

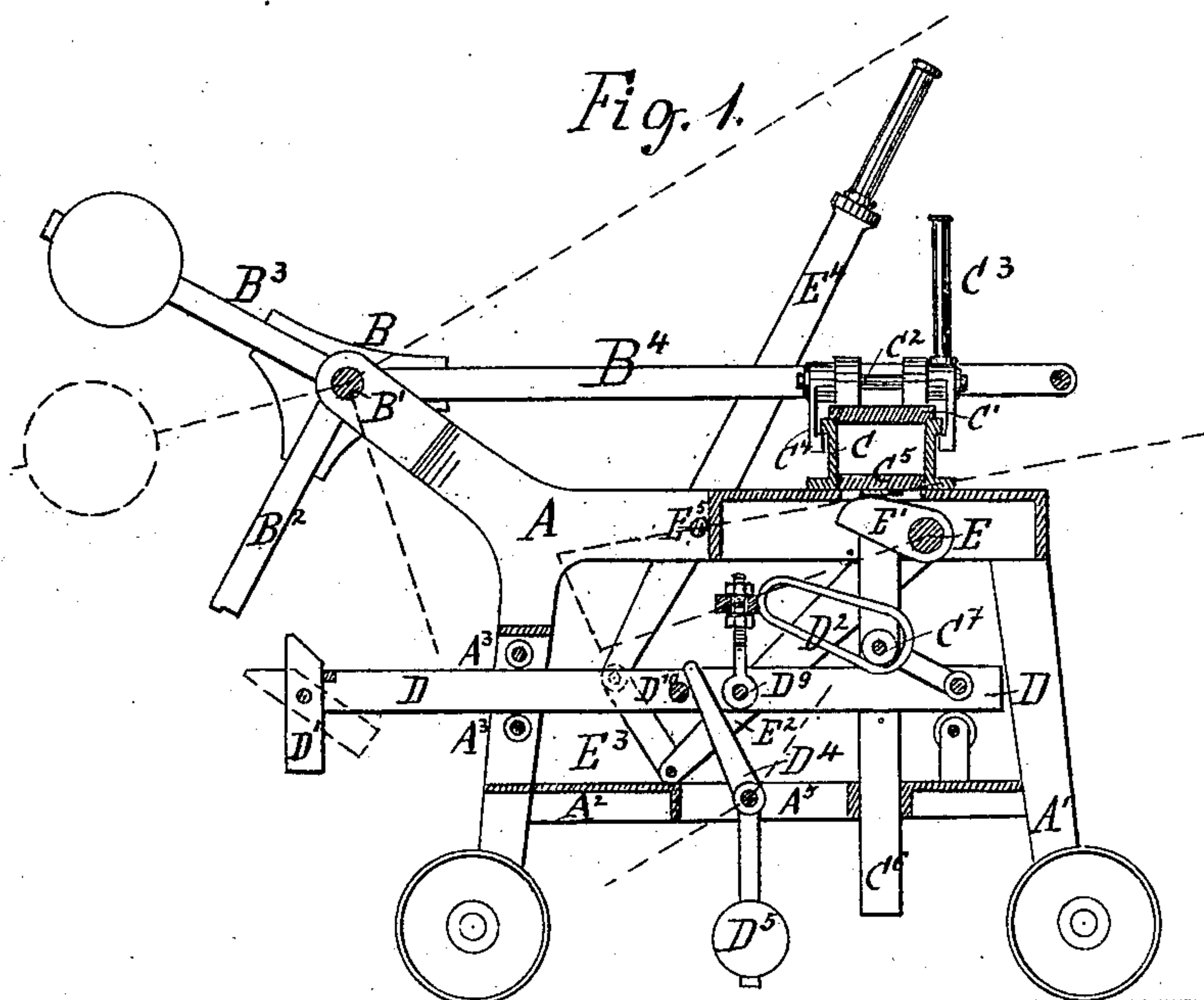
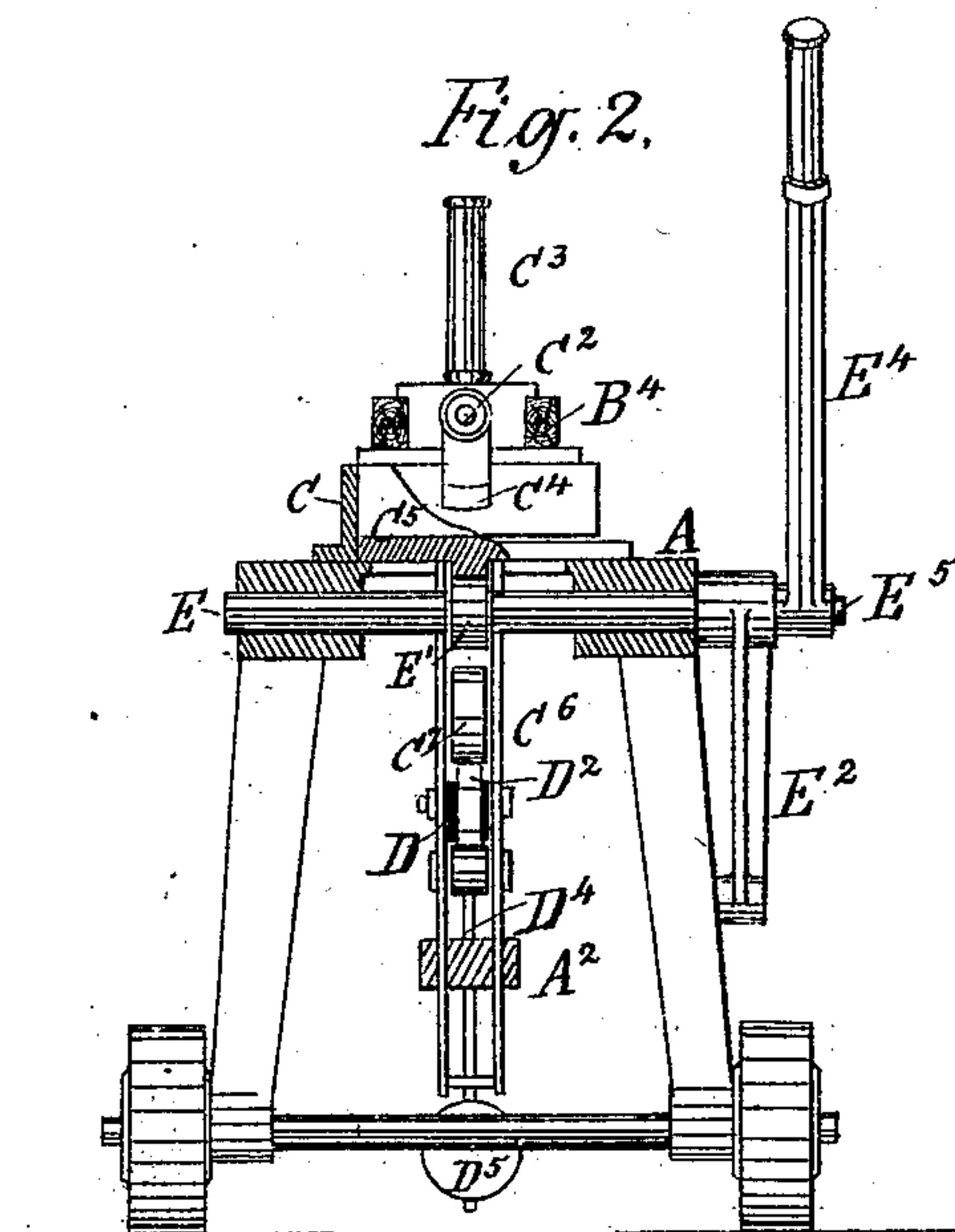
(No Model.)

