

G. G. Cressey,

Molding Apparatus.

No. 83,135.

Patented Oct. 20, 1868.

Fig. 1.

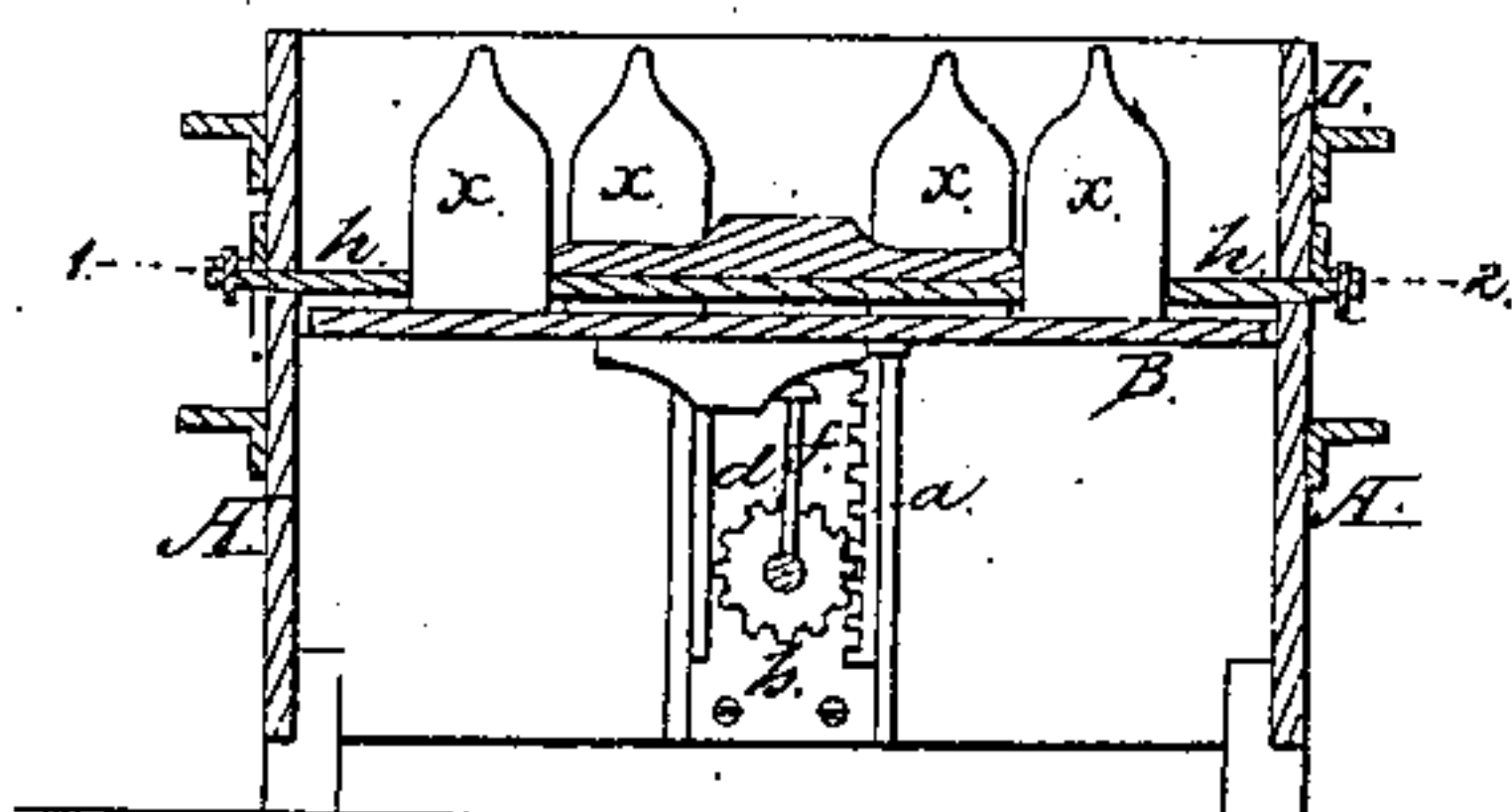


Fig. 2.

