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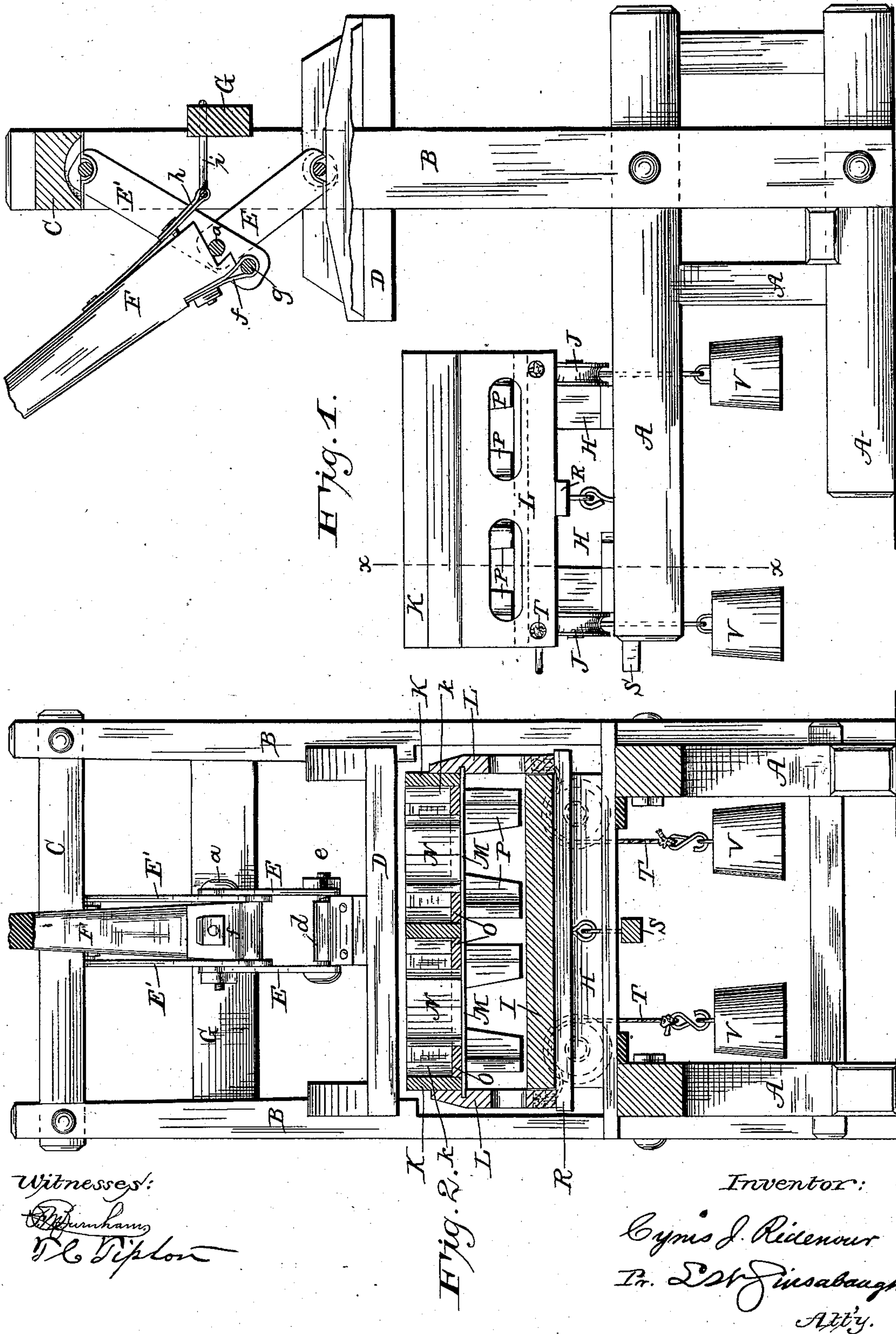
2 Sheets—Sheet 1.

C. J. RIDENOUR.

MACHINE FOR COMPRESSING PLASTIC MATERIAL.

No. 294,274.

Patented Feb. 26, 1884.



Witnesses:
Wm. H. D. D. D.
W. C. D. D.

