

(No Model.)

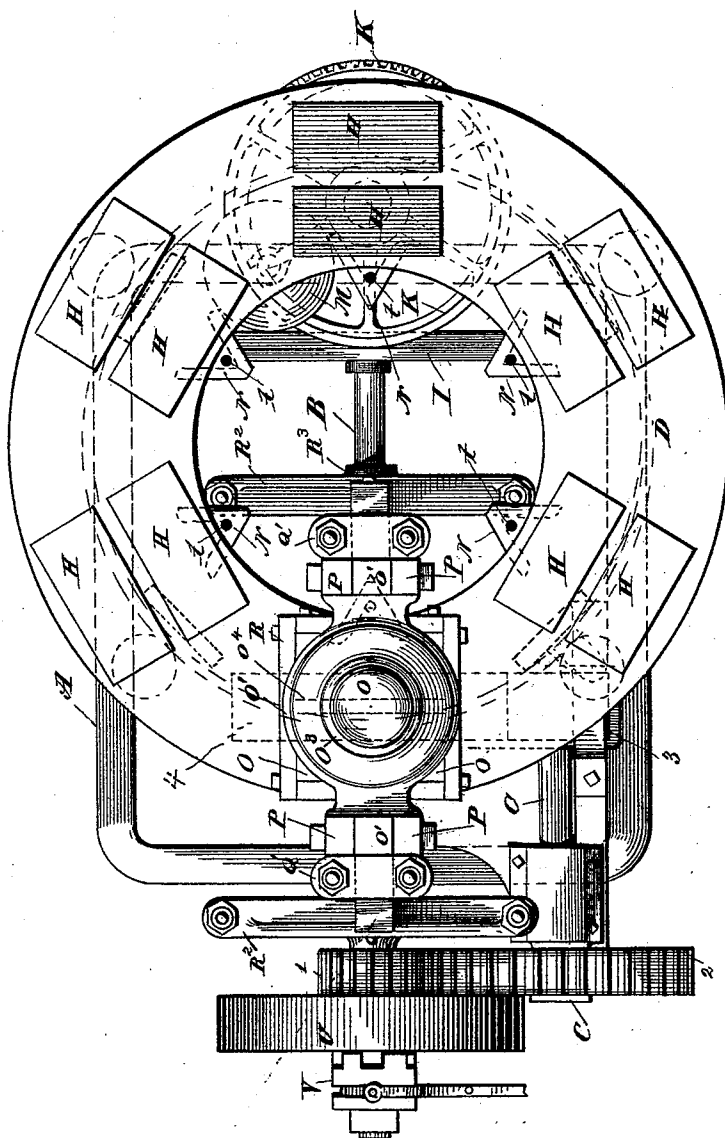
5 Sheets—Sheet 1.

D. J. C. ARNOLD.  
RE-PRESS BRICK MACHINE.

No. 500,315.

Patented June 27, 1893.

Fig. 1.



