(No Model.)

2 Sheets—Sheet 1.

G. CARNELL.

RE-PRESS BRICK MACHINE.

No. 507,649. Patented Oct. 31, 1893.

Fig. 2.

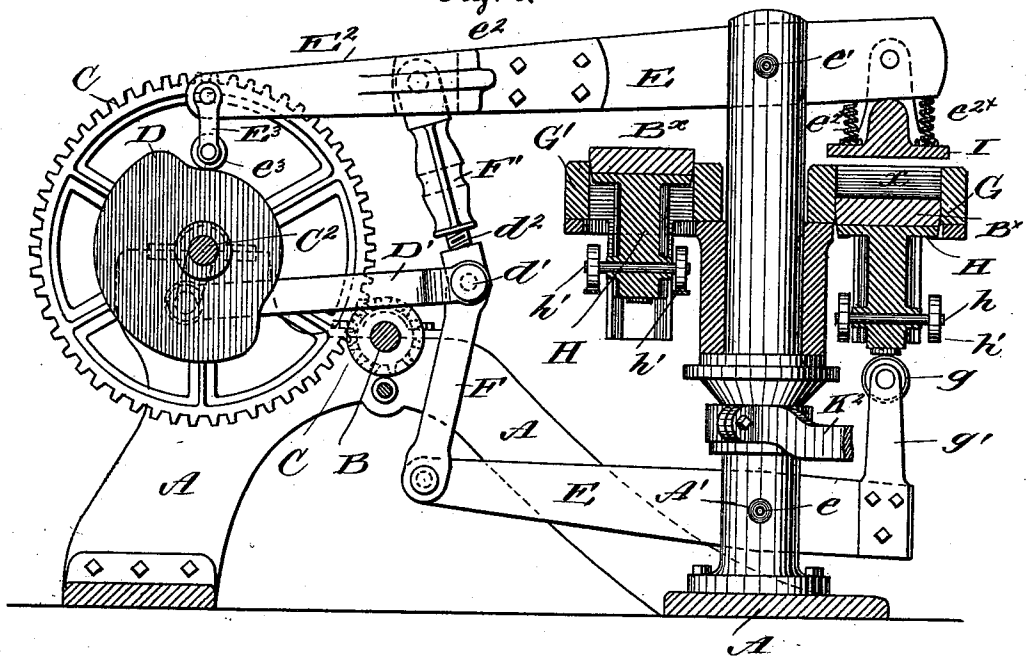
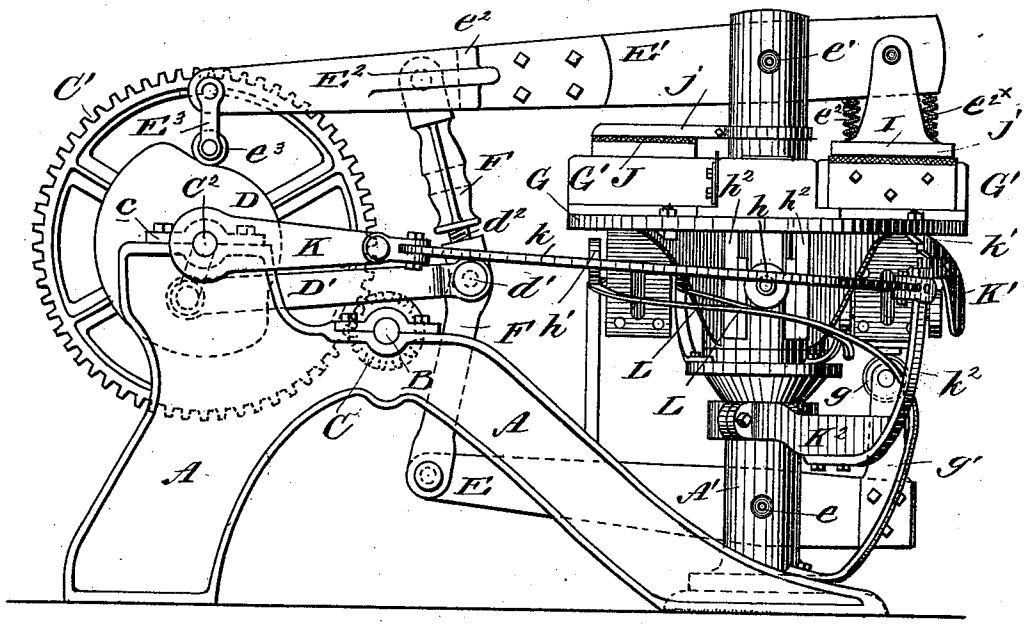


Fig. 1.