Inventor:
Cyrus J. Ridenour
By S. H. Ginsburgh
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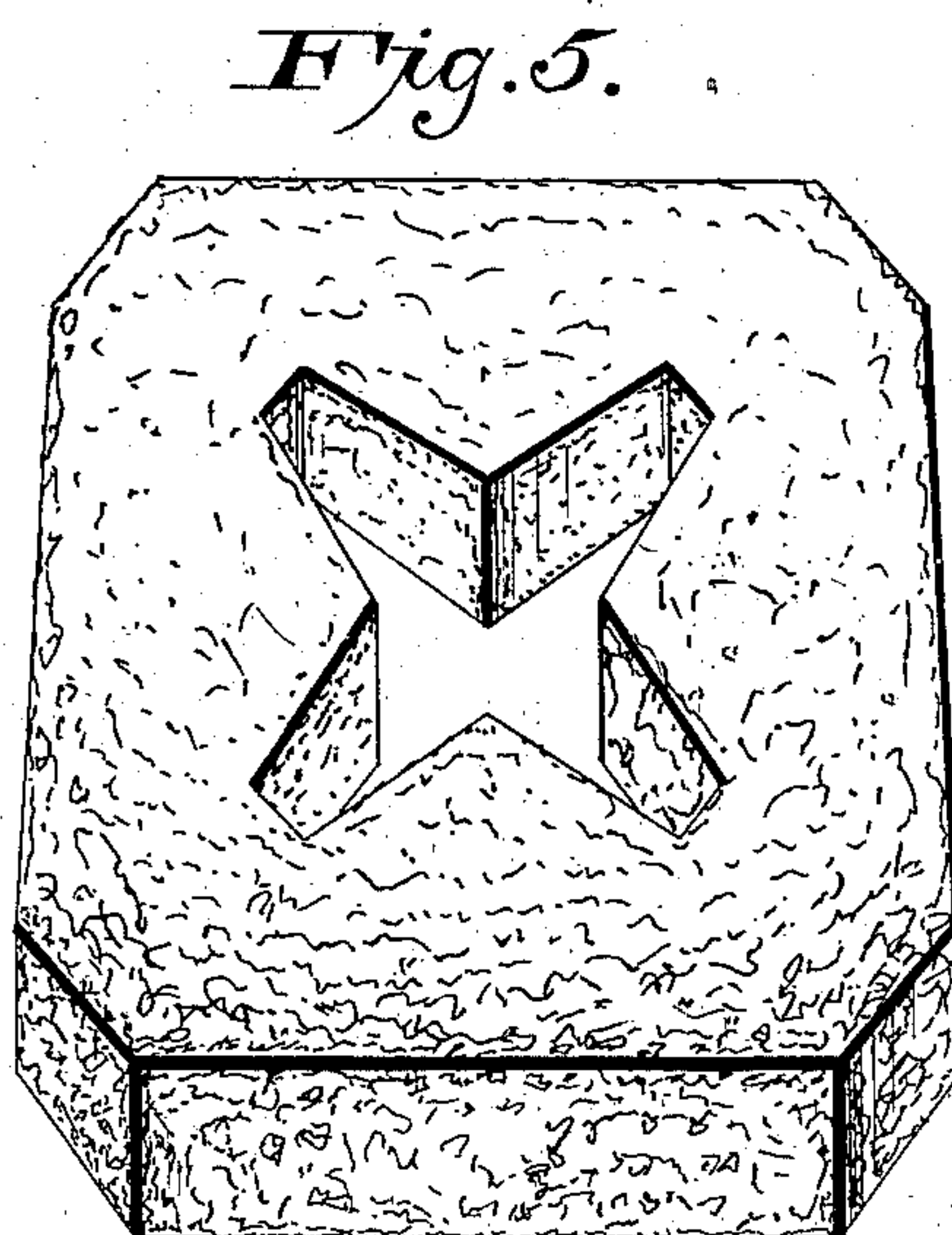
