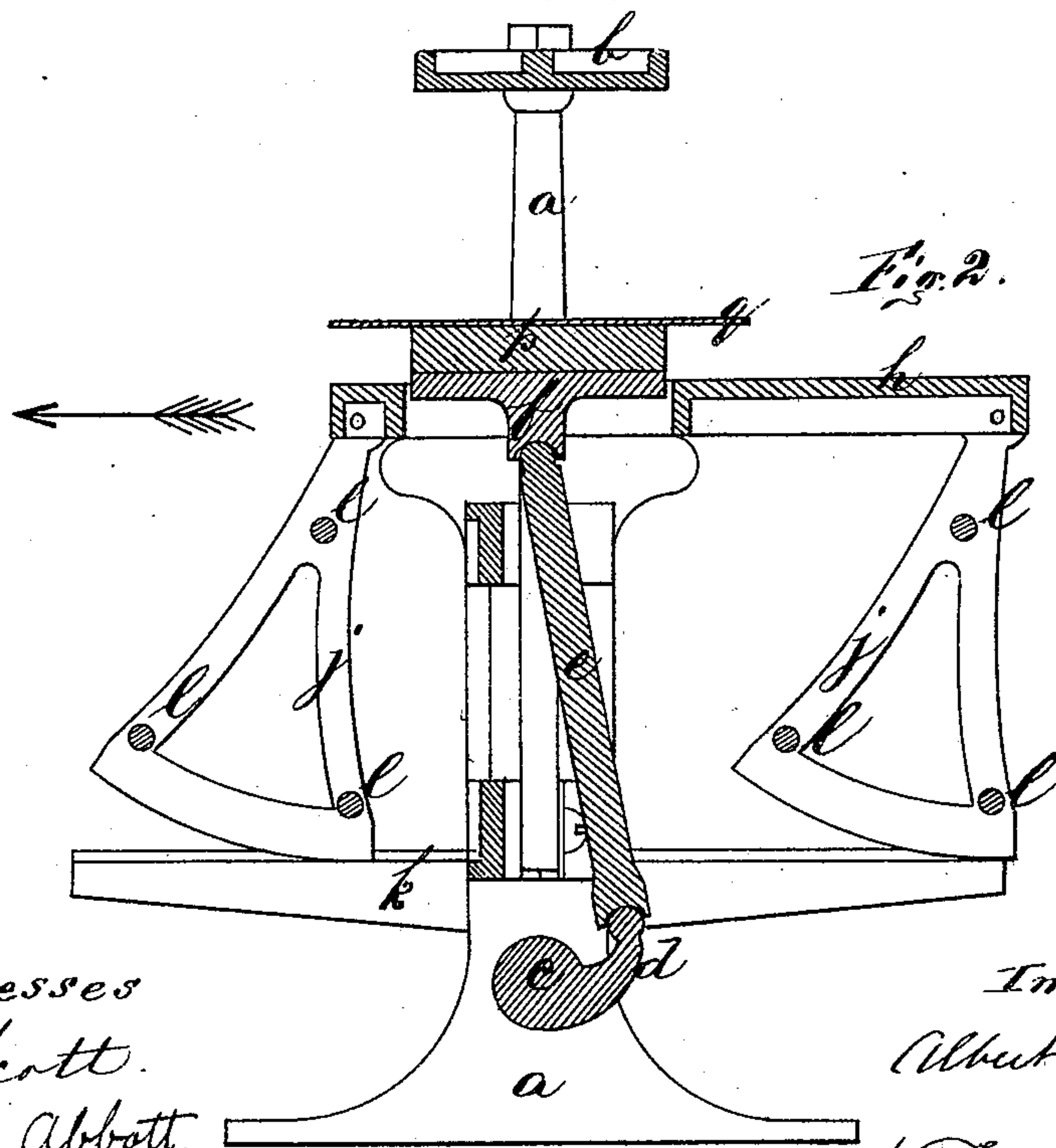