Witnesses:
Hermann Bormann.
L. C. Hills

Inventor:
George Carnell,
by E. B. Stocking
Att'y.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

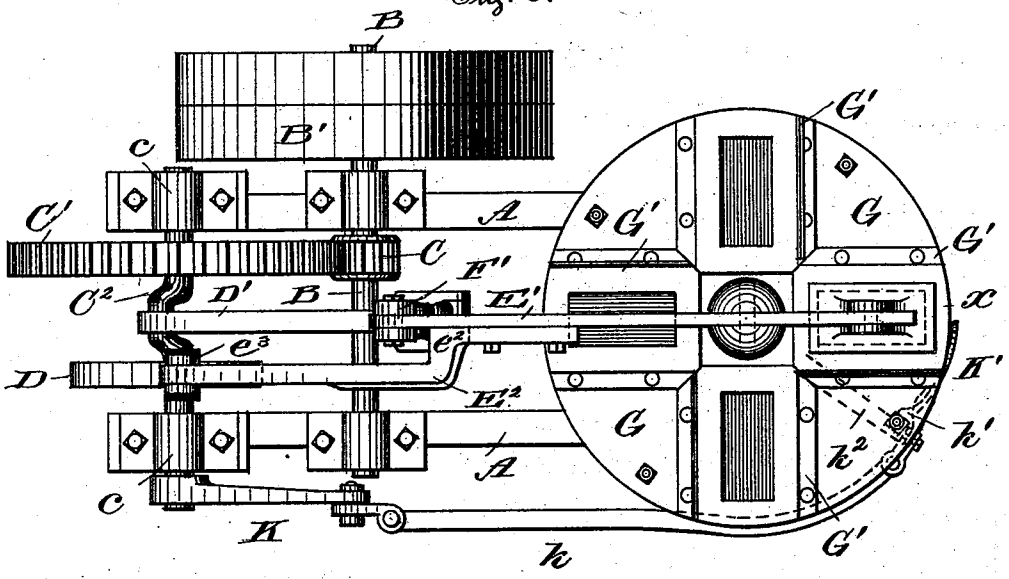
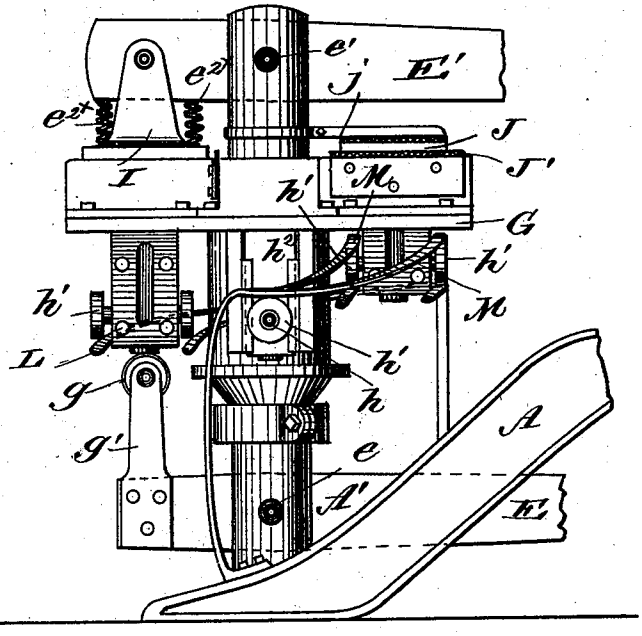


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE CARNELL, OF PHILADELPHIA, PENNSYLVANIA.

RE-PRESS BRICK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 507,649, dated October 31, 1893.

Application filed December 6, 1892. Serial No. 454,249. (No model.)

To all whom it may concern:

Be it known that I, GEORGE CARNELL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Re-Press Brick-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in brick machines, and it has for its objects among others to provide an improved brick pressing machine in which the pressing power or force is obtained by a combined cam and toggle-lever action, these two mechanical forces being designed to automatically come into action, changing from the one to the other. Simple and novel mechanisms are provided for this purpose.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of my improved brick machine, showing the levers, crank shaft, and cam for operating the plunger and templet and showing also the adjustable table having the plungers located therein, the means for rotating the table and the tracks for guiding the plungers. Fig. 2 is a longitudinal section through the same. Fig. 3 is a plan of the same. Fig. 4 is a rear view of the front part of the machine, showing the guide tracks for depressing the plungers.

Like letters of reference indicate like parts throughout the several views in which they occur.

Referring now to the details of the drawings by letter, A designates the frame of the machine which is of suitable form and in or upon which are supported the operative parts of the machine. From the frame work at one end rises the joist or post or pillar A′ upon which is supported the rotatable table.

