

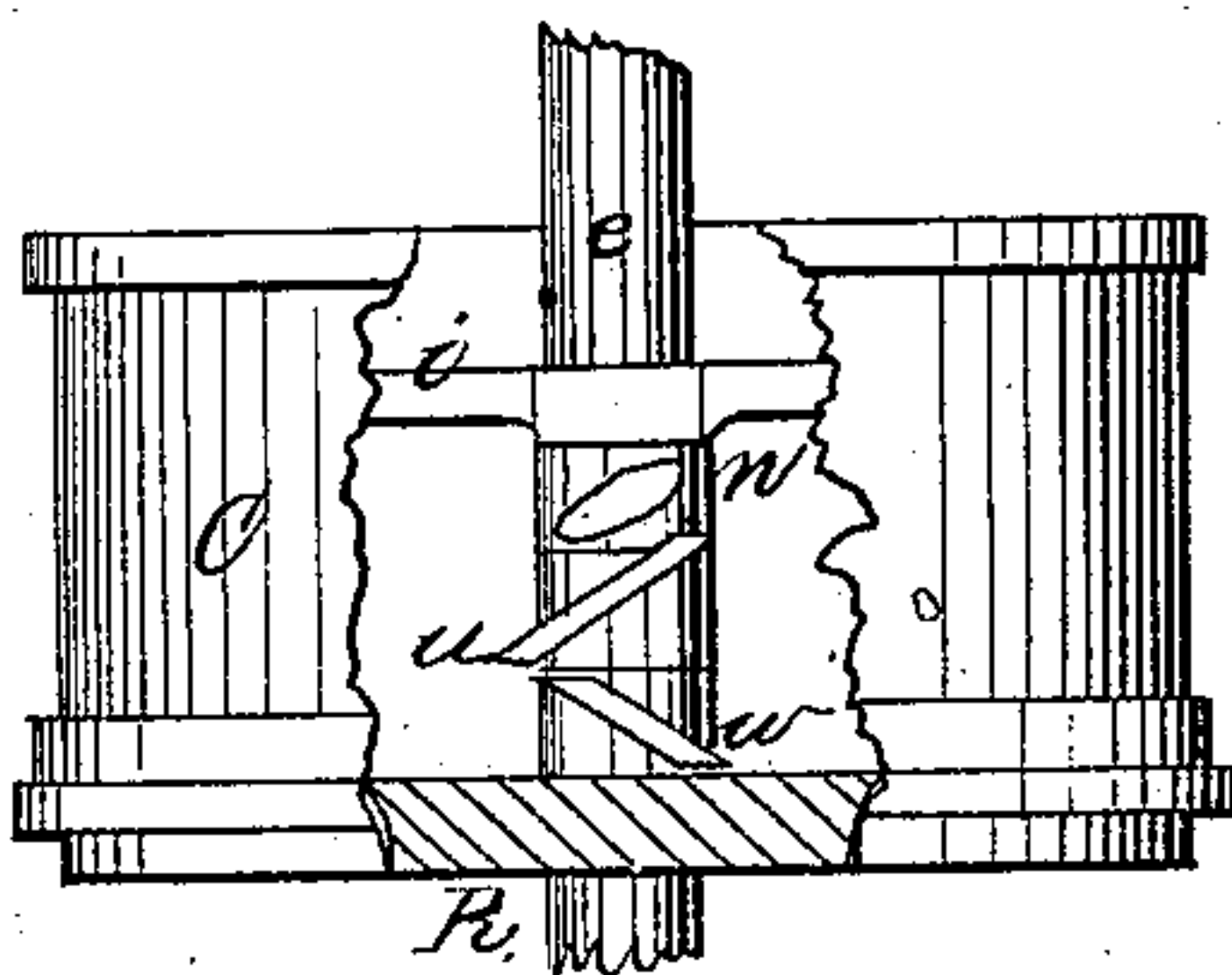
E. Sprague,

N^o 85,142.

Patented Dec. 22, 1868.



Fig: 2



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E. Sprague, Brick Machine.

N^o 85,142.

Patented Dec. 22, 1868.

