

No. 723,548.

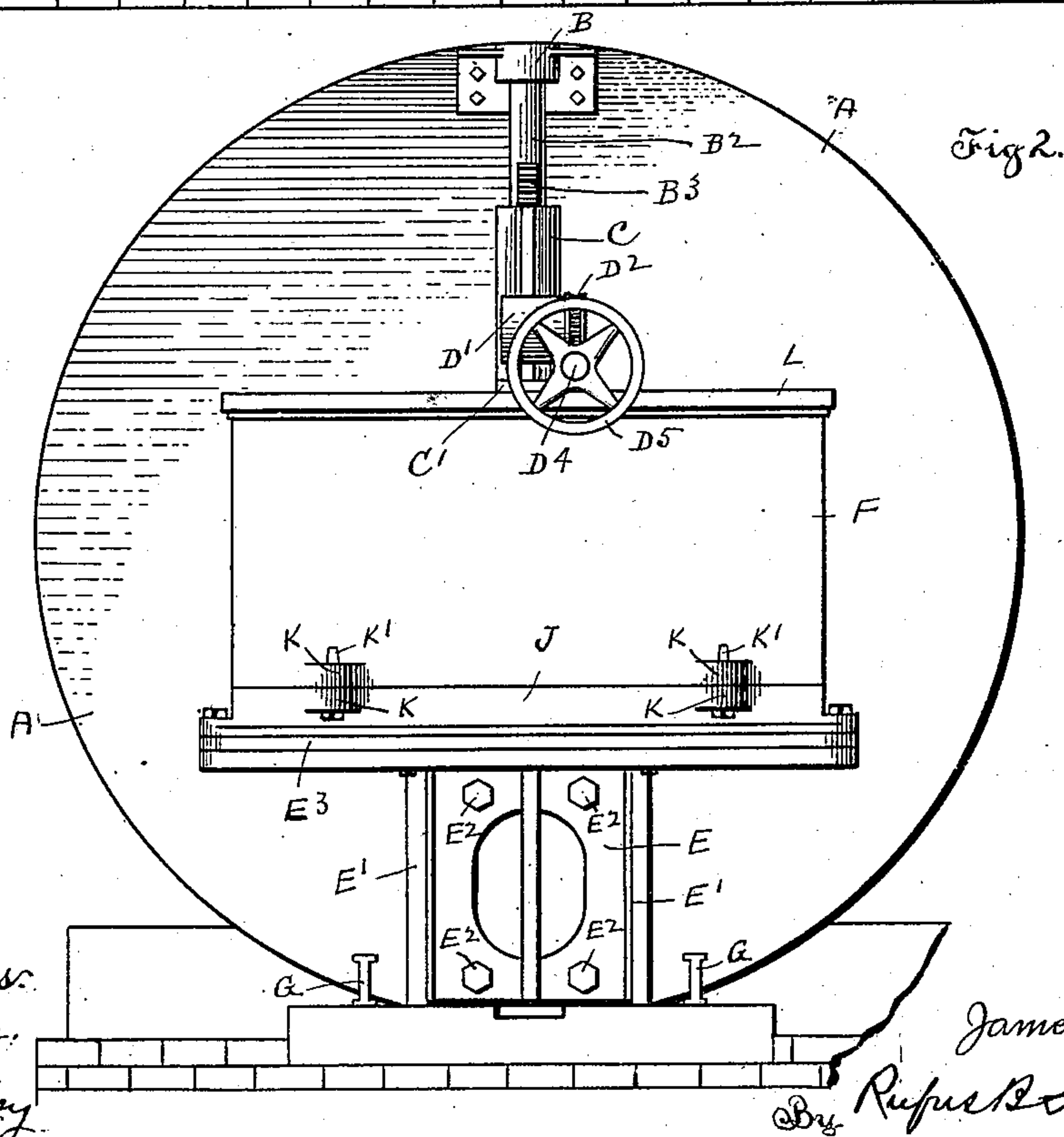
