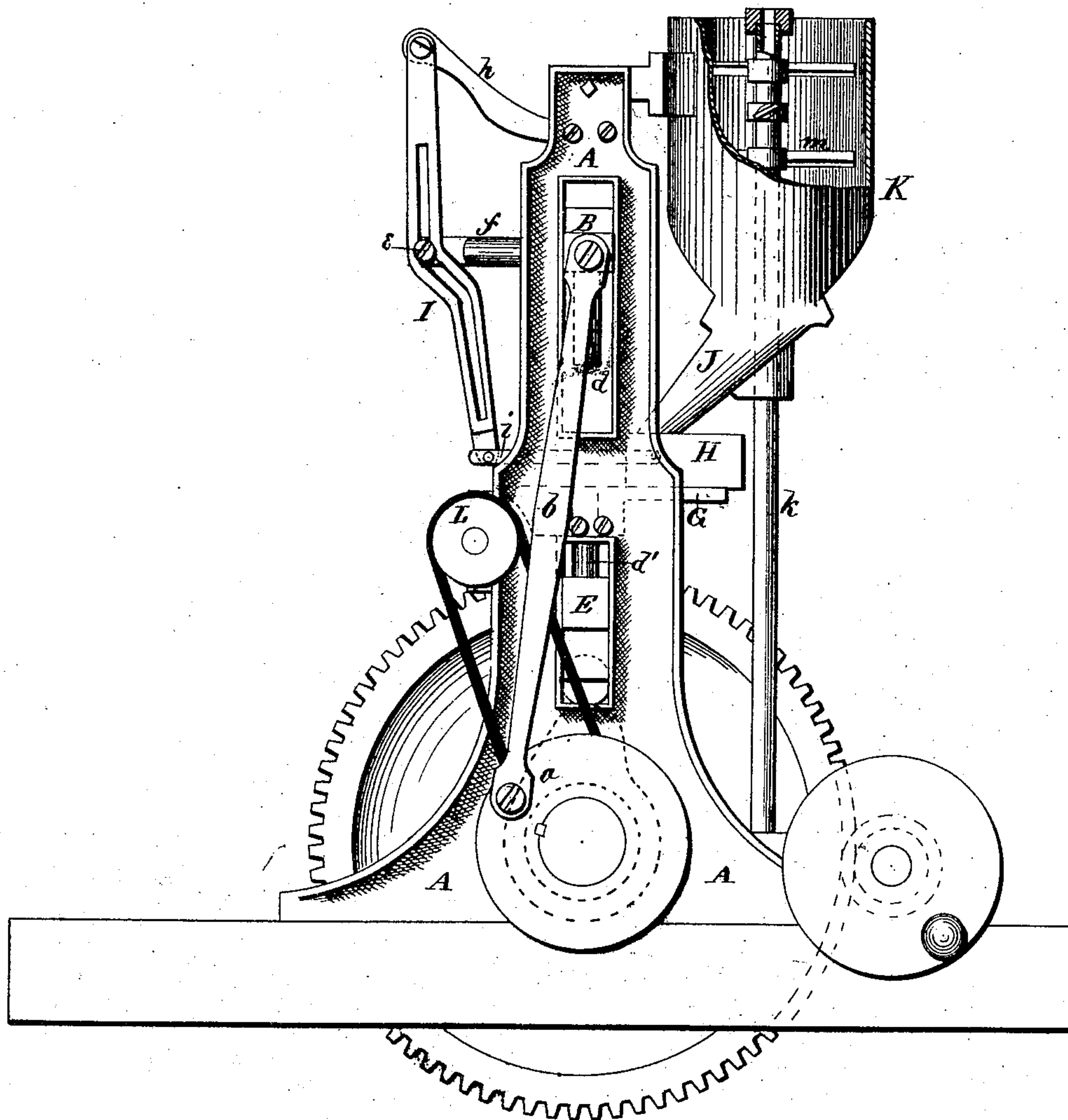


**S. H. DADDOW.**  
**Brick-Machines.**

No. 153,427.

Patented July 28, 1874.

