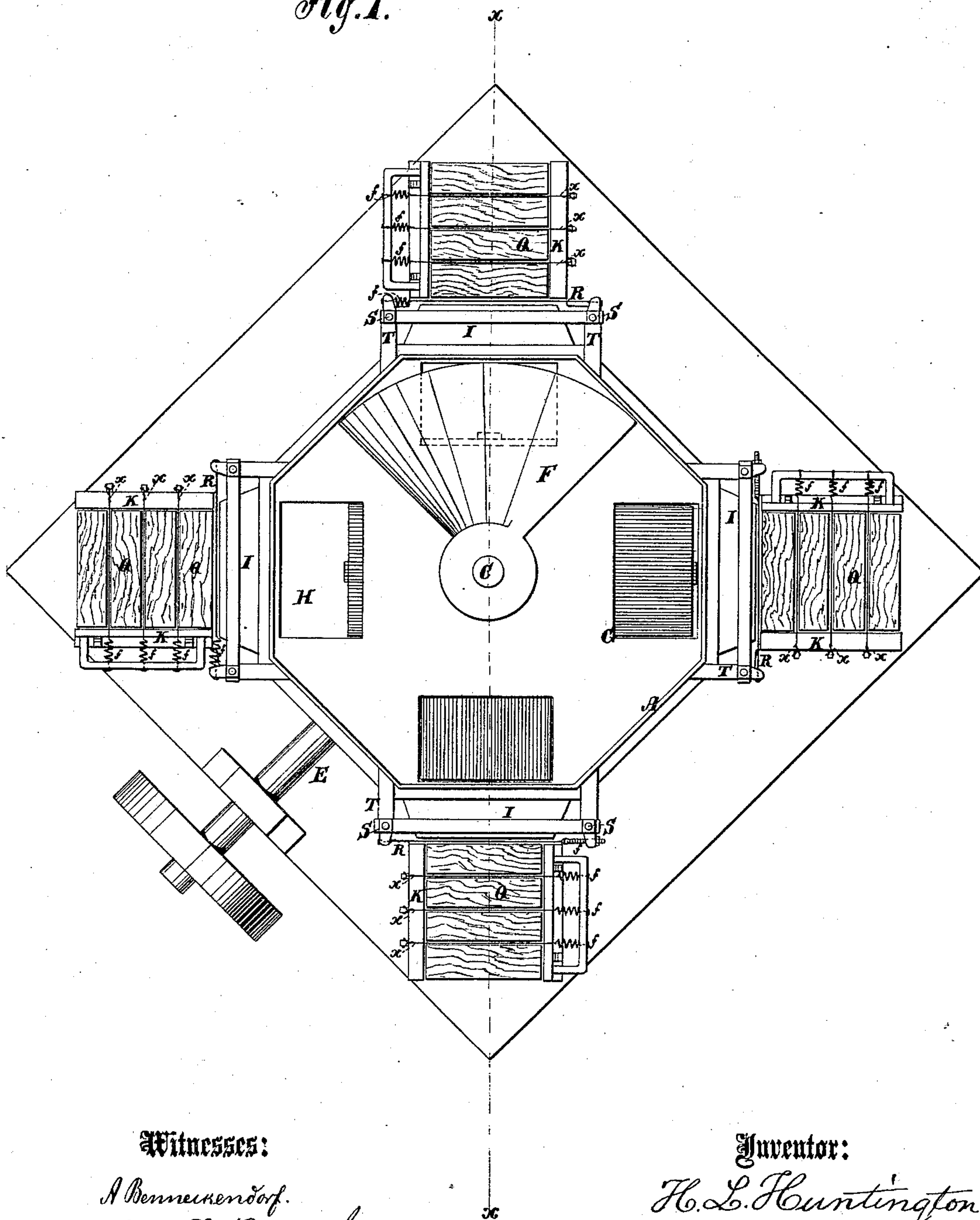


H. L. HUNTINGTON.
Brick and Tile Machines.

No. 157,831.

Patented Dec. 15, 1874.

Fig. 1.