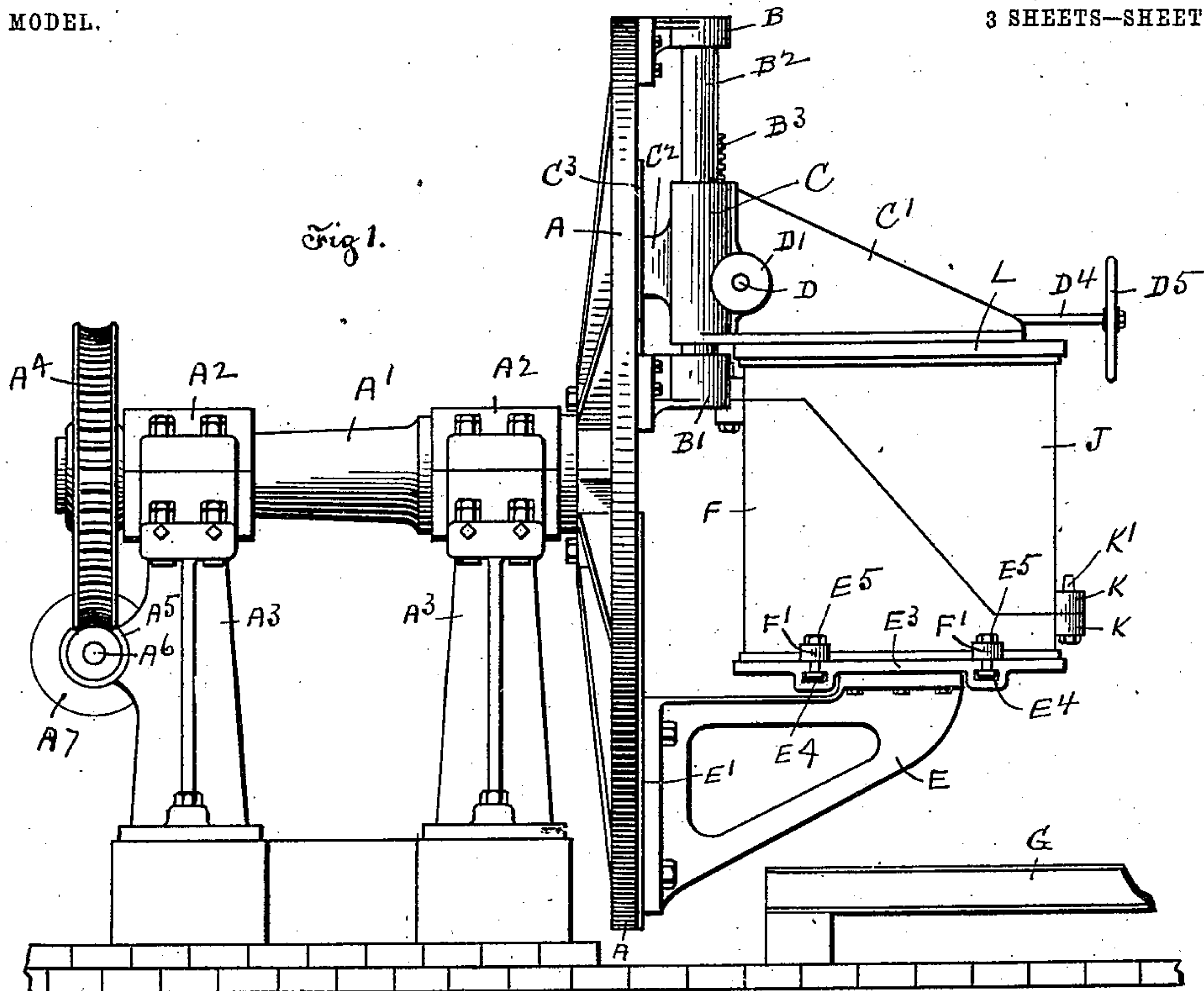
PATENTED MAR. 24, 1903.