*Fig. 1.*



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W. H. Duhamel

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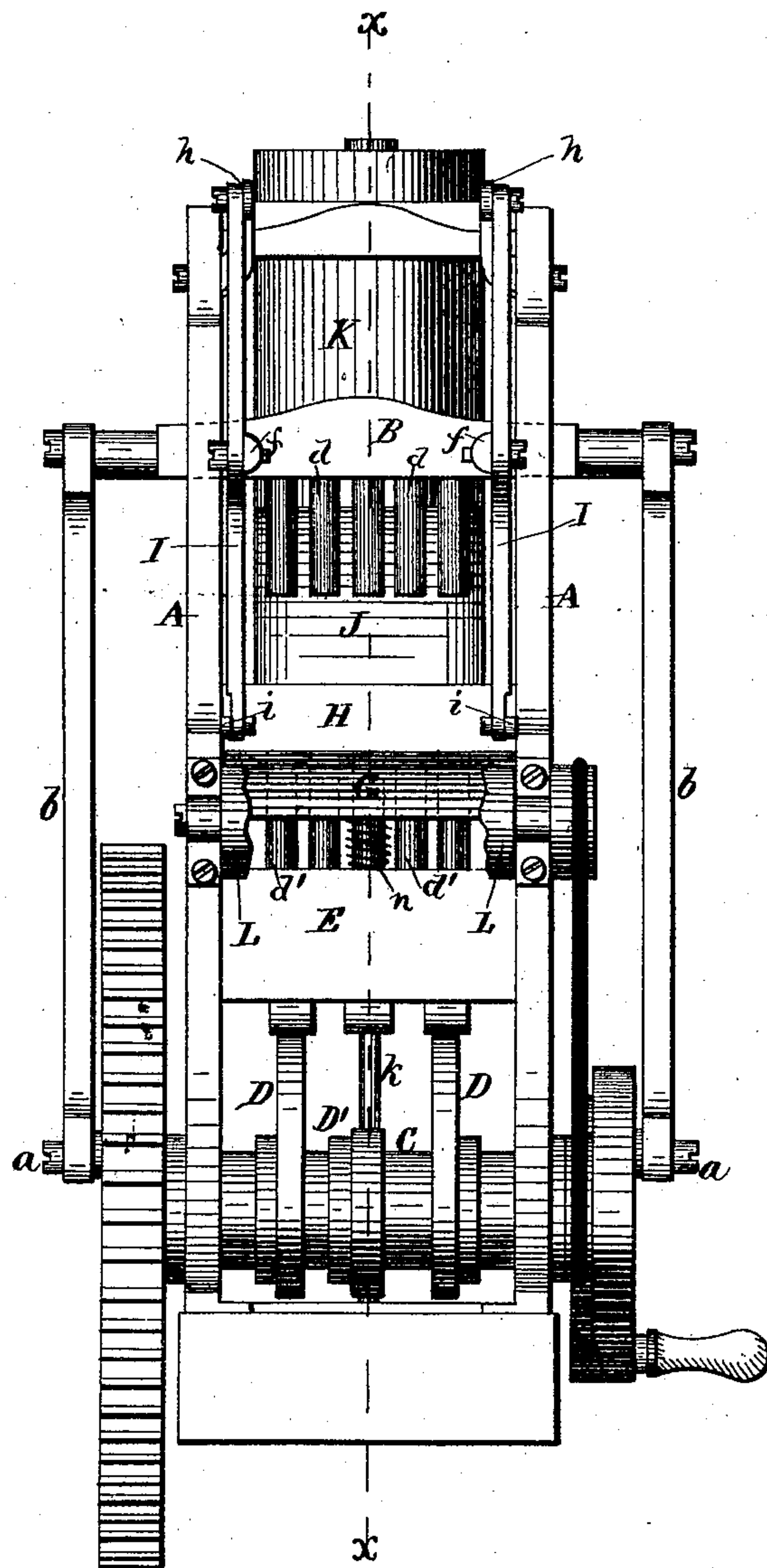
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Fig. 2.