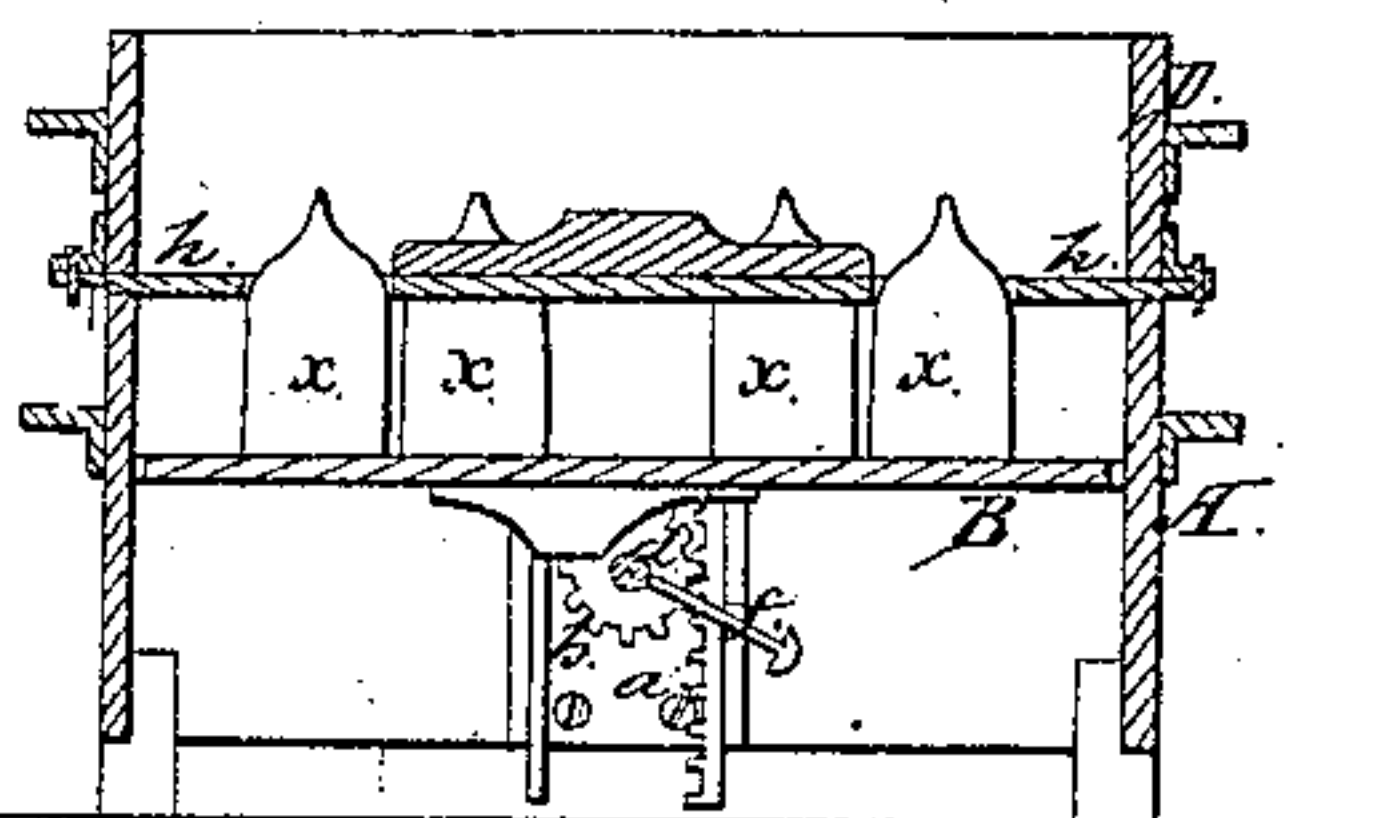


Fig. 5.

