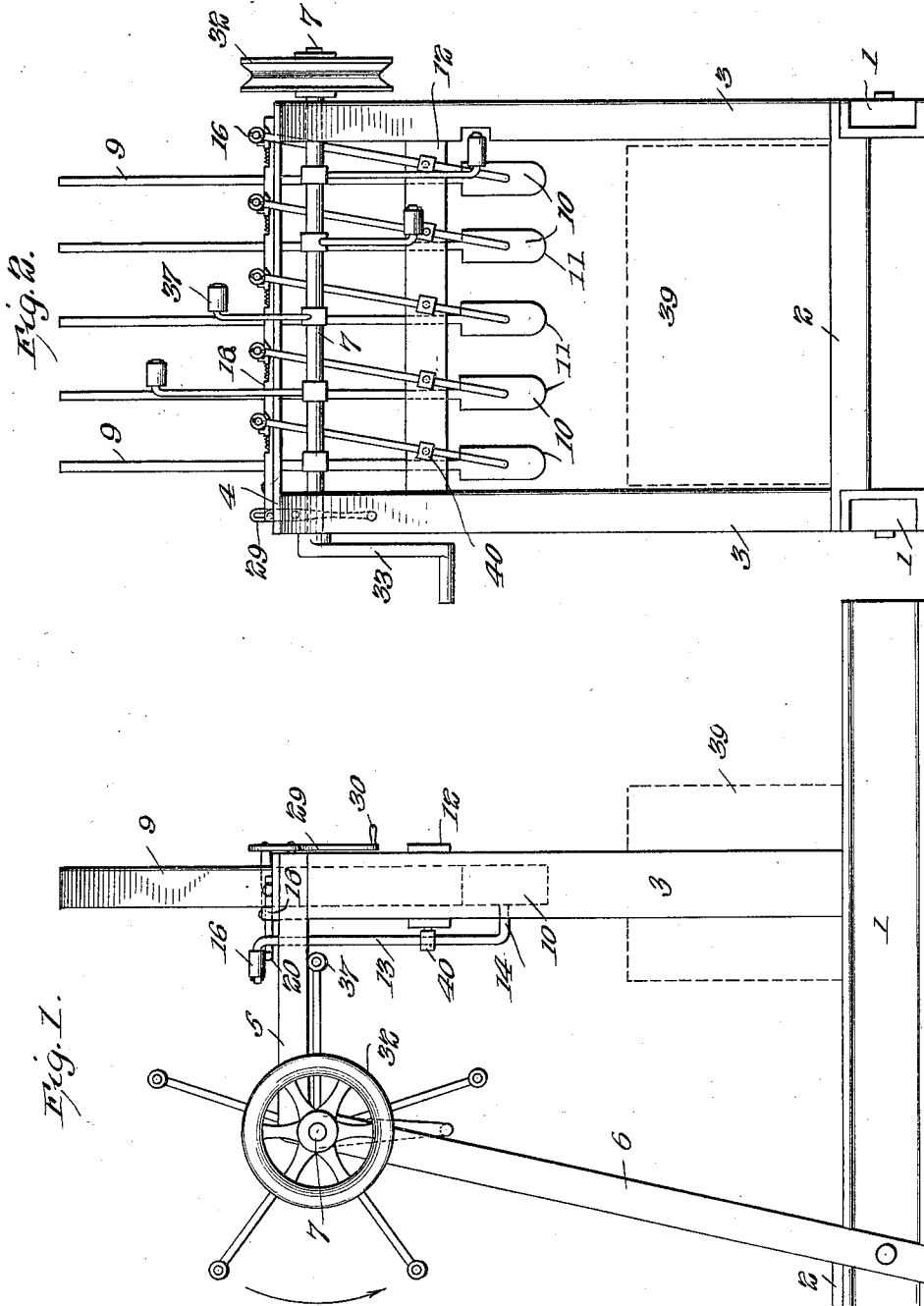


O. NOLAN.
TAMPING MACHINE.
APPLICATION FILED JULY 20, 1911.

1,036,139.

Patented Aug. 20, 1912.