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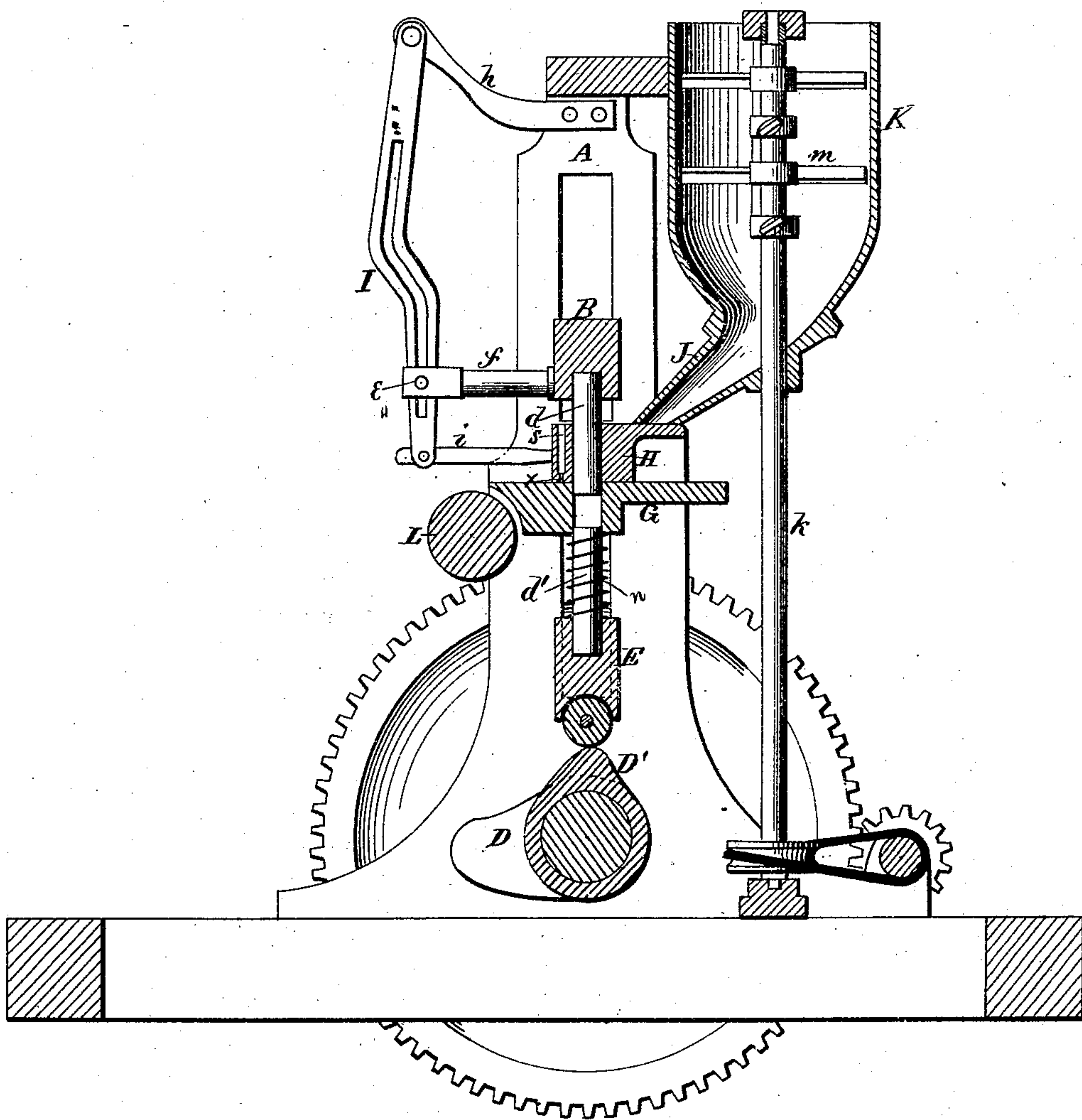
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*Fig. 3.*



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# UNITED STATES PATENT OFFICE

SAMUEL H. DADDOW, OF ST. CLAIR, PENNSYLVANIA.

## IMPROVEMENT IN BRICK-MACHINES.

Specification forming part of Letters Patent No. **153,427**, dated July 28, 1874; application filed July 6, 1874.

*To all whom it may concern:*

Be it known that I, SAMUEL HARRIES DADDOW of St. Clair, county of Schuylkill and State of Pennsylvania, have invented certain new and useful Improvements in Power-Press for the Manufacture of Artificial Fuel, of which the following is a specification:

The nature of my invention consists in the construction and arrangement of a power-press for the manufacture of artificial fuel, brick, tile, or other similar articles, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings which form a part of this specification, and in which—

Figure 1 is a front view of my machine. Fig. 2 is a side elevation of the same, and Fig. 3 is a vertical section thereof, through the line *x x*, Fig. 1.

The machine is composed of two parallel upright frames, A A, one on each side, and between these frames is a cross-head, B, which passes through slots in the frames and is moved vertically up and down by means of cranks or crank-wheels *a a* on a shaft, C, said cranks being connected with the ends of the cross-head by pitmen or connecting rods *b b*. The shaft C is operated by cog-wheels, as shown, or any other suitable mechanical means. On the shaft C are secured three cams, D, D, and D', which operate a second cross-head, E, vertically on guides on the inner sides of the frames A. The cross-heads B and E are to be made strong and heavy, and are provided with suitable recesses for the insertion of adjustable pistons, plungers *d d*, and followers *d' d'*, respectively, which may be of any desirable size and form. The plungers *d d* of the cross-head B fit into corresponding molds or boxes in a stationary mold-box, G, attached to the frames A, and are met by the followers *d' d'* in the lower cross-head E. On the fixed case G is a sliding case or feeder, H, corresponding therewith in size, and containing the same number of preliminary molds or boxes, which may be nearly of the same size and in the same order as the molds in the fixed case G. The feeder H is movable, sliding on the fixed case G with