J. REID, JR.  
FOUNDER'S MOLDING MACHINE.

APPLICATION FILED MAR. 21, 1900.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:  
H. M. Rigg,  
A. A. Murphy

Inventor:  
James Reid Jr.  
By Rufus B. Fowler atty.

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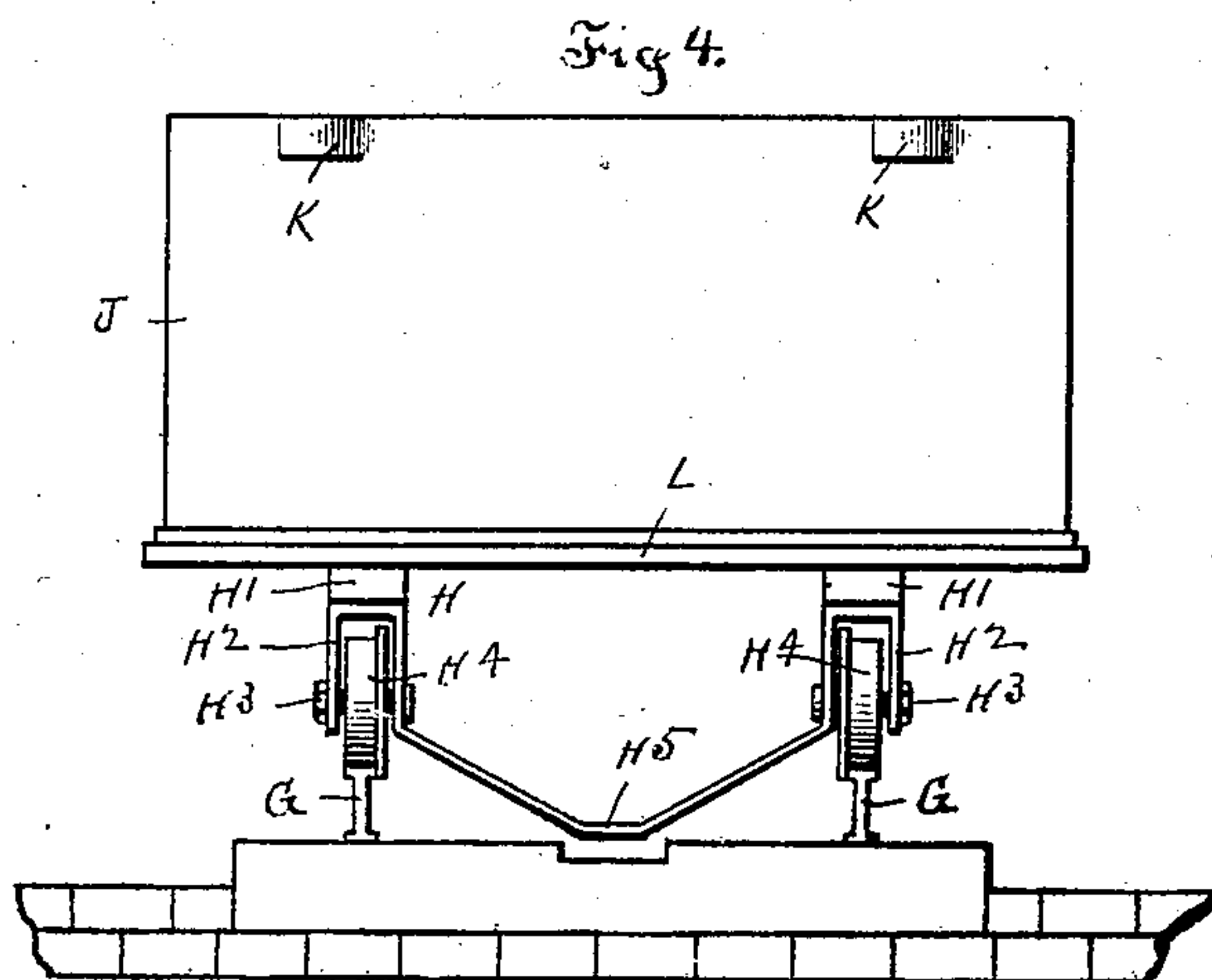
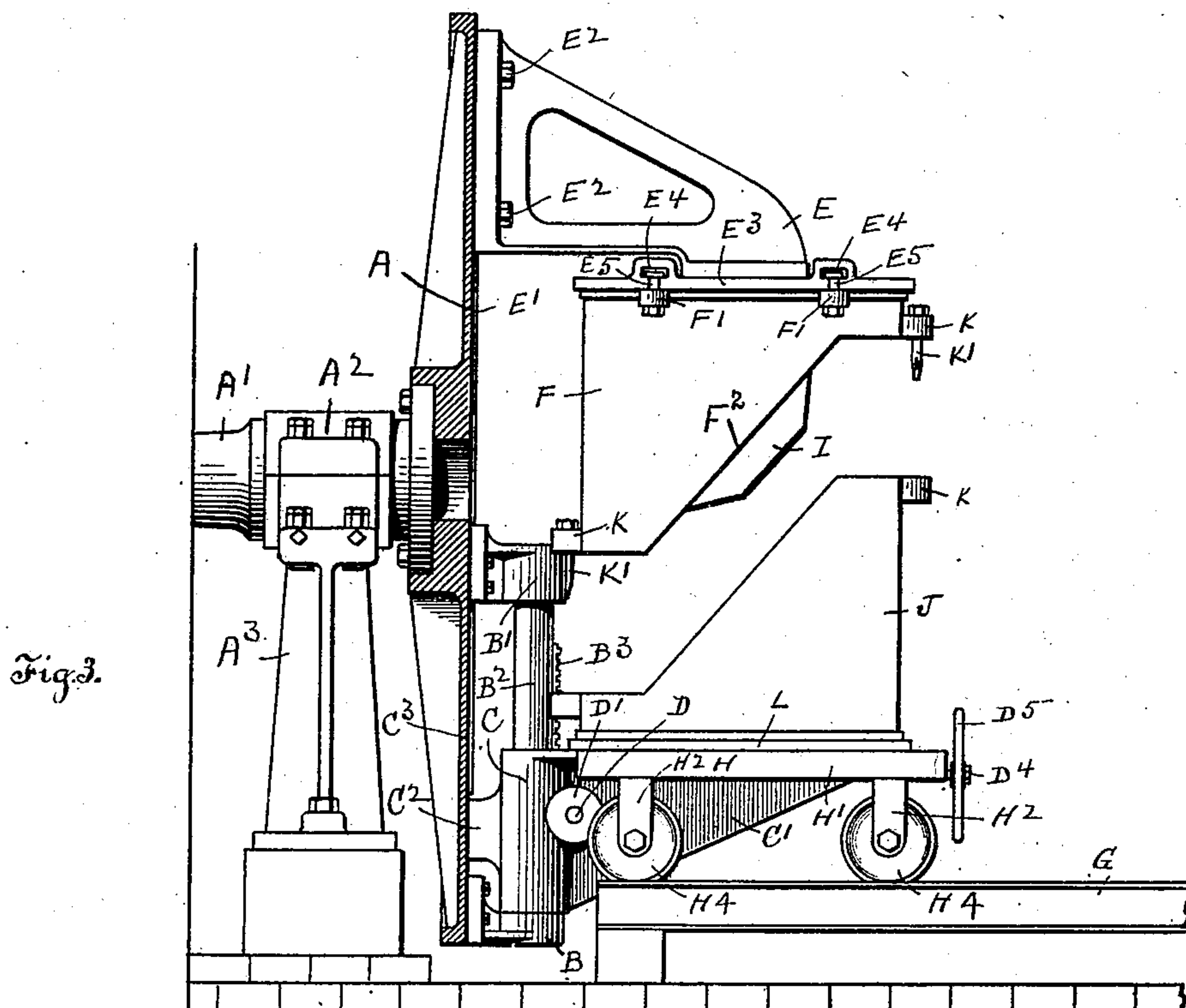
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NO MODEL.

