

No. 614,451.

Patented Nov. 22, 1898.

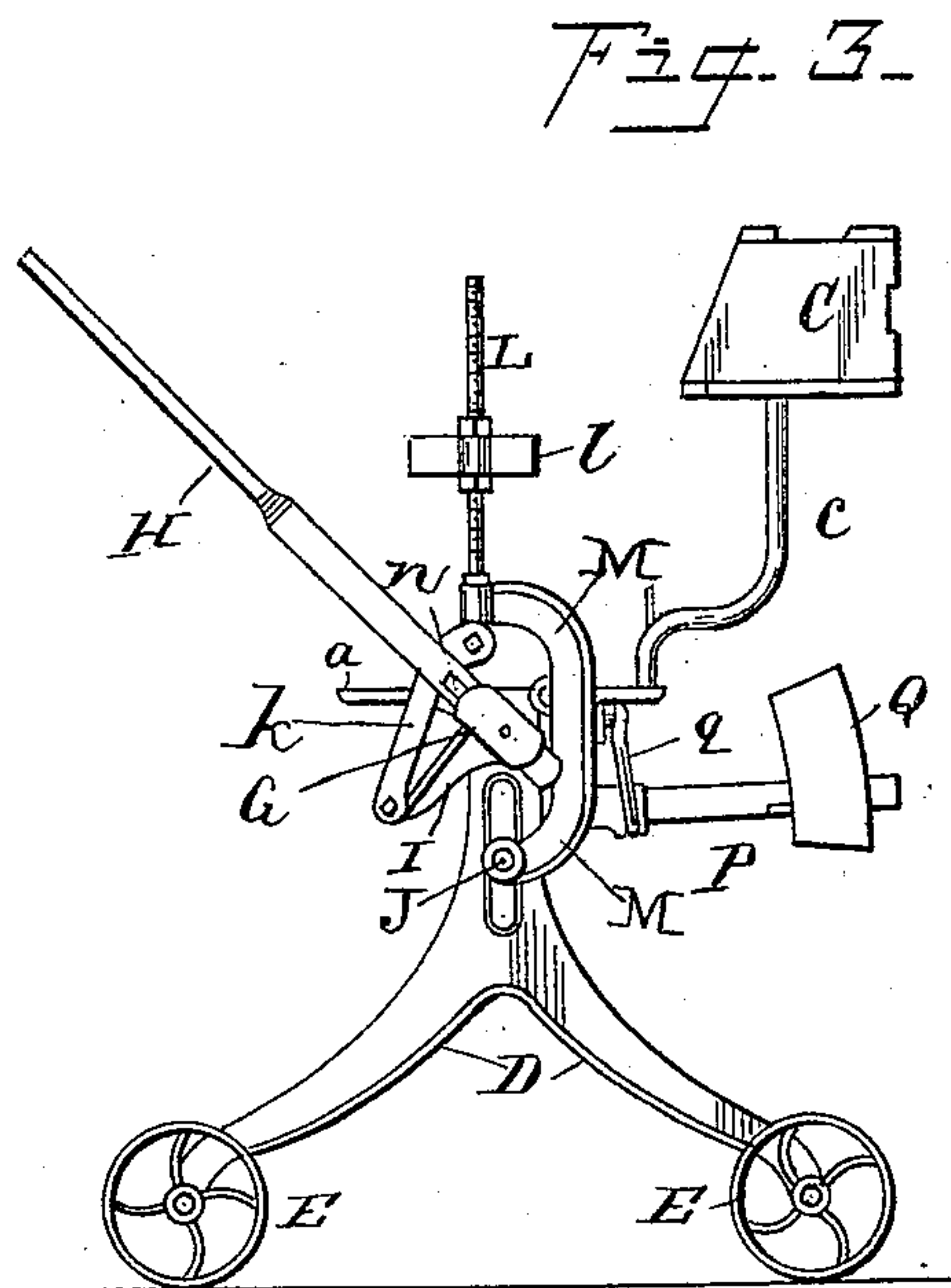
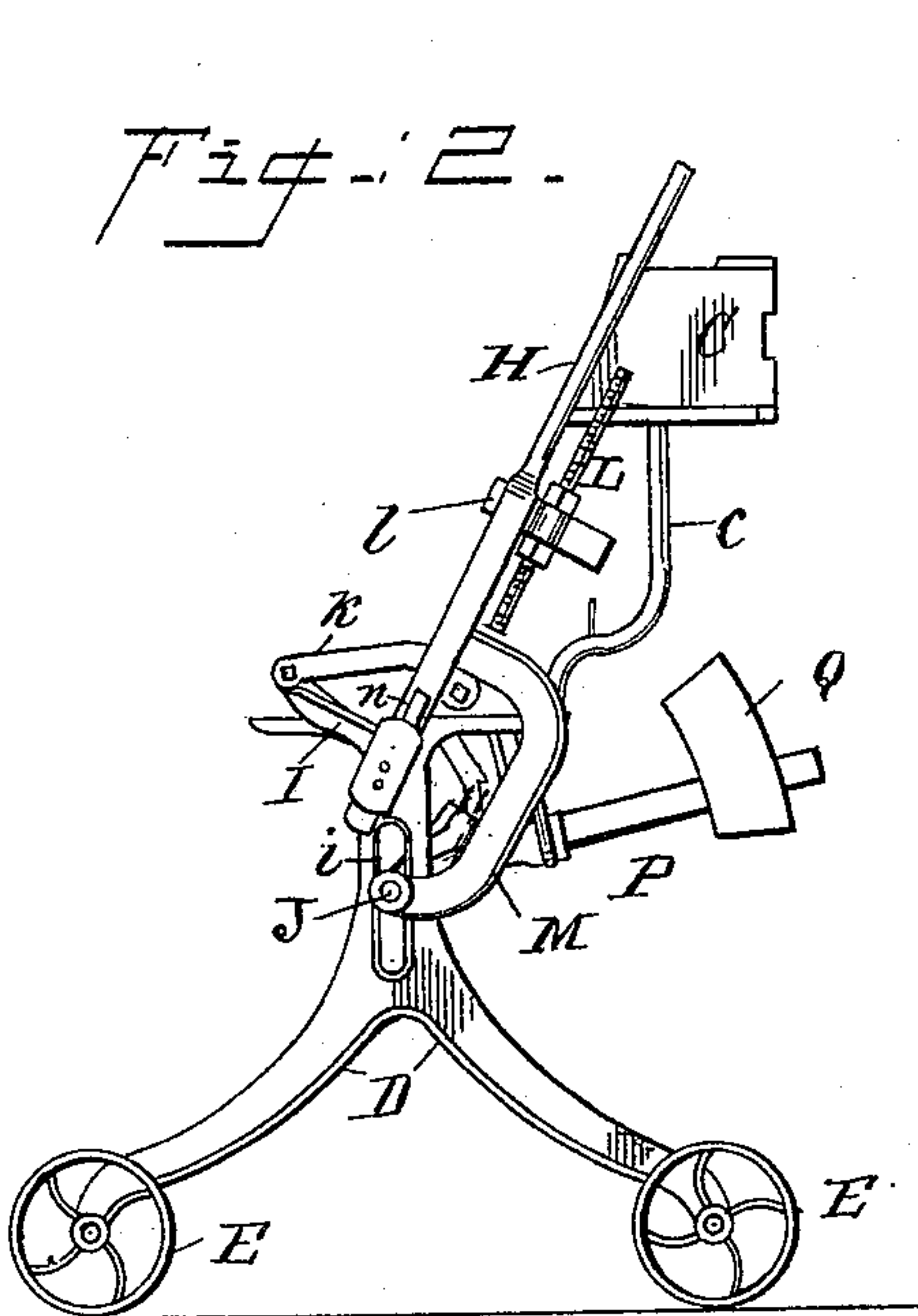
