J. Treadway,

Brick Machine.

No. 46,956. Patented Mar. 21, 1865.

Fig. 1

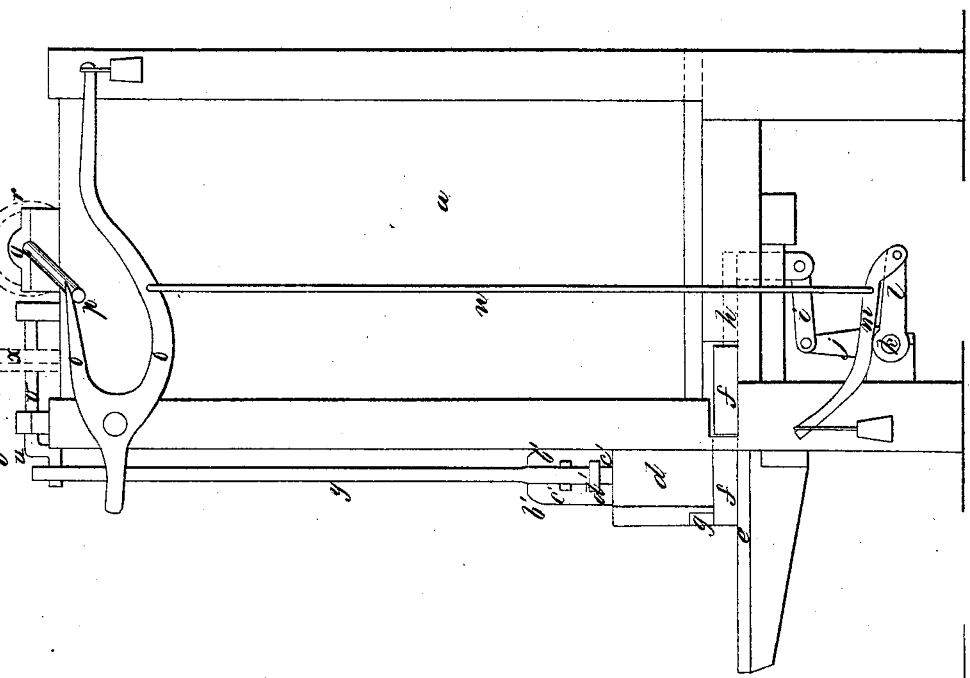
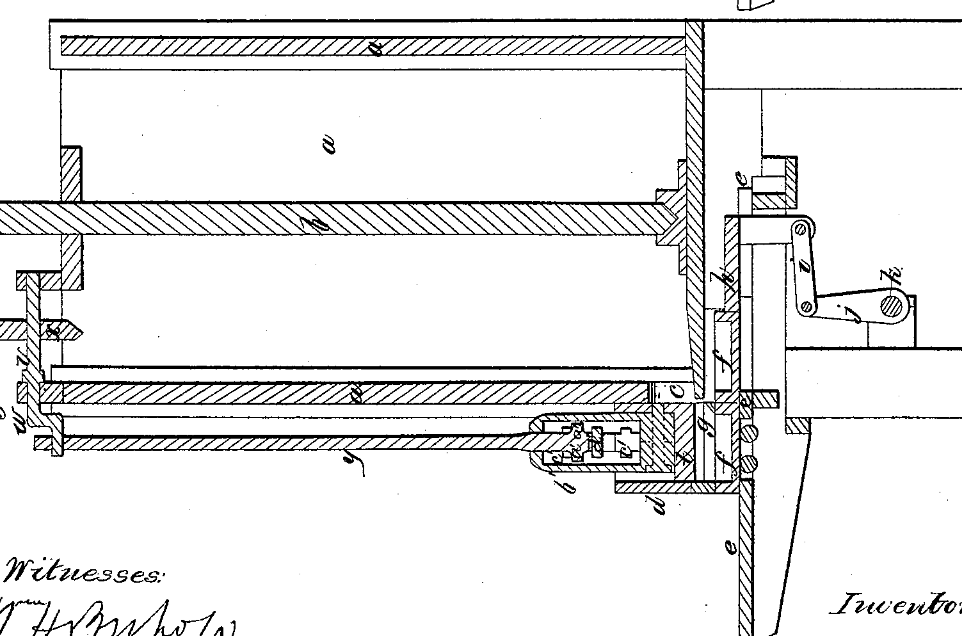


Fig. 2



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN TREADWAY, OF HAVERSTRAW, NEW YORK.

IMPROVEMENT FOR MOLDING AND PRESSING BRICKS.

Specification forming part of Letters Patent No. **46,956**, dated March 21, 1865.

To all whom it may concern:

Be it known that I, JOHN TREADWAY, of Haverstraw, in the State of New York, have invented certain new and useful Improvements in Machinery for Molding and Pressing Bricks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of a machine on my improved plan, and Fig. 2 a vertical section thereof.