3 SHEETS—SHEET 2



Witnesses:

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3 SHEETS—SHEET 3.

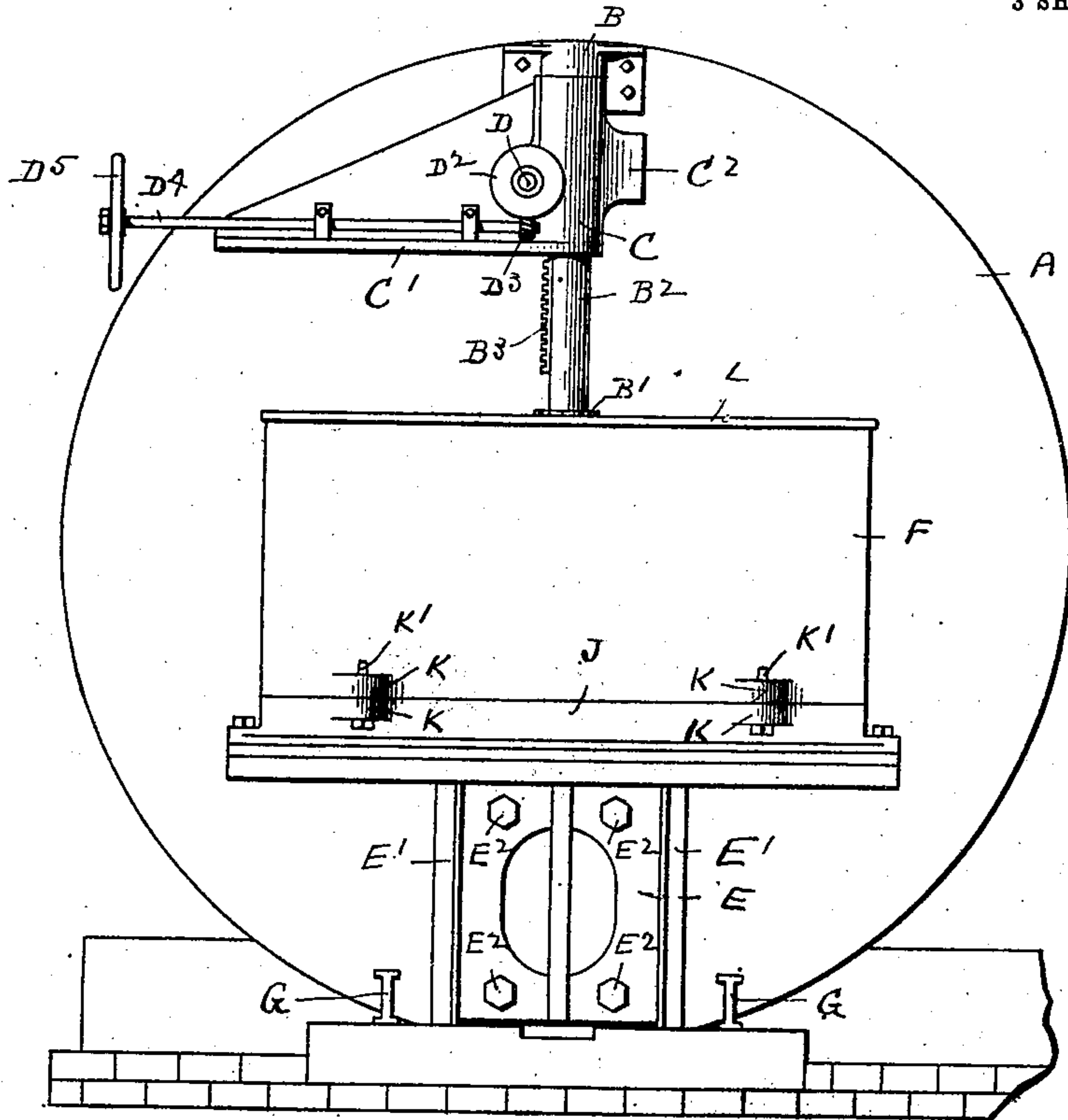


Fig. 5.

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# UNITED STATES PATENT OFFICE.

JAMES REID, JR., OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO HOLYOKE MACHINE COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

## FOUNDER'S MOLDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 723,548, dated March 24, 1903.

Application filed March 21, 1900. Serial No. 9,506. (No model.)

