

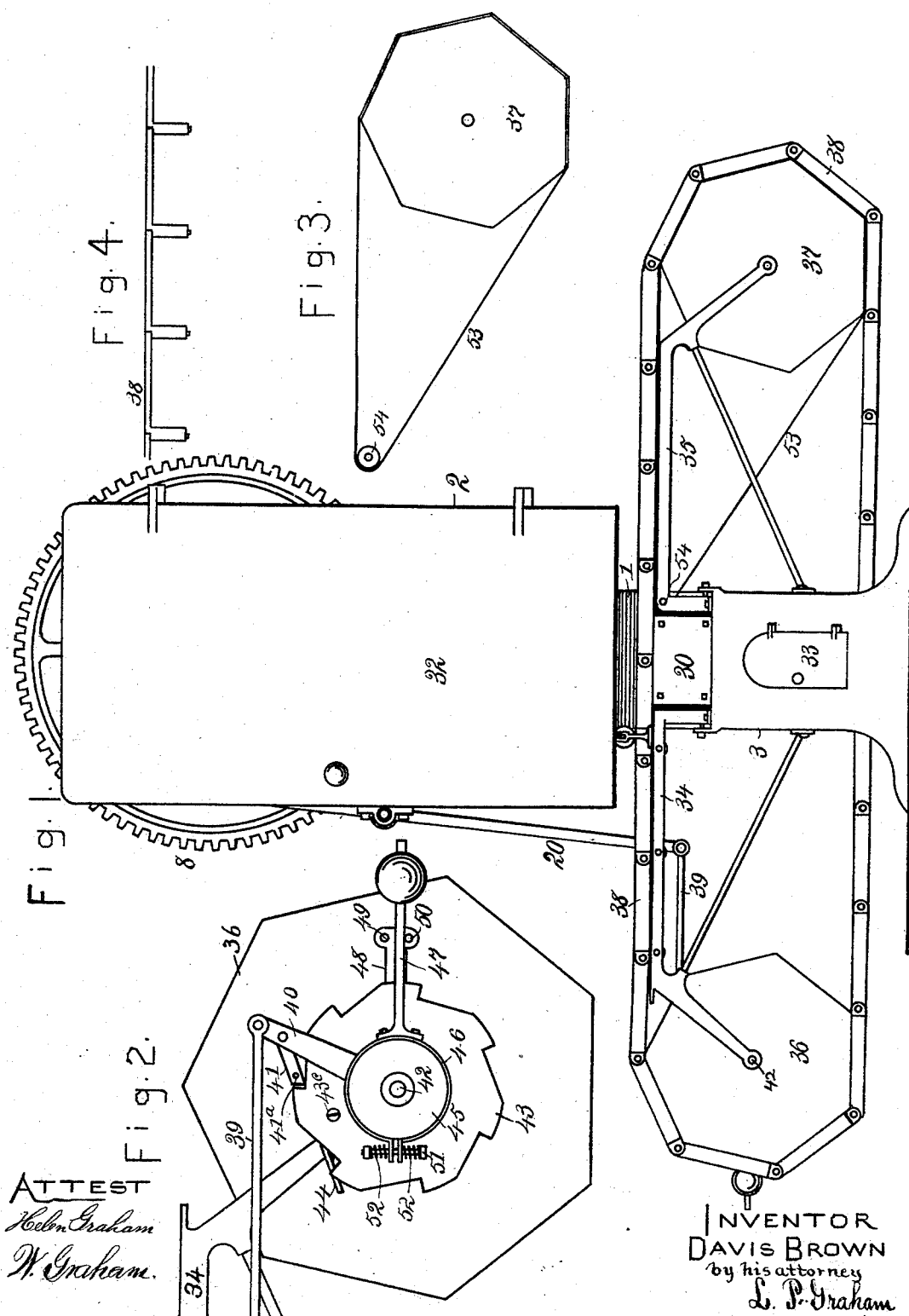
(No Model.)

3 Sheets—Sheet 1.

D. BROWN.
RE-PRESS BRICK MACHINE.

No. 518,643.

Patented Apr. 24, 1894.



ATTEST
Helen Graham
W. Graham.

