

F. A. IVES.  
TAMPING DEVICE.  
APPLICATION FILED JAN. 16, 1911.

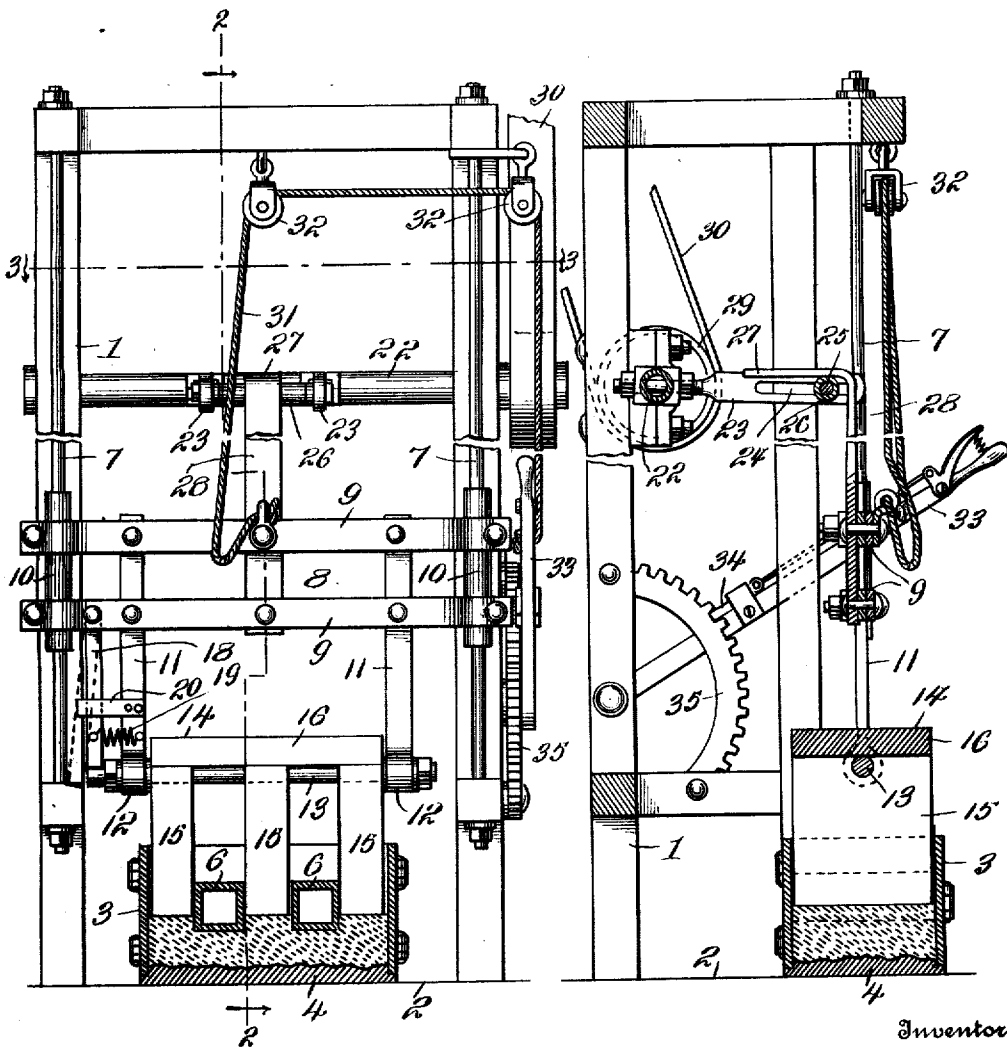
1,012,360.

Patented Dec. 19, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

Fig. 2.



