(Model.) 2 Sheets—Sheet 1.

C. DAWSON.

SAND MOLDING MACHINE.

No. 371,556. Patented Oct. 18, 1887.

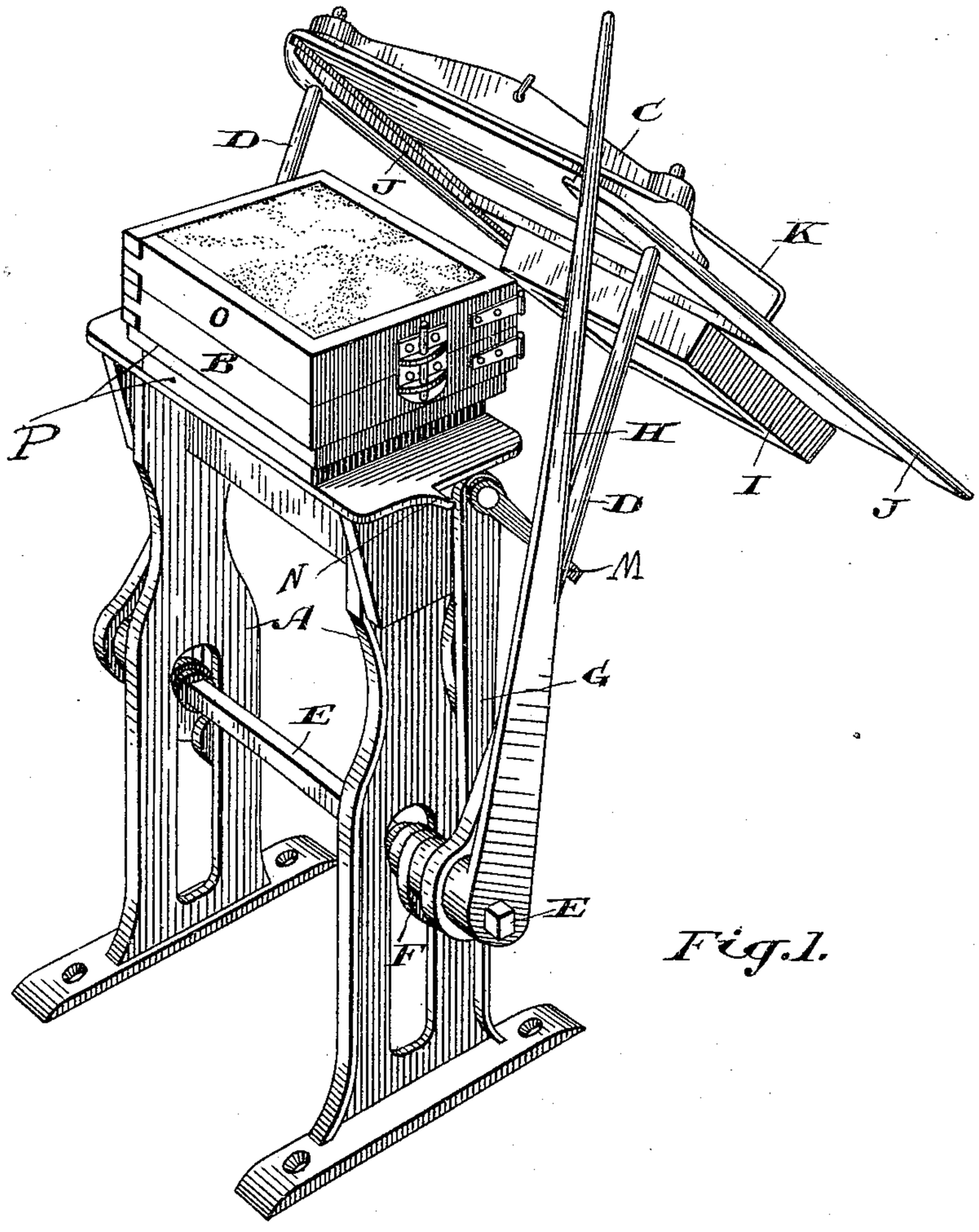

Fig. 1.

Witnesses.
F. B. Fehlinstonbaugh
James E. Maybee

Inventor.
Charles Dawson
by Donald C. Ridout & Co
Attys

(Model.)