INVENTOR
DAVIS BROWN
by his attorney
L. P. Graham

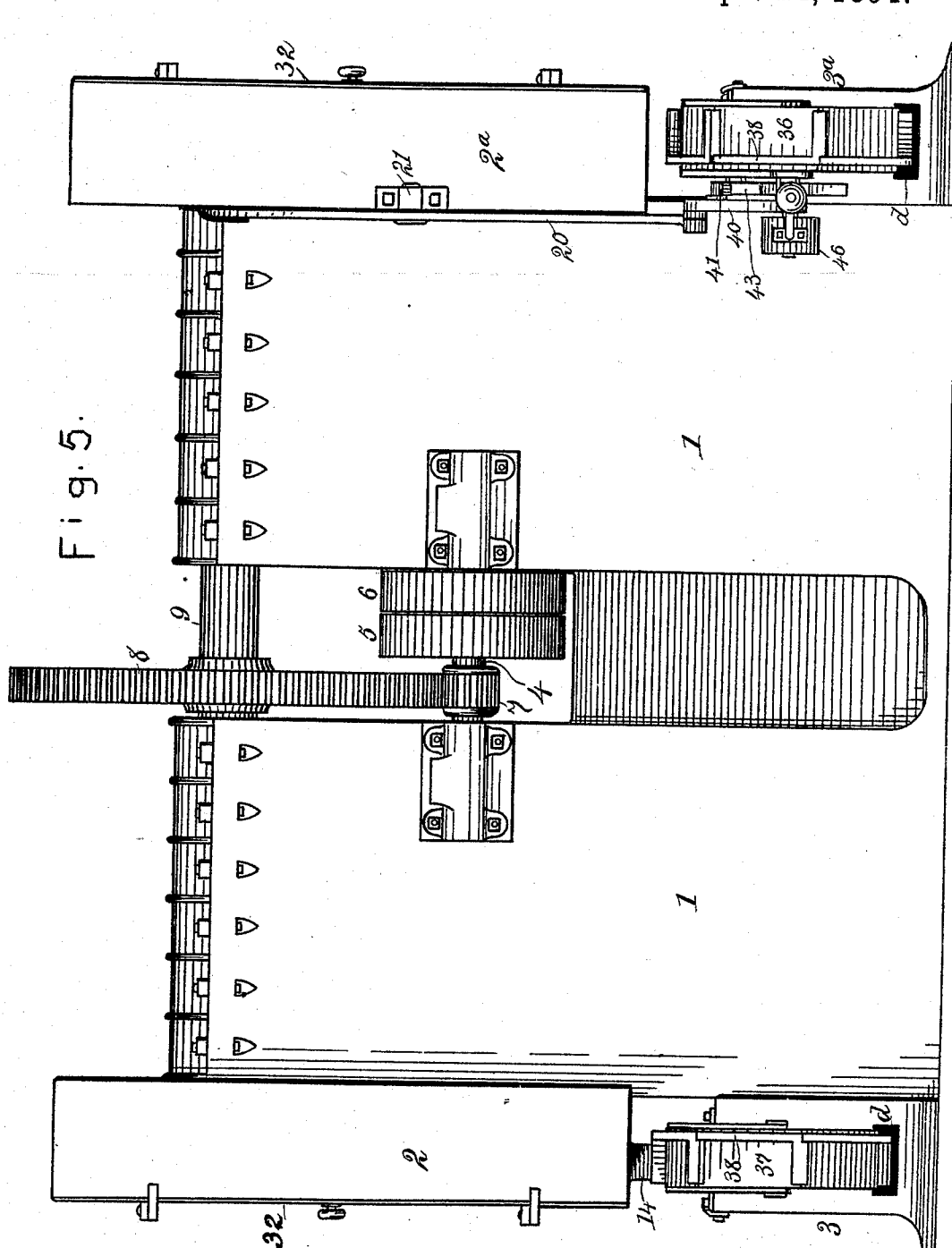
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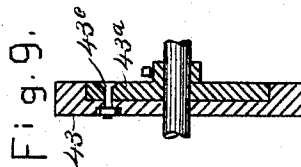
