

C. O. BRANDELL.
TAMPING MACHINE.
APPLICATION FILED DEC. 28, 1908.

943,966.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 1.

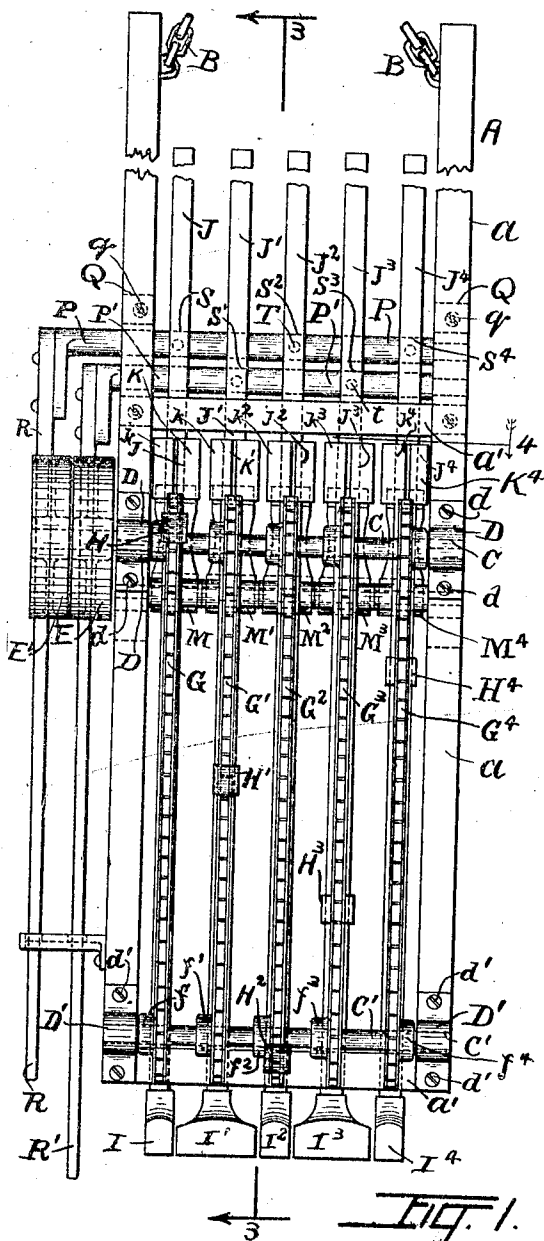


FIG. 1.

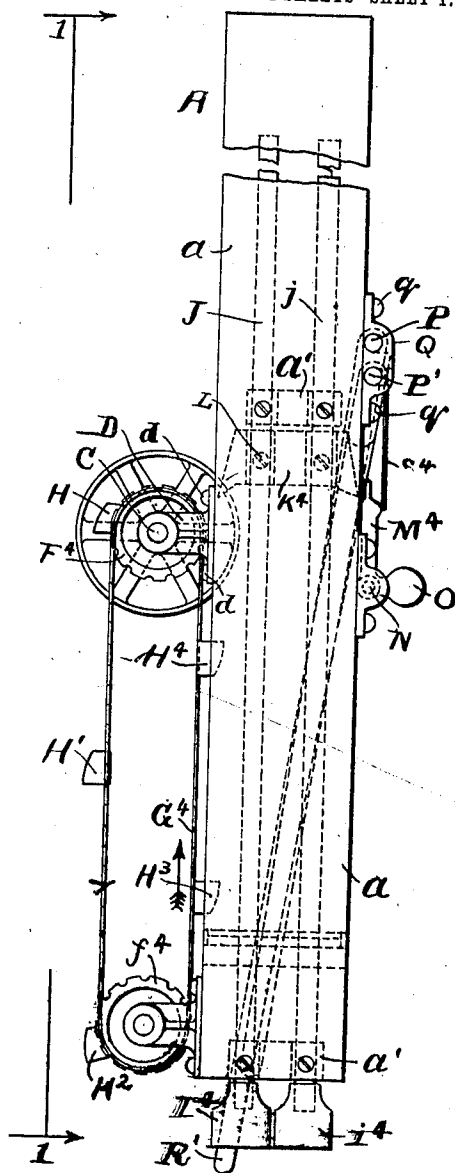


FIG. 2.