2 SHEETS—SHEET 1.



WITNESSES
Edw. J. Callaghan
C. E. Trimmer

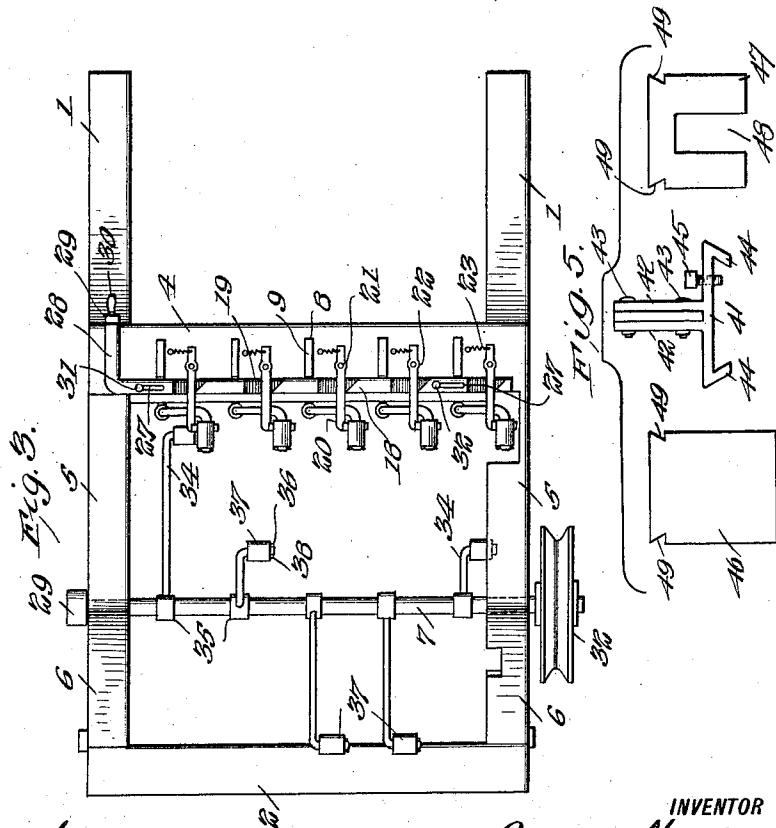
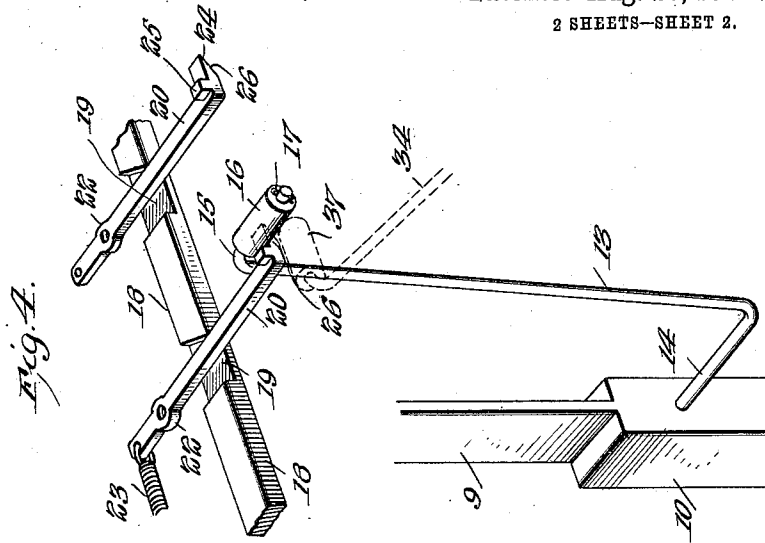
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WITNESSES
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UNITED STATES PATENT OFFICE.

OLIVER NOLAN, OF ST. PAUL, MINNESOTA, ASSIGNOR TO AUTOMATIC CONCRETE MACHINERY COMPANY, OF ST. PAUL, MINNESOTA, A CORPORATION OF MINNESOTA.

TAMPING-MACHINE.

1,036,139.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed July 20, 1911. Serial No. 639,639.

To all whom it may concern:

Be it known that I, OLIVER NOLAN, a citizen of the United States, and a resident of St. Paul, in the county of Ramsey, State of Minnesota, have invented a new and useful Improvement in Tamping-Machines, of which the following is a specification.