Fig. 3

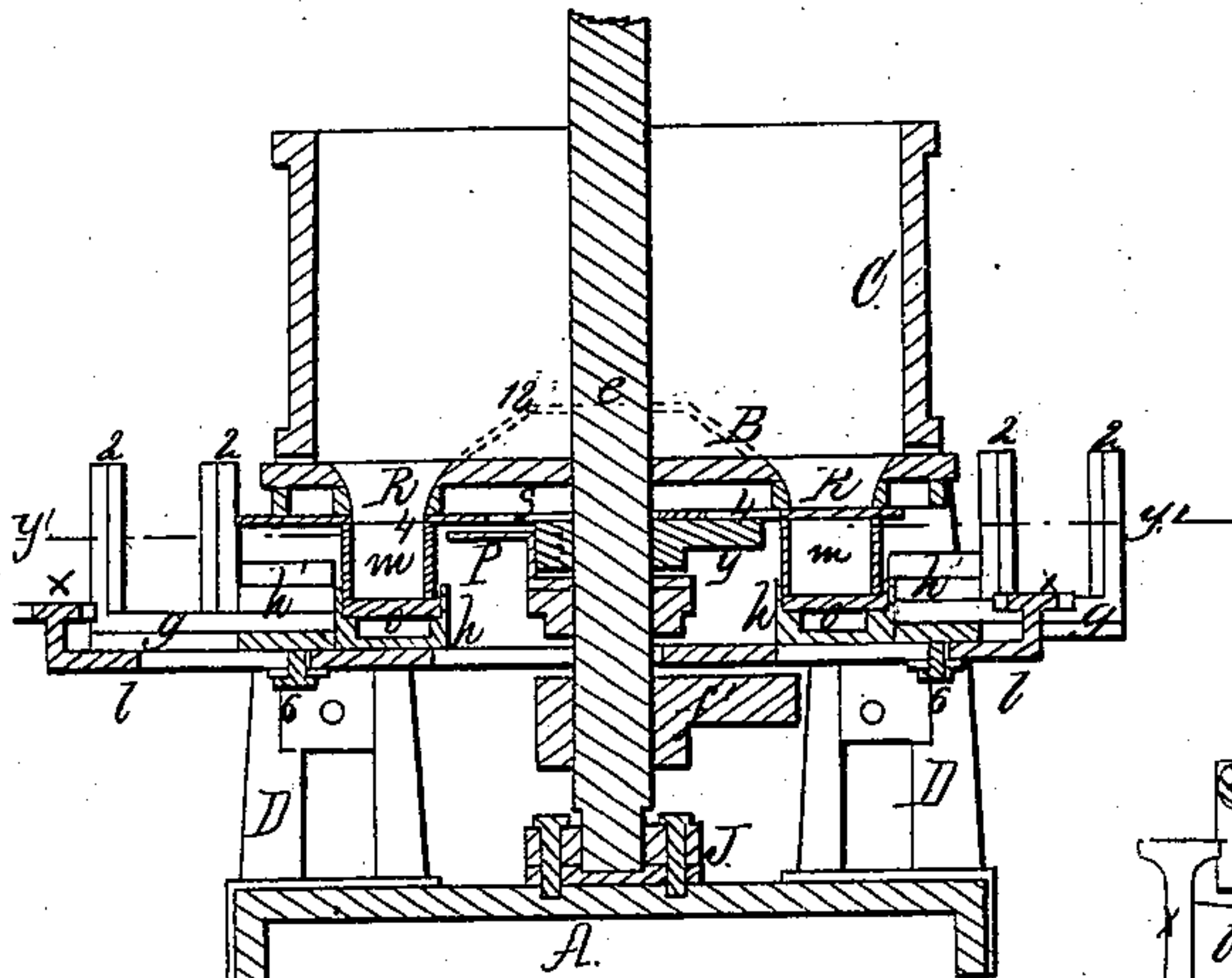


Fig. 5.

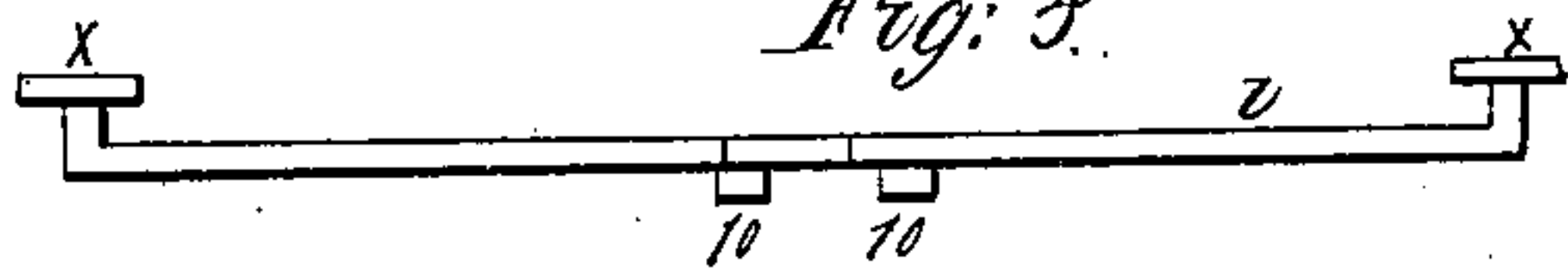


Fig. 6.