WITNESSES:

C. O. Brandell
C. A. Adams.

INVENTOR

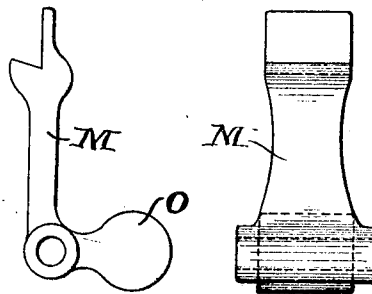
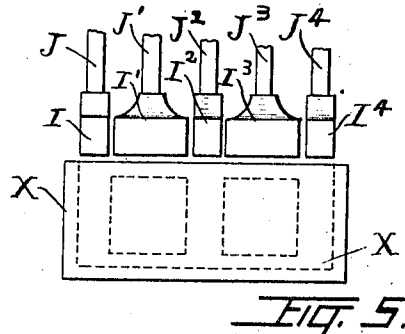
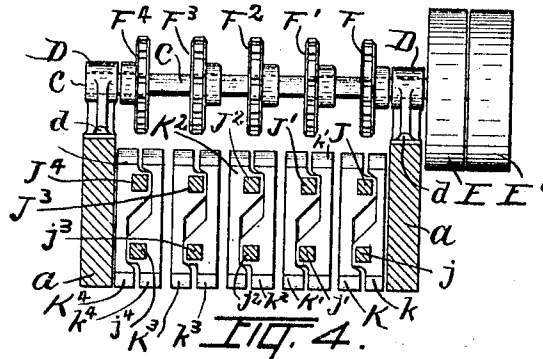
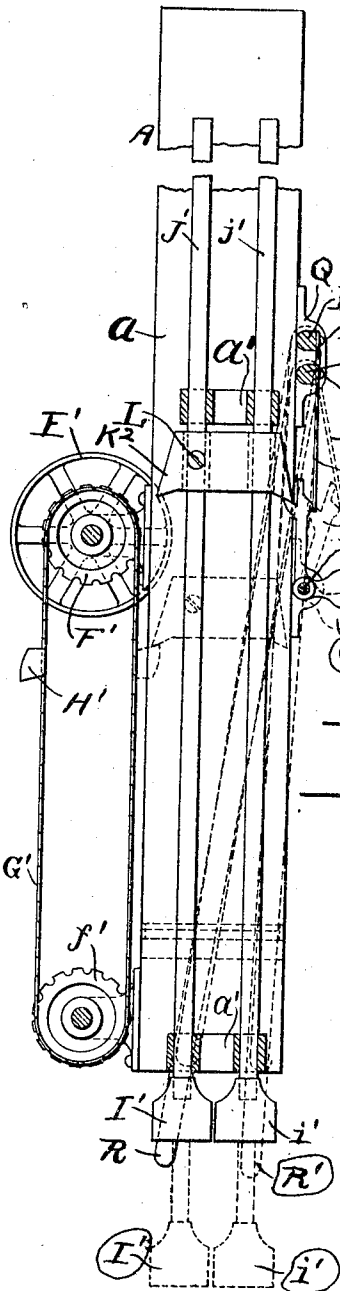
Claus O. Brandell,

BY *Charles Turner Brown*,
ATTORNEY.

943,966.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 2.



WITNESSES:

A. A. Sweeney
C. C. Adams.

INVENTOR
Claus O. Brandell,
BY
Charles Turner Brown,
ATTORNEY.

UNITED STATES PATENT OFFICE.

CLAUS O. BRANDELL, OF CHICAGO, ILLINOIS.

TAMPING-MACHINE.

943,966.

Specification of Letters Patent.

Patented Dec. 21, 1909.

Application filed December 28, 1908. Serial No. 469,616.

To all whom it may concern:

Be it known that I, CLAUS O. BRANDELL, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tamping-Machines for Concrete and other Like Material, of which the following, when taken in connection with the drawings accompanying and forming a part hereof, is a full and complete description, sufficient to enable those skilled in the art to which it pertains to understand, make, and use the same.

This invention relates to devices used principally in tamping the concrete in a box or mold, while such concrete is in a plastic condition, in the making of concrete blocks for building purposes. And the object of the invention is to obtain a device by means of which the tamping of the concrete mixture from which a hollow concrete building block is being molded, during the entire time the mold is being filled may be done and, at the same time, no tamping will be done upon or to the part or portion of the mold by means of which a hollow block is made.

A further object is to obtain a device of the character described by means of which any desired variation in the force of the tamping blows delivered by the device is easily secured.

A further object of the invention is to obtain a device of the character described which is easily controlled, simple in construction, not liable to get out of order, durable and requiring small power to operate it.

In the drawings referred to illustrating a device embodying this invention:—Figure 1, is an elevation on lines 1—1 of Fig. 2, viewed in the direction indicated by the arrows. Fig. 2, is a side elevation of the device. Fig. 3, is a vertical section on lines 3—3 of Fig. 1, viewed in the direction indicated by the arrows. Fig. 4, is a horizontal section on line 4—4 of Fig. 1, viewed in the direction indicated by the arrows. Fig. 5, is a front elevation of the lower ends of the hammers of the device and of a mold suitable to form therein a hollow concrete block. Fig. 6, is a side elevation, on an enlarged scale, of a latch forming an element of the device. Fig. 7, is a front elevation of the latch illustrated in Fig. 6.