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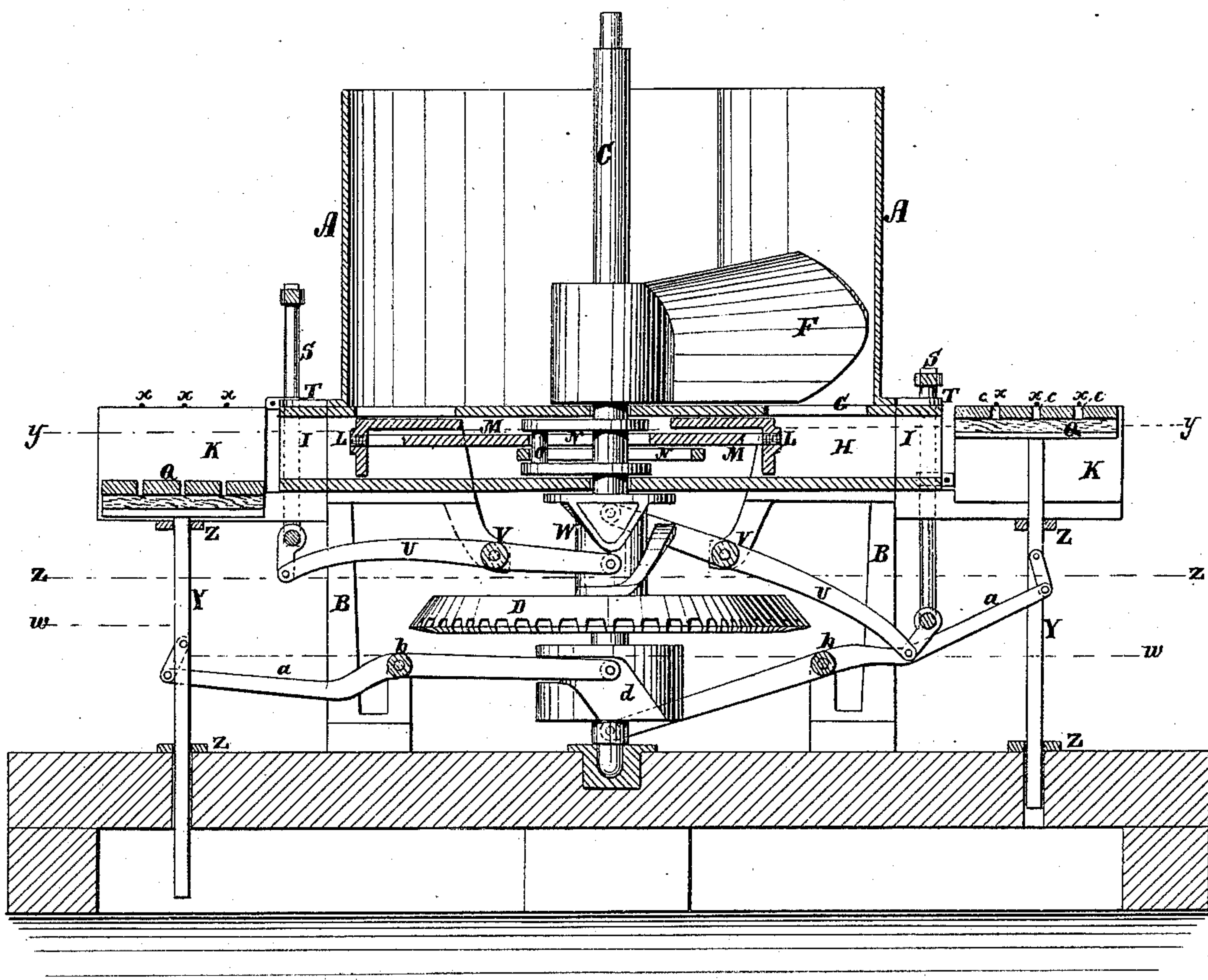
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Fig. 2.