4 Sheets—Sheet 1.

C. F. SCHLICKEYSEN.
BRICK MOLDING MACHINE.

No. 275,715.

Patented Apr. 10, 1883.



Witnesses.

J. A. Rutherford
Robert Everett,

Inventor:

Carl F. Schlickeysen.

By James L. Norris.
Atty.

(No Model.)

4 Sheets—sheet 2.

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Fig. 3.

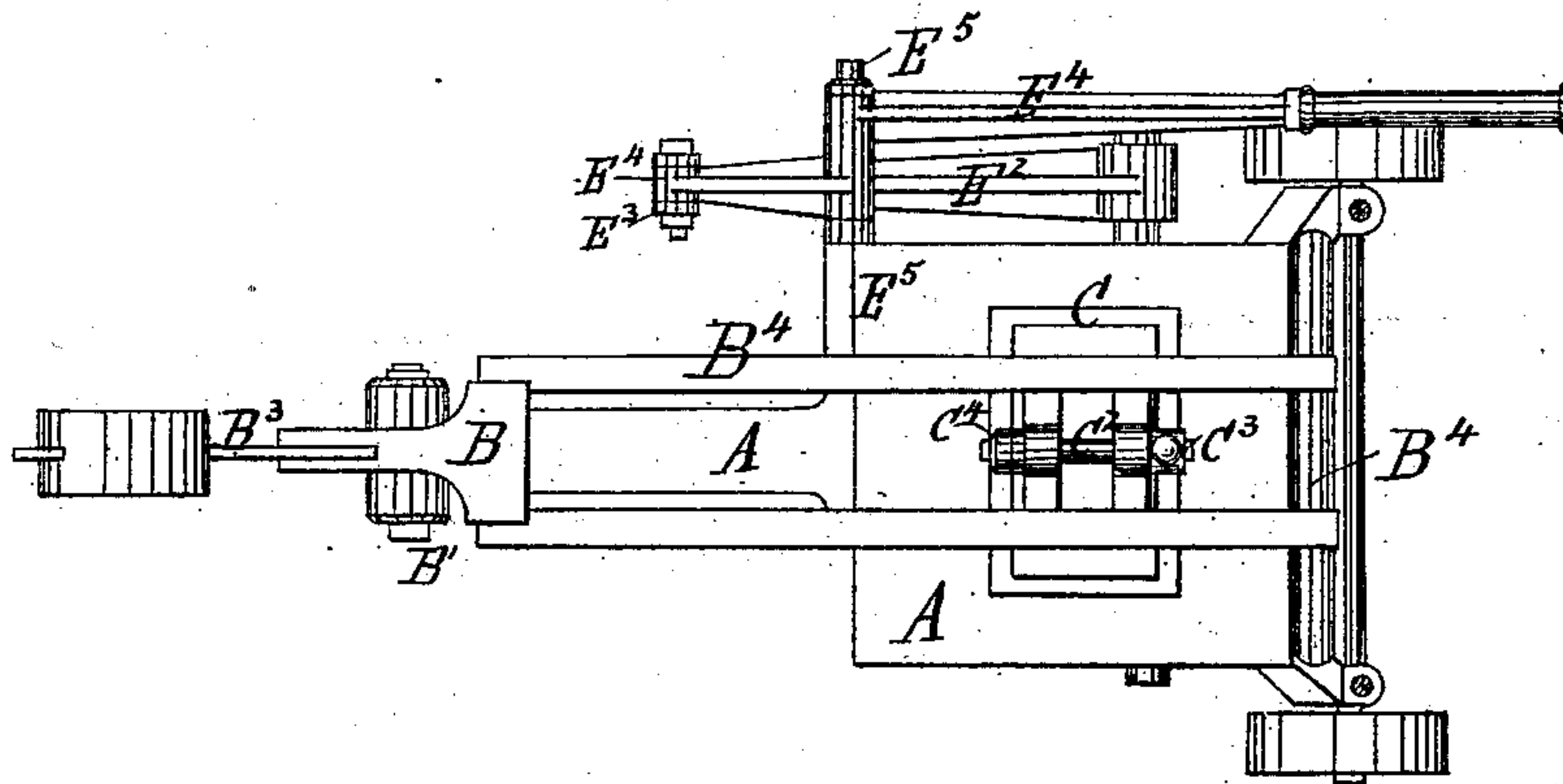
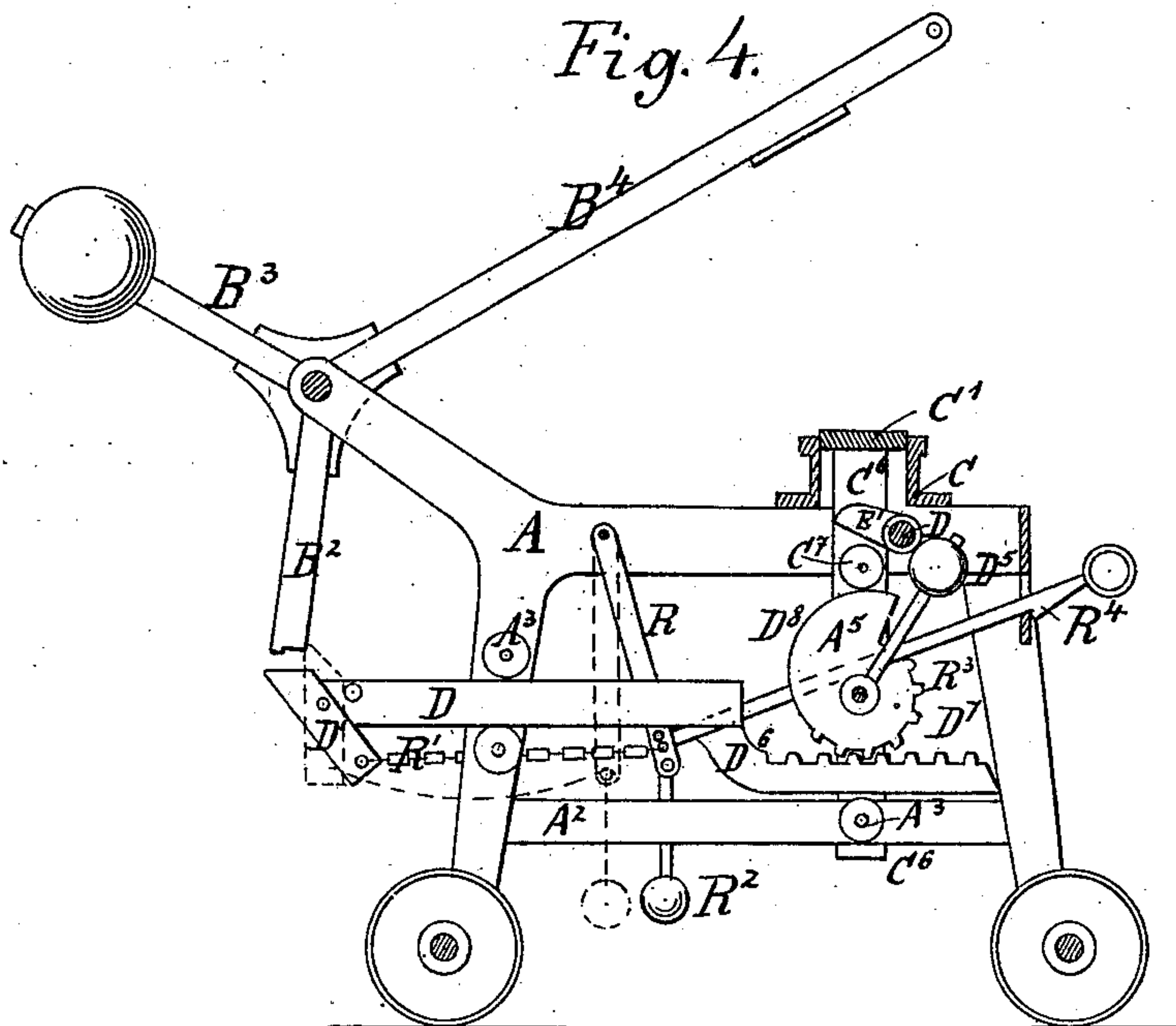


Fig. 4.