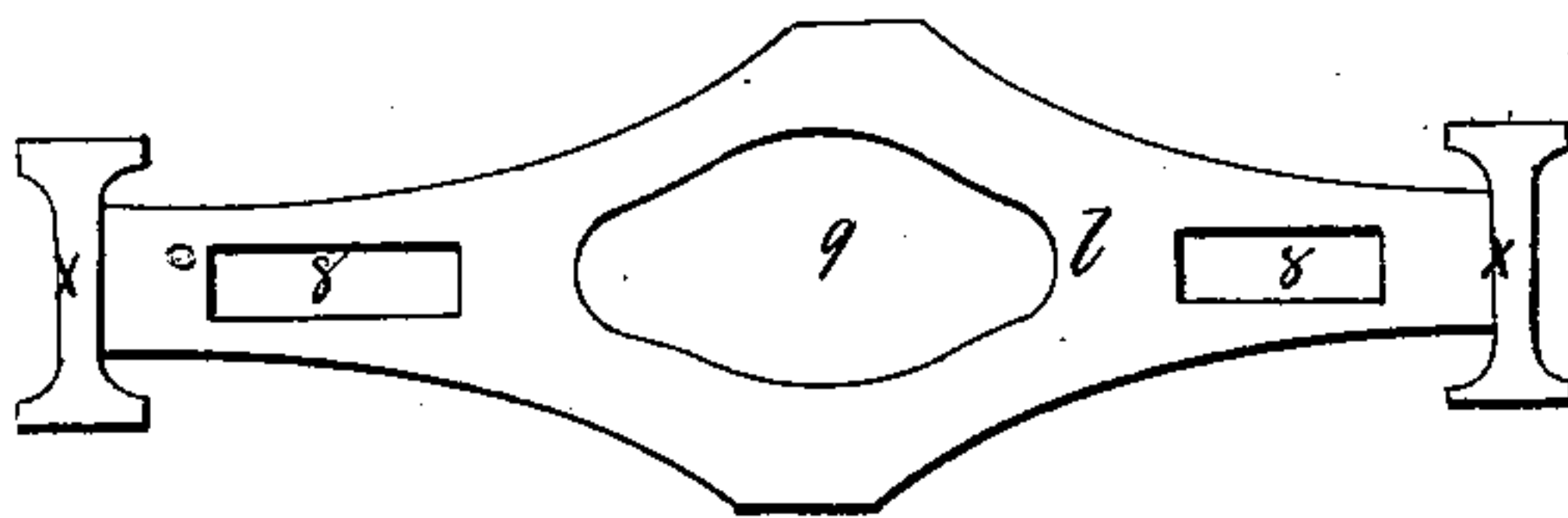


Fig. 4

