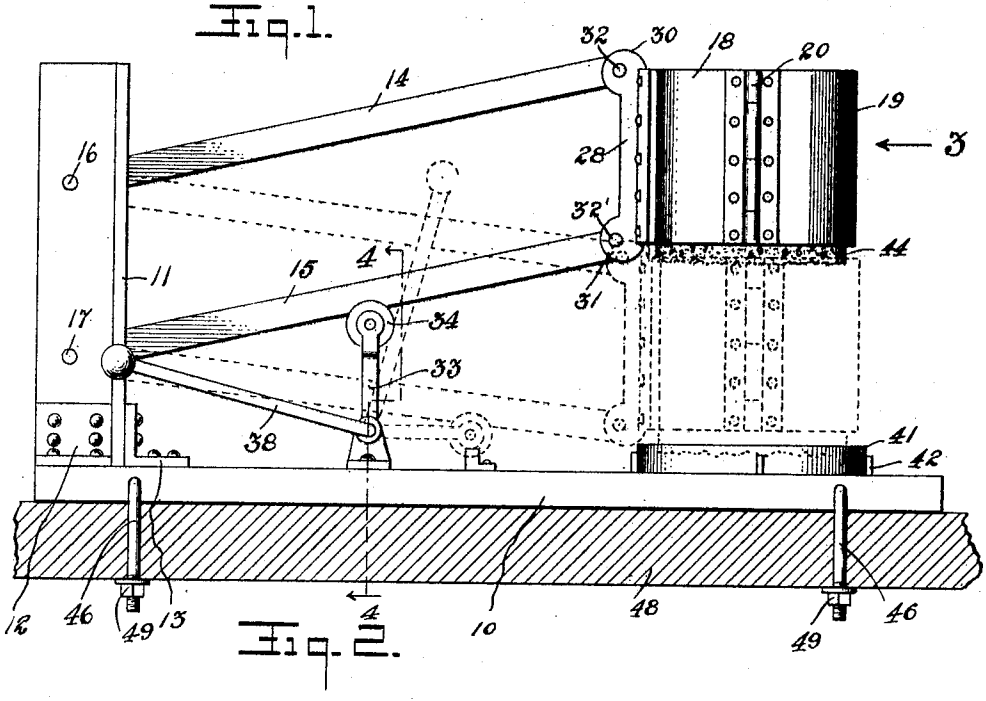
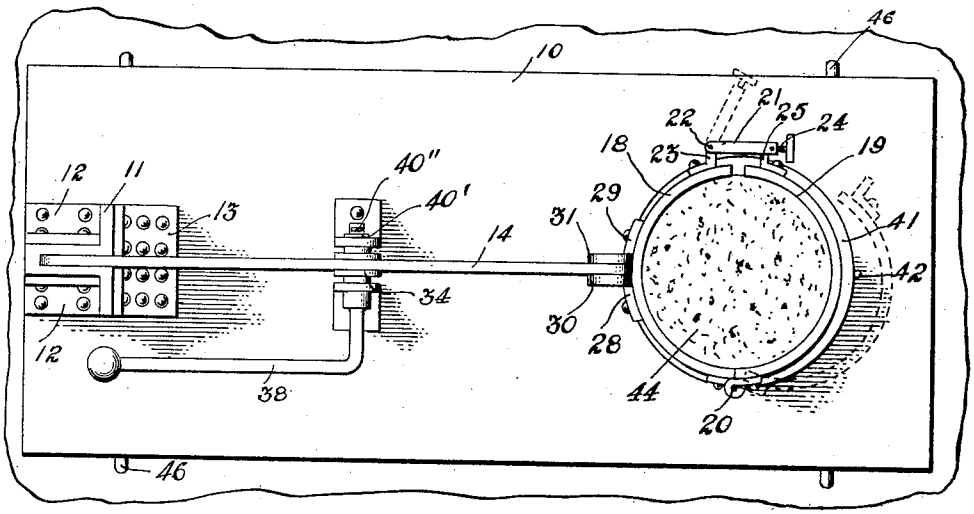


Fig. 2.



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Fig. 3.

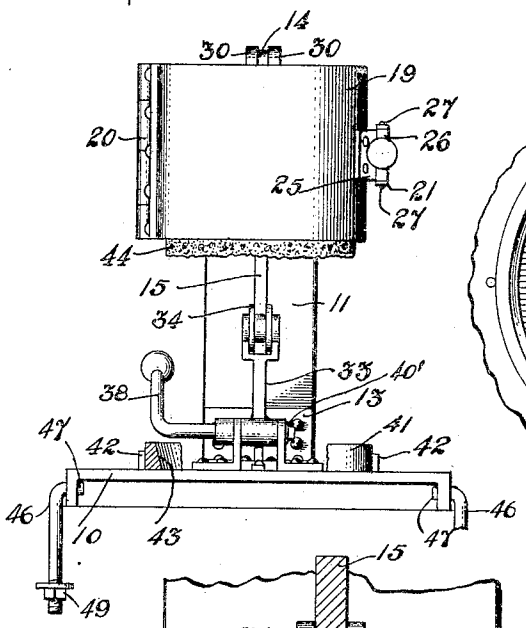


Fig. 5.