2 Sheets—Sheet 2.

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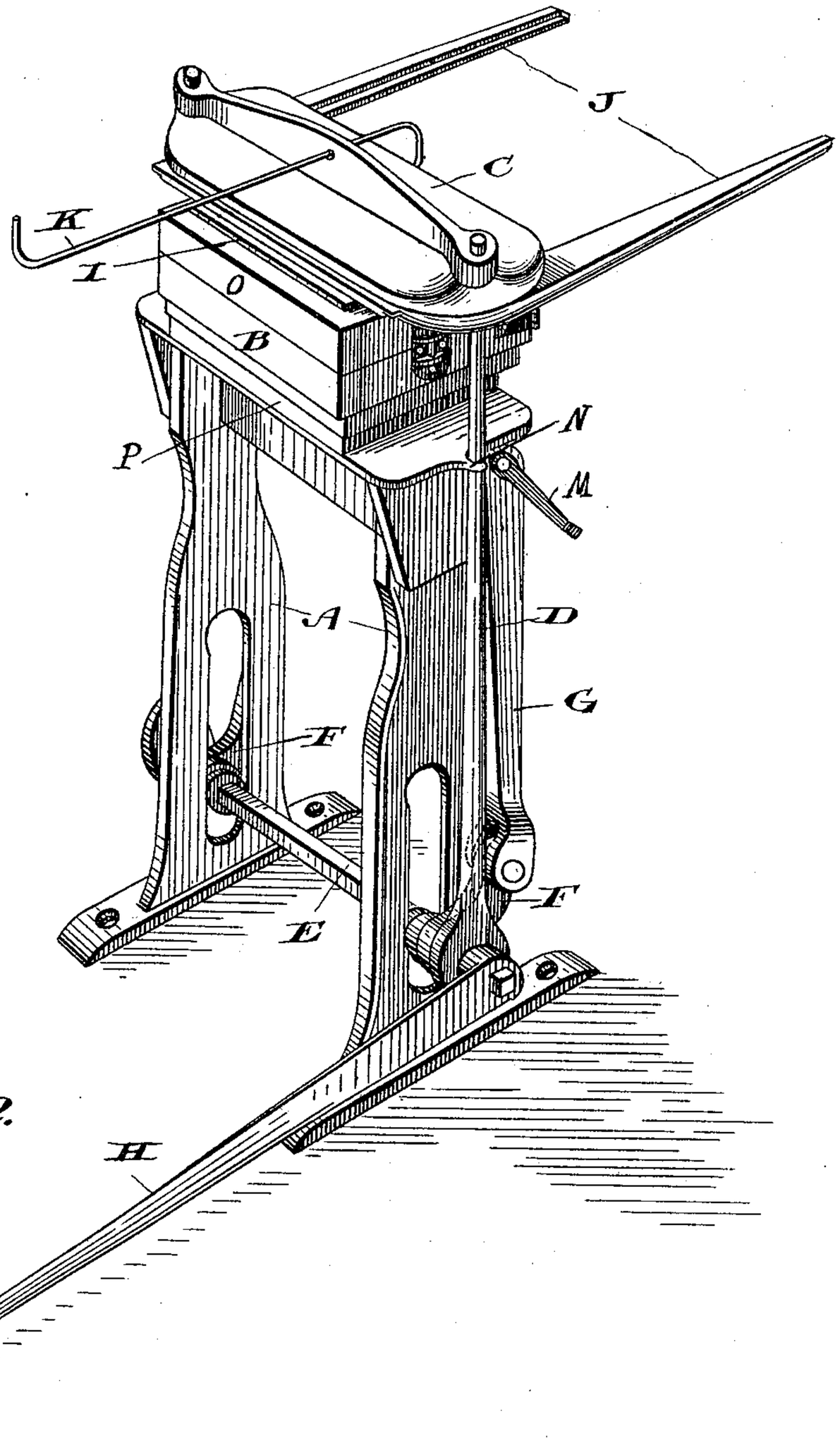

Fig. 2.

Witnesses.
F. B. Fetherstonhaugh
James E. Maybee

Inventor.
Charles Dawson
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Donald C. Ridout & Co
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UNITED STATES PATENT OFFICE.

CHARLES DAWSON, OF PETERBOROUGH, ONTARIO, CANADA.

SAND-MOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 371,556, dated October 18, 1887.

Application filed August 21, 1886. Serial No. 211,493. (Model.) Patented in Canada September 3, 1886, No. 24,857.

To all whom it may concern:

Be it known that I, CHARLES DAWSON, of the town of Peterborough, of the county of Peterborough, in the Province of Ontario, Canada, machinist, have invented certain new and useful Improvements in Molding-Machines, of which the following is a specification.