My invention is an improvement in tamping machines, and has for its object the provision of a simple and effective machine of the character specified for tamping quickly and firmly concrete into molds, wherein a plurality of tamping devices or stamps is made use of, operating in succession by manual means or by power and having means for holding the stamps in inoperative position.

In the drawings: Figure 1 is a side view of the improved machine; Fig. 2 is an end view; Fig. 3 is a plan view; Fig. 4 is a detail perspective view of a portion of the operating mechanism, and Fig. 5 is a front view of a modified form of stamp.

The present embodiment of the invention comprises a suitable frame consisting of a base composed of spaced channel bars 1 connected by cross bars 2. An upright or standard 3 is connected to each bar 1 at approximately the center thereof, and the uprights are connected at their tops by a top plate 4.

An inclined brace 6 is connected to each bar 1 near one end, the braces inclining inwardly at their tops toward the plate 4. The braces are connected at their upper ends by a shaft 7 journaled in the braces, and upper cross bars 5 connect the uprights and braces at their upper ends.

The top plate 4 is provided at spaced intervals with transverse slots 8, and in each slot is received the shank 9 of a tamping device or stamp. Each of the said devices comprises the shank 9, which is rectangular in cross section, and a head 10 having its lower tamping end 11 rounded as shown.

A guide bar 12 is arranged between the standards 3 below the plate 4, and the said bar is provided with slots registering with the slots of the plate for receiving the shanks 9.

Each of the tamping devices is lifted by means of a rod or link 13, each of which is

provided at its lower end with an angular portion 14 secured to the shank. The upper end of each rod or link is bent laterally to form a journal pin 15, extending at right angles to the body of the rod or link and in the opposite direction to the angular portion 14.

A roller 16 is journaled on each of the said pins, and is held thereon by a cotter pin 17 passing through the end of the journal pin. A bar 18 is seated on the inner edge of the plate 4 adjacent to the ends of the slots, and the said bar is provided in its upper face with a plurality of transverse recesses 19.

The recesses correspond in number and position to the links 13, and a lever 20 rests in each recess, engaging the recess intermediate the ends of the lever. Each lever is pivoted to the top plate at 21 adjacent to the bar and on the outer side thereof. The bearing 22 on the lever through which the pivot pin passes is much nearer the outer end of the lever than the inner end.

The short end of each lever is engaged by one end of a spring 23, whose other end is secured to the top plate, and the opposite long end of the lever is provided with an angular arm 24 and with an upright lug 25 at the junction of the arm and lever.

The lower face of the end of the arm 23 is beveled, as shown at 26. The arm 24 is so placed as to engage beneath the roller 16 of the adjacent link or rod 13, and the spring 23 normally presses the lever toward the link. The lug 25 engages the roller as shown in Fig. 4 before the lever strikes the body of the link or rod.

The bar 18 is slotted longitudinally near each end, and at one end the bar is provided with a laterally extending portion 28 passing across the top plate 4 and having a depending portion 29 provided with an outwardly extending handle 30. A pin 31 on the plate 4 passes through each slot 27 and is headed above the bar to hold the bar in place.

The shaft before mentioned is provided at one end outside the frame with a grooved wheel or pulley 32 and at the other end with a crank 33. Inside the frame the shaft is provided with a plurality of radial arms 34.

The arms correspond in number to the

tamping devices, and each arm is provided at one end with a sleeve 35 engaging the shaft 7, and at the other end with a lateral journal pin or arm 36, on which is journaled
5 a roller 37 held in place by a cotter pin 38.

The arms are spaced angularly from each other as well as longitudinally of the shaft, and each arm corresponds in position approximately to that of a tamping device.
10 The mold 39 containing the material to be tamped is arranged below the tamping devices on the base and the operation is as follows:

Each of the links 13 passes through a
15 bearing sleeve 40 pivoted to the inner side of the guide bar 12, and the bar 18 is movable longitudinally within limits prescribed by the slots 27 and pins 31 by means of the handle 30.

20 The shaft 7 is rotated either by power engaging the pulley 32, which is of sufficient weight to act also as a fly wheel, or manually by means of the crank 33. As the shaft rotates in the direction of the arrow in Fig. 1,
25 the rollers on the arms 34 successively engage the rollers 16 of the links 13.