A reference letter applied to indicate a given part is used to designate such part

throughout the several figures of the drawings wherever the same may appear.

A, is the frame of the device, and comprises the side bars *a*, and the cross bars *a'*.

B, are chains attached to side bars *a*, by means of which the frame A is suspended.

C, C', are shafts rotatably mounted in bearings D, D', respectively. Bearings D, D', are rigidly secured to the side bars *a*, as by lag screws *d*, *d'*.

E, is a driving pulley, and E' is a loose pulley on shaft C.

F, F', F², F³, F⁴, respectively, are sprocket wheels rigidly secured on shaft C, and *f*, *f'*, *f*², *f*³, *f*⁴, are sprocket wheels loosely mounted on shaft C'.

G, G', G², G³, G⁴, are sprocket chains respectively extending over the sprocket wheels of the F, *f*, series. The sprocket chains are actuated by the rotation of shaft C. And when the device is in operation the shafts C, C', with the sprocket wheels thereon and the chains of the G series, extending over such wheels, are continually moving.

H, H', H², H³, H⁴, are elevating abutments on the corresponding sprocket chains of the G series.

I, I', I², I³, I⁴, are hammers which are respectively provided with the vertical shanks J, J', J², J³, J⁴.

j, *j*², and *j*³ are vertical shanks to additional hammers which are located in the same row as are hammers *i*, *i*² and are duplicates of hammers I, I² and I³.

The cross bars *a'*, of the frame A, are respectively provided with apertures through which the shanks of the J, *j*, series extend, such shanks fitting loosely in such apertures so that the shanks may move longitudinally to raise the hammers.

K, *k*, K', *k'*, K², *k*², K³, *k*³, K⁴, *k*⁴, are abutments which are respectively rigidly secured, as by screws or bolts L, to corresponding shanks of the J, *j*, series.

When any hammer is down the abutment of the H, *h*, series which is on the shank thereof, (being also down) is engaged by the corresponding abutment of the H, series as such abutment ascends (see arrow adjacent to chain G⁴ Fig. 2) and such abutment of the H, *h*, series, together with the shank to which it is attached and the hammer on such shank, is raised into substantially the position illustrated in Figs. 1, 2 and 3, of the drawings.

M, M', M², M³, M⁴, are latches loosely mounted on shaft N, and weighted, as at O, so as to be yieldingly held out of engagement with the corresponding abutments of the H, h, series, when such abutments are raised to a position adjacent thereto by the movable abutments of the H series.

P, P', are rocking shafts, loosely mounted in bearings Q.

Bearings Q, are secured to the sides a, of the frame A as by bolts or lag screws q, q.

R, R', are handles rigidly secured to rocking shafts P, P', respectively.

S, S', S², S³, S⁴, are springs. Springs S, S², and S⁴, are rigidly secured as by rivets T, to shaft P, and springs S', S³, are rigidly secured, as by pins t, to shaft P'.

When the levers R, R' are both forward, as illustrated in Fig. 2, of the drawings, the springs of the S series respectively hold the corresponding latches of the M series in engaging position with the corresponding abutments of the H, h, series: and when in this position, as a given abutment is raised, in the operation of the machine, to a position adjacent to the corresponding latch such latch is forced back by the moving abutment, against the resilience of the corresponding spring, and as soon as such abutment is moved beyond or above its corresponding latch such latch is forced by the spring thereof, of the S series, forward, underneath such abutment, and the abutment together with the shank and hammer thereof is maintained thereby in an elevated position. When, however, the handles R, R', are forced back, into the position indicated by the broken lines lettered R', in Fig. 3, the springs of the S series are moved into the position indicated by the broken lines lettered S in said Fig. 3, and at such times the several weighted ends, of the latches of the M series, will move such latches into the position thereof indicated by the broken lines lettered M, O, in said Fig. 3.

When the handles R, R', the springs of the S series and the latches of the M series are in the last named position, and out of engagement with the abutments corresponding therewith, the hammers and shanks are continuously raised and permitted to fall by the continuous operation of the shafts, sprocket wheels and sprocket chains and abutments on said chains.

It will be observed that in the device illustrated by the drawings, the hammers of the I, i, series, on the lower ends of shanks J, j, J², j², J⁴, j⁴, which tamp the ends and the middle of the block which is being molded in the mold X, (Fig. 5), are controlled by handle R, and by shaft P, so far as determining whether the same shall be permitted to fall to perform the tamping functions thereof; and that the hammers of said I, i, series which are on the lower ends of shanks

J', j', J², j², are controlled, so far as determining the tamping functions thereof, by handle R' and shaft P', as hereinbefore described.