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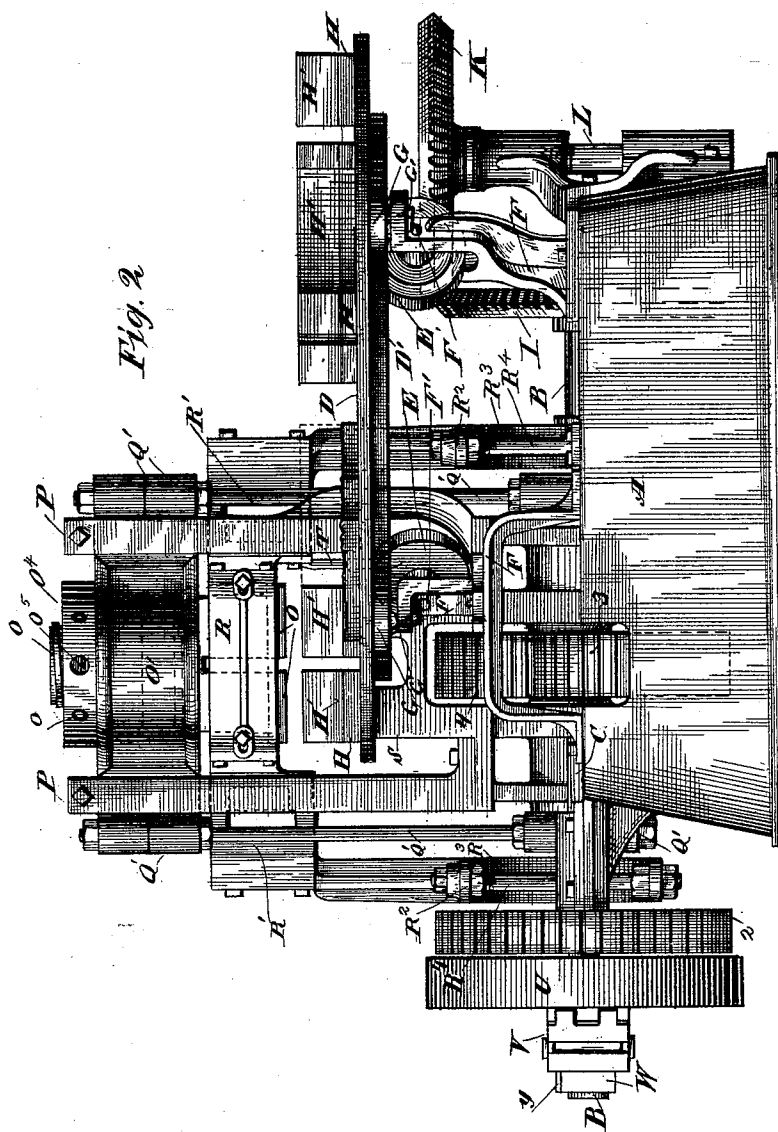
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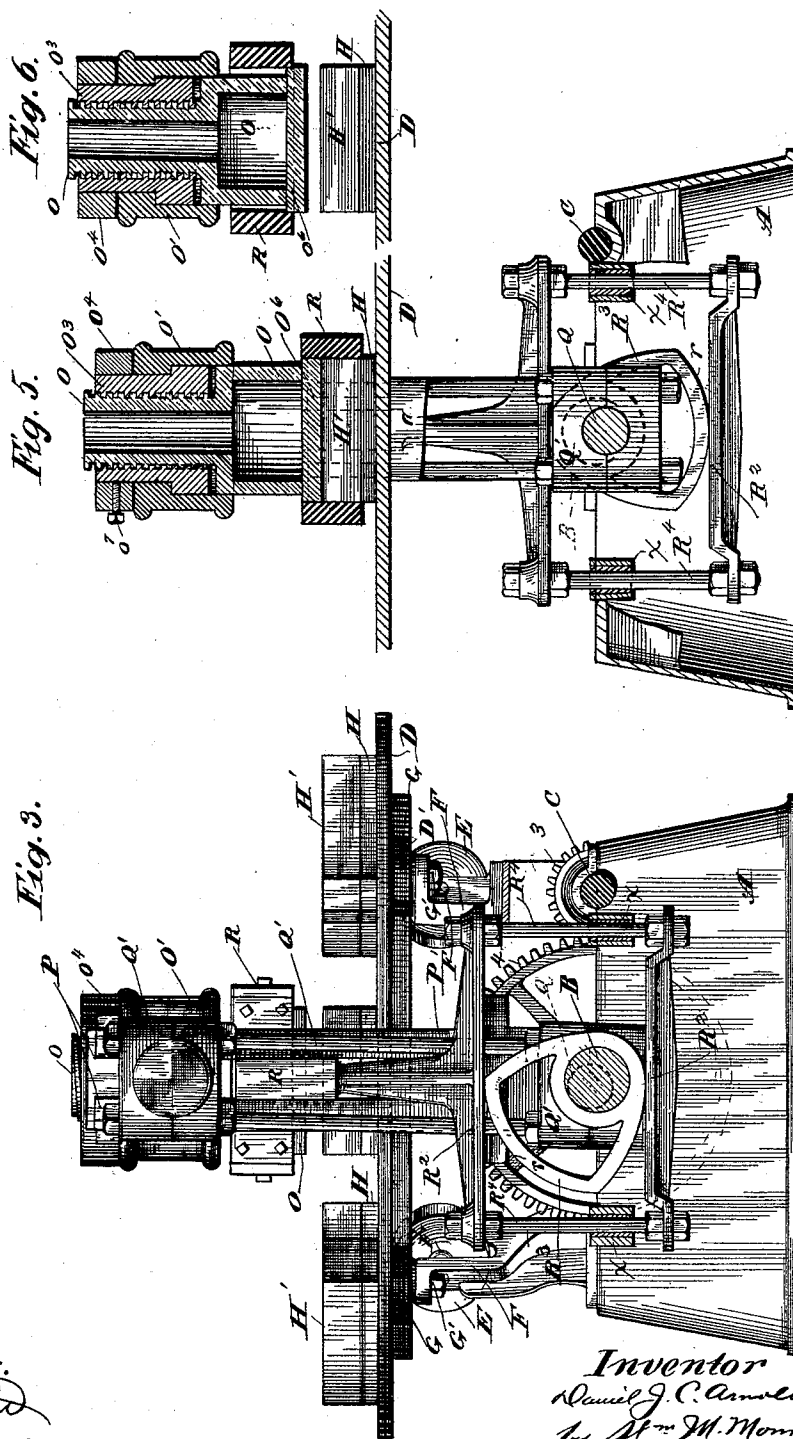