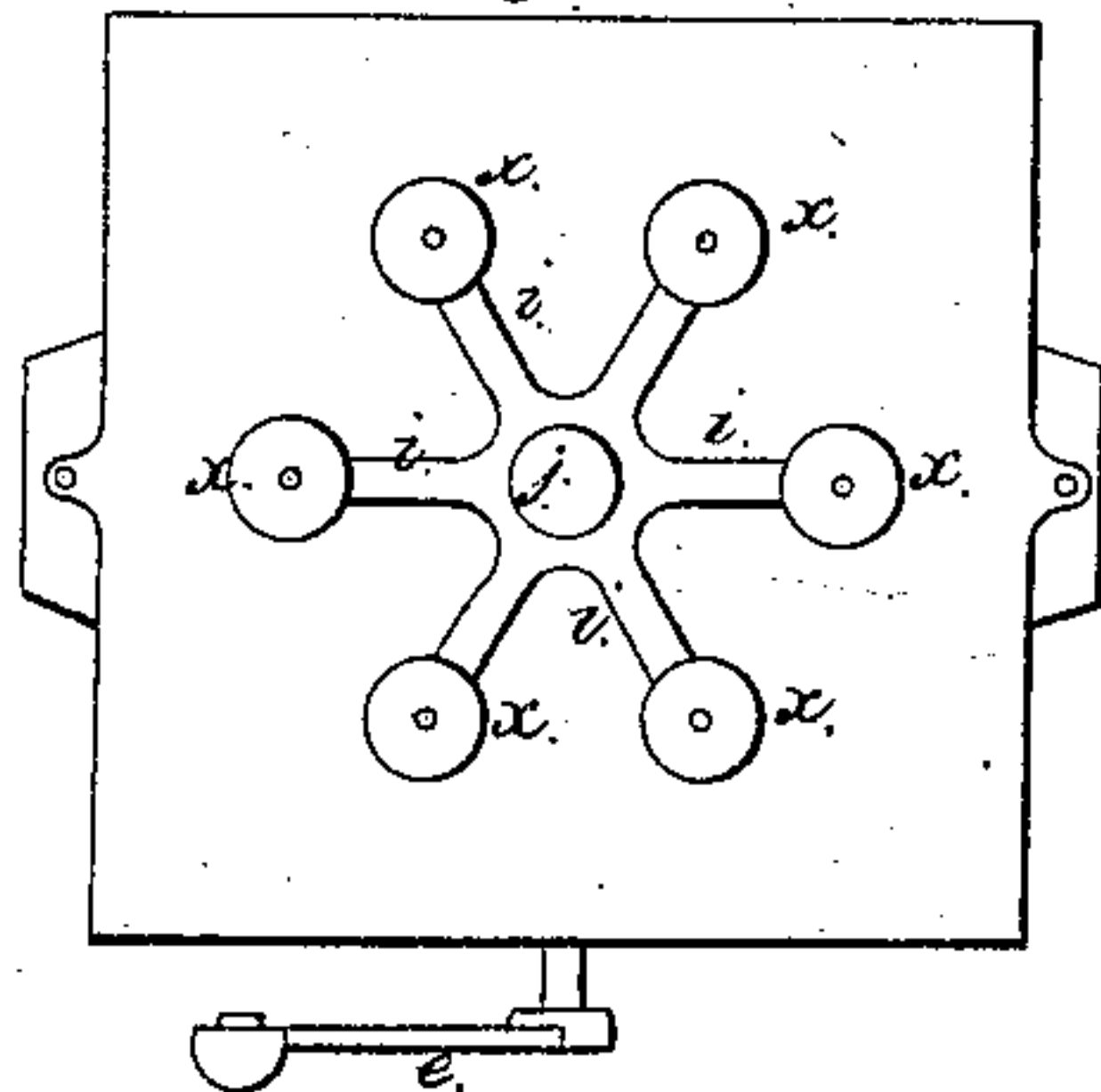


Fig. 8.