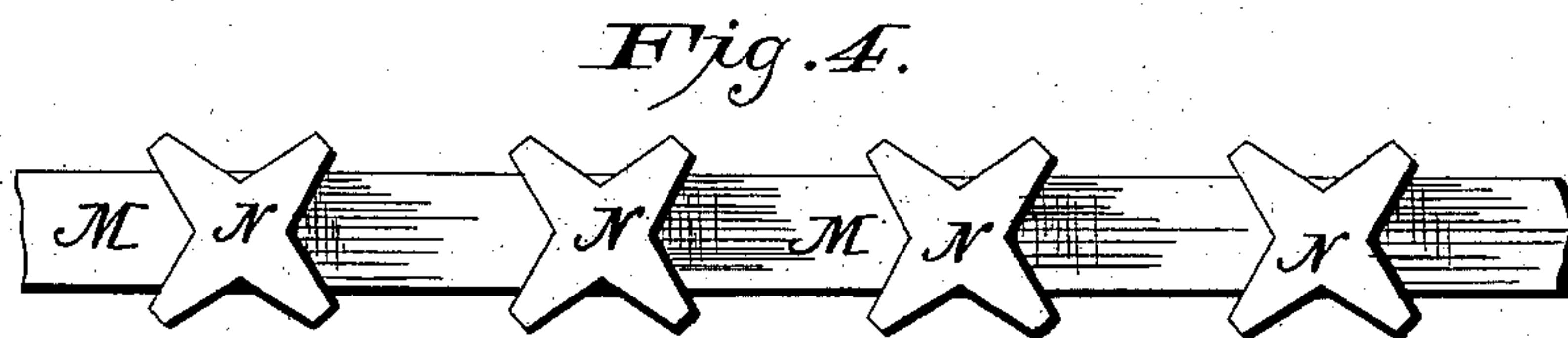
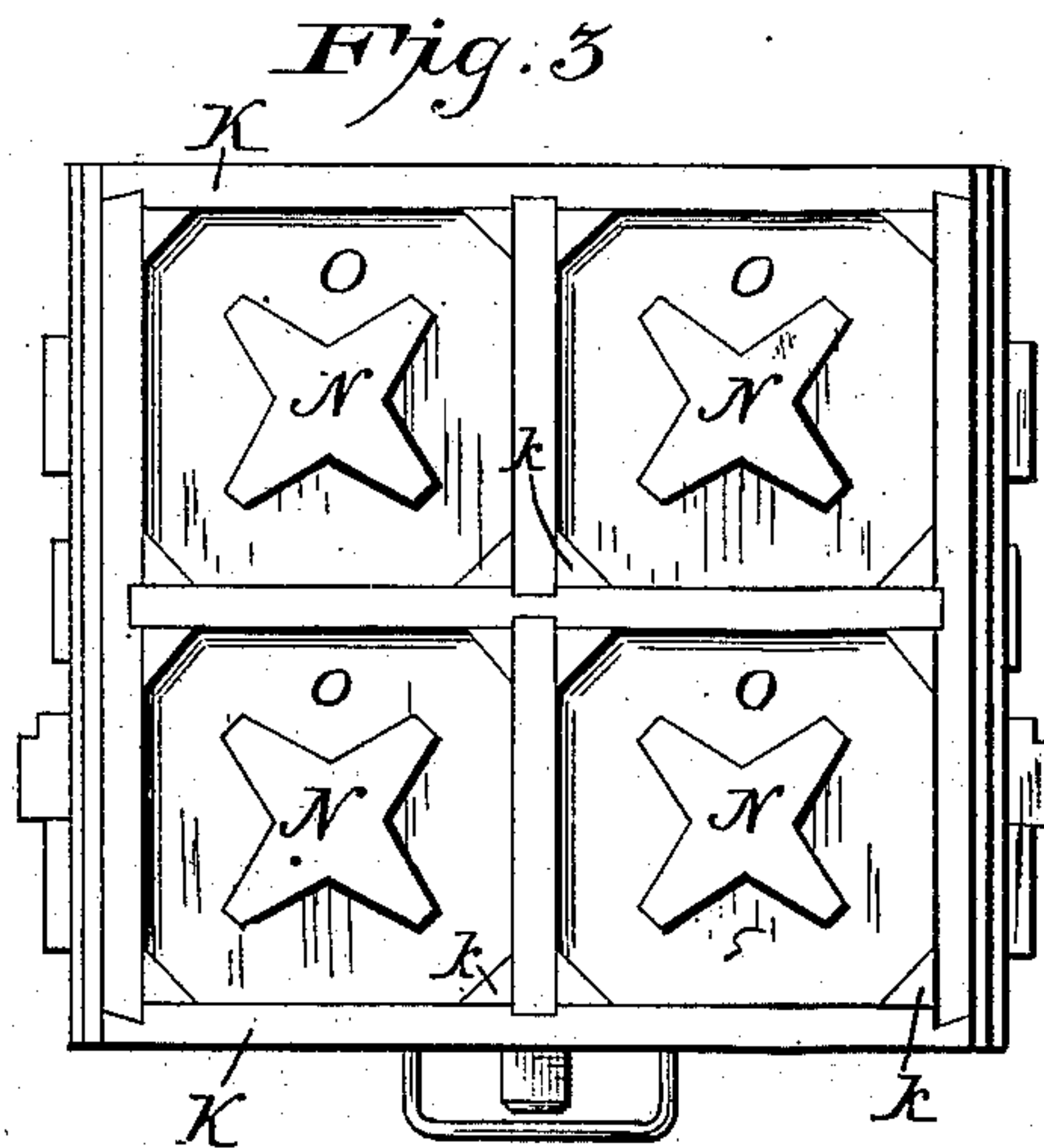
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UNITED STATES PATENT OFFICE.