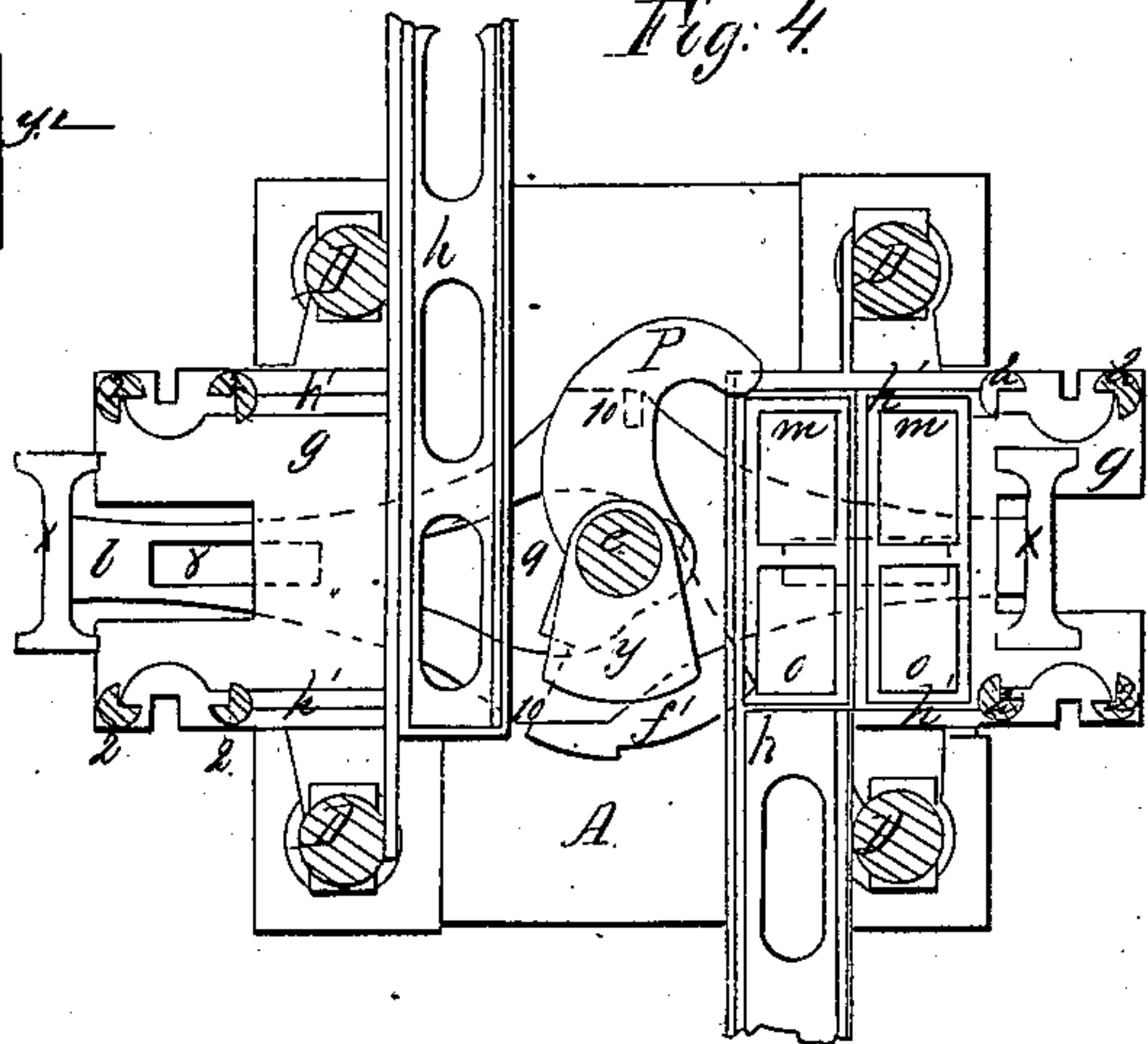


Fig. 7.