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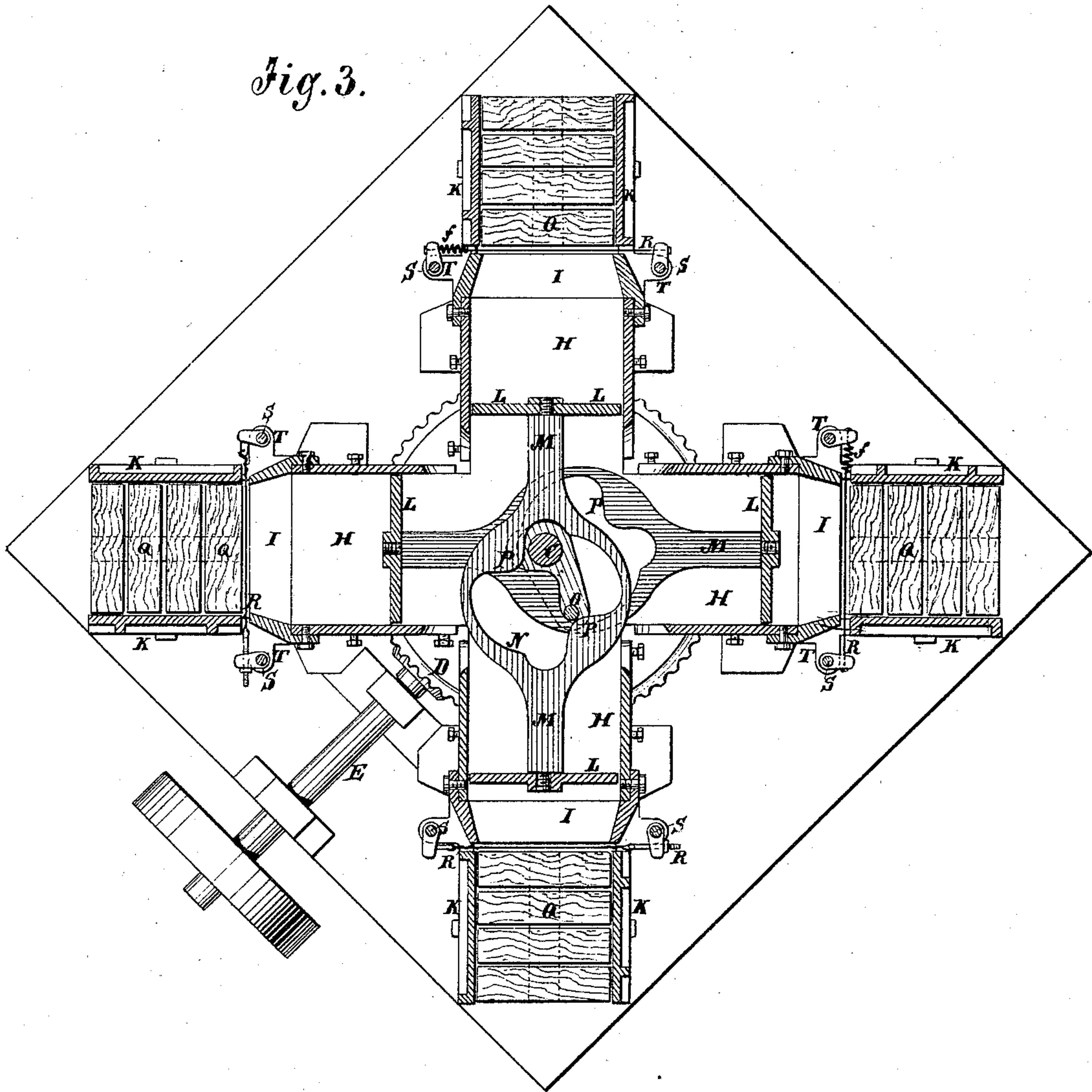
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Fig. 3.



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Fig. 4.