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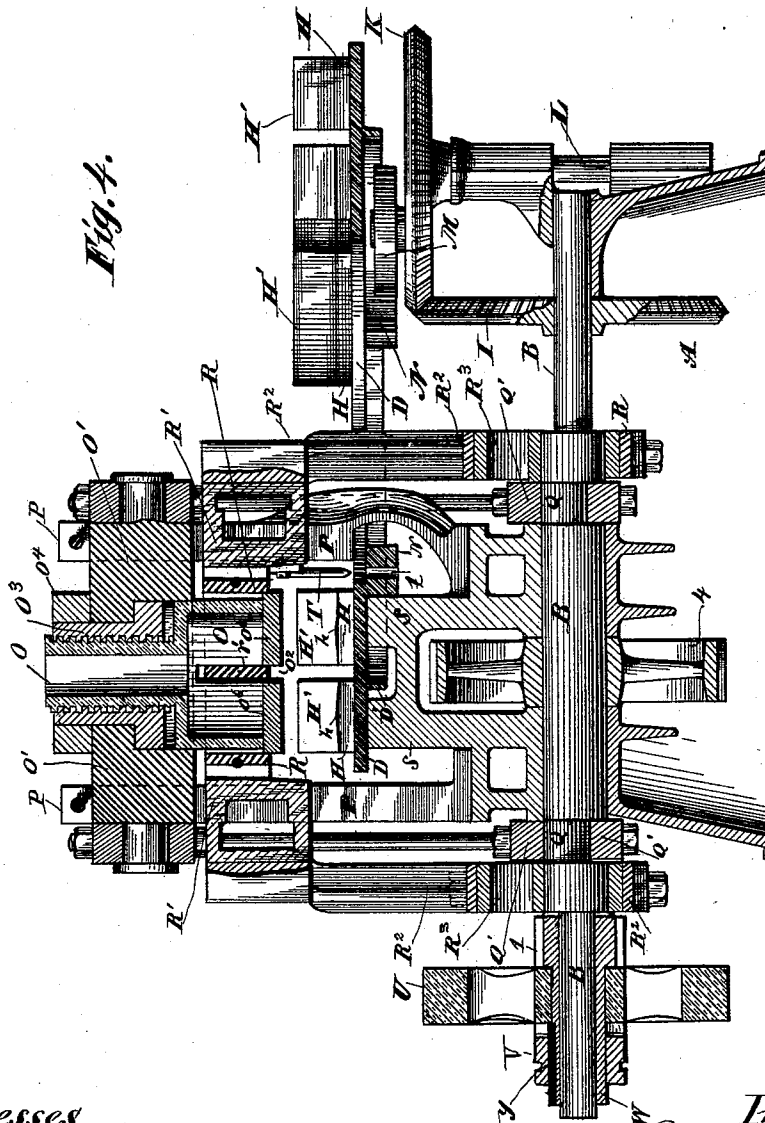
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Patented June 27, 1893.