To all whom it may concern:

Be it known that I, JAMES REID, Jr., a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Founders' Molding-Machines, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

Figure 1 represents a side elevation of a founders' molding-machine embodying my invention. Fig. 2 is an end view. Fig. 3 is a side view with a part of the flask lowered upon a truck by which it is removed from the machine, the rotating disk or face-plate being shown in central vertical sectional view; and Fig. 4 is an end view of the truck with a part of the flask mounted thereon. Fig. 5 is a front view with the bracket C' turned to one side in order to uncover the flask.

Similar reference-letters refer to similar parts in the different views.

The object of my present invention is to provide a mechanism for handling the heavy parts of founders' flasks during the operation of forming the mold; and it consists in the construction and arrangement of parts, as hereinafter described, and set forth in the annexed claims.

Referring to the drawings, A denotes a disk or face-plate carried by a rotating shaft A', journaled in bearings A<sup>2</sup> A<sup>2</sup>, mounted upon fixed posts A<sup>3</sup> A<sup>3</sup> and driven by a worm-gear A<sup>4</sup>, attached to the shaft A' and engaged by a rotating worm A<sup>5</sup> on a shaft A<sup>6</sup>, provided with a belt-pulley A<sup>7</sup>, operatively connected with the shaft A<sup>6</sup> by a clutching mechanism (not shown) by which power is applied at will to rotate the disk A. Lugs B B', attached to the disk A, support a rod B<sup>2</sup>, which is capable of oscillating in the lugs and is provided on one side with a rack B<sup>3</sup>. Sliding on the rod B<sup>2</sup> is a sleeve C, carrying on one side a bracket C' and on the opposite side a tailpiece C<sup>2</sup>, having its end entering between parallel ribs C<sup>3</sup>, which form a radial guideway for the tailpiece C<sup>2</sup>, thereby preventing the bracket C' and rod B<sup>2</sup> from turning in the lugs B B'. Journaled in bearings in the sleeve C is a

short spindle D, carrying a pinion (not shown) 50 inclosed in a case D' and engaging the rack B<sup>3</sup>. Attached to the spindle D is a worm-gear D<sup>2</sup>, which is engaged by a worm D<sup>3</sup> on a shaft D<sup>4</sup>, having a hand-wheel D<sup>5</sup>, by which spindle D is rotated and the sleeve C raised 55 and lowered upon the rod B<sup>2</sup>. A space is left between the outer ends of the ribs C<sup>3</sup> and the lug B, so that when the sleeve C is moved radially outward on the rod B<sup>2</sup> the tailpiece C<sup>2</sup> will be released and allow the bracket C' 60 and rod B<sup>2</sup> to be swung in the lugs B B' to one side, as shown in Fig. 5, for the purpose of uncovering the flask and allowing it to be filled with sand. Attached to the disk A, upon the side diametrically opposite the lugs 65 B B', is a bracket E, preferably held between ribs E' E', which form a radial guideway for the bracket E, which is adjustably secured to the disk or face-plate A by means of bolts E<sup>2</sup>, a series of holes being provided in the 70 face-plate for that purpose. The bracket E supports a table E<sup>3</sup>, having T-shaped slots E<sup>4</sup> to receive the heads of bolts E<sup>5</sup>, passing through lugs F' F', by which the false part F of the flask is attached to the table E and supported upon the floor. In front of the face-plate A is a horizontal track G, leading from the face-plate to such portions of the foundry-floor as it is desired to remove the completed 80 molds, which are transferred from the machine upon trucks H. In the false part F is secured a pattern I, that part which is to form the mold projecting beyond a parting-line F<sup>2</sup>. The pattern I is supported in the false part F by any of the well-known means now practiced by 85 founders—such, for example, as embedding the pattern in calcined plaster held in the false part F. In the operation of forming the mold the disk A is rotated, bringing the table E<sup>3</sup> in a horizontal position and below its 90 center, with the false part F, carrying a pattern I, mounted thereon.