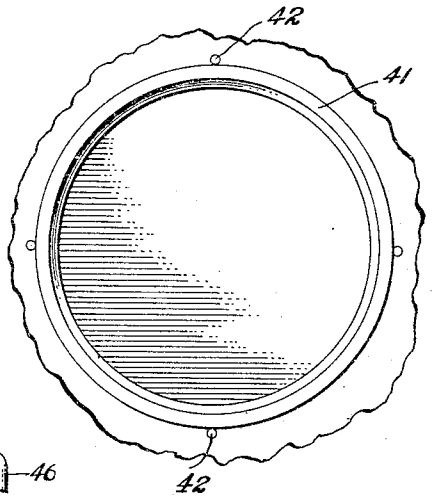


Fig. 4.

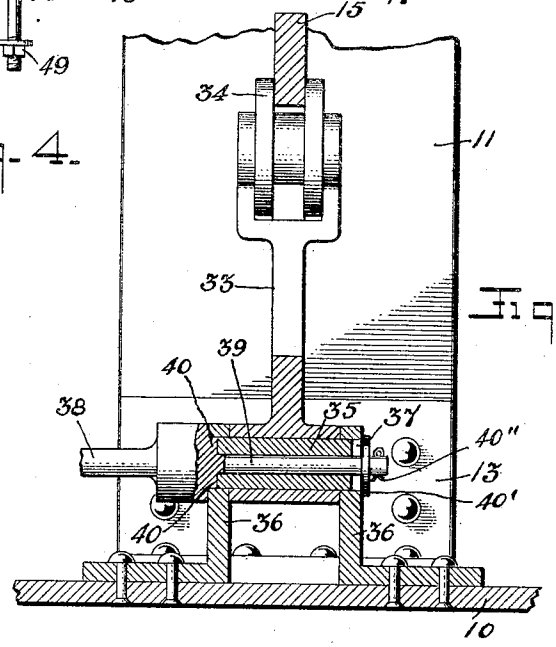


Fig. 6.

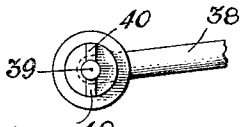
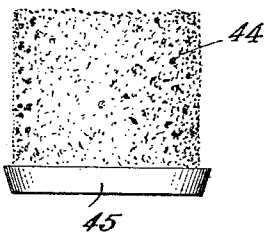


Fig. 7.



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Patented Mar. 1, 1932 1,847,557

UNITED STATES PATENT OFFICE

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CORE CAPPING MACHINE

Application filed December 24, 1930. Serial No. 504,546.

This invention relates to core capping machines, and has for an object to provide a device adapted to maintain a core in the proper position to receive a cap, the base of which shall be accurately perpendicular to the axis of the core.

It is well known, that a step in the testing of pavements, such for instance as cement pavement, consists in removing a core from the pavements and subjecting the core to a crushing test. To properly conduct this crushing test, it is necessary that the end of the core shall be truly and accurately perpendicular to the axis of the core, which condition does not exist as the core is removed from the pavement.

It is the purpose of the present machine, therefore, to provide a cap upon the end of the core as removed, which shall accurately present a plane surface perpendicular to the axis of the core.

The invention comprises a clamp properly proportioned to clamp about the core and to maintain the core movably with its axis accurately vertically and to provide a mold for the receipt of a cementitious material into which the end of the core is inserted to become associated therewith, such cementitious material being so maintained that when the setting of the cementitious material has been completed, it shall properly adhere to the core and present a plane end accurately perpendicular to the axis of the core.

The invention is directed to other objects and possesses other features of novelty and advantage, some of which, together with the foregoing, will be hereinafter more fully set forth.

In the drawings:

Figure 1 is a view of the device in side elevation,

Figure 2 is a view of the device in top plan,

Figure 3 is a view in end elevation as indicated by arrow 3 at Figure 1, but with a part of the mold ring broken away,

Figure 4 is an enlarged detail view taken on line 4—4 of Figure 1,

Figure 5 is a plan view of the mold ring,

Figure 6 is a detail view in end elevation of the operating lever, and

Figure 7 is a view of a core with the cap applied thereto by the use of the present device.

Like characters of reference indicate corresponding parts throughout the several views.

The mechanism which forms the subject matter of this application comprises a base 10 which will have preferably a plane top upon which is erected a pillar 11. This pillar 11 is preferably of T-formation in cross section, as shown more particularly at Figure 2 and is secured to the base in any improved manner as by the use of the angles 12, upon the sides, and the angle 13 in front.

Pivoted to the pillar 11 are the arms 14 and 15, such pivoting being at the pivoting points 16 and 17, respectively.