The swinging of the arm 34 lifts the tamping device with which it is engaged. The tamping devices are then lifted in succession, and as the roller 37 slips off the
30 roller 16 the devices are dropped. The heads thus strike the material in the mold successively from one end of the mold to the other.

35 In running the machine by power, the motion of the shaft 7 being continuous, it is desirable that there be means for holding the device inoperative without stopping the shaft. This end is attained by moving the
40 bar 18 longitudinally in such direction that the levers 20 are swung by the springs 23 into the position shown in Figs. 3 and 4.

It will be noticed that one end of each recess 19 is inclined, and when the bar 18 is
45 moved toward the end provided with the handle all of the levers 20 are swung to move the arms 24 from beneath the roller 16. When the bar is in this position, the stamps are free to lift and drop. When,
50 however, the bar 18 is moved in the opposite direction, the arms 24 of the levers are swung beneath the rollers 16 by means of springs 23, and the stamps are held in elevated position by the said arms. When it is
55 desired to again operate the stamps the bar is shifted in the opposite direction.

In Fig. 5 is shown a modified form of stamp, wherein interchangeable flanges are provided, suitable for solid blocks or for
60 blocks having cores. In this construction, a bracket 41 is provided, having at the center thereof oppositely arranged upwardly extending straps 42, which may be clamped on to the shank 9 of the plunger by means of

bolts 43. Each end of the bracket is provided with an angular lug 44, each of which is inclined inwardly as shown, and a set screw 45 is threaded through the bracket for engaging the top of the stamp block. The
said stamp block may be solid as shown at 70 46, in Fig. 5, or the block 47 may be provided with a central recess 48 for receiving a core. In either case however, the upper end of the block is provided at each side with an undercut or dove-tail groove 49, for
75 engagement by the lugs 44. In placing the stamp blocks, the set screw 45 is turned outwardly, and the block is slipped in place with the lugs 44 engaging the grooves 49. The set screw 45 is then turned downwardly
80 to tighten the block against the lugs, thus holding the said block firmly in place.

I claim:

1. A tamping machine comprising a frame, vertically spaced guide bars on the
85 frame, each of the said bars having spaced transverse slots registering with the slots of the other bar, a stamp comprising a head and shank for each pair of registering slots, the shanks moving in the slots, a rod connected with each stamp, each rod having its
90 lower end connected to the stamp and having an angular arm at its upper end, a guide on the frame for each rod, a shaft journaled on the frame and provided with means for
95 rotating the same, a plurality of arms secured at one end to the shaft and extending radially therefrom, said arms being spaced apart angularly and longitudinally of the shaft, each arm having an angular portion at
100 its end for engaging the angular portion of a rod to lift and drop a stamp, and means for holding the stamp in elevated position, and out of position for engagement by the arms, said means comprising a shifting bar
105 movable longitudinally on the upper face of the upper guide bar, said bar having a transverse recess adjacent to each stamp, a lever for each stamp pivoted to one of the guide bars and extending transversely of
110 the shifting bar in a recess of the said bar, whereby to swing the lever when the bar is moved, each lever having an angular arm for engaging beneath the arm of a rod to hold the same when the shifting bar is
115 moved in one direction, and a spring pressing each lever toward the adjacent rod.

2. A tamping machine comprising a frame, vertically spaced guide bars on the
120 frame, each of the said bars having spaced transverse slots registering with the slots of the other bar, a stamp comprising a head and shank for each pair of registering slots, the shanks moving in the slots, a rod connected with each stamp, each rod having its
125 lower end connected to the stamp and having an angular arm at its upper end, a guide on the frame for each rod, a shaft

5 journaled on the frame and provided with means for rotating the same, a plurality of arms secured at one end to the shaft and extending radially therefrom, said arms being spaced apart angularly and longitudinally of the shaft, each arm having an angular portion at its end for engaging the angular portion of a rod to lift and drop a stamp, and means for holding the stamp in elevated position, and out of position for engagement by the arms.