CYRUS J. RIDENOUR, OF SPRINGFIELD, OHIO.

MACHINE FOR COMPRESSING PLASTIC MATERIAL.

SPECIFICATION forming part of Letters Patent No. 294,274, dated February 26, 1884.

Application filed January 15, 1884. (No model.)

To all whom it may concern:

Be it known that I, CYRUS J. RIDENOUR, a citizen of the United States, residing at Springfield, in the county of Clarke and State of Ohio, have invented certain new and useful Improvements in Machines for Compressing Plastic Material, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in machines for compressing plastic material into shape.

The object of my invention is to produce a machine which will be easily operated and reliable in its action.

My invention consists in mounting the mold-frame on a supplemental frame or platform, which is adapted to slide in ways in the frame-work, so as to bring the molds under the pressure plate or platen, said mold-frame being adapted to slide up and down over the supplemental frame or platform.

My invention consists in providing the bottoms of the molds with legs or standards, which rest on the supplemental frame or platform, so that when pressure is applied to the platen, which covers the entire upper surface of the mold-frame, the mold-frame will be depressed and the direct pressure be received by the mold-bottoms.

My invention consists, further, in securing elastic strips of metal or other material to the mold-frame, which extend across the mold-cavities, said elastic strips being provided with fillets or cores, which extend through the mold-bottoms and form an opening of any desired configuration through the article.

My invention consists, further, in attaching to the mold-frame a hand-lever, by which the said mold-frame can be drawn down, so as to eject the article from the mold-cavity by means of the mold-bottoms, and also in securing to the mold-frame cords and weights, which pass over pulleys on the supplemental frame or platform, so that the mold-frame will be held in an elevated position at all times, except when the hand-lever is used to expel the articles from the mold-cavities.

My invention consists, further, in certain details of construction, which will be fully described hereinafter, and pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of my machine. Fig. 2 is a sectional

end view on the line *x x*, Fig. 1. Fig. 3 is a top view of the mold-frame, mold-bottoms, corner fillets, and cores. Fig. 4 is a top view of the elastic strip with the cores or pieces for forming the central apertures in the article attached thereto. Fig. 5 is a perspective view of the article as produced by my machine.

A indicates the frame-work of the machine, which may be of any suitable or desirable material and construction.

B B are standards rigidly secured to the sides of the frame-work and joined at the top by means of the cross-bar C. The inner sides of the standards may be provided with grooves or guideways, by which the pressure plate or platen D is guided in its upward and downward movement by means of the toggle-levers E E'; or notches may be cut in the pressure-plate to embrace the standards, as shown in Fig. 2, and by this means be guided in its movement, as before stated.

E E' are a double set of toggle-levers, the upper ends of the toggles E' being pivoted to the cross-piece C, while a bolt near their lower ends connects them to the upper ends of the toggle-levers E E, the lower ends of the toggles E E being connected, by means of a bracket, *d*, and bolt *e*, to the central upper portion of the pressure-plate D.

F is a hand-lever, the lower end of which is pivoted by means of the loop *f* to the cross bar or bolt *g*, which is secured in and connects the lower ends of the toggles E' E'. The hand-lever F is connected to a cross-bar, G, by means of a strap-hinge, *h*, and large staple *i*, which forms the fulcrum of the lever F, and by which means a powerful pressure can be brought to bear on the plate D.

H is a supplemental frame adapted to be moved back and forth on top of the frame A, said frame being provided with a floor, I, and pulley-wheels J J, the functions of which will more fully appear.

K is the mold-frame, provided with suitable mold-cavities and side pieces or extensions, L, which extend down over the frame H. The corners of the molds are filled in with triangular pieces of wood or metal, so that the material to be operated upon will not be compressed into the corners of the mold, and thus require an extra effort to remove the article from the mold.