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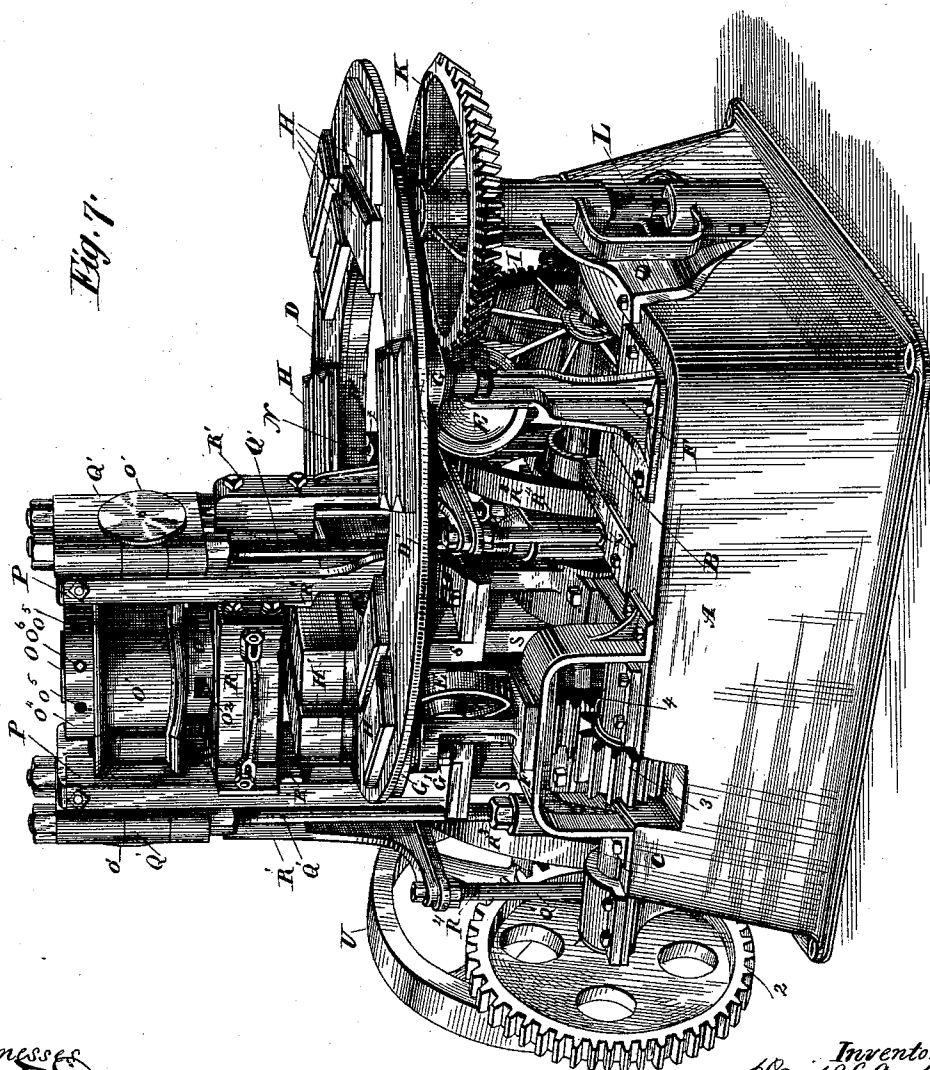
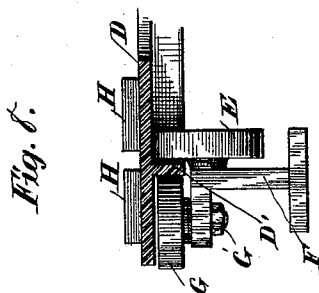
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D. J. C. ARNOLD.  
RE-PRESS BRICK MACHINE.