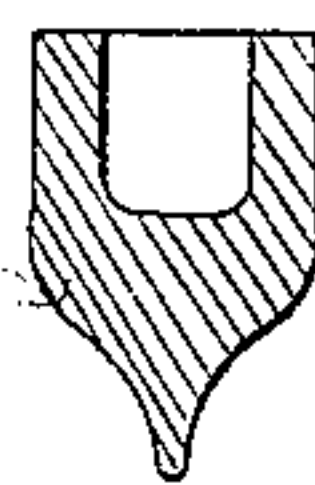


Fig. 3.

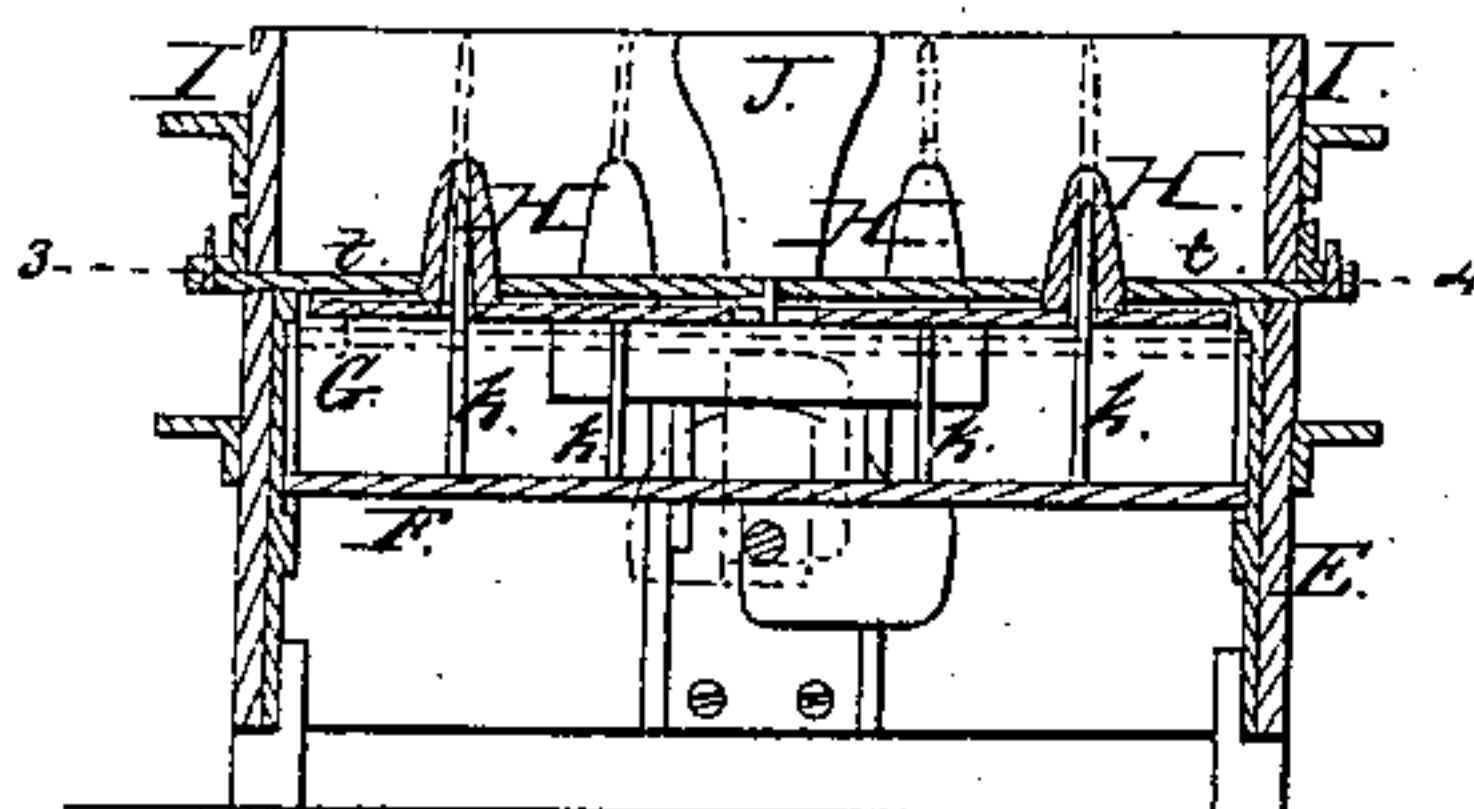


Fig. 4.