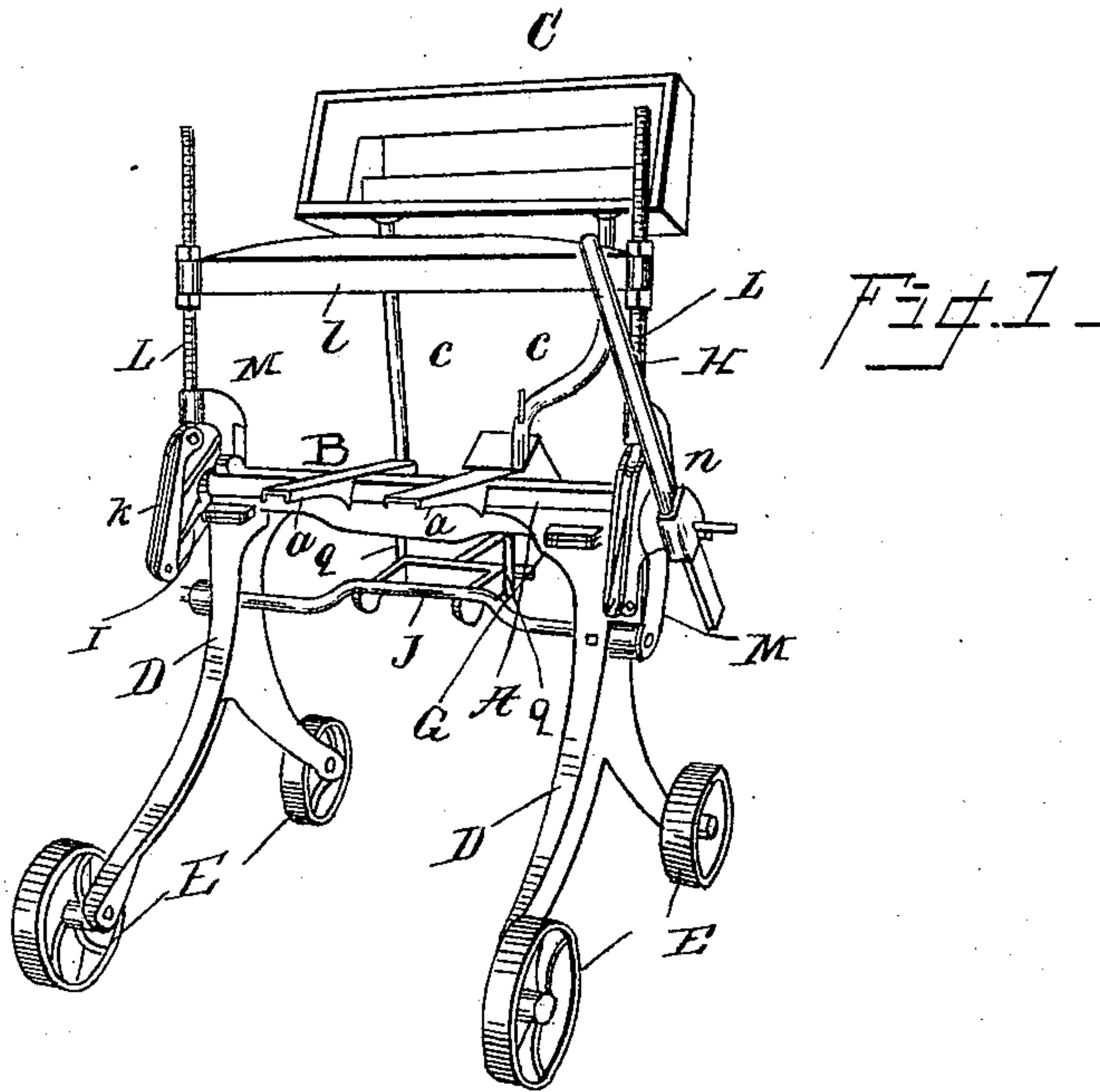
F. O. FARWELL.