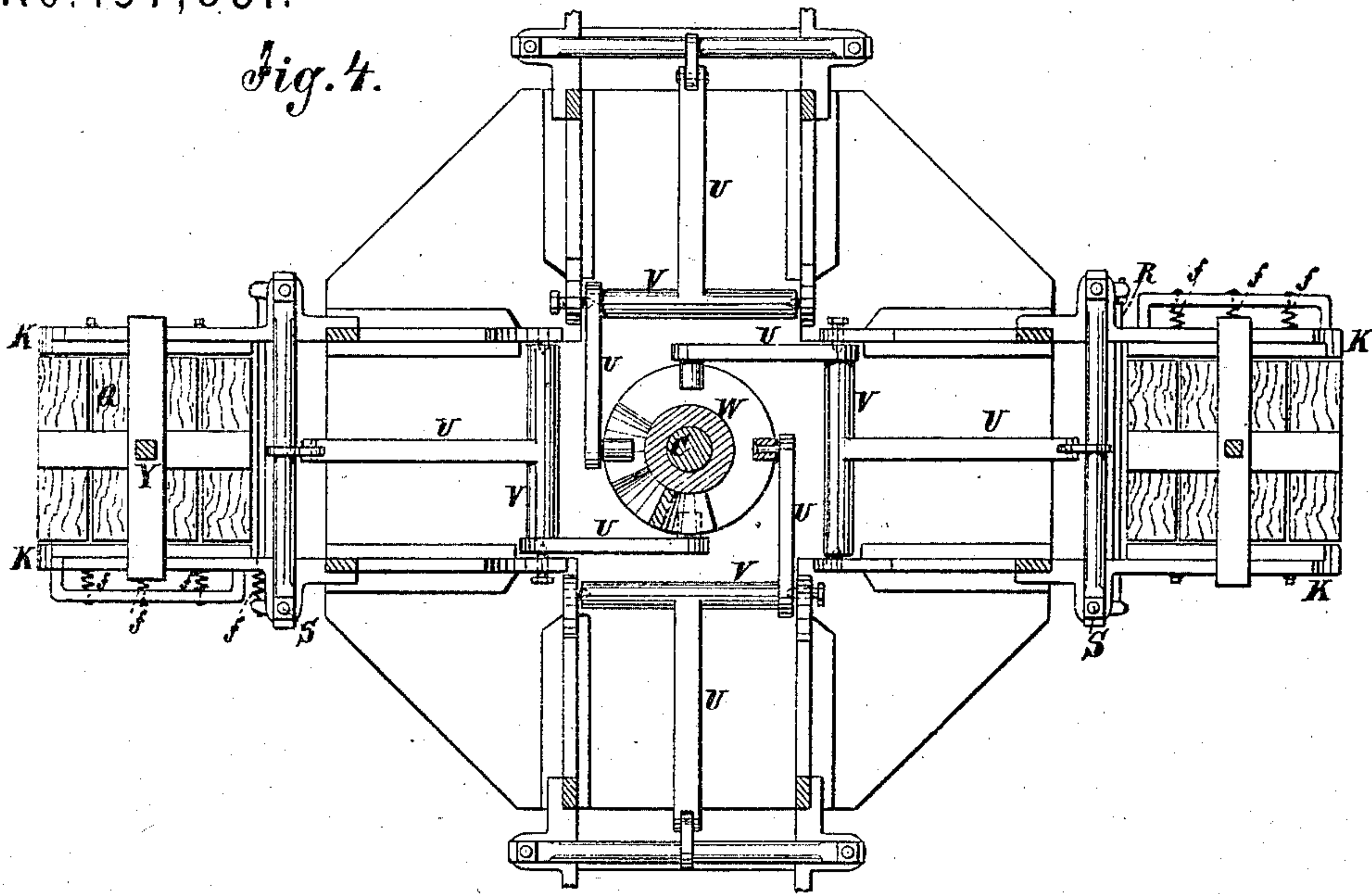
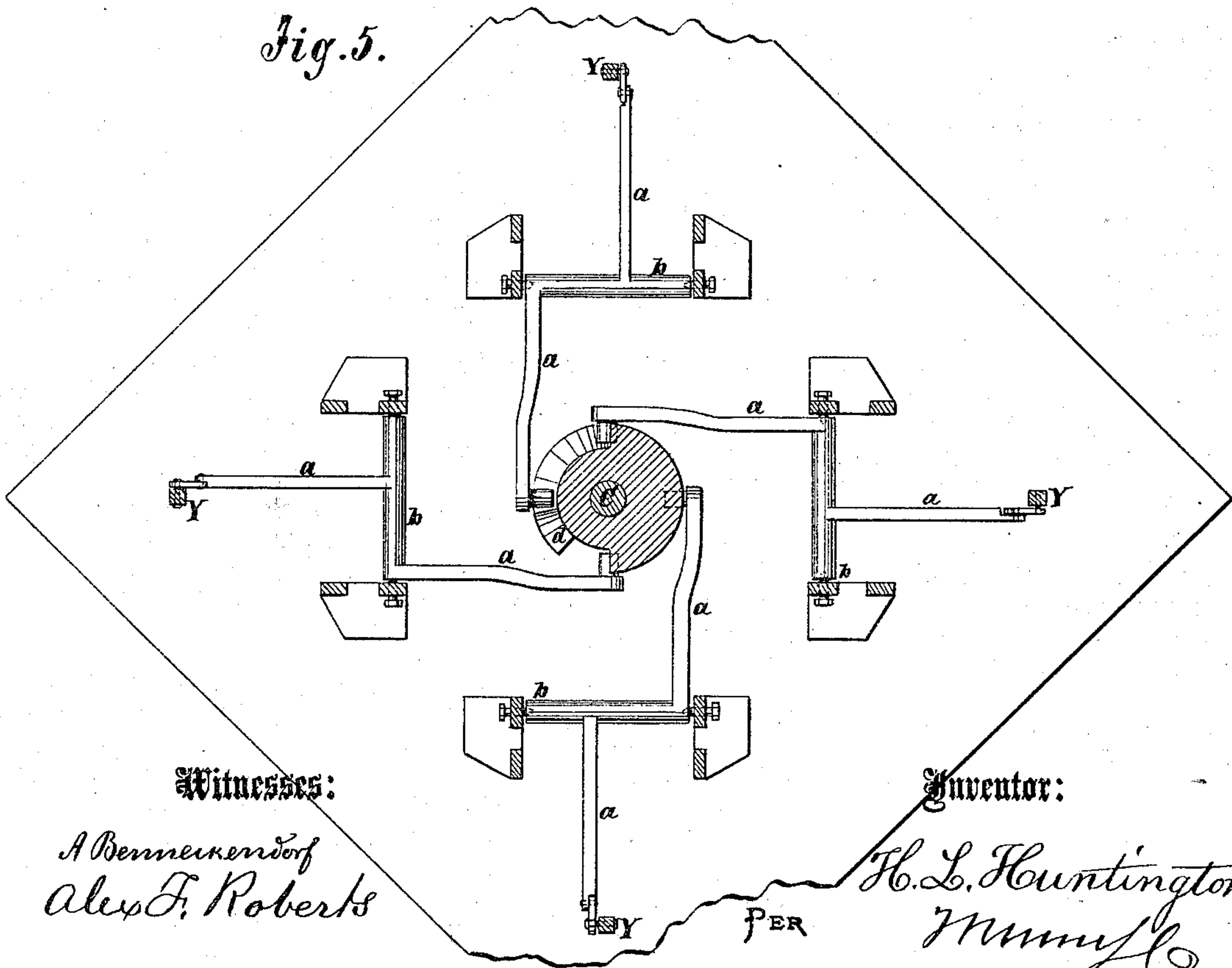


