

(No Model.)

2 Sheets—Sheet 1.

S. McCARTER.
BRICK PRESS.

No. 478,625.

Patented July 12, 1892.

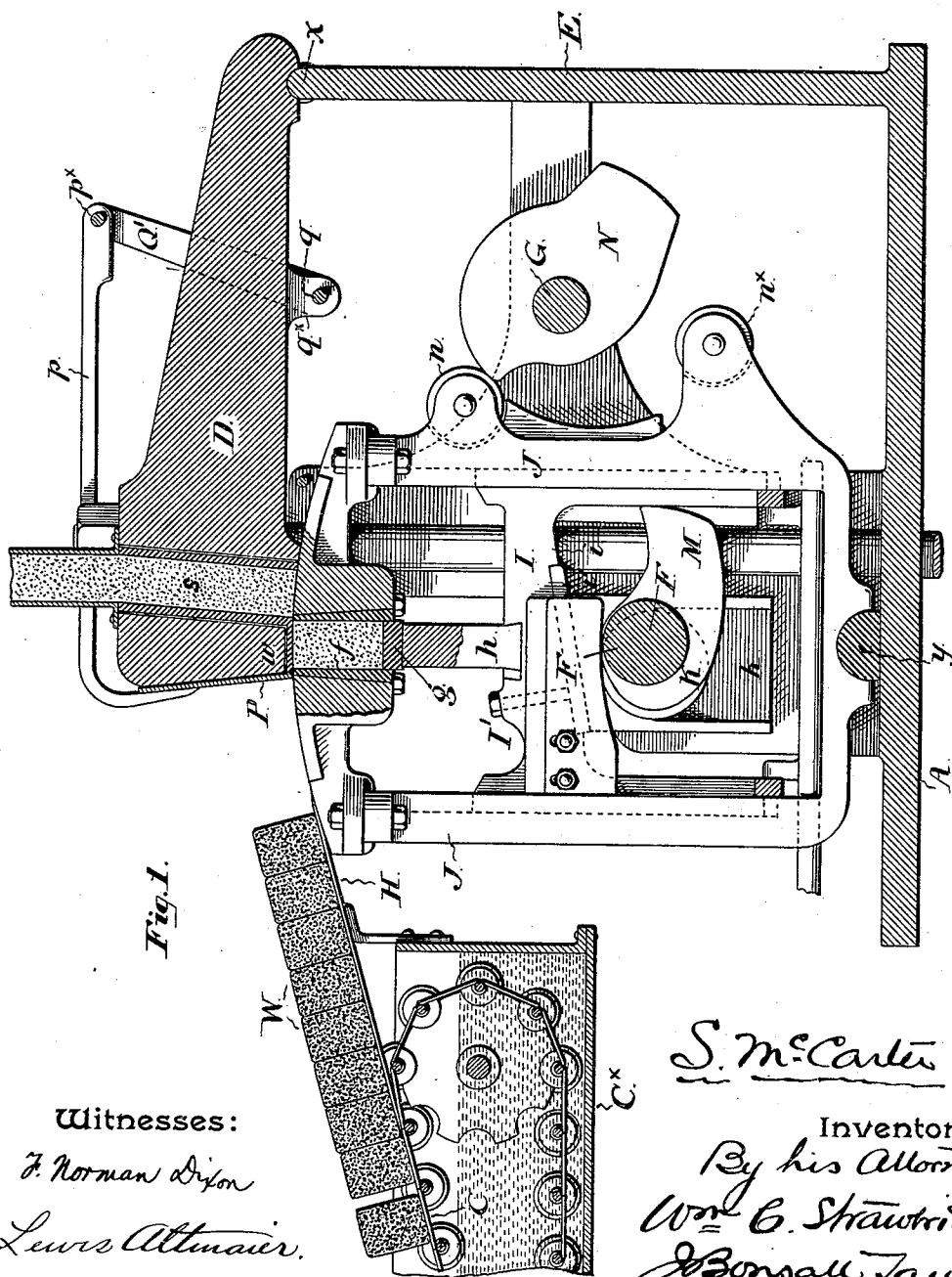


Fig. 1.