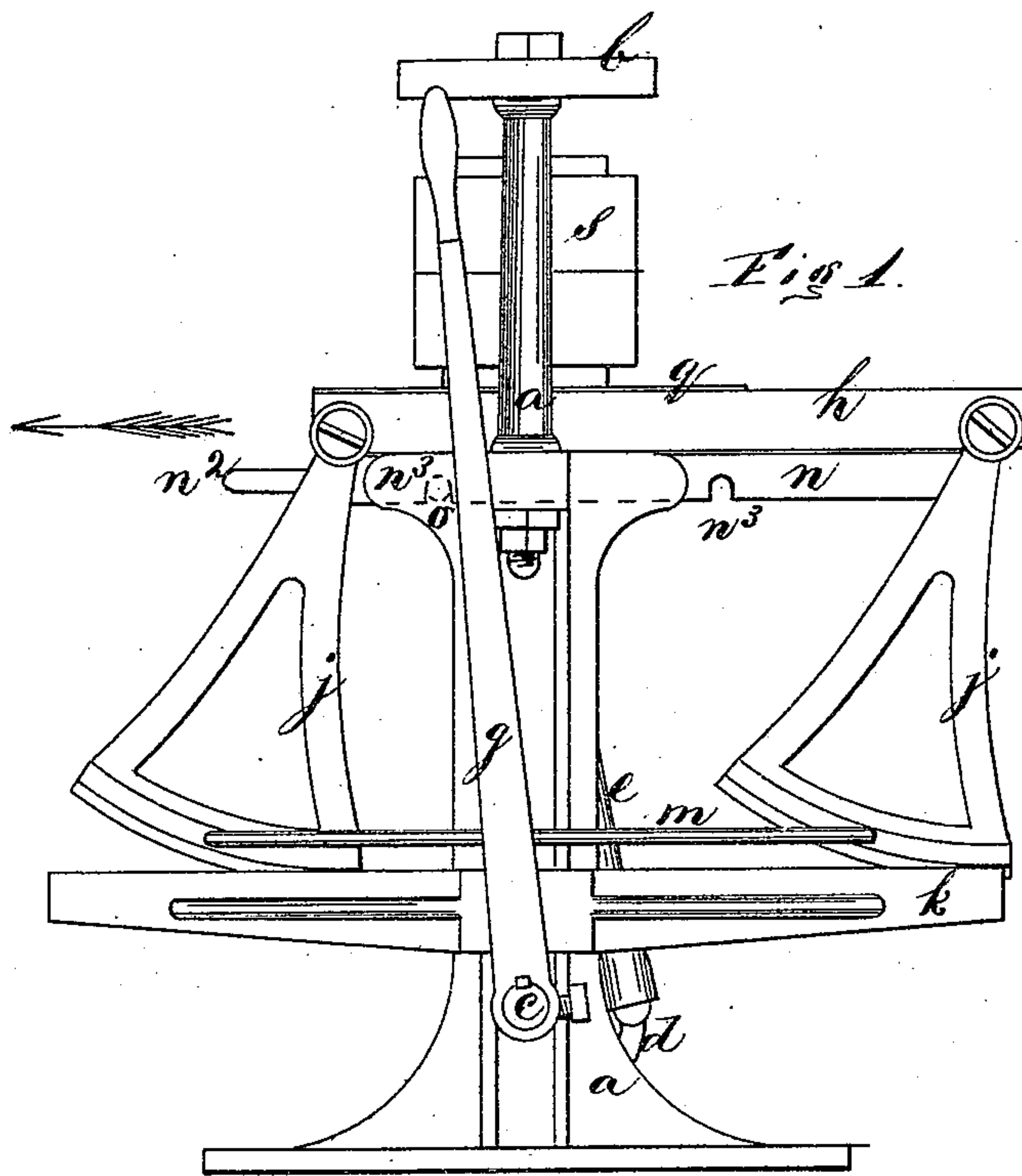