Fig. 5.



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UNITED STATES PATENT OFFICE.

HIRAM L. HUNTINGTON, OF KEYPORT, NEW JERSEY.

IMPROVEMENT IN BRICK AND TILE MACHINES.

Specification forming part of Letters Patent No. **157,831**, dated December 15, 1874; application filed October 10, 1874.

To all whom it may concern:

Be it known that I, **HIRAM LORD HUNTINGTON**, of Keyport, in the county of Monmouth and State of New Jersey, have invented a new and useful Improvement in Brick and Tile Machines, of which the following is a specification:

In this improved brick and tile machine there is a series of contracted throats radiating from the axis of the mud-mixing shaft below the mixer, through which throats the mud or clay is forced into receivers by pushers, which press it sufficiently for the bricks and tiles in forcing it through said throats. When a receiver full of clay has been pushed out a wire cutter rises up in front of the mouth of the throat and separates the mass in the receiver from the remaining portion; then the bottom of the receiver rises and carries the pressed clay against a series of wire cutters extending across the receivers, and separating the clay into bricks, which are then removed, the receiver-bottom goes down, and the pusher goes back, ready for another operation. Each set of apparatus is operated in succession, and all the moving parts are worked directly from the extension of the mixing-shaft below the mixer by simple and inexpensive contrivances, all as will be hereinafter described in the specification; and the particular features which I consider to be of my invention will be pointed out in the claims.

Figure 1 is a top view of my improved machine. Fig. 2 is a sectional elevation taken on the line *xx* of Fig. 1. Fig. 3 is a horizontal section taken on the line *yy* of Fig. 2. Fig. 4 is a horizontal section taken on the line *zz* of Fig. 2, the parts represented being those seen in looking upward; and Fig. 5 is a section taken on the line *ww* of Fig. 2, the parts represented being those seen in looking downward.