Witnesses:

J. Norman Dixon

Lewis Altmaier

S. McCarter

Inventor

By his Attorneys
Wm. C. Strawbridge
& Benson Taylor

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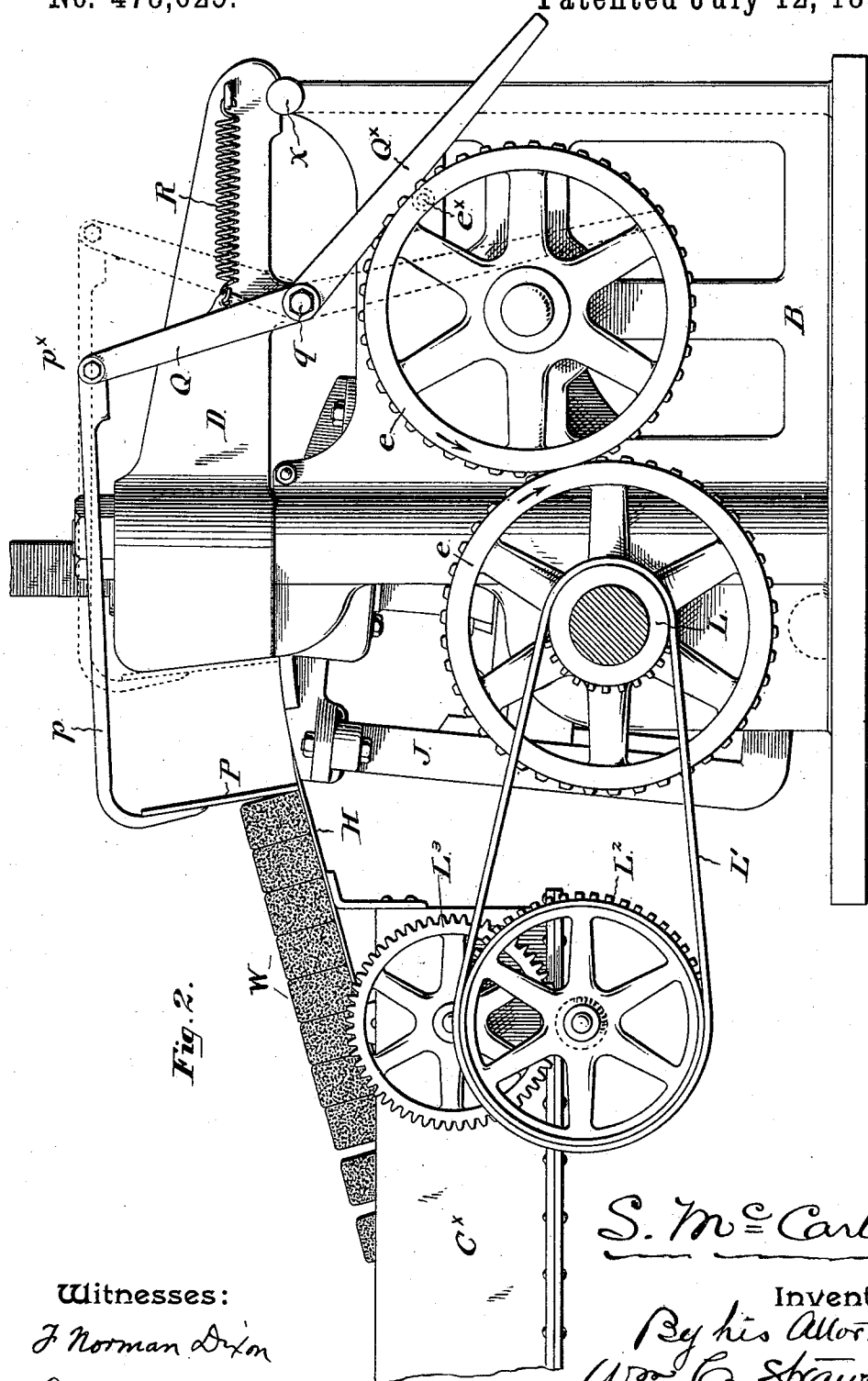


Fig. 2.

Witnesses:

J. Norman Dixon

Lewis Altmaier.

S. McCarter

Inventor

By his Attorneys,
Wm. C. Strawbridge
Bonsall Taylor

UNITED STATES PATENT OFFICE.

SAMUEL McCARTER, OF NORRISTOWN, PENNSYLVANIA, ASSIGNOR TO THE
INTERNATIONAL PAVEMENT COMPANY, OF HARTFORD, CONNECTICUT.

BRICK-PRESS.

SPECIFICATION forming part of Letters Patent No. 478,625, dated July 12, 1892.

Application filed March 27, 1890. Serial No. 345,471. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL McCARTER, a citizen of the United States, residing at Norristown, Montgomery county, Pennsylvania, have
5 invented certain Improvements in Presses for Plastic Material, of which the following is a specification.