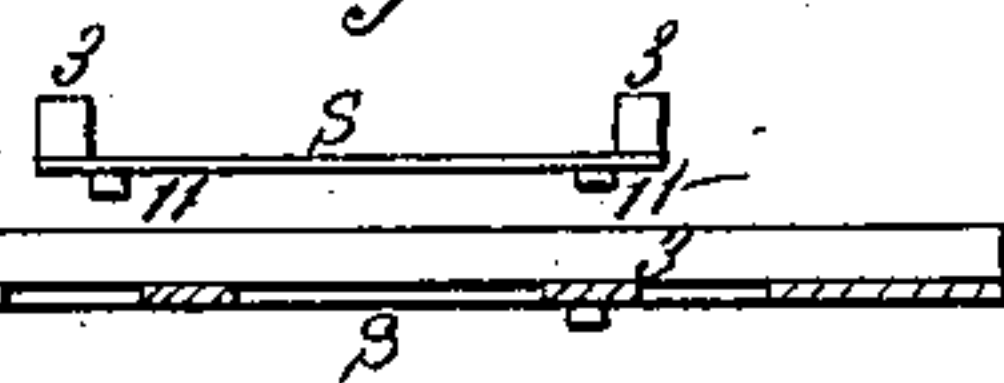
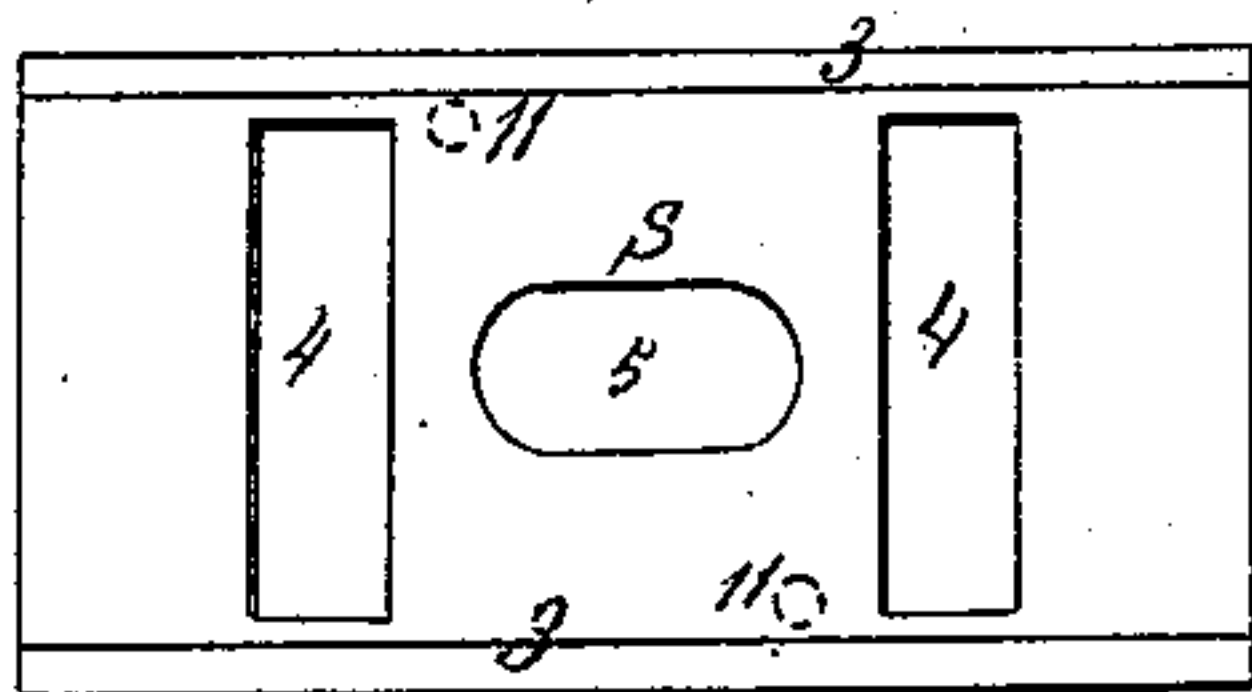


Fig. 8



Fig. 9



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EDWIN SPRAGUE, OF ALLEGHENY CITY, PENNSYLVANIA.

Letters Patent No. 85,142, dated December 22, 1868; antedated December 11, 1868.

IMPROVED BRICK-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, EDWIN SPRAGUE, of the city and county of Allegheny, in the State of Pennsylvania, have invented a new and useful Improvement in Brick-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon.

The nature of my invention consists in providing the brick-machine with a mould-rack, feeding-device, a cut-off, delivering-arm, and mould-ways, combined with a hopper for mixing the brick-clay and filling the moulds, the whole being constructed, arranged, and operating as hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of my specification—

Figure 1, sheet A, is a perspective view of my improvement in brick-machines.

Figure 2, sheet A, is a side elevation of the hopper of the machine, and represents a portion of the side of the hopper broken out for the purpose of representing the arrangement of the mixing-arms, used for filling the moulds with clay, and the relation of said filling-arms to the openings in the bottom of the hopper, through which the mixed clay passes into the moulds.

Figure 3, sheet B, is a vertical section of my improvement in brick-machines, representing the mixing-arms removed from the hopper.

Figure 4 is a top view, with that part of the machine above the line *y* of fig. 3 removed.

Figure 5 is a side view of the piece used for drawing the empty moulds into the machine for filling.

Figure 6 is a top view of the same.

Figure 7 is an end view of the cut-off.

Figure 8 is a longitudinal section of the same.

Figure 9 is a top view of the same.

In the drawings—

A represents the base of the machine.

B represents the bottom of the hopper C.

The bottom plate, B, is held in position over the plate A, by means of four columns, D, to which are secured mould-racks, which consist of the plate *g* and grooved corner-posts, marked 2, and the mould-ways marked *h*.

The hopper C is secured firmly to the bottom plate B, which is provided with two openings, R, for the mixed clay to pass through into the brick-moulds *m*.

The shaft *e* is held in the desired position by the step J and the cross-bar *f*, on the upper end of the hopper C.