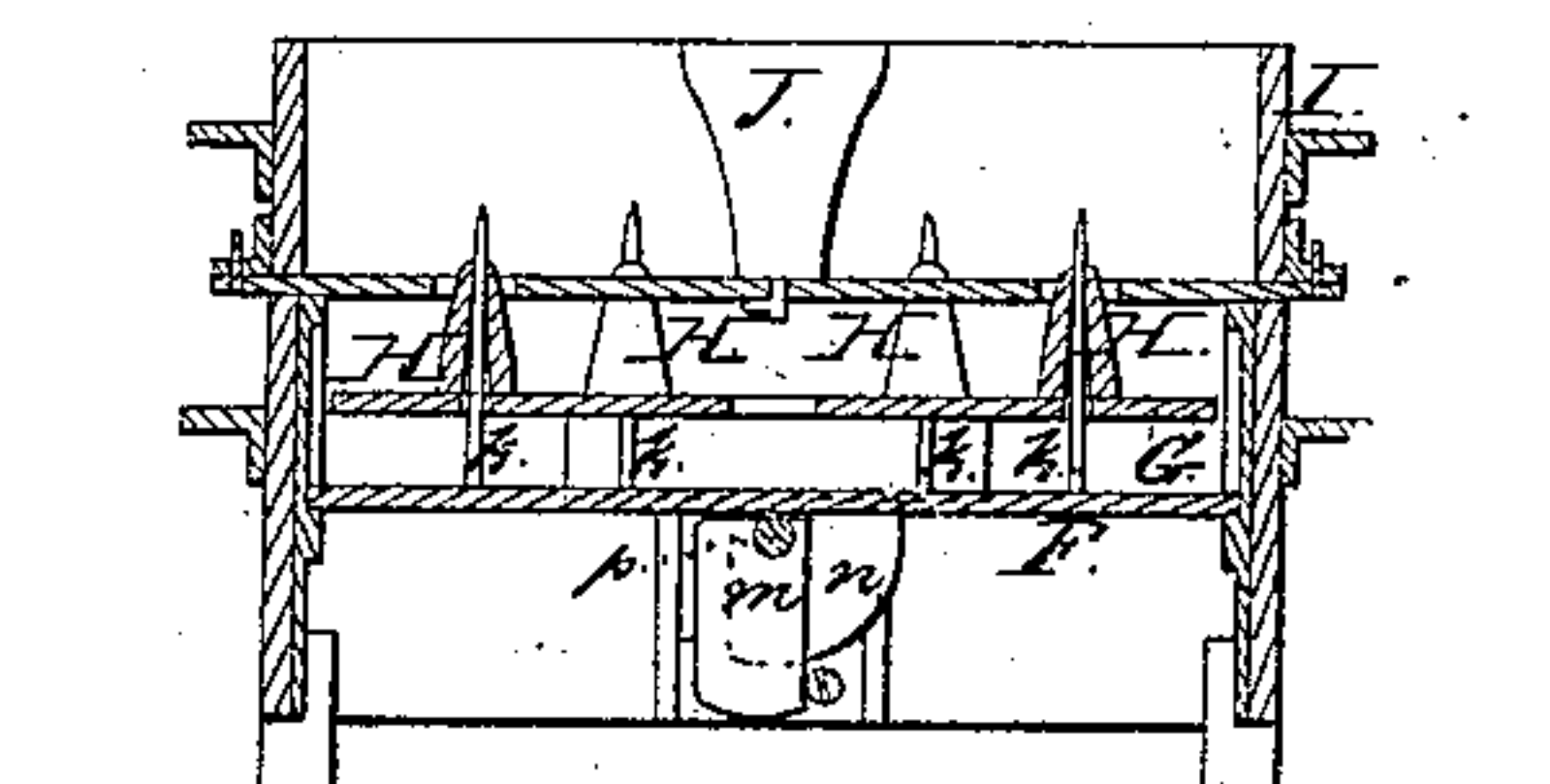


Fig. 6.