M is an elastic strip of metal or other material, secured in the extensions L of the mold-

frame and resting against the under side of said mold.

N are cores secured to the elastic strip M, and they project through the bottoms of the mold into the mold-cavity. The office of these cores is to produce central apertures through the article.

O are the mold-bottoms, and are provided at each corner with feet or legs P, which rest on the floor I of the frame H. The elastic strips pass between the legs of the bottoms, and, as before stated, the cores N pass up through corresponding openings in the mold-bottom.

R is a cross-bar, passing under the floor I, the ends of which are secured to the extensions L of the mold-frame, to the center of which is secured a hand-lever, S, the inner end of said lever being pivoted to a cross-bar in the frame A. The mold-frame is held in an elevated position by means of cords T, secured to the ends of the side extensions, L, said cords being passed over the pulley-wheels J J, and having weights V attached thereto.

The operation of my device is as follows: The molds and frame being drawn out onto the ends of the frame A, as shown in Fig. 1, and the mold frame in the elevated position shown in Fig. 2, the material is placed in the mold-cavities around the cores N. The frame, with the filled molds thereon, is now pushed under the pressure-plate and power applied by means of the hand-lever F. During the pressing operation the mold-frame is pressed down and the material compacted between the pressure-plate and the bottoms of the mold. After the articles have been pressed, the frame and mold are drawn forward on the frame A, the hand-lever S is depressed, and the mold-frame, with the cores N, is drawn down, leaving the articles exposed on the tops of the mold-bottoms, from whence they can be readily removed.

The molds, mold-bottoms, and cores are by preference made of metal, and may be faced with porcelain or other vitreous material which will prevent the material from adhering thereto.

In practice I may use a thin sheet of metal or other material, placed between the platen D and the top of the mold-frame, which will prevent the material from adhering to the under side of the pressure plate or platen D.

My machine is specially adapted for the manufacture of fire-kindlers from sawdust and rosin or analogous binding material; but I do not confine myself to such use, as the machine is equally well adapted for making tile, brick, and other like articles.

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

1. In a machine for pressing plastic or semi-plastic material into form, a mold-frame mounted on a movable supplemental frame located therein, said mold-frame being adapted to yield to the force exerted thereon by the

pressure-plate, and provided with mold-bottoms having legs adapted to rest upon the floor of the supplemental frame and receive the impact of the pressure-plate, as set forth.

2. In a machine for pressing plastic material into form, a vertically-sliding mold-frame provided with mold-compartments, and an elastic strip, M, carrying the cores N, secured to the under side of the mold-frame, as and for the purpose set forth.

3. In a machine for molding and pressing plastic material into form, a supplemental frame, H, adapted to be moved laterally to and from the pressure-platen provided with the floor I, in combination with a vertically-moving mold-frame and mold-bottoms, as set forth.

4. In a machine of the character described, a supplemental frame, H, adapted to be moved laterally to and from the pressure-platen, in combination with a vertically-moving mold-frame, said mold-frame being connected to the supplemental frame by elastic connections, which will permit the mold-frame to yield or move down under pressure and be returned again to an elevated position when released from such pressure, as set forth.

5. In a machine of the character described, the supplemental frame H, provided with the sheaves or pulleys J, in combination with the vertically-moving mold-frame provided with weighted cords passing over said pulleys, whereby the mold-frame is held in an elevated position, as set forth.

6. In a machine of the character described, the vertically-moving mold-frame adapted to slide over and connected to the supplemental frame by means of the cross-bar R, in combination with the lever S, whereby the mold-frame is drawn down and the articles ejected therefrom by means of the mold-bottoms, the legs of which come in contact with the floor of the supplemental frame, located within the side extensions of the mold-frame, as set forth.

7. The combination of the hand-lever F and toggle-levers E and E', pivoted as described, with the cross-bar G, hinge h, and staple i, as and for the purpose set forth.

8. In a mold for shaping plastic material, an elastic bar secured to the under side of the mold-frame, and provided with stationary cores secured thereto, which project up into the mold-cavities, as and for the purpose set forth.

9. A mold-frame provided on its under side with a bar or bars, M, to which are secured the cores N, in combination with a movable mold-bottom resting loosely upon and held in position by said bars M, and adapted to have the cores pass therethrough, as and for the purpose set forth.

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

CYRUS J. RIDENOUR.

Witnesses:

SIMON P. MAST,

J. ALF. HAYWARD.