The same letters indicate like parts in all the figures.

My said invention relates to improvements in that class of machines for molding and pressing bricks which are operated by horse-power.

In the accompanying drawings, *a* represents the tube or case in which the clay is to be tempered, and *b* a vertical shaft which is to be provided with the usual means for working the clay and gradually forcing it down to the bottom and toward the aperture *c*, where it is forced into the hopper *d* of the press, as usually employed in this class of machines. Below the hopper of the press is the usual bed, *e*, on which the molds *f* rest during the operation of molding and pressing the bricks, and on which they slide when filled.

The molds, after they have been filled, and while the pressure is still bearing on the clay, are forced out from under the grating *g*, which forms the bottom of the hopper, which operation cuts off the clay smoothly at the upper surface of the molds, and when this operation has been attempted to be effected by power-machines—such as driven by horse-power or steam—the machinery was liable to be broken if a stone or other hard substance in the clay happened to get partly in the molds and partly in the grating at the bottom of the hopper. This difficulty is entirely avoided by my improvement. The molds, as usual in this class of machines, are forced out by a driver, *h*, which slides on the bed *e*, and between ways which guide its movements. This follower is connected by two connecting-rods, *i*, with arms *j*, projecting from a rock-shaft, *k*, the outer end of which is provided with another arm, *l*. To the outer end of the arm *l* is hinged one end of a lever, *m*, which carries a weight at the other end, and this lever is connected by a connecting-rod, *n*, with what may be termed a "cam-lever," *o*, at the upper part of the frame. Now, when the cam-lever *o* is lifted, it operates the weighted lever *m*, and if the resistance presented to the rock-shaft *k* is greater than the resistance due to the weight on the lever, that end of the lever which carries the weight will be lifted and the rock-shaft *k* will not be operated; but the weight on the lever should be such as to present a greater resistance to the motion of the lever than will be presented by the molds when there is no obstruction—such as a stone or other foreign matter—extending from the grating into the molds, and therefore so long as there is no such obstruction the lifting of the cam-lever *o* through the weighted lever *m* will operate the rock-shaft to force the filled molds from under the press; but when the molds meet with some undue resistance, the weighted end of the lever *m* rises, and thereby avoids the breaking of the molds or other parts of the machinery.

The cam-lever *o* is operated by a crank-pin, *p*, on the outer end of a horizontal shaft, *q*, which receives motion by bevel cog-wheels *r* and *s* from the vertical shaft, which is to be turned by horse-power or other motor. The crank-pin *p* in about one-half of its revolution travels in an open space in the lever *o*, first against the upper and then against the lower surfaces of this open face, which is of a cam-like form, as represented, so that the crank-pin in acting on the lower of the said surfaces depresses the lever to force back the follower *h*, that an empty mold may be placed under the hopper of the press, and then, in passing through the open space from the lower to the upper surface, does not operate the lever, and during that interval of time the mold is being charged with clay, and then the crank-pin on reaching and acting against the upper surface of the said open space of the lever lifts the lever to operate the rock-shaft to force out the filled molds or to lift the weighted lever, if there should be any serious obstruction to the movement of the molds.

The platen *t* of the press is operated by a

crank, *u*, on another horizontal shaft, *v*, which receives motion from the same vertical shaft by bevel-gears *s* and *x*.

The lower end of the connecting rod *y* on the crank *u* is formed with a projecting pin, *a'*, on the front and back faces, and it is fitted to slide freely up and down in the space between two standards, *b' b'*, of the platen *t* of the press, which standards are formed with grooves on the inner faces for the pins to slide in, the length of these grooves determining the distance that the connecting-rod *y* can slide between the standards of the platen. And these standards are formed with a series of cross-grooves, *c' c' c'*, in either of which a wedge-key, *d*, can be inserted, and as this key, wherever placed, is below the lower end of the connecting-rod, the shifting of the key will vary the distance that the rod can move down without giving motion to the platen.

As the connecting-rod receives a positive motion from the crank *u*, and sometimes the hopper of the press contains more clay than at others, and the range of motion of the platen should be reduced in proportion to such quantity, the attendant can, by shifting the wedge-key, readily set the platen to the required range of motion, and thus prevent the machine from being broken.

I am aware that the connecting-rod has before been connected with the platen so as to accomplish the same result, but by means neither so cheap, simple, or easily adjusted.

What I claim as my invention, and desire to secure by Letters Patent in that part of the above-described machinery for driving out the molds, is—

1. The weighted lever, in combination with the rock-shaft and its arms, or the equivalents thereof, and the cam-lever operated by the crank, substantially as described, and for the purpose set forth.

2. The platen, with its two standards with cross-grooves to receive the wedge-key, in combination with the connecting-rod adapted to slide between the said standards, and provided with projecting pins adapted to slide in longitudinal grooves in the standards, as and for the purpose described.

JOHN TREADWAY.

Witnesses:
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