My invention relates in general to presses in which plastic material is compressed into
10 given forms, and particularly to presses for making blocks from asphaltic paving compositions;—and it is an improvement upon a press of this character invented by me and patented to me in and by United States Letters Patent No. 304,337, granted September 2,
15 1884, to which Letters Patent reference is to be made.

My present improvements comprehend the provision in connection with such a press as
20 is described in the specification and illustrated in the drawings of my said patent, of a block delivery mechanism for discharging the blocks from the press, and their object is the provision of an inexpensive, durable, and reliable automatic device for forcing the blocks
25 as they are expelled from the mold from off the oscillatory or sliding mold frame of the machine and along the inclined chute to the endless traveling delivery apron which conducts them through a water trough wherein
30 they are chilled.

A press embodying my improvements is represented in the accompanying drawings, and hereinafter described, the particular
35 mechanism claimed as novel being hereinafter definitely specified.

In the drawings, Figure 1 is a central, vertical, longitudinal, sectional elevation, and
40 Fig. 2 a side elevation of a press embodying my improvements.

Similar letters of reference indicate corresponding parts.

In order that the devices in which my present invention resides may be understood it is
45 necessary briefly to describe the construction and operation of the press referred to in my patent aforesaid, and in connection with which, as stated, my said improvements are applied and operate.

50 In the drawings, A is the base, B B the sides, D the top, and E the back of the fixed frame

of the machine. Of these parts, the base, sides, and back, are cast in one piece or rigidly bolted together, but the top is pivoted to the back at the point *x*, and confined vertically to the side frames by bolts (not shown),
55 as fully set forth in my patent.

F and G are two shafts adapted to bearings in the side frames, and suitably geared together by spur wheels *e e*, as shown in Fig. 2.
60 To one of these shafts, preferably the shaft F, power is suitably applied.

J is a vibrating mold frame, mounted upon a central basal pivot *y* upon the base of the fixed frame and having an opening in its upper portion forming the mold *f*. Within this
65 mold is fitted a plunger *g*, the rod *h* of which has a cross head I vertically guided in the frame J and having an inclined under face *i*.

On the shaft F is an eccentric K and a cam
70 M, the eccentric having a block *k* having an inclined upper face *i'* adapted to act upon the inclined under face *i* of the cross head I. The cam M is adapted to act upon a projection
75 I' of said cross head, so as, in connection with the eccentric and its block, to impart a differential vertical reciprocating movement of the character set forth in my patent referred to, to the plunger.

N is a cam upon the shaft G adapted
80 through its alternate contact with the anti-friction rollers *nn'* to impart a predetermined vibratory movement to the vibrating frame J.

s is a charging opening in the top D of the frame, through which plastic material from a
85 charging hopper (not shown) is fed into the mold.

w is a press block, being a part of the frame top D in advance of the charging opening.

C is an endless traveling apron, suitably operated within a water tank C^x, the carrying
90 face of the upper extremity of which is in communication with the upper carrying face of the vibrating mold frame by an intermediate inclined chute H, along which the compressed blocks W are automatically and
95 positively fed by the operation of my delivery mechanism hereinafter described.

In Fig. 2, I represent connective gearing L L' L² L³, which is convenient to transmit
100 power from the shaft F to the driving of the endless apron C. This gearing as a whole is

illustrative simply of a suitable means of driving the apron.

As set forth in my patent referred to, the mold frame J is by the cam N suitably vibrated to first bring the mold beneath the charging opening *s*, then beneath the press block, and then beyond the press block; while the plunger *g* is by the eccentric K and cam M suitably operated, first, to permit of the filling of the mold from the charging opening; second, to compress against the press block the contents so received; and, third, to expel the finished block from the mold while the latter is in advance of the press block, and before the mold frame is caused to take on its reverse or backward movement.

In the operation of presses of the foregoing character, difficulty has been experienced in effecting the movement of the blocks from off the carrying head-face of the reciprocating frame along the chute and onto the apron. This difficulty has arisen from the resistance due to the frictional contact between the blocks and the chute,—and, after more than a very few blocks have been expelled from the mold and in the backward movement of the mold frame been caused to stand side by side upon, and to gravitate from off the segmental head of the mold frame onto, the chute,—it has been found that the line of blocks, by reason of the frictional contact referred to, comes to a standstill and is unaffected by the further vibratory movement of the mold-frame. As a consequence the next block expelled from the mold is expelled against and beneath the last block (of the series,) for the time being standing still over the mold in its discharging position, with the result that the said block then being expelled pushes the block last previously expelled upward and off the head of the mold frame and chute.