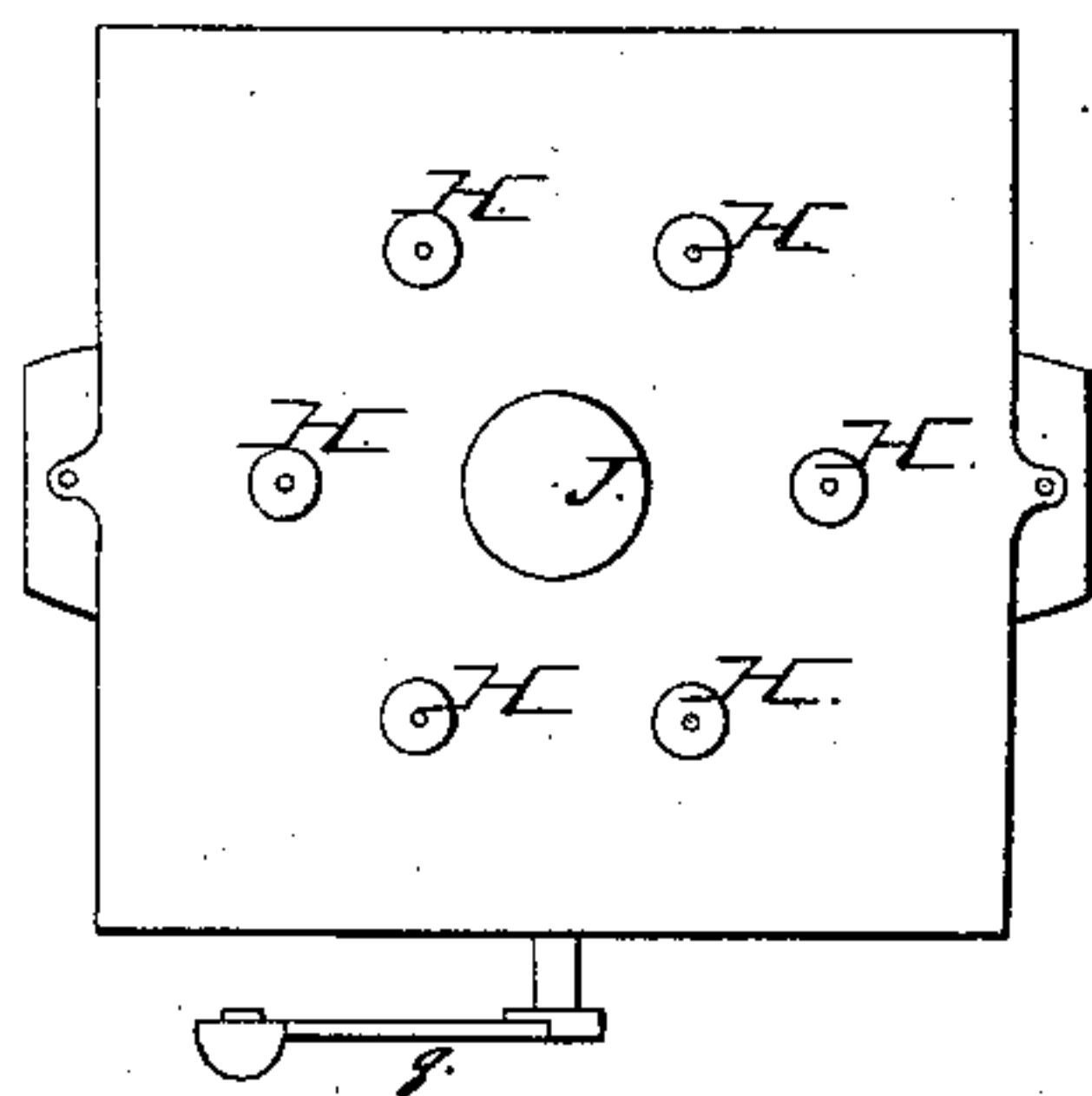