Witnesses.

J. A. Rutherford
Robert Everett

Inventor.

Carl F. Schlickeysen.

By *James L. Norris.*
att'y.

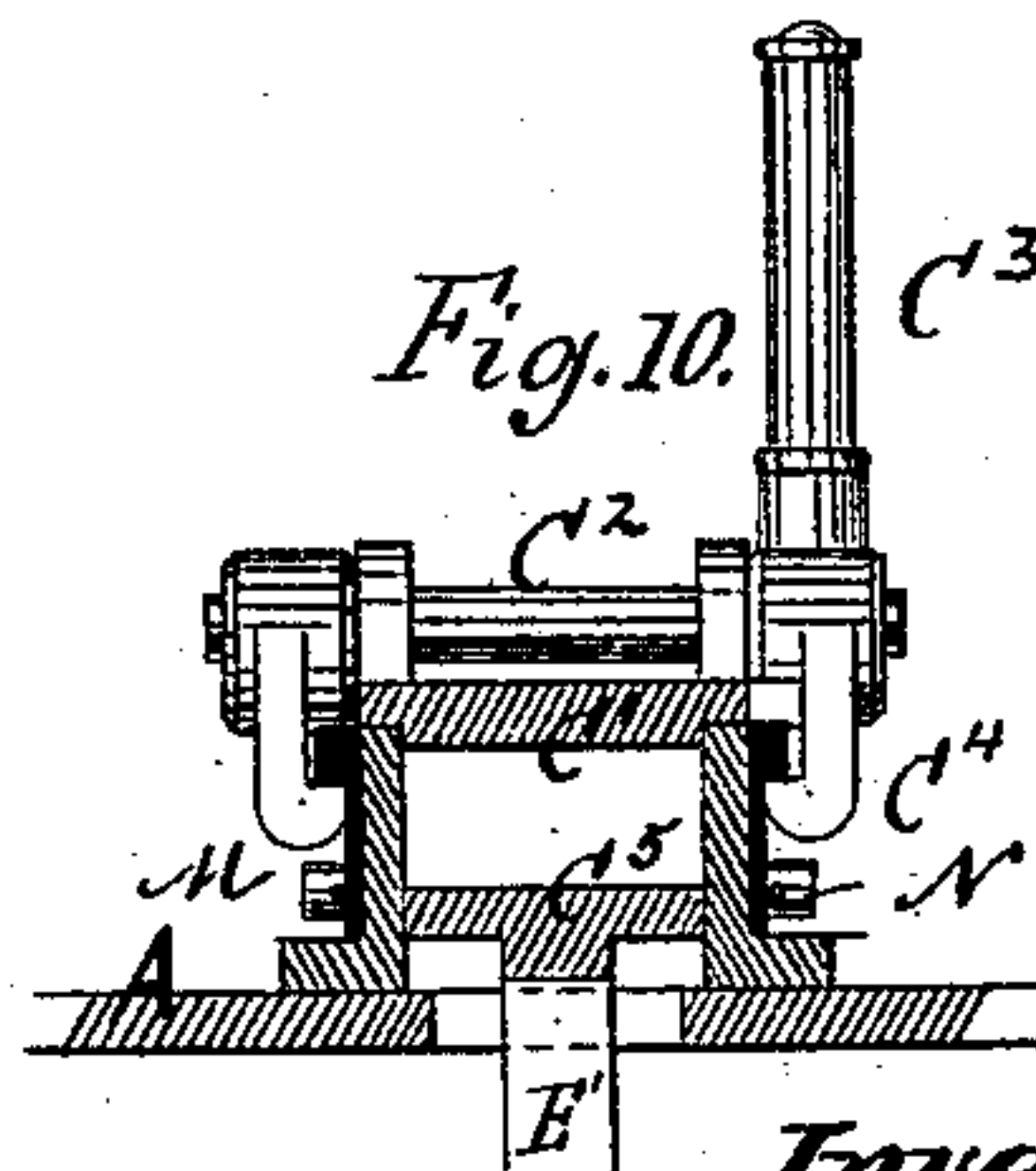
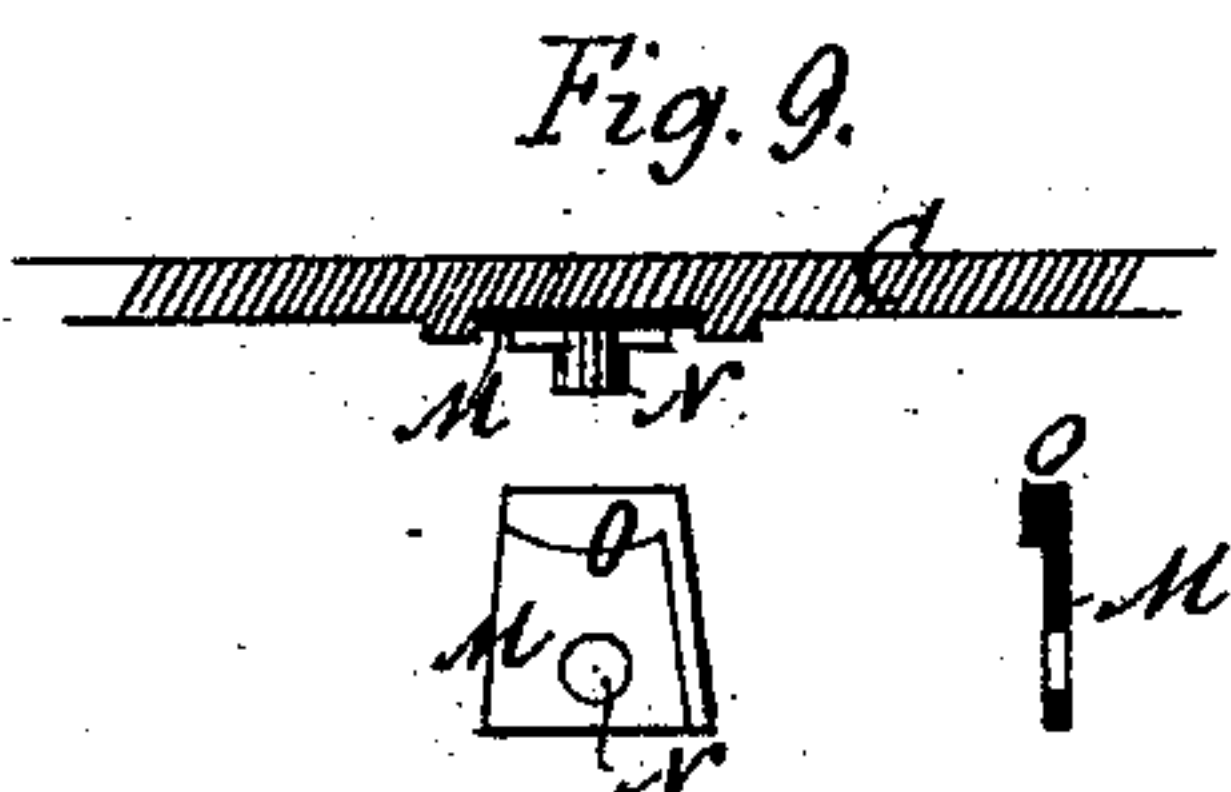