The object of the invention is to design a molding-machine simple in construction, cheaply made, and provided with an attachment by which the peening or ramming of the sand down around the edges of the flask may be accomplished by a single stroke of the adjustable cross-head; and it consists, essentially, first, in carrying the cross-head on the upper end of vertical rods pivoted or journaled on a horizontal shaft having cranks fixed to it and pivoted on the lower end of bars, the upper ends of which are pivoted upon the frame of the machine; and, second, in providing a frame corresponding in size and shape to the interior of the flask, which frame is adjustable, so that it may be brought below the cross-head for use or held away from it when not required, the whole being constructed and operated substantially as hereinafter more particularly explained.

Figure 1 is a perspective view of the machine, showing the cross-head thrown back clear of the table. Fig. 2 is a similar view of the machine, showing the cross-head and peening-frame in operation.

In the drawings, A represents the frame of the machine, on which the flask B is supported.

C is a cross-head supported on the ends of the vertical rods D. The lower ends of the rods D are journaled on the horizontal shaft E, which has fixed to it the two cranks F. These cranks are pivoted on the ends of the bars G, the upper ends of which are pivoted on the frame A, as indicated. Vertical slots are made in the frame A, so as to permit the passage of the shaft E.

H is a handle fixed to the shaft E. As the shaft E cannot move horizontally, it will, when caused to roll, move upwardly or downwardly, the connection between the cranks F and bar G being the pivot-points.

When the cross-head is in the position shown in Fig. 2, the vertical movement of the cross-head C is utilized for the purpose of imparting pressure on the sand in the flask B, in order to tamp the sand in the said flask; or it may be utilized for the purpose of peening the sand in the following manner—that is to say, the peening-frame I, carried on arms J, extending from the cross-head C, is provided with a rod, K, by which the said frame I may be drawn into the position indicated in Fig. 2. As this peening-frame is made the exact size of the interior of the flask B, it may, when brought over the said flask, be pressed down by the action of the cross-head C, so as to peen entirely around the edges of the flask by one motion of the cross-head, and thus avoid the possibility of shifting the pattern, which is contained in the flask in the usual manner.

M is a stop to limit the movement of the rod D in one direction, while a lug, N, on the frame A serves to stop said rod when it reaches a vertical position.

Instead of carrying the peening-frame on the arm J, it may be made entirely independent of the said cross-head; but for the convenience of operation I think it would be better to arrange it in the manner shown.

The operation is as follows: Supposing a single one-piece pattern to be used, the upper part of the flask or cope O is first set down in a reversed position on a board, P, resting on top of the stand or frame A, and filled with sand, on which the pattern is laid, and the "drag" or lower part of the flask B is then put in place in a reversed position on top of the cope O and the sand thrown in. The peening-frame I is then brought forward under the cross-head C and the two depressed by lowering the lever H in the position shown in Fig. 2, after which the parts are thrown back, as shown in Fig. 1, more sand is thrown in, and the cross-head C brought over the top of the flask without the peening-frame, and then pressed down, as before, and again thrown back, as in Fig. 1. A board is then placed over the sand and the flask reversed on the table in the position shown in the drawings, after which the board P and the cope are removed and the sand on the latter thrown out, thus leaving one-half of the mold complete with the pattern in the sand in the drag. The cope O is then put in place and more sand is thrown in, and the peening and

pressing operation is performed, as before, after which the flask is opened, the pattern taken out, and the flask closed and secured, when the mold is ready to receive the molten metal.

What I claim as my invention is—

1. A cross-head, C, connected to the vertical rods D, the lower ends of which are journaled on the shaft E, in combination with the cranks F, fixed to the shaft E and pivoted to the bars G, which are pivoted on the frame A, and a handle, H, fixed to the shaft E, substantially as and for the purpose specified.

2. The combination of a cross-head with a peening-frame connected to said cross-head and adapted to move up and down with the same, substantially as described.

3. The combination, with the cross-head, of the peening-frame I, connected to said cross-head and constructed to move from under the same, substantially as and for the purpose specified.

4. A cross-head, C, having the arms J, in combination with the peening-frame I, carried on the arms J and operated by the rod K, substantially as and for the purpose specified.

Peterborough, August 9, 1886.

CHARLES DAWSON.

In presence of—
G. M. ROGER,
A. V. R. YOUNG.