To the ends of the arms 14 and 15, opposite their pivots, a clamp is attached. The clamp comprises segments 18 and 19 hinged together at 20. At the ends of the segments opposite the hinge, a tensioning means is provided comprising the arms 21, pivoted at 22 to the lug 23 and provided with a screw 24 engaging against the lug 25. The screw 24 passes through a block 26, pivoted to the arms 21 at 27.

The manner of attaching the clamp to the arms 14 and 15 is by providing spaced angles 28 and 29, having ears 30 and 31 between which the ends of the arms are pivoted respectively at 32 and 32′.

The arms 14 and 15, being of identical length, and the pivot points 16 and 17 being vertically alined, it follows that the pivots 32 and 32′ will remain in vertical alinement irrespective of the angular position of the arms 14 and 15. To vary the angular position of the arms, a lever 33 is provided, having a roller 34 engaging under the arm 15. This lever 34 is rigidly attached to a pipe section 35, journaled in the ears 36, and is provided at opposite ends with cut-out notches 37. A crank arm 38 is provided having a pintle 39 properly proportioned to be inserted into either end of the pipe section 35, and having lugs 40 properly proportioned to engage either pair of notches 37. When inserted from either side, a washer 40′ and a collar pin 40″ maintain it in position.

Located upon the table 10 is a ring 41 positioned by a plurality of pins 42, upstanding from the table so that it shall be in accurate axial alinement with the clamp when lowered to dotted line position, as shown at Figure 1. This ring 41 is circular and open at both top and bottom, but is formed tapered as indicated at 43.

In operation, the core 44 is clamped by the manipulation of the screw 24, and so adjusted, that it shall occupy the required position relative to the ring 41. It is now raised and the ring 41 is filled with the required cementitious material whereupon, the clamp is lowered to introduce the lower end of the core into such cementitious material. After the cementitious material has set to form the cap 45, as shown in Figure 7, it is removed from the ring and from the clamp, and is further employed for testing in the usual and well known manner.

For convenience of operation, the organization maintained in stationary position by the employment of fasteners which may be in the form shown at 46 as bolts, having offset fingers 47 inserted through perforations in the flanges of the base 10 and passing through the bench or other body 48 supplied with nuts 49.

Of course, the core capping machine, herein illustrated, may be modified in various ways without departing from the invention herein set forth and hereinafter claimed.

The invention is hereby claimed as follows:

1. A core capping machine comprising a base, a ring removably mounted upon the base, a circular clamp disposed above the ring, and means to move the clamp downwardly into juxta-position with the ring retaining the perpendicularity of the axis of the clamp continuously relative to the base.

2. A core capping machine comprising a base, a cement mold mounted upon the base, a pillar mounted upon the base spaced from the mold, parallel arms pivoted to the pillar and extending toward the position of the mold, a clamp mounted upon the ends of the arms opposite the pivots, said clamp mounting including pivotal points for the arms in parallelism with the first named pivot points, and means to manually raise and lower the clamp relative to the mold.

3. A core capping machine comprising a base, a pillar erected upon the base, arms pivoted to the pillar upon pivot points perpendicular to the base, a clamp mounted upon the ends of the arms opposite their pivots, said clamp mounting including pivot points parallel with the first mentioned pivot points, means to open and close the clamp, means to raise and lower the clamp upon the arms as supporting structures, and a cement mold positioned upon the base beneath the lowermost limit of movement of the clamp.

4. A core capping machine comprising a base, a pillar erected upon the base and providing pivot points in alinement perpendicular to the base, parallel arms pivoted at the pivot points and having pivots at their opposite ends in alinement perpendicular to the base, a clamp carried by said last mentioned pivots and including a band having its axis perpendicular to the base, means to raise and lower the arms and the clamp relative to the base, and a cement retaining ring mounted upon the base concentric with and adjacent to the lowermost position of the clamp.

5. A core capping machine comprising a base, a pillar erected upon the base and providing alined pivot points perpendicular to the base, arms pivoted at said pivot points and having at their opposite points pivots in alinement perpendicular to the base, a clamp carried by the arms and connected at said pivot points, a lever mounted beneath the lowermost arm and provided with a roller engaging the under side of said arm, and a crank arm removably connected with and to manually operate said first mentioned arm.

6. A core capping machine comprising a base, a pillar erected upon the base, arms pivoted to said pillar and extending therefrom over the base, a clamp carried by the ends of the arms opposite their pivots, a lever mounted beneath the lowermost arm, said mounting comprising a tube inserted through said arm and fulcrumed in upstanding ears, a roller carried by said lever in engagement with the lowermost arm, and a crank adapted to be inserted into the tube at either side and having means for engagement therewith to prevent rotation relative thereto.

7. A core capping machine comprising a base, a clamp, means to raise and lower the clamp relative to the base with its axis remaining perpendicular to the base, a ring having its inner walls tapered, and means to maintain the ring removably upon the base adjacent to and concentric with the lowermost position of the clamp.

In testimony whereof I have signed my name to this specification.

LOUIS GERDÉRÉS.