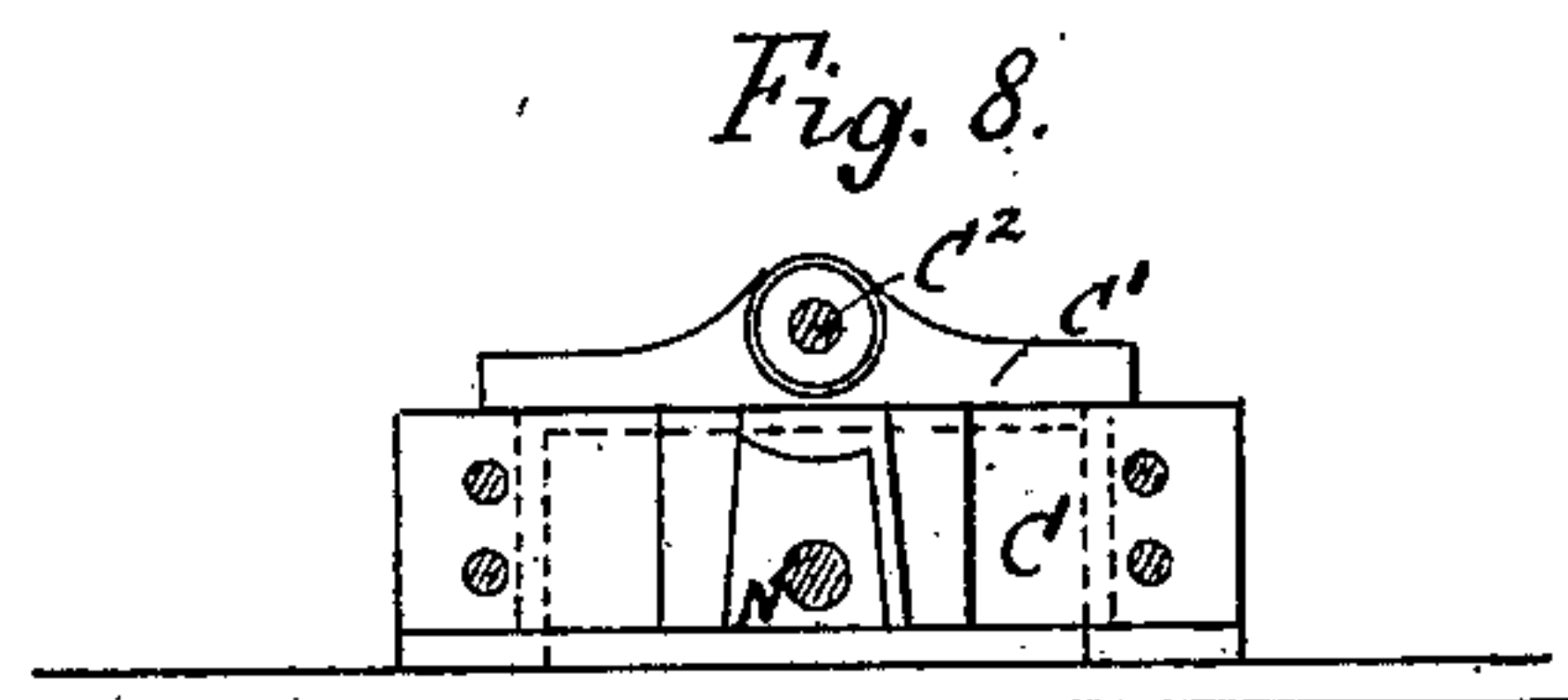
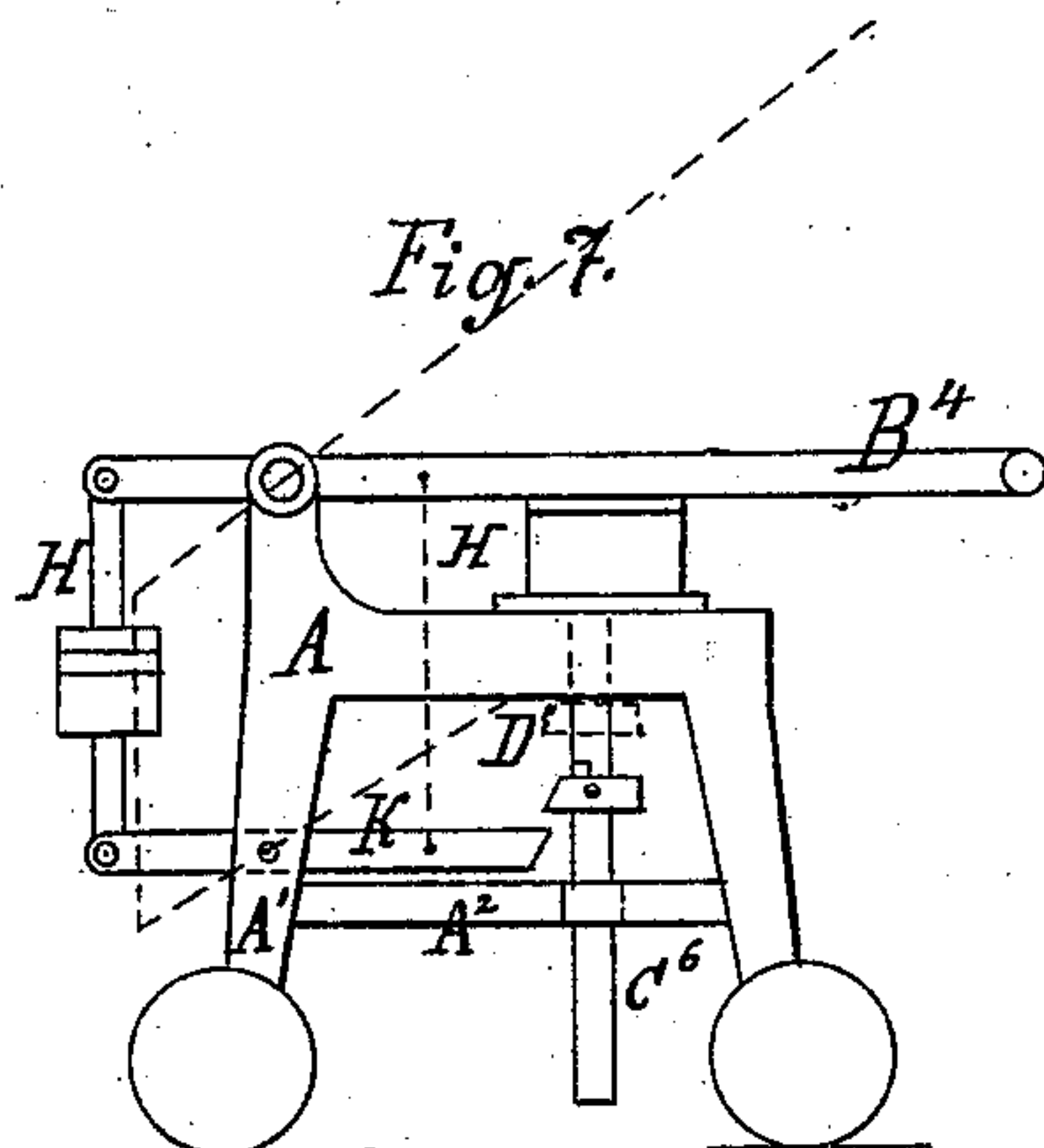