3. A tamping machine comprising a supporting frame, a series of stamps arranged in spaced relation transversely of the frame, means for guiding the stamps vertically, and means for lifting and dropping the stamps in succession, said means comprising a shaft journaled transversely of the frame adjacent to the stamps, a radial arm on the shaft for each stamp, said arms being spaced apart angularly and laterally, a rod connected with each stamp and provided with an angular arm at its upper end, each of the radial arms having an angular portion for engaging the arm on the rod of the adjacent stamp, means for rotating the shaft, and means for holding the stamps elevated and out of position for engagement by the arms of the shaft, said means comprising a lever pivoted adjacent to each stamp and having an angular arm at each end for engaging beneath the angular portion of a rod to hold the stamp from downward movement, a longitudinally movable shifting bar on the frame beneath the levers and having a recess for each lever in which the lever is received to swing the lever when the bar is shifted longitudinally in one direction, and a spring connected with each lever and pressing it into operative position.

4. A tamping machine comprising a supporting frame, a series of stamps arranged in spaced relation transversely of the frame, means for guiding the stamps vertically, and means for lifting and dropping the stamps in succession, said means comprising a shaft journaled transversely of the frame adjacent to the stamps, a radial arm on the shaft for each stamp, said arms being spaced apart angularly and laterally, a rod connected with each stamp and provided with an angular arm at its upper end, each of the radial arms having an angular portion for engaging the arm on the rod of the adjacent stamp, means for rotating the shaft, and means for holding the stamps elevated and out of position for engagement by the arms of the shaft, said means comprising a lever pivoted adjacent to each stamp and having an angular arm at each end for engaging beneath the angular portion of a rod to hold the stamp from downward movement, a longitudinally movable shifting bar on the frame beneath the levers and having a recess for

each lever in which the lever is received to swing the lever when the bar is shifted longitudinally in one direction.

5. A tamping machine comprising a supporting frame, a series of stamps arranged in spaced relation transversely of the frame, means for guiding the stamps vertically, and means for lifting and dropping the stamps in succession, said means comprising a shaft journaled transversely of the frame adjacent to the stamps, a radial arm on the shaft for each stamp, said arms being spaced apart angularly and laterally, a rod connected with each stamp and provided with an angular arm at its upper end, each of the radial arms having an angular portion for engaging the arm on the rod of the adjacent stamp, means for rotating the shaft, and means for holding the stamps elevated and out of position for engagement by the arms of the shaft, said means comprising a lever pivoted adjacent to each stamp and having an angular arm at each end for engaging beneath the angular portion of a rod to hold the stamp from downward movement, and means for simultaneously swinging the levers.

6. A tamping machine comprising a supporting frame, a series of stamps arranged in spaced relation transversely of the frame, means for guiding the stamps vertically, and means for lifting and dropping the stamps in succession, said means comprising a shaft journaled transversely of the frame adjacent to the stamps, a radial arm on the shaft for each stamp, said arms being spaced apart angularly and laterally, a rod connected with each stamp and provided with an angular arm at its upper end, each of the radial arms having an angular portion for engaging the arm on the rod of the adjacent stamp, means for rotating the shaft, and means for holding the stamps elevated and out of position for engagement by the arms of the shaft.

7. A tamping machine comprising a supporting frame, a series of stamps arranged in spaced relation transversely of the frame, means for guiding the stamps vertically, and means for lifting and dropping the stamps in succession, said means comprising a shaft journaled transversely of the frame adjacent to the stamps, a radial arm on the shaft for each stamp, said arms being spaced apart angularly and laterally, a rod connected with each stamp and provided with an angular arm at its upper end, each of the radial arms having an angular portion for engaging the arm on the rod of the adjacent stamp, and means for rotating the shaft.

8. In a tamping machine, a plurality of vertically movable stamps, means for lifting and dropping the stamps in succession, and means for holding all the stamps elevated

out of position for engagement by the lifting means, said means comprising a lever arranged adjacent to each stamp and having means at one end for engaging and holding
5 the stamp from downward movement, a shifting bar arranged transversely of the levers and having a recess for each lever in

which the lever is received, and means for shifting the bar to simultaneously swing the lever.

OLIVER NOLAN.

Witnesses:

C. R. WILKINSON,
F. W. HUNT.

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