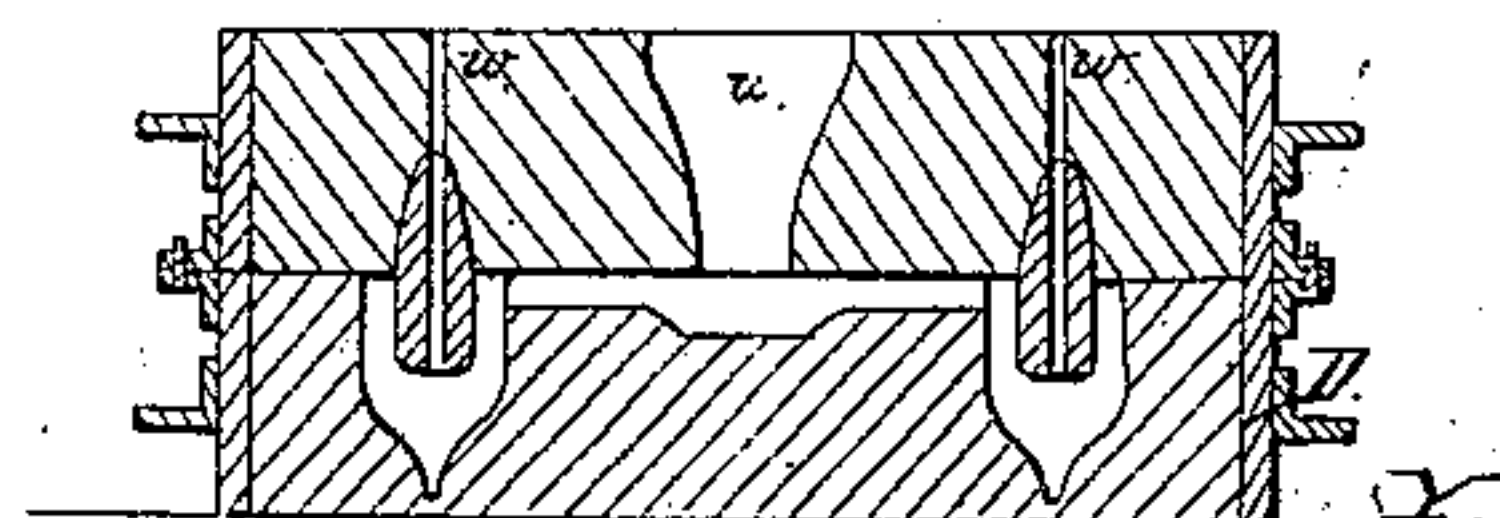