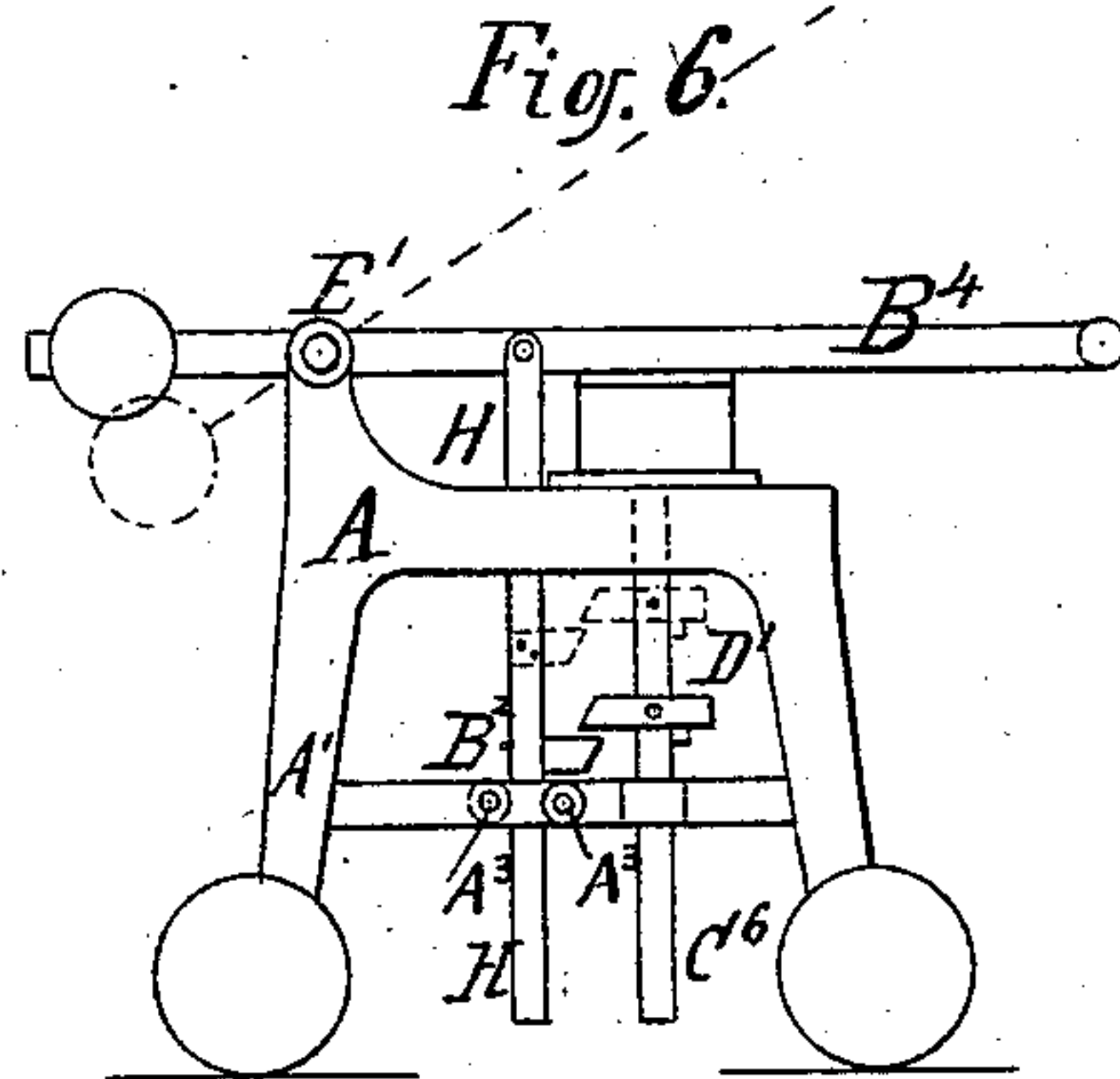
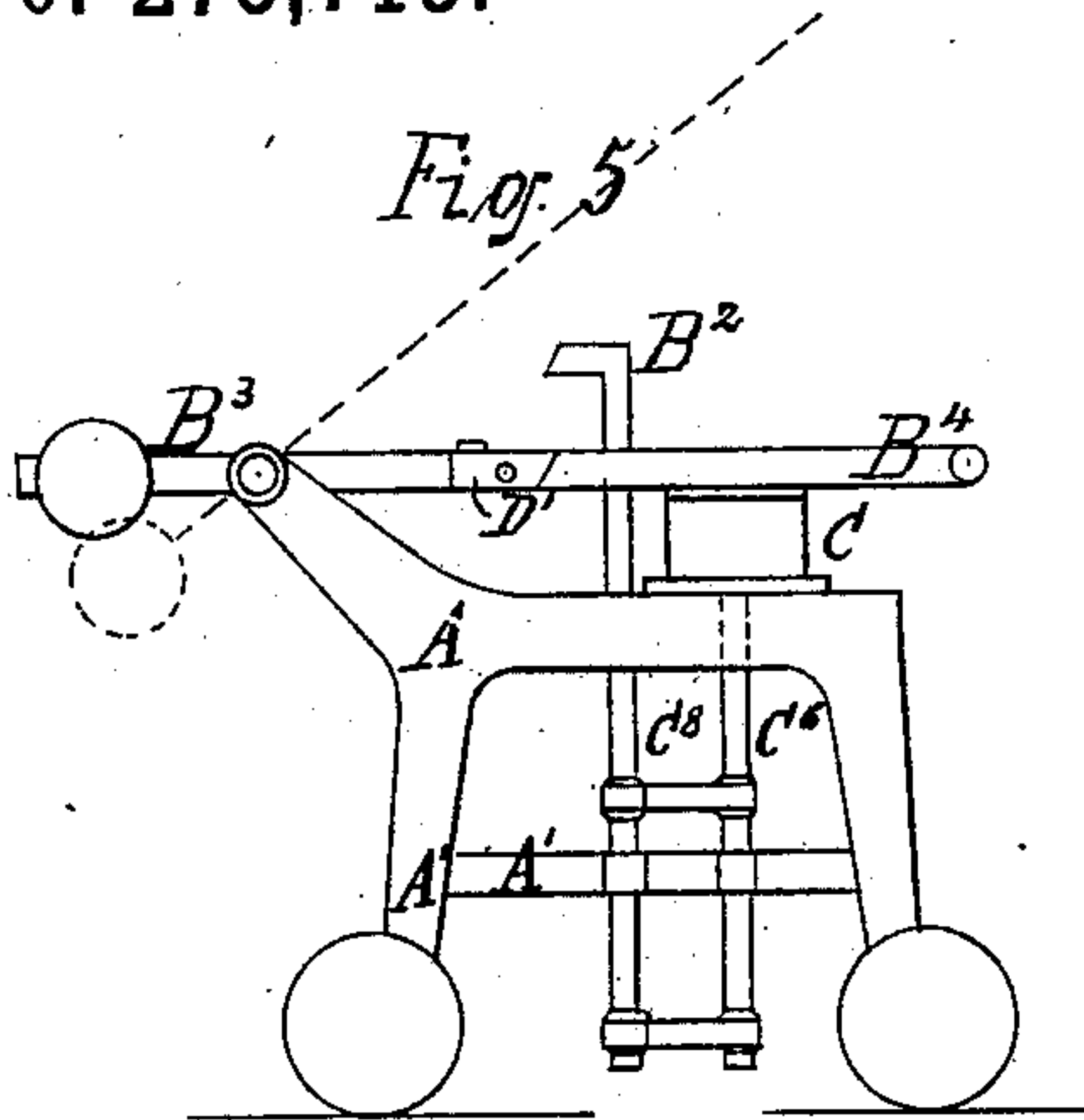
(No Model.)