A. EAMES.

Machines for Molding Patterns.

No. 153,708.

Patented Aug. 4, 1874.



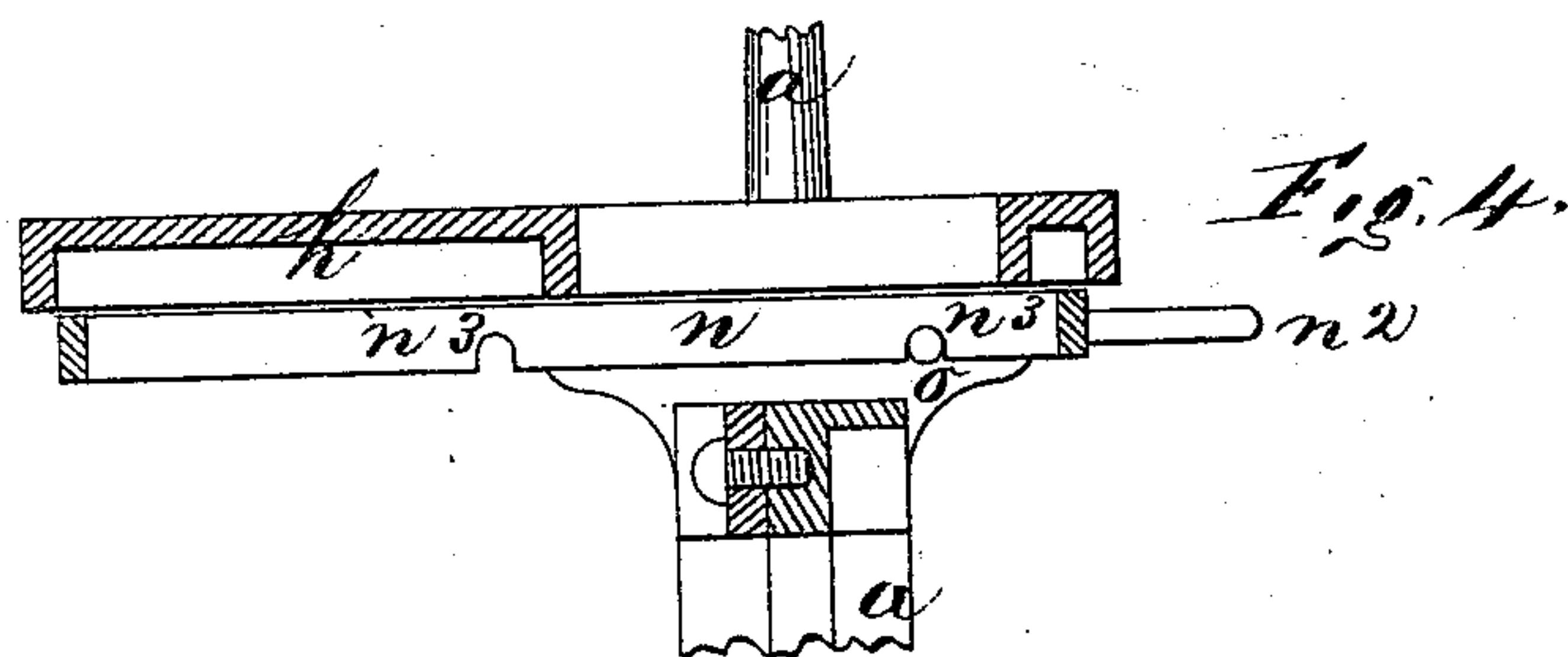
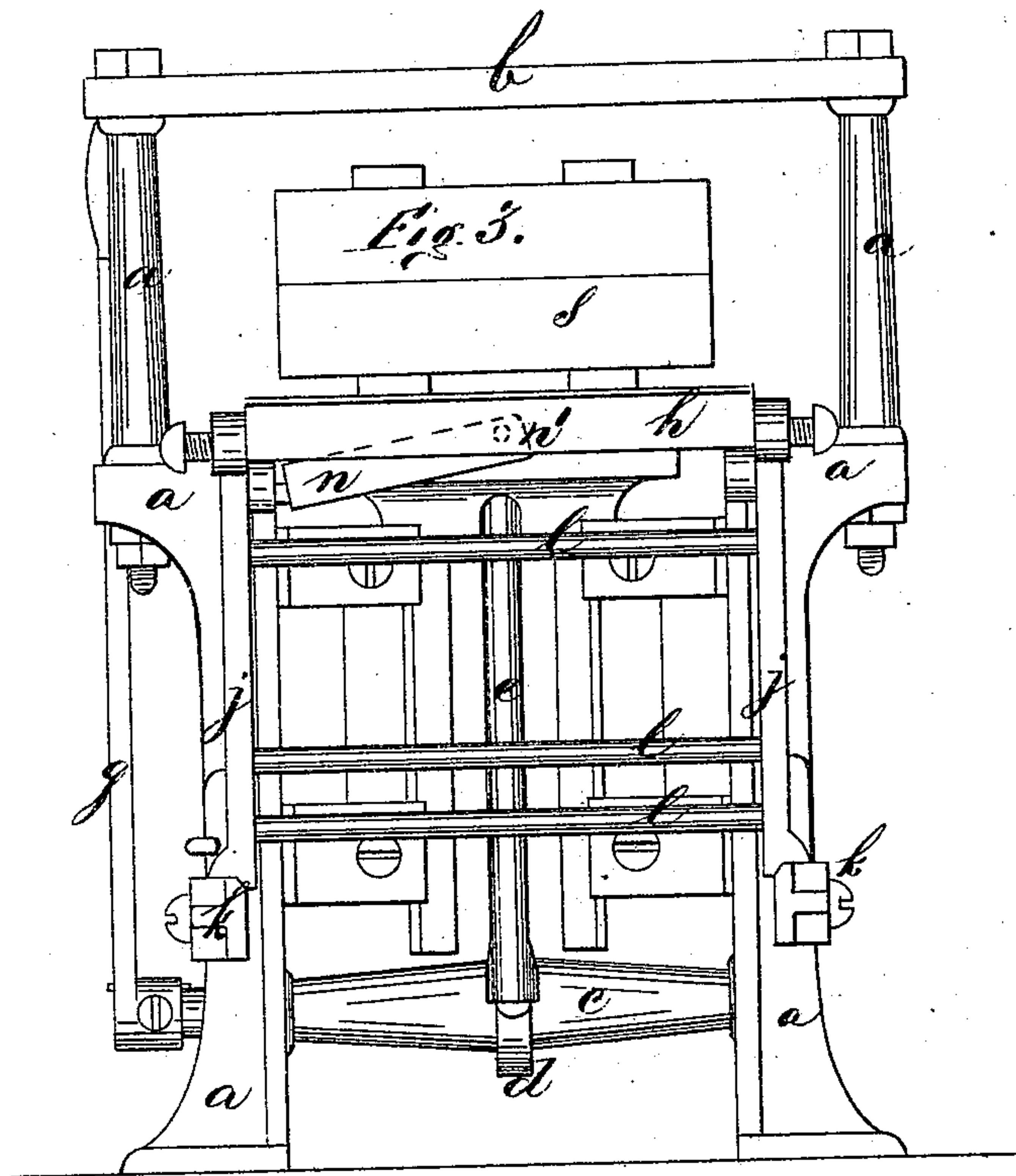
Witnesses
Wm Scott.
Phillips Abbott.