My delivery mechanism has been designed to obviate the foregoing defects in operation, and it consists, briefly stated, in a push-plate, connected with, so as to be automatically operated by, any convenient moving portion of the press mechanism, which plate acts behind each block as it is expelled from the mold to sweep said block and also the line or column of blocks in advance of it upon the head of the mold frame and along said chute to the apron.

In the drawings the push plate is designated P, and is as shown, simply a flat plate, the lower edge of which rests upon the upper face of the head of the vibrating mold frame and the plane of the back face of which is preferably parallel with the plane of the outer end of the top of the fixed frame of the machine. It is immaterial how this push plate is supported, and immaterial also by what operative devices it is caused to advance to push forward the line of blocks and to retreat to present itself behind the next block to be expelled. Various devices may be resorted to to effect the connection of the push plate

with a moving part of the machine and to occasion its movement in concomitance with the mold frame. I prefer, however, to resort to the following devices forming a connective and operative mechanism for the push plate, which, as explained, is the delivery mechanism *per se*.

p are a pair of arms connected to the push plate P, having horizontal extension rearwardly a given distance, and at their rear extremities being pivotally connected at *p*^x each to one of two downwardly extending arms designated Q Q' respectively.

q is a transverse rock shaft mounted in bearings *q*^x in the top frame D, to which rock shaft the rock arms Q Q' are keyed or otherwise rigidly connected. The rock arm Q is extended down below the shaft *q*, so as to become in effect a lever, and said downwardly extending end portion, which I designate Q^x is so situated as to lie in proximity to the inner face of the wheel *e* mounted upon the shaft G. Upon the inner face of the wheel referred to and near its outer edge is mounted a stud or projection *e*^x which is for convenience equipped with a roller.

R is a contractile spring, the ends of which are secured to the lever or rock arm Q above the shaft *q*, and to a staple fixed in the frame D, respectively.

It will now be understood that in the rotation of the wheel *e*, the stud *e*^x will be carried against the lever Q^x, and will occasion the movement of said lever with the shaft *q* as a pivot, whereby, through the instrumentality of the rock arms Q Q' and the arms *p* the plate P will be forced positively forward,—and at the same time the spring R will be stretched. As in the continued rotation of said wheel *e* the stud *e*^x is carried away from the lever so as to permit the same to swing in toward the axle G, the spring R will contract and in so doing retract the plate P from the position shown in full lines in Fig. 2, in which position it has just completed the advance of the column of blocks, to that shown in dotted lines in which it is in readiness to act upon a new block about to be expelled.

The lever Q is represented as bent or angled so that the most advantageous action of both the stud and the spring may be had upon it.

While I have described and illustrated my delivery mechanism and its connections as applied and operative with a vibratory mold frame of the character especially illustrated in Fig. 8 of the drawings of my patent, it is obvious that the push plate and its connections can with equal ease be applied to and operated in connection with a sliding mold frame such as is described in the specification of my patent referred to and represented in the first seven figures of the drawings; with this consideration in view, I employ in the claims the term reciprocating as applied

to a mold frame whether it be a vibrating or a sliding frame.

Having thus described my invention, I claim:

5 1. In a reciprocating press of the type here-
inbefore specified, in combination with the
top of the fixed frame, with the upper por-
tion of the reciprocating mold frame, and
with the chute, the push plate P, and mech-
10 anism for operating said push plate relatively
to the aforesaid elements, substantially in the
manner and for the purpose specified.

2. In combination, a fixed frame, a charg-
ing opening and a press block formed in said
15 frame, a mold frame having a mold and adapt-
ed to be reciprocated with respect to said
fixed frame, a plunger carried by the mold
frame, means for operating said plunger with
respect to the mold, means for reciprocating
20 the mold frame, a chute leading from the

mold frame, a push plate, and operative
mechanism for moving said push plate toward
and from the mold and toward and from the
chute, substantially as set forth.

3. In combination with the fixed frame, the 25
mold frame, the plunger and its operative de-
vices, the devices for reciprocating the mold
frame, the chute, the push plate having the
rearwardly extended arms, the rock arms, the
downwardly extending lever, the stud pro- 30
vided wheel, and the spring, substantially as
set forth.

In testimony that I claim the foregoing as
my invention, I hereunto sign my name this
21st day of February, A. D. 1890.

SAMUEL McCARTER.

In presence of—

J. BONSALE TAYLOR,
F. NORMAN DIXON.