SAND PRESS.

(Application filed Aug. 28, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Attest  
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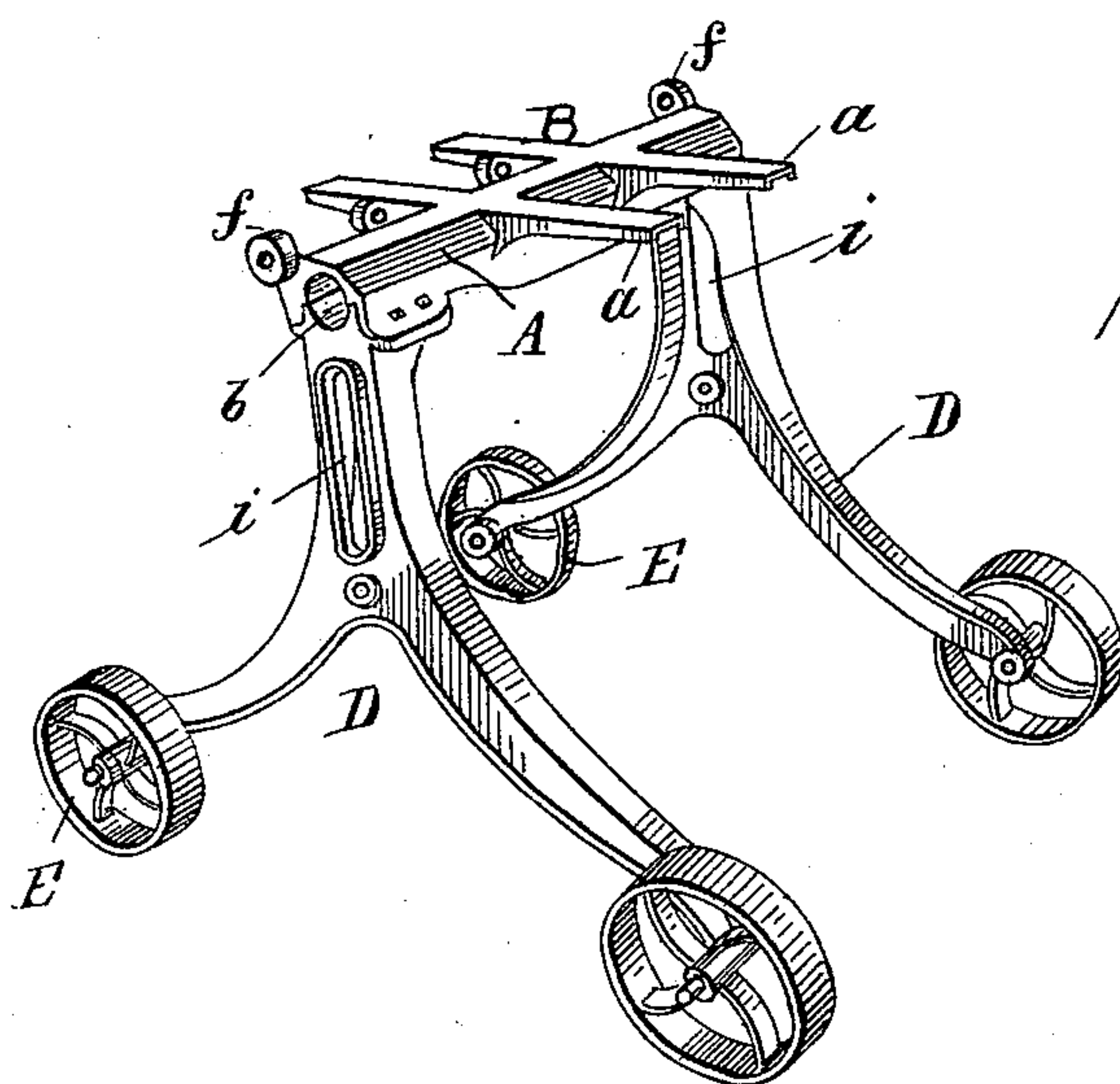
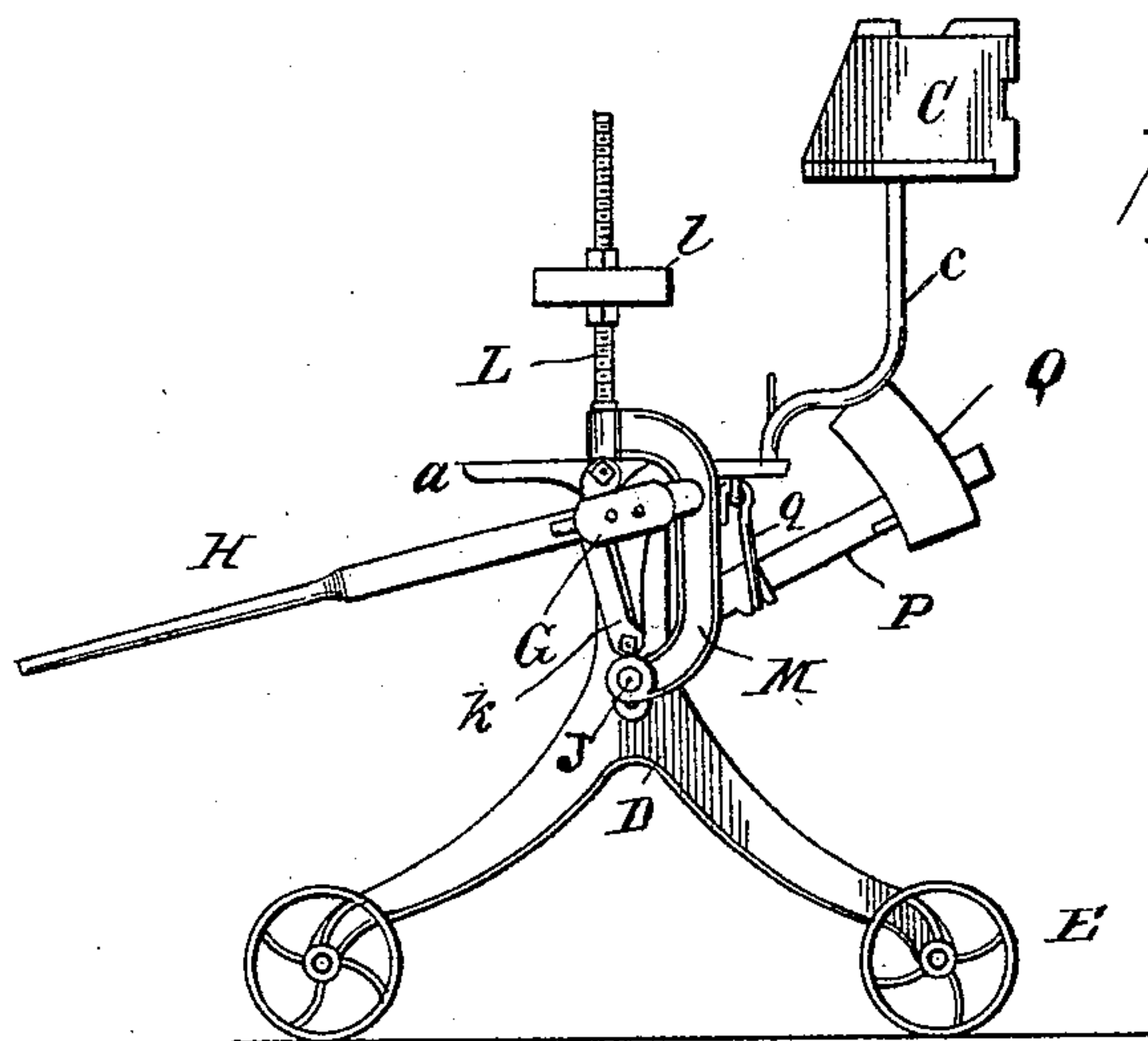
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# UNITED STATES PATENT OFFICE.