The shaft *e* is provided with a number of arms, *n*, for mixing the clay, and arms *w* for forcing the clay down into the brick-moulds *m*.

The hopper C is also provided with a number of fixed arms, *i*, and two broad inclined arms, *u*, which are so

arranged, with relation to the openings R in the bottom plate of the hopper C, that, combined with the inclined filling-arm *w*, on the shaft *e*, the clay will be forced downwards, through the openings R, into the brick-moulds *m*. This arrangement of the arms for filling the moulds with clay, is clearly shown in fig. 2 of sheet A.

Close to the under side of the bottom plate B is placed the cut-off S, which moves in slides secured to the bottom plate B.

On the upper side of the cut-off S are two ribs, 3, which are fitted to grooves made in the under side of the bottom plate B.

The cut-off plate S is made of sheet cast-steel, and is provided with two openings, 4, for the clay to pass through into the moulds *m*, and an opening, 5, through which the shaft *e* passes.

The openings 4, in the cut-off S, are arranged, with relation to the openings R, in the bottom of the plate B of the hopper, so that only one of the openings, 4, will come opposite the openings R.

On the under side of the cut-off S are two pins, 11, against which the cam *y*, on shaft *e*, presses, and thereby moves the cut-off S back and forward, for the purpose of alternately opening and closing the openings R, in the bottom plate B, and for cutting off the clay even with the top of the brick-moulds *m*.

The device for feeding or drawing the empty moulds and their bottom-boards into the desired position under the hopper, for being filled with clay, consists of the piece marked *l*, which is held up against the under side of the part *g* of the mould-rack, by means of the bolts 6, placed in the openings, 8, of the piece *l*, the centre of which is provided with an opening, 9, for the shaft *e* to pass through.

On the under side of the piece *l* are two projecting pins, against which the cam *f* presses alternately, thereby imparting to the piece *l* a reciprocating motion.

h and *h'* represent the mould-ways.

The dotted lines, 12, in fig. 3, sheet B, represent the contour of a proposed elevation in the bottom plate B, for the purpose of avoiding the drag of the clay on the bottom of the hopper, and also for facilitating the filling of the moulds with clay.

The material used for constructing my improved brick-machine is cast-iron, wrought-iron, and steel, but I leave the use of the kind of material for the construction of the machine to the good judgment of the skilled mechanic.

As the construction and arrangement of the several parts of my improvement, and the relation they bear to each other, will be readily seen and understood by reference to the accompanying drawings, I will therefore, without further description of its construction, proceed to describe its operation, which is as follows:

The brick-moulds are placed in the mould-rack, as indicated in fig. 1, sheet A, and may be, if desired,

placed one on the top of the other, to any desired height, care being taken to place a bottom-board, *o*, under each mould.

The clay being made properly damp, it is thrown into the hopper *C*. Motion is then imparted to the shaft *e*, through the medium of the crank *k*, or other suitable gearing. The revolving of the shaft *e* will cause the cam *f'* to press against the projecting pins 10, of the piece *l*, and cause it to move back and forward a distance little more than the width of a mould, and at each movement of the piece *l*, the part of it marked *x* will press against the side of a mould, *m*, and force it and its bottom-board *o* along on the mould-way *h'*, until the mould and its bottom-board come directly under the openings *R*, at which point the mould will remain until the filling-arms *w* have forced down sufficient mixed clay to fill the mould. The cam *y* will, by this time, come in contact with one of the projecting pins, 11, on the under side of the cut-off *S*, and move it so as to cut the clay off even with the top edge of the mould, and also close one of the openings *R*, as shown in fig. 3 of sheet B. By this time the point of the de-

livering-arm *P* will have come in contact with the end of the mould, as indicated in fig. 4 of sheet B, and will force it along on the mould-way *h*. The part *x*, of the piece *l*, will then force in another mould to be filled, and thus the machine will continue to operate, feeding in empty moulds, filling them with clay, cutting off the clay even with the top of the moulds, and delivering them along on the mould-way, ready to be "borne off," and manipulated in the usual manner.

Having thus described the nature, construction, and operation of my improvement,

What I claim as of my invention, is—

The mould-racks, automatic mould-feeder *l*, cut-off *S*, delivering-arm *P*, and mould-ways *h* and *h'*, constructed, arranged, and made operative through the medium of the shaft *e* and cams *f'* and *y*, in the manner substantially as herein described, and for the purpose set forth.

EDWIN SPRAGUE.

Witnesses:

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