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Patented June 27, 1893.



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# UNITED STATES PATENT OFFICE.

DANIEL J. C. ARNOLD, OF NEW LONDON, OHIO.

## RE-PRESS BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 500,315, dated June 27, 1893.

Application filed October 22, 1892. Serial No. 449,544. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL J. C. ARNOLD, a citizen of the United States, and a resident of New London, county of Huron, State of Ohio, have invented certain new and useful Improvements in Re-Pressers, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in repressing machinery for brick, and its objects are to provide a simple and efficient form of press having quick and powerful movements, and it consists in the combination and arrangement of parts and construction of details as hereinafter described, shown in the accompanying drawings, and more specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan of my improved machine. Fig. 2 is a side elevation. Fig. 3 is an end elevation showing actuating parts. Fig. 4 is a vertical longitudinal central section on axis of main shaft. Fig. 5 is a transverse vertical central section through press showing working parts as in Fig. 4 (intervening gears being broken away). Fig. 6 is a similar section showing working parts of press in the positions shown in Fig. 2. Fig. 7 is a perspective view of the entire machine; and Fig. 8 is a section of table showing rollers in position.

In the drawings A is the bed plate upon which all the machinery rests, of which B is the main actuating shaft and C auxiliary shaft.

D is an annular table supported upon rollers E which pivot in bearings F' in pedestals F resting upon the bed plate. To secure uniform rotary movement additional rollers G are secured in such a manner as to bear upon the vertical flange D'. These rollers are also for convenience mounted upon the pedestals F in bearings G' and prevent any horizontal slip of the table. Upon the upper face of the table slightly raised forms or blanks H are placed at regular distances, as in groups of two, six times repeated, upon which the bricks to be repressed are placed as at H'. The upper surfaces of the forms H are slightly raised in the center h to prevent the bricks from bulging.

Rotary movement is given the table by means of the miter gears I and K upon shafts B and L, and by roller M mounted upon the gear K, and at each revolution of the gear K coming into contact with one set of the projecting parallel guides N secured to the inner and lower edge of the table. The movement thus given the table should be of the degree by which the mold blanks and bricks thereon are separated, as sixty degrees so as to bring each group of blanks in turn exactly underneath the press, which is located over one side of the table and whose composite portions are controlled by eccentric movements connected with the main shaft, and guided by supports resting upon the bed plate. The movements of the press are coincident with the revolution of the table and for the sake of clearness in the drawings all the main figures show the mechanism at the end of the first quarter of its movements.

The construction and mode of operation of the press and adjacent parts is as follows:

O is the repressing plunger, having a limited movement, and adjustably supported in the cross head O' moving in vertical guides P, and actuated by eccentric Q on the main shaft Q' are the connecting rods and brasses.

R is the mold box which envelops the brick on four sides while under pressure and its movement is necessarily greater than that of the plunger O, the movements being in the drawings in the proportion of four to one. The proportion however is not a fixed quantity. The mold box is mounted on cross head arms R' reciprocated in the guides P by means of yoke R<sup>2</sup> and cam R<sup>3</sup> upon the main shaft.

R<sup>4</sup> are the rods of the yoke R<sup>2</sup> moving in the guides x upon the bed plate.

It will be seen from Figs. 3 and 5 that the cams Q and R<sup>3</sup> are situated upon the same side of the shaft, but from the greater movement of the cam R<sup>3</sup> the mold box R is brought down around the bricks upon the table before the plunger has descended, and removed before the plunger has risen its full height, thus pushing the bricks neatly from the mold box as it rises.

It will further be seen by reference to Figs. 3 and 5, that the cam Q will act for an eighth of a movement before the cam R<sup>3</sup>, the advantage of which is very great on the return

movement in relieving the pressure upon the brick when the cams are just rising and before the mold box has had time to rise, since otherwise the soft brick would be forced under the sides of the mold box. The surface  $r$  of the cam  $R^3$  being equal to a segment of one quarter of its revolution, the cam will revolve one quarter of a revolution at either end of its stroke without moving the yoke.