FAY O. FARWELL, OF DUBUQUE, IOWA, ASSIGNOR OF ONE-HALF TO THE  
ADAMS COMPANY, OF SAME PLACE.

## SAND-PRESS.

SPECIFICATION forming part of Letters Patent No. 614,451, dated November 22, 1898.

Application filed August 28, 1897. Serial No. 649,891. (No model.)

*To all whom it may concern:*

Be it known that I, FAY O. FARWELL, a citizen of the United States, residing in the city and county of Dubuque, State of Iowa, have  
5 invented certain new and useful Improvements in Sand-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it apper-  
10 tains to make and use the same.

My invention relates to that class of machines known as "sand-pressers;" and it consists, essentially, in a novel combination and mechanical construction of the several parts,  
15 whereby a powerful and effective machine is produced, all of which invention and combination will be fully disclosed in detail in the following specification and illustrated in the accompanying drawings, in which—

20 Figure 1 is a perspective of the machine. Fig. 2 is a left end view with the presser-head turned back. Fig. 3 is a left end view showing the position of the lever and presser-head ready to press the mold. Fig. 4 is a left end  
25 view showing the position of the lever and presser-head at its lowest position, and Fig. 5 shows a perspective of the frame of the press.

30 The same letters of reference denote corresponding and like parts in all the figures of the drawings.

The table B for holding the flask is preferably made of an inverted-U-shaped bar A. At right angles to the bar A and upon both  
35 sides and integral therewith are cast the bars *a a*, which form the table proper of my machine. (See Figs. 1 and 5.) To the outer ends of the rear set of arms *a* are secured the supports *c* of the tender C. The tender C  
40 consists of a platform set upon two uprights at the rear of the machine for the purpose of holding in a convenient place the various tools for use in molding. To the opposite upper corners of the bar A are fastened rollers *f* for the purposes presently to appear.

45 The supports for the table B consist of two bifurcated legs D, to which the bar A is secured. The upper part of the supports are also hollowed out to form with the bar A the  
50 journal-boxes *b* for the rocker-shaft presently

to be described. The legs D are also slotted at *i* to serve as guides for the draw-bars hereinafter to appear. The supports D are divided, spreading considerably in order to keep the machine steady, and are journaled to  
55 wheels E, whereby the press is readily moved from place to place along the sand-row.

Beneath the bar A and through the journal-boxes *b* runs a rocker-shaft G, at or near the ends of which are securely fastened the  
60 cranks I. To the outer ends of the cranks I are pivoted pitmen *k*, and to the outer ends of said pitmen are hinged or loosely attached the uprights L. The uprights L are screw-threaded, and upon these is adjustably secured  
65 the presser-head *l*. The uprights L are rigidly clasped at their lower ends, near where they are hinged to the pitmen *k*, by C-shaped draw-bars M. The lower ends of the bars M are rigidly secured to a vertically-moving rod  
70 J, which is bent at its center, as shown. The inner edge of the bar M comes in contact with the rollers *f* on the bar A, which serve as one guide for the draw-bars M. At one end of the  
75 shaft G is a mortise *n*, in which a lever H is adjustably secured. The rod J runs through the slots *i* in the supports D and has, in addition to a rising and a falling motion, a partially-  
80 turning movement which is imparted to it by the draw-bars M as the uprights L are moved into their various positions, as shown more especially in Figs. 2 and 3.