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Witnesses

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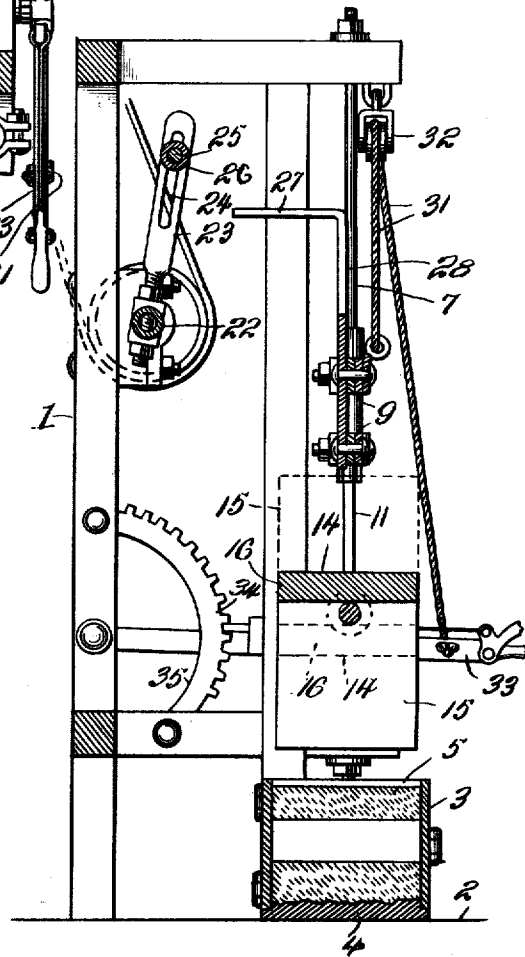
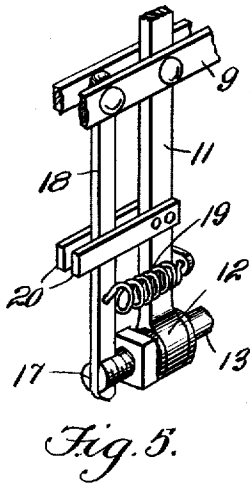
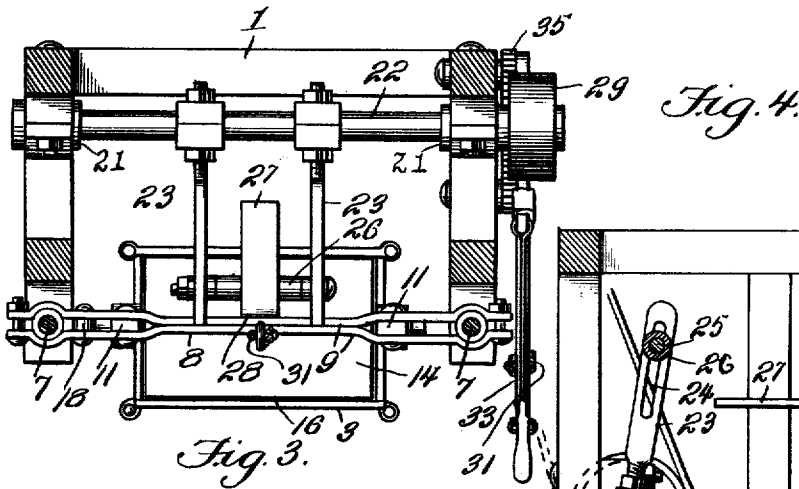
Attorney.

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# UNITED STATES PATENT OFFICE.

FRED A. IVES, OF ATKINSON, NEBRASKA.

## TAMPING DEVICE.

1,012,360.

Specification of Letters Patent.

Patented Dec. 19, 1911.

Application filed January 16, 1911. Serial No. 602,974.

*To all whom it may concern:*

Be it known that I, FRED A. IVES, a citizen of the United States, residing at Atkinson, in the county of Holt and State of Nebraska, have invented certain new and useful Improvements in Tamping Devices, of which the following is a specification.

This invention relates to a tamping device for use in conjunction with molds for making concrete building blocks and the like, the main object of the invention being to provide a simple and efficient construction of tamping device having oppositely arranged multiple and single tamping surfaces respectively formed by a plurality of tamping arms and a solid or continuous tamping head, whereby the tamper may first be employed to tamp the face and body of the block without interfering with or opposition from the core or cores, and then reversed when the material is tamped level with the upper surfaces of the cores to solidly tamp the back of the block.

A further object of the invention is to provide a device of this character which may be operated by hand or power, which provides for variations in the strokes of the tamper, which enables the tamper to be raised to an inoperative position at will, and which is constructed to allow the tamper to be easily reversed and firmly locked in its operative position.

With these and other objects in view, the invention consists of the features of construction, combination and arrangement of parts hereinafter described and claimed, reference being had to the accompanying drawings, in which:

Figure 1 is a front elevation of a tamping device embodying my invention showing the tamper arranged for the use of the tamping arms in first tamping the material in the mold, the mold appearing in section. Fig. 2 is a vertical front-to-rear section on line 2—2 of Fig. 1. Fig. 3 is a sectional plan view on line 3—3 of Fig. 1. Fig. 4 is a view similar to Fig. 2, showing the tamper raised and indicating in dotted lines its reversed position to set the tamping head for

use. Fig. 5 is a detail view showing the means for fastening the tamper in its operative positions.

Referring to the drawings, 1 designates an open rectangular derrick or frame, mounted upon a floor or suitable foundation 2, on which the mold 3 is supported. This mold may be of any suitable construction to admit of it being opened for the removal of the block. At its bottom is a face plate 4, which forms the front of the block, and in its open top is adapted to be inserted a back plate or follower 5, see Fig. 4, which forms, shapes or levels the back of the block. The mold extends lengthwise in a direction transversely of and at the front of the frame 1, and is adapted for the reception of one or more cores 6, whereby transverse openings are formed in the body of the block, which cores extend transversely of the mold and in a direction parallel with the sides of the frame.

Arranged upon the frame are guide rods 7, on which slides a vertically reciprocating carriage 8, comprising cross bars 9, carrying sleeves 10, which loosely embrace the rods. From said bars depend spaced bracket arms 11 provided at their lower ends with bearings 12 in which is journaled a transverse rock shaft 13. Fixed to said shaft is the tamper 14, comprising a frame embodying a multiple tamping surface formed of a plurality of arms 15 projecting from one side of the shaft and a single tamping surface composed of a block or head 16 projecting from the opposite side of the shaft. One end of the shaft is formed with a cross slot 17 constituting a keeper to receive the lower end of a latch 18 pivoted at its upper end to one of the bars 9. This latch is connected with the adjacent bracket arm 11 by a spring 19, which holds it normally in locking position, and is movable between guides 20 carried by said bracket arm.