Upon the false part F is placed the drag J of the flask, held in proper position by means of the usual lugs K and steady-pins K'. The 95 bracket C' is swung to one side, as represented in Fig. 5, allowing the drag J to be filled with sand, which is compacted around the



pattern I. The surplus sand is then stricken off and the drag covered by a board L. The bracket C' is then swung around and lowered until it presses upon the board L by means of the hand-wheel D<sup>5</sup>, as represented in Figs. 1 and 2, thereby firmly clamping the board against the part J of the flask. The disk A is then rotated one-half a revolution and the truck H moved beneath the drag J, which is lowered thereon by moving the bracket C' radially downward on the rod B<sup>2</sup>, as shown in Fig. 3, leaving the pattern I exposed. The truck H consists of a pair of longitudinal strips H' H', connected at each end by iron straps H<sup>2</sup>, supporting the bolts H<sup>3</sup>, upon which the flanged truck-wheels H<sup>4</sup> turn. Each of the straps H<sup>2</sup> is depressed between the truck-wheels, as at H<sup>5</sup>, to receive the bracket C' and allow the board L and drag J to rest upon the truck.

When a sufficient number of molds have been made in the lower part of the flask, a second false part is prepared, with the pattern I in position to form the mold in the cope or upper part of the flask, and the operation is then repeated in forming a corresponding number of molds fitting the already-completed lower parts of the flask.

The bracket E, supporting the table E<sup>3</sup>, is made adjustable on the disk A in order to bring the center of gravity of the filled flasks coincident with the axis of the rotating disk A, so that the load will be as nearly balanced as possible during the rotation of the disk A.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a molding-machine, the combination of a rotating shaft journaled in horizontal bearings, means for rotating said shaft, a vertical disk, or face-plate, attached to said shaft and provided on one side its axis with a radial guideway, a bracket fitted to said disk, or face-plate, and adjustably fixed in said guideway, a table supported on said fixed bracket, a second movable bracket carried by the disk on the opposite side of its axis, and means for independently moving said second bracket on the face-plate in order to clamp a flask between it and said table, substantially as described.

2. In a molding-machine, the combination with a rotating shaft journaled in horizontal bearings, of a vertical disk, or face-plate, attached to said shaft, a bracket adjustably attached to said disk, or face-plate, a table attached to said bracket, means for attaching a molder's flask to said table, a movable bracket carried by said disk on the side of its axis opposite said table, means for moving

said bracket radially on said disk in order to clamp an interposed flask between said bracket and said table, substantially as described.

3. In a molding-machine the combination with a rotating disk, or face-plate, of a table attached to said disk and at right angles thereto, lugs projecting from said disk, an oscillating rod journaled in said lugs and held radially to said disk, a sleeve capable of sliding on said rod but held from rotating thereon, a bracket projecting from said sleeve and opposed to said table and means for sliding said sleeve on said rod, substantially as described.

4. In a molding-machine the combination of a rotating disk, or face-plate, a table carried by said disk, means for attaching the false part of a flask to said table, clamping mechanism for holding the other part of a flask on said false part and supporting the same as the disk is rotated to bring said clamping mechanism below the axis of the disk, means for moving said clamping mechanism radially on said disk and lowering the part of the flask supported thereon and a wheeled truck arranged to receive the clamping mechanism between its wheels and support the flask, substantially as described.

5. In a molding-machine, the combination of a rotating face-plate, a bracket carried thereby at right angles to said face-plate, means for clamping a flask against said bracket, means for lowering said bracket, and a truck provided with supports for the flask, with its center depressed to receive said bracket, substantially as described.

6. In a molding-machine the combination with a disk, or face-plate, of a table E carried by said disk, lugs B, B' projecting from said disk, a rod B<sup>2</sup> journaled in said lugs and provided with a rack, a sleeve capable of sliding on said rod, a spindle journaled in bearings on said sleeve, a pinion engaging said rack and attached to said spindle, a worm-gear attached to said spindle and a worm engaging said worm-gear, a bracket projecting from said sleeve over said table and capable of a swinging movement about the axis of said rod and a radially-sliding movement thereon, substantially as described.

In testimony whereof I have signed my name to this specification, in presence of two subscribing witnesses, this the 10th day of March, 1900.

JAMES REID, JR.

Witnesses:

AVA T. MURPHY,  
RUFUS B. FOWLER.