From the under side of the cross-arm *a* in the rear of the table is suspended a link *q*, which forms a fulcrum for the weighted lever  
85 P. The forward end of the lever P is forked and engages with the crank portion of the rod J, as shown in Fig. 1, and to the outer end is attached a weight Q. This crank or bent  
90 portion of the rod J is so set that when the presser-head *l* is pushed back from the position shown in Fig. 3 to the position shown in Fig. 2 the forked end of the lever P is depressed and the weight is raised. In this manner the head is counterbalanced and may be  
95 swung backward or forward with only slight effort on the part of the operator. This weight Q is adjusted along the lever P till it will just counterbalance the presser-head *l*. It will be  
100 observed that this weight Q serves a dou-



ble purpose—that of counterbalancing the presser-head when swung back, and it also serves to raise the presser-head from the position shown in Fig. 4 to that shown in Fig. 3.

5 When the mold has been pressed, the hand-lever, presser-head, and weight would be in the position shown in Fig. 4. Now when the pressure of the hand upon the lever H is removed the weight descends and raises the head to  
10 the position shown in Fig. 3, and when the head is pushed back the crank or bent portion of the rod J acts upon the weight, and thus prevents the head from dropping back violently.

15 It will be observed that the presser-head and lever are so connected together by the pitmen *k* and cranks I that if the operator draws the lever forward the presser-head is brought in position, or should he pull the  
20 presser-head forward the lever is brought into position, enabling the operator to use either hand, which is of great advantage and saves much time in the preparation of the molds.

25 The manner of operating my device is as follows: The presser-head *l* being in the position shown in Fig. 2, the flask is placed upon the table resting upon the cross-arm and is filled with sand in the usual manner. The surplus  
30 sand is struck off and a bottom board is placed squarely upon the mold. The operator grasps the hand-lever H with his right hand and pulls it forward, which simultaneously causes the top to be swung forward until it is directly over  
35 the mold; as shown in Fig. 3. A further movement of the lever downward will cause the top to descend in a vertical line upon the mold, as shown in Fig. 4, the draw-bars being guided by the rollers *f* and slots *i*. When the sand  
40 is pressed in the mold, the lever is lifted to the position shown in Fig. 3, and then the operator can throw the presser-head back, which will draw back the lever to the position shown in Fig. 2. It will be further observed  
45 that as the presser-head is connected to the draw-bars M and the draw-bars are connected by the rod J, by which the weighted lever is

operated, any movement in the one will produce a movement in the other.

This improvement is susceptible of various 50 changes in the form, proportion, and the minor details of construction without departing from the principles or sacrificing any of the advantages thereof.

Having thus described my invention, what 55 I claim, and desire to secure by Letters Patent, is—

1. In a lever-press, a frame, and a support for the work, a shaft journaled in the top of the frame, cranks on the ends of said shaft, 60 an actuating-lever secured at one end of said shaft, a rod which extends through suitable slots in the frame, draw-bars rigidly secured at their lower ends to the said rod, a presser-head secured at the upper ends of the draw- 65 bars, pitmen secured at one end to the cranks, and at their other ends to said draw-bars at a point between the presser-head and the connection of the draw-bars with said rod, and a weighted lever pivotally connected to the 70 frame, and engaging the rod, substantially as shown and described.

2. In a lever-press, a frame, and a table thereon, a rocker-shaft journaled in the frame, and cranks secured to the ends of the shaft, 75 combined with draw-bars connected together at their lower ends by a rod passing through slots in the frame, a presser-head secured to the upper ends of the draw-bars, pitmen connected at one end to the cranks, and at their 80 other ends to the draw-bars between the presser-head and the connections of said draw-bars with said rod, and an operating-lever secured to said shaft, whereby said lever can control the upward and backward move- 85 ment of the presser-head as well as its vertical movements, substantially as shown.

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

FAY O. FARWELL.

Witnesses:

M. M. CADY,  
ROBERT HIRD.