Inventor
Albert Eames
per Thompson & Crummett
attys

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Inventor
Albert Eames
per *Thos. B. Mumick*
- atty -

UNITED STATES PATENT OFFICE

ALBERT EAMES, OF BRIDGEPORT, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR MOLDING PATTERNS.

Specification forming part of Letters Patent No. **153,708**, dated August 4, 1874; application filed February 18, 1874.

To all whom it may concern:

Be it known that I, ALFRED EAMES, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Machinery for Molding Patterns in Sand; and that the following, taken in connection with the drawings, is a full, clear, and exact description thereof.

In the drawings, Sheet 1, Figure 1 is a side view of the machine embodying my improvement in its preferred form. Fig. 2 is a central longitudinal vertical section through the same. Fig. 3, Sheet 2, is an end elevation thereof, and Fig. 4 is a detail section through the latch, &c.

This machine is an improvement upon that described in Letters Patent granted to Albert Eames and John P. Broadmeadow, November 29, A. D. 1859, and is applicable, not only to the process of molding described in that patent, but to any process of molding in which sand is compressed into a flask or half-flask by means of a follow-board or piston entering the flask. In the patent before referred to, there is described a press, a sliding carriage, and a flask and its appurtenances; and the present improvement consists in mounting the carriage upon sections of a wheel or partial wheels; in combining, with a carriage thus mounted, a latch which shall hold the carriage at the two ends of its range of movement, and in other contrivances, all as hereinafter specified.