10  $S$  is a permanent anvil located immediately underneath the plunger and table, and designed to receive the blow from the plunger without springing the table.

15  $T$  is a pin secured to the cross head arm  $R'$ , and adapted to register with one of the openings  $t$  in the table and form a lock to secure rigidity of parts when the plunger and mold box are down on the table. The movement of the gear  $K$  and roller  $M$  serves to bring the  
20 openings  $t$  in position at the same that it brings up to the plunger dies the blank forms  $H$  with brick  $H'$ , and this should occur once in every revolution of the shaft.

25 In the sectional views of the plunger head means are shown for adjustment for the thickness of the bricks, which with the adjacent parts are as follows:  $O$  is the plunger divided at  $O^2$  into two portions to act upon the two bricks. Through the opening  $O^2$  passes the  
30 partition  $r'$  of the mold box which is closely bolted together, and to the cross head arms  $R'$ . A nut  $O^3$  in the cross head  $O'$  serves to raise or lower the plunger  $O$  by its screw threaded extremity, and it is turned by means  
35 of a hand wheel or collar  $O^4$  provided with openings  $O^5$  for a spanner or bar. Plates  $O^6$  serve as die blocks for the plunger.

$O^7$  are set screws fastening the collar  $O^4$  to the nut  $O^3$ .

40 The actuating gear is shown in Figs. 1 and 2, where 1 and 2 3 and 4 are spur gears deriving power from the pulley or clutch  $V$  and reduce the speed as desired.

45 It will be seen that the power is derived from a large fly band wheel  $U$  which will equalize any irregularity of movement incident to varying hardness of brick or other causes, and by means of a clutch as  $V$  the  
50 wheel can instantly be cut off to stop all movement of the press in case of any accident or undesirable occurrence in the movements of the mechanism.

Any suitable form of wheel and clutch may be employed.

As shown Fig. 4  $W$  is a loose sleeve upon the shaft, bearing the pinion 1.  $V$  is the clutch of usual form sliding upon the spline  $y$ , and  $U$  is the fly band wheel.

In Fig. 8 is distinctly shown the manner in which the table is supported upon and guided 60 by the rollers  $E$  and  $G$ .

It will be seen that the form of device shown is exceedingly well designed to accomplish the desired objects and additional advantage is gained in the alternating movements of the 65 mold box and plunger since the friction of the bricks on the mold box when rising will cause them to be lifted far enough from their beds on the table, to loosen them thoroughly so that they will not stick on being removed. 70

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

1. In a repress, the combination with a horizontal rotary annular table, of vertically reciprocating plunger and mold box over said table, a main actuating shaft  $B$  supported upon a suitable bed plate underneath the table, and mechanism for revolving the table conjointly with the vertical movements of 80 the dies and mold box, consisting in the gears  $I$  and  $K$  on shaft  $B$ , wheel  $M$  and parallel guides  $N$  on the table, with eccentrics  $R^3$  and  $Q$  on the shaft, provided with cross heads  $O'$  and  $R'$ , substantially as set forth. 85

2. In a repress, the combination of a horizontal table with vertically reciprocating plunger and mold box, and means for reciprocating the same consisting in cross heads  $R'$  and  $O'$ , yoke  $R^2$  and cam  $R^3$  provided with segment  $r$ , cam  $Q$  and rod  $Q'$  and main and auxiliary shafts,  $B$  and  $C$  with operating gears, 1—2—3—4,  $I$  and  $K$  provided with roller  $M$  adapted to engage guides  $N$ , substantially as set forth. 95

3. In a repress the combination with vertically reciprocating plunger and mold box, and vertical guides therefor, of an annular table adapted to rotate between said guides supported upon vertical rollers and guided by 100 horizontal rollers, and an anvil underneath said table and vertically reciprocating dies and mold box, substantially as described.

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Witnesses:

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