Fig. 7.



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GEORGE G. CRESSEY, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 83,135, dated October 20, 1868; antedated October 8, 1868.

IMPROVEMENT IN VENTING CORES.

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, GEORGE G. CRESSEY, of Philadelphia, Pennsylvania, have invented an Improved Moulding-Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention consists of certain apparatus, fully described hereafter, whereby the operation of making of moulds for various objects in which cores are used, may be accomplished with rapidity and accuracy.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figures 1 and 2 are vertical sections of apparatus used in connection with my improvement for carrying out the first part of the moulding-process;

Figures 3 and 4, vertical sections of my improved apparatus as arranged for carrying out the second part of the process;

Figure 5, a plan view of fig. 1, on the line 1-2;

Figure 6, a plan view on the line 3-4, fig. 3;

Figure 7, a view of the mould completed, and ready for receiving the metal; and

Figure 8, a sectional view of the object to be cast in the mould.

Similar letters refer to similar parts throughout the several views.

In reference to figs. 1, 2, and 3, A represents a box, within which is a plate, B, the latter being arranged to slide up and down freely in guides in the box, and having racks, *a*, into which gear pinions *b*, on a spindle, *d*, which turns in opposite sides of the box, and is provided with a suitable handle, *e*, the spindle being also provided with an arm or arms, *f*, which serve to support the plate B, when the latter has reached the limit of its upward movement.

To the top of this plate, B, are secured and arranged in a circle, six patterns, *x*, of the object to be cast, (see fig. 8,) each pattern being arranged to fit snugly, but slide freely in the top, *h*, of the box A, on which plate are also six ribs, *i*, each radiating from one of the patterns, *x*, to a central projection, *j*.

A moulding-flask, D, having the usual steady-pins, adapted to legs on the box A, is now adjusted to the latter, and the plate B, with its patterns, elevated to the position seen in fig. 1, where it is held by the above-mentioned arms *f*. Sand is now placed in the flask D, and carefully rammed round and above the patterns, after which the plate B and its patterns are lowered, the flask D removed from the box A, reversed, and placed on the moulding-floor Y, fig. 7, where it forms the lower portion of the mould, and contains the impressions of the six patterns, the radial ribs *i*, and central projection *j*.

While the above operation is being accomplished by

one workman, another may be engaged in preparing the upper portion of the mould, by the aid of the appliances illustrated by figs. 3, 4, and 6, in which E is a box, similar, as regards external form, to the above-described box A, but having two guide plates, F and G, the latter carrying prints H, arranged to correspond in number and position to those of the patterns *x*, and the lower plate F having six wires, each arranged to pass through the centre of one of the prints.

The plate F is operated by cams *m*, and the plate G by cams *n*, both being on a spindle, *p*, arranged to turn on the opposite sides of the box E, and provided with a suitable handle, *q*.

A flask, I, having been adjusted to the box E, the spindle *p* is turned until its cams *n* elevate the plate G and its prints H to the position shown in fig. 3, the said prints projecting through the plate *t*, of the box E, while the plate F remains so far depressed that the points of its wires, *k*, are a short distance below the points of the prints.

On the plate *t* is a central detachable pattern, J, round which, as well as round and above the prints H, is rammed the moulding-sand, thrown into the flask I.

After the sand has been properly packed into the latter, the plate F is suddenly elevated by the cams *m*, the plate G, with its prints, in the mean time, retaining its original position, consequently the pointed wires *k* pierce the sand, and form, through the same, a number of openings, one directly above each print, as shown by red lines in fig. 3. Immediately after piercing the sand, the plate F, with its wires, is suddenly depressed, by operating the spindle *p*, to the position seen in fig. 4, after which the movement of the cams *n* permits the plate G and its prints H to fall to the position shown in fig. 4. The pattern J being now withdrawn from the sand, the box I is removed, and after appropriate cores, K, have been adjusted to the impressions left by the prints, the flask is adjusted to that previously deposited on the moulding-floor, and the mould is complete and ready to receive the molten metal, which is poured into the opening, *u*, made by the pattern J, flows along the channels *r r*, made by the radial ribs *i*, on the top plate *h* of the box A, and thence into the spaces formed in the lower flask D, and around the cores projecting into these spaces, while the gases, the accumulation of which in the mould might render the castings imperfect, pass off through the vents *w*. The result of the above-described operations will be six castings, of the character shown in fig. 8.

Numerous castings of this description are used for securing to the ends of rods used in making lap-welded tubes, and have, therefore, been selected as proper objects to illustrate the application of my invention; but it will be readily understood, by those familiar with the process of moulding, that the inven-

tion may be used in connection with apparatus for casting articles of almost any form.

It will be understood that in preparing the different boxes and flasks described, the steadying-pins of all must be alike, as regards the position in respect to each other, and to the patterns and prints, otherwise the two portions of the mould will not coincide, and the castings would be imperfect.

Without confining myself to any particular form or number of pattern or points,

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

The box E, its plate G, and prints H, in combination with the sliding plate F, and its pointed wires K, and the mechanism herein described, or its equivalent, for imparting the desired movements to the said plates.

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

GEO. G. CRESSEY.

Witnesses:

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