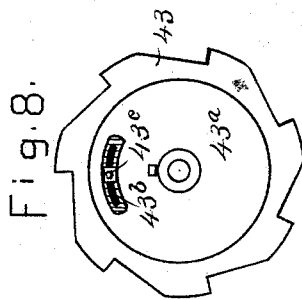
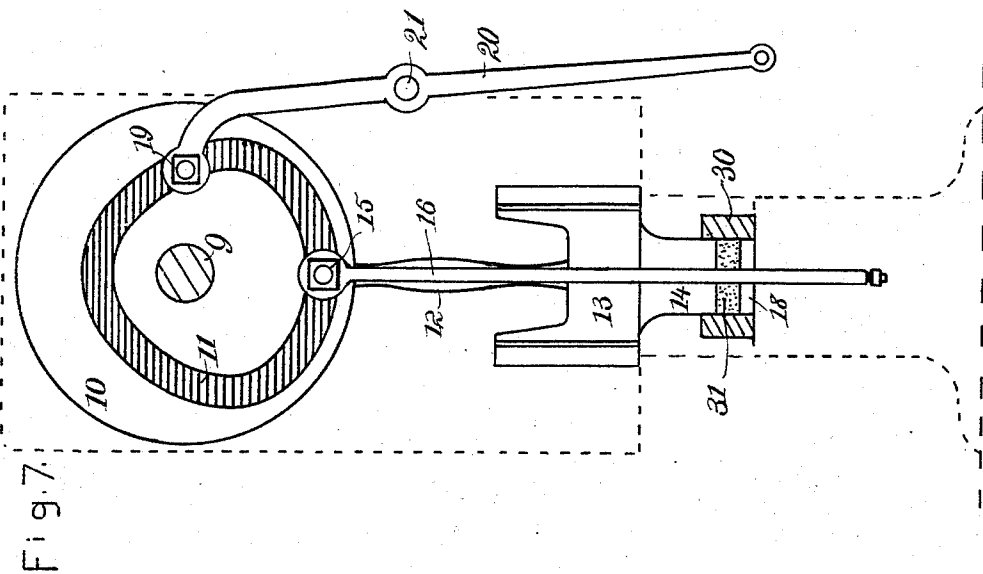
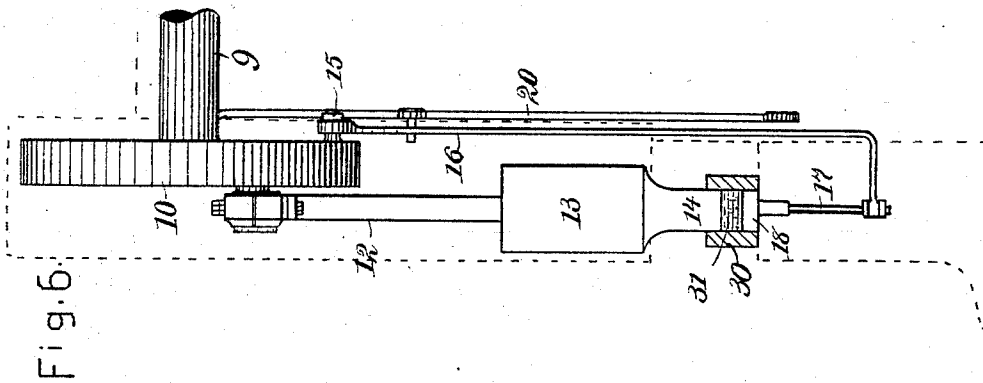
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UNITED STATES PATENT OFFICE.