Journaled in suitable bearings 21 is a transverse drive shaft 22 to which are fixed arms 23 provided with longitudinal slots 24 receiving the ends of a bolt or rod 25 on which is loosely mounted a friction roller

or sleeve 26. These arms, bolt and sleeve constitute a striker-arm or crank adapted on each rotary movement of the shaft, to engage the rearwardly projecting, right-angularly bent horizontal upper end or arm 27, of a contact bar or member 28 fixed to and extending upwardly from the carriage. Each time the striker-cam engages the arm 27 the carriage and tamper are elevated on their up stroke, and upon the release of the arm by the striker-cam the carriage and tamper drop by gravity on their down or tamping stroke. It will be understood that the bolt or rod 25 is adjustable in the slots 24 to vary the effective length and working radius of the striker cam, whereby the length or power of the working stroke of the tamper may be increased or decreased. The drive shaft may be provided with a pulley 29 for operating the same by a belt 30 from a suitable source of power, or it may be driven by hand or power gearing as desired.

Secured at one end to the carriage is a rope or cable 31 which extends upwardly and laterally to one side of the frame over guide pulleys or sheaves 32 and is attached at its opposite end to a pivoted lever 33. This rope or cable is of sufficient length, when slack and the lever is in its normal position shown in Fig. 2, to allow the carriage and tamper to have freedom of operating motion, but by adjusting the lever to the position shown in Fig. 4, the rope may be drawn taut and the carriage and tamper elevated to a position above the mold. In this position of the tamper the mold may be filled or emptied without interference therefrom, or the tamper reversed, as hereinafter described. The lever is provided with a pawl 34 to engage a rack 35, whereby it may be locked in any of its positions of adjustment.

In operation, the tamper is first raised by means of the lever to a position above the mold, a quantity of the material from which the blocks are to be formed placed in the bottom of the mold and the cores then applied in position. Another quantity of the material is then inserted and the tamper lowered and set into operation with the arms 15 in working position. These arms are arranged to work between and on opposite sides of the cores, so that the material will be tamped down solid against the face plate and about the cores. Charges of the material are thus successively tamped until the material is solidly filled in up to the level of the upper surfaces of the cores. At this stage the tamper is elevated by the lever, the latch released and the tamper reversed or turned half way over to bring the head 16 into operative position, when the tamper is again locked by the latch, a charge of the material inserted and the tamper set

into action, to compress the same. When the mold is filled to the top with the compressed material, the backing plate or follower 5 is inserted against which the pounding action of the head 16 is directed to compress the back of the block to the desired density and make the same smooth. As the head 16 acts over the entire area of the mass of material it will be seen that a block of any desired density may be formed, and that by means of the arms 15 the material between and about the cores may be compressed in an efficient manner, by which a proper degree of solidity may be secured at the center of the block without displacing the cores. Of course it will be understood that the head 16 may be primarily and finally employed to compress the material below and above the line of the cores, and the arms 15 employed only to compress the material between the bottom and top faces of the cores, and that the amount of material introduced at each charge may vary as occasion may require. When a complete block is formed the tamper is elevated, the formed block removed, and the operation above described repeated for the production of the succeeding block.

Having thus described my invention, I claim:

1. In a tamping device, the combination of a frame, a carriage mounted to reciprocate vertically thereon, cam mechanism for successively elevating said carriage and allowing it to drop by gravity, a rock shaft journaled on the carriage, a tamper having oppositely arranged tamping faces and secured to said shaft for rotation therewith to bring either of its tamping faces into operative position, means for engaging the shaft to lock the tamper in adjusted position, and means for elevating the carriage and tamper to an inoperative position.

2. In a tamping device, the combination of a frame, a carriage mounted to reciprocate vertically thereon, cam mechanism for elevating said carriage and allowing it to drop by gravity, a rock shaft journaled on the carriage, a tamper having oppositely arranged tamping faces and secured to said shaft for rotation therewith to bring either of its tamping faces into operative position, means for engaging the shaft to lock the tamper in adjusted position, a normally slack cable connected with the carriage, means for tightening said cable and drawing thereon to raise the tamper to an inoperative position, and means for securing the first-named means in adjusted position.

3. In a tamping device, the combination of a frame, a carriage mounted to reciprocate vertically thereon, means for elevating said carriage and allowing it to drop by gravity, a rock shaft journaled on the car-

riage and having a notched end, a tamper  
having a plurality of tamping faces and  
revolubly mounted on said shaft, a pivoted  
spring actuated latch to engage said notch  
5 and lock the shaft and tamper in adjusted  
position, and means for elevating the car-  
riage and tamper to an inoperative position.

In testimony whereof I affix my signature  
in presence of two witnesses.

FRED A. IVES.

Witnesses:

RALPH RHOADES,  
WILLIAM BRUDER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."