As the frame A is raised or lowered the distance of the fall of the hammers of the device is lengthened or lessened, and the force of the blows thereof is increased or diminished. The greatest distance possible for the fall of the hammers is substantially the distance between the shafts C, C'.

I do not limit myself to the number of levers sprocket wheels, chains, hammer shanks, and hammers in the construction herein illustrated and described, or to the order in which the same are permitted to drop by said construction.

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

1. The combination of a frame, a plurality of shanks respectively arranged to move longitudinally in the frame, said shanks arranged to form a plurality of series, a hammer to each of said shanks, means to raise the shanks, latching mechanisms corresponding in number with the number of shanks and arranged in series to correspond with the series of shanks, movable mechanisms corresponding in number with the number of latching mechanisms and arranged in series corresponding with the series of latching mechanisms, and independent means to move each series of movable mechanisms and force the corresponding series of latching mechanisms into place to maintain the corresponding series of shanks raised.

2. The combination of a frame, a plurality of shanks respectively arranged to move longitudinally in the frame, said shanks arranged to form a plurality of series, a hammer to each of said shanks, means to raise the shanks, latching mechanisms, corresponding in number with the number of shanks and arranged in series to correspond with the series of shanks, springs corresponding in number with the number of latching mechanisms and arranged in series corresponding with the series of latching mechanisms, shafts corresponding in number with the number of series of springs with all the springs of a given series attached to a given shaft, and means to rock the shaft and bring the series of springs thereon against the corresponding series of latching mechanisms to force said latching mechanisms into place to automatically engage with and maintain the shanks of the corresponding series raised.

3. The combination of a frame, a plurality of series of tampers mounted thereon for vertical movement, lifting mechanism for each tamper, a latching device for each tamper to hold it elevated, said latching devices arranged in a plurality of series cor-

responding to the series of tampers; and a manually operated controlling mechanism for each series of latches.

4. The combination of a frame, a plurality of series of hammers, shanks to the hammers, such shanks longitudinally movable in the frame, a plurality of means respectively arranged to raise corresponding shanks, a plurality of series of latching mechanisms respectively arranged to latch corresponding shanks in a raised position, and means to force one of the series of latching mechanisms into an operative position independently of the position of the latching mechanisms of the remaining series.

5. The combination of a frame, a plurality of hammers, shanks to the respective hammers, such shanks arranged to move longitudinally in the frame, abutments rigidly secured to the shanks, rotatable shafts, sprocket wheels on the shafts, chains on the sprocket wheels, abutments secured to the chains, the abutments on the chains arranged to engage with the abutments on the hammer shanks, a plurality of series of mechanisms to latch the shanks in a raised position, said latching mechanism arranged to be normally in an inoperative position, and means to force the latching mechanisms of a determined series into an operative position.

6. The combination of a frame, a plurality of series of hammers, shanks to the hammers, such shanks longitudinally movable in the frame, rotatable shafts, sprocket wheels on the shafts, chains on the sprocket wheels, abutments secured to the chains, such abutments on the chain arranged to engage with the abutments on the hammer shanks, a plurality of series of latching mechanisms, respectively arranged to latch corresponding shanks in a raised position, said latching mechanism constructed to nor-

mally rest in an inoperative position, and means to force one of the series of latching mechanisms into an operative position independently of the position of the latching mechanisms of the remaining series.

7. The combination of a frame, a series of hammers, shanks to the hammers, such shanks longitudinally movable in the frame, abutments rigidly secured to the shanks, rotatable shafts, sprocket wheels on the shafts, chains on the sprocket wheels, abutments secured to the chains, such abutments on the chains arranged to engage with the abutments on the hammer shanks, a series of latches arranged to yieldingly stand in an inoperative position, means to force such latches into an operative position to latch the shanks in a raised position, and means to release the mechanisms which force such latches into operative position.

8. The combination of a frame, a plurality of hammers, shanks to the respective hammers, such shanks arranged to move longitudinally in the frame, abutments rigidly secured to the shanks, rotatable shafts, sprocket wheels on the shafts, chains on the sprocket wheels, abutments secured to the chains, the abutments on the chains arranged to engage with the abutments on the hammer shanks, a plurality of series of latches arranged to normally stand in an inoperative position, to force the latches of a determined series into an operative position to latch the shanks corresponding with such series of latches in a raised position, and means to release the mechanism which forces the latches of a determined series into an operative position.

CLAUS O. BRANDELL

In the presence of—

CHARLES TURNER BROWN,
EDWARD J. BROWN.