a reciprocating motion, and it is operated by the movement of the cross-head B, from which project two arms, *f*. Each of these arms has on its outer end a pin or stud, *e*, which passes through a slot in a bent or angular swinging lever, I, constructed substantially in the form shown in Fig. 2. The upper ends of the swinging levers I are pivoted to bars or arms *h* projecting from the upper ends of the frames A A, and the lower ends of the arms are connected by rods *i* with the feeder H. The swinging levers I may have a variable motion by changing the angles of the levers, or by increasing or decreasing the length from the hinged to the fixed arms *f*. The sliding case or feeder H is fed by the spout J on the mixer or hopper K. In this mixer is a hollow shaft, *k*, on which are hollow radiating arms *m m*, inclined like propeller-blades, through which steam or water is passed. In a full-sized operating machine the blades or arms *m m* are provided with numerous small openings or holes, through which the steam or water issues into the material to be mixed in the hopper. These arms act as a screw to force the material through the spout J into the sliding case or feeder H. The spout J may be of any suitable form, and may have one side perpendicular. The arms *m* are actuated or revolved by the shaft *k* and gear-wheels, or any other suitable mechanical means. The material may be fed or thrown direct into this mixer, or it may be fed by any suitable device if hot material is forced through heated pipes or tubes by a screw, steam, or other means. The cam D' is designed to be large or strong to exert great force. It has a very gradual plane and a small lift. This is designed to exert the final pressure on the blocks in the molds when the plungers *d* and the followers *d'* are in the nearest proximity, and when the cranks *a* are turning the lower centers. At this moment, when the machine has its maximum power, the cam D' lifts the followers *d'* with great force, and gives the final pressure to the blocks, as shown in Fig. 3. When the feeder H slides from the top of the molds in the case G, after the cross-head B—carrying the plungers *d*—is lifted, the cams D D raise the cross-head E and the followers *d'* to push the blocks out of the molds, and these blocks



are pushed off by the next forward movement of the feeder onto a belt carried by the roller L, to be conveyed to any convenient place. Any number of cams D and D' may be used, according as may be deemed necessary. Around one or more of the followers *d'* are placed spiral springs *n* to throw the head-block E, with the followers, down as soon as the cams cease to operate.

The operation of the machine is substantially as follows: The material—artificial fuel, clay, artificial stone, &c.—is fed by any suitable device into the mixer K, and is there mixed by the arms *m*, and forced through the spout J into the reciprocating box or feeder H, which conveys the material from the spout to the molds in the fixed case G. This feeder, having corresponding molds or boxes to carry the material, is stopped directly over the molds in the case G, and the material is forced out of the feeder into the molds by the plungers *d*. At this moment the followers *d'*, which form the bottoms of the molds, are stationary and remain so until the plungers reach a point near their lowest reach, pressing the material to a smaller mass. Then, before the plungers *d* commence to retreat, the followers *d'* are forced up with great power by the cam D', giving the final pressure, while the material is held by the plungers, which, in turn, become the stoppers for the upper part of the molds. As soon as the plungers retreat and the box or feeder H moves from the top of the molds the cams D raise the cross-head E and the followers *d'*, which pushes the pressed material out of the molds and holds it there until the feeder H returns to push the block off the table to the belt on the roller L. But just before the feeder gets fairly over the molds

a set of pumps throw jets of oil or other lubricating substances into the molds. These pumps are to be inserted in holes *s* on the feeder H, the bottom of each hole being provided with an outlet, X. The pumps are to be fed by a flexible hose from a convenient tank under pressure. The cams D D' may work against rollers to remove the friction, or they may be operated by eccentrics and levers to diminish the friction.

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

1. The mixer K, having spout J, shaft *k*, and inclined blades *m*, in combination with the reciprocating feeder H, substantially as shown and described.

2. The fixed case G, provided with molds, as described, in combination with the plungers *d* and followers *d'*, constructed and operating substantially as and for the purposes herein set forth.

3. The angular slotted swinging levers I in combination with the cross-head B and feeder H, substantially as and for the purposes herein set forth.

4. The combination of the cross-head B with plungers *d*, cross-head E with followers *d'*, stationary mold case G, feeder H, swinging levers I, mixer K with spout J, and roller L, all constructed substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my invention I hereunto affix my signature this 3d day of July, 1874.

SAMUEL HARRIES DADDOW.

Witnesses:

JOSEPH TOWNSEND,  
W. T. RICHARDS.