In the drawings, the frame-work of the press is represented at *a a a*, the head-plate at *b*, the rocking shaft at *c*, an arm attached thereto at *d*, a strut leading from the arm at *e*, and the platen at *f*. To the rock-shaft is attached a long hand-lever, *g*, and the platen is free to slide vertically in proper ways or guides, to rise high enough to compress the sand, the follow-board striking against the head-plate, and to descend low enough to clear the bottom of the carriage. The platen is actuated by the hand-lever. All these parts are like those described in the patent before referred to. The carriage is represented at *h*. It has a hole in it large enough to admit of the passage of the platen, (see Fig. 2, where the platen is represented as elevated,) and is mounted upon

two segments of wheels, each about an octant of a circle, by preference, although the tread of the segments may be of a greater or lesser circular arc. These segmental wheels are shown at *j*. There are four of them, each turning upon a pivot attached to the carriage. These segmental wheels rest upon rails *k*, attached to the frame of the press, and the treads of the wheels are by preference flanged like railroad-wheels, although the rails may be flanged and the wheels may have plain treads, or all flanges may be dispensed with, and guides applied either to the wheels or the carriage, so as to insure a rectilinear movement of the latter. The two front segmental wheels are connected together by rods *l*, (see Figs. 2 and 3.) The hind wheels are connected in the same way, and the front pair is connected with the hind pair by a connecting-rod, *m*, (see Fig. 1,) similar to those on the driving-wheels of locomotives. In this way, all the segmental wheels are compelled to move to the same distance or through the same arc whenever the carriage is moved, and one cannot slide on the rails unless all slide.

The treads of the wheels might be cogged and run on a rack, or might be confined to a smooth track by straps, as in some picker-staff arrangements of looms, and it is intended to use such contrivances in place of those represented in the drawings, although an inferior machine might be made without any connection between the segmental wheels.

To the carriage is attached a latch, *n*, which tends to fall by gravity. It is pivoted at *n*¹, (see Fig. 3,) and at a corresponding point upon the other end of the carriage. This latch is shaped like three sides of a parallelogram, and has a handle, *n*², and also two notches, *n*³ *n*³, which, when the latch drops, will take over a pin, *o*, (see Fig. 4,) attached to the frame of the machine.

The hole in the carriage may be provided with a stopper, *p*, upon the upper part of which is screwed a flat plate, *q*. By the use of this contrivance a flask larger than the platen may be lifted, and the follow-board in the bottom of it is held in place before the sand in the flask is compressed.

In Figs. 1 and 2 the carriage is represented in its "run-in" or rearward position, and held

there by the latch, the platen being lifted as if compressing the sand in the flask *s*; and it will be noticed that the center of gravity of the segmental wheels is in such position that a portion of their weight is acting with a tendency to throw the carriage forward in the direction of the arrow, and the flask from under the head-plate. As soon as the platen is dropped and the latch is lifted this weight acts and starts the carriage forward, the weight being aided, if necessary, by a pull upon the carriage or latch-handle. As the segments roll, their center of gravity is transferred to the rear side of their pivots, and the weight tends to stop the carriage, or bring it to rest; and it is brought to rest with the latch having its rearmost notch engaged with the pin. The flask is now lifted off, another flask is put in its place, the latch is lifted, and the gravity of the segmental wheels aids in starting the carriage back, and, finally, in bringing it to rest, as in Figs. 1 and 2.

I make my segmental wheels of cast-iron; and I could produce the same effect with a whole wheel, by loading it properly; and consider a wheel so loaded to be the equivalent, although an inferior one, of my segmental wheel.

The apparatus with segmental wheels is now, and has for some months, been in actual use;

and it is an improvement upon the old contrivance before referred to. It works with less shock and jar, requires less power to work it, and can be worked faster.

I claim as of my own invention—

1. A carriage with segmental wheels in combination with a press-platen and head-plate, the combination being and acting substantially as described.

2. In combination, a platen and head-block, a carriage with segmental wheels provided with connecting-rods, or the substitute therefor, herein described, for causing all the wheels to move through the same arc, the combination being substantially as herein set forth.

3. In combination with a platen and head-block and a carriage with a hole in it, the stopper and its attached plate, the combination being substantially such as described.

4. In combination with a carriage mounted upon segmental wheels and a platen, a latch which stops the carriage in proper position over the platen, and in proper position for the removal of the flask, the combination being substantially such as hereinbefore set forth.

Witness my hand this 22d day of January, A. D. 1874.

Witnesses:

ALBERT EAMES.

A. R. LACEY,
F. HURD.