Similar letters of reference indicate corresponding parts.

A is the mixing-tub, which is mounted in an elevated position on a frame, B, to provide room below the bottom for the contrivances for working the presses, the movable cutters, and the receiver-bottoms. C is the shaft of the mixer, which extends through the bottom, and is prolonged sufficiently below for the ap-

plication of the bevel-wheel D, by which it is driven by the driving-shaft E; also, for the application of the necessary cams for working the several contrivances. F is a broad spiral blade attached to the shaft C, for forcing the mixed clay down through the openings G in the bottom of the mixer into the chambers H, for being forced out through the contracted throats I into the receivers K, and thus be compressed to the proper consistency for the bricks and tiles; also to be delivered to the cutting devices, whereby the masses so pressed may be separated from the remaining portions in the throats, and be cut up into bricks and tiles. L represents the pushers, which are arranged to work back and forth in the chambers H. Two of these pushers are connected to a radial bar, M, extending across from one chamber, H, to another on opposite sides of the axis, with a large opening, N, at the center, so shaped that the crank-pin O on the shaft C, which passes through said opening, will act alternately on the shoulders P in one revolution, and force the pusher of each chamber outward, at the same time drawing the pusher of the opposite chamber back. There are four of the chambers, pressing and discharging throats and pushers, and two of the radial bars M. The crank-pin O is so adjusted on the shaft that a pusher is forced out just after the blade F has passed over the openings G and filled the chamber H with clay. The receivers consist of the two permanent vertical sides K and a movable bottom, Q, arranged in front of the throats, to receive the mass of pressed clay as it is forced out of said throats, and hold it while it is separated from that remaining by the wire cutters R, which are stretched between the vertical rods S of a gate or frame arranged in suitable bearings T, to carry the said cutters up and down in front of the throats for so cutting off the masses of protruding clay. These frames or gates are mounted at the outer ends of levers U, pivoted at V, and arranged for their inner ends to be acted on by the cam W on shaft C, which moves the said cutters upward as soon as the pushers cease to press the clay outward; then the movable bottoms Q of the receivers rise and force the masses of clay against the fixed wire cutters X, to be separated into bricks and then be removed

from the machine. These movable bottoms are supported on vertical bars extending downward through suitable guides Z, and connected to the outer ends of levers *a*, pivoted at *b*, and arranged at their inner ends to be acted on by the cam *d* on the shaft C, for forcing the said bottoms upward, as above described. This cam *d* is so arranged that the said bottoms are set in motion as soon as the cutters R have separated the clay at the mouths of the throats. The cutters R move down again as soon as they have performed their work; but the bottoms K remain up long enough to afford time to remove the completed bricks and tiles; but they go down long enough before the pushers begin to act to be ready to receive the clay when it begins to be forced out again. The bottoms K are provided with grooves *e* immediately under the cutters *x*, to allow the latter to clear the bottom of the clay to insure the cutting of it completely through. These wire cutters are connected, at one or it may be both ends, to their supports by stiff springs *f*, which are capable of holding them for cutting the clay, but will yield to prevent breaking the cutters in case any substance they cannot cut may come in contact with them.

To make bricks with holes or openings through them with this machine it is only necessary to introduce the usual stops for that purpose in the throats I.

In the manufacture of tiles by this machine the usual stops and dies are placed in the throats I, and the wires are either wholly

omitted and the tiles cut by hand after they issue from the machine, or the tiles are cut by the wires, as described, the arrangement of the wires being changed to suit the required length of the tiles.

My invention is applicable to the making of solid and perforated bricks and tiles of every description.

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

1. The plunger M M, provided in cavity N with opposite convex bearings P P, quite or nearly parallel with the line of motion, in combination with a crank-pin on shaft C, as shown and described, so that the same cam will alternately carry and push the plunger.
2. The covering-plate arranged over plunger M, as shown and described, to prevent a discharge of clay back of the plunger-face.
3. The combination, with box having two or more outlets, of a superposed hopper having two or more apertures in the bottom, as and for the purpose specified.
4. The combination, with a receiver having a vertically-movable bottom, of a series of fixed wire cutters, *x*, as and for the purpose described.
5. The combination, with cutters *x*, of the end connecting-springs *f'*, as and for the purpose set forth.

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Witnesses:

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