B is the power shaft suitably journaled in bearings on the frame and carrying the band wheels B′ which are designed to receive their motion from any suitable source of power. On this shaft is a small gear wheel C meshing with a large gear wheel C′ on the crank shaft C^2 journaled in suitable bearings or boxes *c* on the frame as seen best in Fig. 3. By this means motion is given to the various parts which are operated from the crank shaft. On this crank shaft is a cam D of substantially the shape shown in Figs. 1 and 2, and suitably connected with the crank of said shaft is a rod or arm D′ as seen in Figs. 1, 2 and 3.

E is a lever pivoted between its ends as at *e* on the post A′ near the lower end thereof, and E′ is another lever pivoted between its ends as at *e′* to the said post near the upper end thereof.

E^2 is an arm offset as at e^2 from the inner end of the lever E′ as seen best in Fig. 3, and from the free end of this arm E^2 depends a short arm E^3 in the lower end of which is journaled a roller e^3 which is designed to engage with the cam D as seen best in Figs. 1 and 2.

F and F′ are toggles pivotally connecting the inner ends of the levers E and E′, and at their centers connected with the end of the arm D′ in any suitable manner as seen in Figs. 1 and 2. The toggle levers are adjustably connected in any suitable manner so as to render them adjustable to vary the effectiveness of the stroke. The connection of the arm D′ with the toggles is shown at *d′* and the adjustable connection of the toggles is shown at d^2 in Figs. 1 and 2.

G is a rotatably mounted table having a plurality of molds G′ four being shown in Figs. 1, 2 and 3. In these molds work the plungers H as seen best in Fig. 2, which are operated in turn by the roller *g* carried by a vertical arm *g′* on the free end of the lever E as seen best in Fig. 2. In the lower ends of the plungers are carried the cross shafts *h* upon each end of each of which is a wheel or roller *h′* as seen best in Fig. 2, suitable guides h^2 being provided to insure perfect vertical movement as seen best in Figs. 1 and 4.

I is a templet pivotally suspended from the free end of the lever E′ and connected by springs $e^{2\times}$ as seen best in Figs. 1 and 2 to permit the necessary movement.

J is a wiper carried by an arm *j* on the upper end of the post A′ as seen in Figs. 1 and 4, said wiper being for the purpose of automatically wiping off the surface of the plun-

gers, and the surfaces of the templet or upper presser plate I are wiped off by the wipers J′ placed alongside of the matrices or molds G′ as seen in Figs. 1 and 3.

On the crank shaft C^2 is an arm K, connected by rod or arm k with a pawl K′ as seen in Figs. 1 and 3 which pawl is designed to engage a lug k' on the rotating table as seen in Figs. 1 and 3.

K^2 is an arm revolubly mounted on the post A′ and carrying an arm k^2 engaged by the rod k as seen in Fig. 1.

L are spiral tracks over which the wheels or rollers h' ride and as they ascend said tracks they consequently force the plungers upward and the brick out of the mold. In order to draw the plungers down again the tracks M are provided which are also spiral and so arranged that the tops of the said wheels or rollers engage under the said tracks as seen in Fig. 4 and thus draw the plungers downward.

The operation will be readily understood from the foregoing description when taken in connection with the annexed drawings, and, briefly stated, is as follows:—The molded bricks are placed in the molds or matrices at X, see Fig. 2, the bricks being designated by $B^{\times}$. The parts are all so timed in their movements that at each revolution of the crank shaft one brick is pressed and the table makes a quarter revolution. The table is moved by the pawl K′ and the brick is forced out of the molds and off the plungers by the mechanism above described for that purpose. The upper presser plate or templet I is held in place by the springs so as to lie evenly or rather come into contact with the molds or matrices uniformly. The arm k^2 is provided for the purpose of guiding and steadying the movements of the pawl and its complemental devices.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

1. In a brick-pressing machine, the combination with the plunger and templet, of means for actuating the same and provisions for giving the same first a cam and then a toggle-lever actuation, as set forth.

2. In a brick-pressing machine, the combination with the plunger and templet, of a crank shaft with cam and connections between said shaft and the plunger and templet whereby a cam first acts and then the motion is continued by toggles, as set forth.

3. The combination with the plunger and templet, of pivoted levers connected therewith, a shaft with cam for actuating one of said levers, and a toggle for actuating the levers and connected with said shaft, as set forth.

4. The combination with the plunger and templet, of the pivoted levers connected therewith, the crank shaft with its cam, the toggles connected with the levers and with the crank of the said shaft, and the roller on one of the levers traveling in contact with the cam, as set forth.

5. The combination with the levers and an adjustable toggle connecting them, of the crank shaft and a connection between said shaft and toggles, as set forth.

6. The combination with the mold and its plunger, of a lever pivoted between its ends, and a templet pendent from said lever and connected with the lever by springs, as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE CARNELL.

Witnesses:
W. H. HOOD,
JOEL W. REBER.