DAVIS BROWN, OF DECATUR, ILLINOIS, ASSIGNOR OF ONE-HALF TO THE
DECATUR LEADER MANUFACTURING COMPANY, OF SAME PLACE.

RE-PRESS BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 518,643, dated April 24, 1894.

Application filed July 26, 1893. Serial No. 481,511. (No model.)

To all whom it may concern:

Be it known that I, DAVIS BROWN, of Decatur, in the county of Macon and State of Illinois, have invented certain new and useful
5 Improvements in Re-Press Brick-Machines, of which the following is a specification.

In the drawings forming part of this specification Figure 1 is a front elevation of a re-press machine embodying my invention. Fig.
10 2 is an enlarged detail representation of mechanism used to operate the feed chain. Fig. 3 shows the supplemental off-bearing belt. Fig. 4 is a plan of a section of the feed chain. Fig. 5 is a side elevation of the complete machine. Fig. 6 is a side elevation of the re-press mechanism, the matrix being shown in section, and Fig. 7 is an inner face view of the same. Fig. 8 is a detail representation of the ratchet wheel used in the feed mechanism.
20 Fig. 9 is a sectional view of the ratchet wheel shown in Fig. 8.

The frame consists of a preferably integral shell represented in Fig. 5 by reference characters 1, 2, 2^a, 3 and 3^a, the part 1 providing
25 bearings for the shaft and counter shaft, the parts 2^a and 2 incasing the actuating mechanism, and parts 3^a and 3 supporting the matrices and feed mechanism, and incasing the stem for the brick expelling plunger. The
30 part 1 of the shell is recessed to receive the counter shaft 4, and such shaft is supplied with pulleys 5 and 6 (fast and loose.) On each end of shaft 9 is fixed a disk 10, see
35 Figs. 6 and 7, and such disks are each supplied with a cam groove 11, which is peculiar in that the parts nearest to and farthest from the shaft are diametrically opposite, are each concentric with the shaft for
40 one fourth of a circle, and more gradually one into the other. The disk is also supplied, on the face opposite the cam groove *i. e.*, the outer face, with a crank pin in line with a radius drawn through the center of the larger curve of the cam groove, and pitman 12
45 connects the crank pin with slide 13, to the lower end of which the press plunger 14 is attached. Roller 15 engages the cam groove at its lowest point, and rod 16 extends downward, in vertical alignment with the shaft,
50 and turns outward at its lower end under ma-

trix 30. Said matrix is provided with vertical sides to inclose the sides of each brick, while it is re-pressed. Stem 17 extends upward from the lower termination of rod 16 and connects with a brick-expelling plunger
55 18. Roller 19 engages the cam groove at one side of the shaft, in horizontal alignment therewith, and bar 20 connects with the roller and is pivoted to the shell as seen at 21.

The mechanism above described is ordinarily completely incased in the shell, but it is
60 always accessible through doors 32 and 33.

Extensions 34 and 35, one to each side are secured to the matrix support and are suitably braced, they provide bearings for the
65 polygonal pulleys 36 and 37 respectively. The feed belt 38 is composed of links corresponding in length to the sides of the pulleys, and is open on the outer side to receive the bricks. It runs over the pulleys and through
70 a slot *d*, shown in Fig. 5, in the matrix support. A rod 39 connects bar 20 with a rock arm 40 on shaft 42 of pulley 36, and the rock arm carries a pawl 41 which is supplied with a pin or lateral extension 41^a. Ratchet wheel 43
75 is mounted on shaft 42 in a manner permitting rotary adjustment, and through the bar 20, the rod 39, the arm 40, the pawl 41 and the ratchet wheel 43, the pulley is intermittently
80 turned and the bricks fed to the press by the chain. The spaces in the links of the chain are somewhat longer than the length of the longest brick for which the machine is adapted, and the feed is varied to suit bricks of
85 different lengths and bring them in proper position under the plunger by adjusting the ratchet wheel on the shaft. The necessity for such adjustment lies in the fact that the rear end of the brick lies always in contact
90 with the rear wall of the link, its center must always be in alignment with the center of the plunger during the re-press operation, and as the center of the long brick is farther from the end than is the center of a short brick, the throw of the chain must be varied to ac-
95 commodate the lengths of the bricks. This may be done by the means shown in Figs. 8 and 9 where 43^a shows a disk fixed on the shaft and slotted at 43^b; 43^c indicates a bolt extending through the slot and through a 100

hole in the ratchet wheel. The adjustment is made by loosening the bolt, shifting the ratchet wheel and re-tightening the bolt.

It is desirable that the chain shall retract slightly after feeding the bricks to the die of the press in order to be entirely out of the way of the plunger, and this is done as follows: Pulley 45, fixed on shaft 42, is supplied with a friction band 46 which clamps the pulley with more or less tenacity according to the tightness or looseness of bolt 51 on springs 52. A weighted arm 47 extends horizontally from the band, and has a limited amount of play between pins 49 and 50, which project from the rigid extension 48 of pulley support 34. With the initial motion of the ratchet wheel the arm 47 rises in contact with pin 49 when its motion is arrested and the band compelled to slip on pulley 45 during the completion of the throw. As the brick is fed to its proper position under the press plunger the lateral projection of the pawl rides up incline 44, which is fixed on support 34, and, by releasing the ratchet wheel, permits the weighted arm to retract the chain to the extent of its throw, which may be more or less according to the distance between pins.

The bricks, one of which is shown at 31, in Figs. 6 and 7, are fed to the press along an immovable plane surface, and belt 53 running over roller 54 and polygonal pulley 37 enables the chain to off-bear without subjecting the re-pressed brick to the damaging action of the sliding friction.

The disk 10 has its cam grooves so disposed that in two opposing quadrants the cam is concentric and in the other two quadrants it is eccentric with the shaft. The roller of the expelling plunger is always in an effective part of the groove while the roller of the feed bar is in an ineffective part, and vice versa, and consequently the bricks are fed to the press while the press is motionless, and the press operates while the feed is motionless, one disk effecting the entire result. The disk on opposite ends of shaft 9 are oppositely arranged in order that one press may act while the other is inactive, so distributing the work, and such arrangement is indicated in Fig. 5 where one die is shown protruded and the other is withdrawn.

As shown in the drawings the presses are each provided with a single press plunger, but it is obvious that either or both may have two plungers, and that in such case the feed chain should have extensions on both sides instead of one as shown.

The bricks are supplied to the chain by hand and the number of links in receiving positions may be sufficient to enable the supply to equal the demand, whatever speed the press mechanism may attain. In the structure shown provision is made for supplying two bricks at one time. The expelling plunger rises to expel one brick and receive another, it forms a continuation of the feed plane when raised to receive the bricks, and

it descends with the press-plunger until the bricks are inside the matrix, when it stops and resists the further, compressing motion of the press plunger. See 18 in Fig. 6 where the expelling plunger is lowered and the brick 31 is being subjected to compression.

The press is strong, substantial, simple in construction and operation, its mechanism is inclosed, and it is in practical effect two presses operated with one press power. The continuous feed mechanism enables more than one brick to be supplied at one time, the number depending on the length of the feed table, and consequently increases the possible speed of the machine.

While it is desirable to have press mechanism at each end of the shaft, in the manner specified, it is obvious that many of the features of the invention are independent of such arrangement and are equally applicable to a single press.

I claim as new and desire to secure by Letters Patent—

1. A feed for re-press brick machines comprising an endless intermittently acting carrier with a plunger above, and a stationary matrix under said carrier, said matrix having vertical sides to inclose a brick.

2. A feed for re-press brick machines comprising an endless intermittently acting carrier having openings therein to receive and advance the already molded bricks under a plunger, with said plunger above, and a stationary matrix under said carrier, said matrix having vertical sides to inclose a brick.

3. In re-press brick machines, a shaft, a cam thereon opposite quadrants of which are eccentric while the others are concentric with the shaft, a brick expeller having a bearing in the cam, and a feed actuating bar also having a bearing in the cam at a distance approximating ninety degrees from the bearing of the expeller.

4. The movement for re-press brick machines comprising shaft 9, disk 10 having cam groove 11, pitman 12 connecting a crank pin on the disk with the slide of the press, brick expelling rod 16 having a bearing in the cam groove in vertical alignment with the shaft, and feed bar 20 also having a bearing in the groove in horizontal alignment with the shaft, substantially as set forth.

5. A feed for re-press brick machines comprising an endless chain with open links to receive bricks and conduct them under a plunger, with said plunger above, and a matrix under said carrier, said matrix having vertical sides to inclose a brick.

6. A feed for re-press brick machines comprising an endless chain with open links to receive the bricks, pulleys carrying the chain, a ratchet wheel on a shaft of a chain-carrying pulley, an arm mounted loosely on the shaft, and a pawl on the arm engaging the ratchet wheel.

7. A feed for re-press brick machines comprising an endless feed chain, pulleys to carry

the chain, a ratchet on a shaft of a chain carrying pulley, a pawl to drive the ratchet and throw off at the end of its stroke, and a weight, or equivalent tending to retract the chain, substantially as set forth.

5 8. A feed for re-press brick machines comprising an endless feed chain, pulleys to carry the chain, a ratchet on a shaft of a chain carrying pulley, a pawl to drive the ratchet, and
10 a weight, or equivalent tending to retract the chain, substantially as set forth.

9. In re-press brick machines, the combination of a chain adapted to feed and off-bear, and a belt running under the off bearing portion of the chain.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

DAVIS BROWN.

Attest:

THEO. SCHAFER,
I. D. WALKER.