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Witnesses.

J. A. Rutherford
Robert Everett

Inventor.
Carl F. Schlickeysen.

By James L. Norris, Atty.

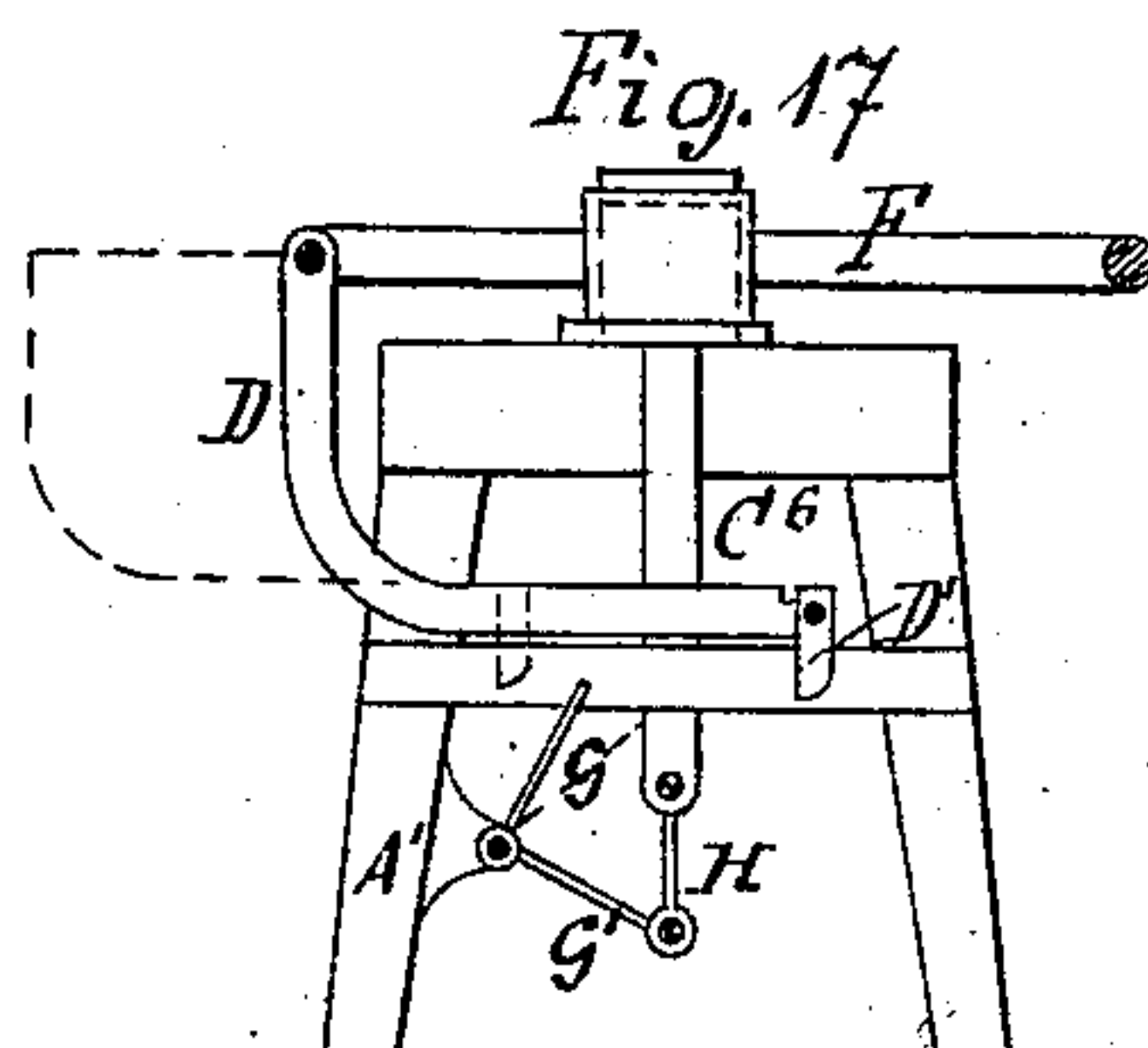
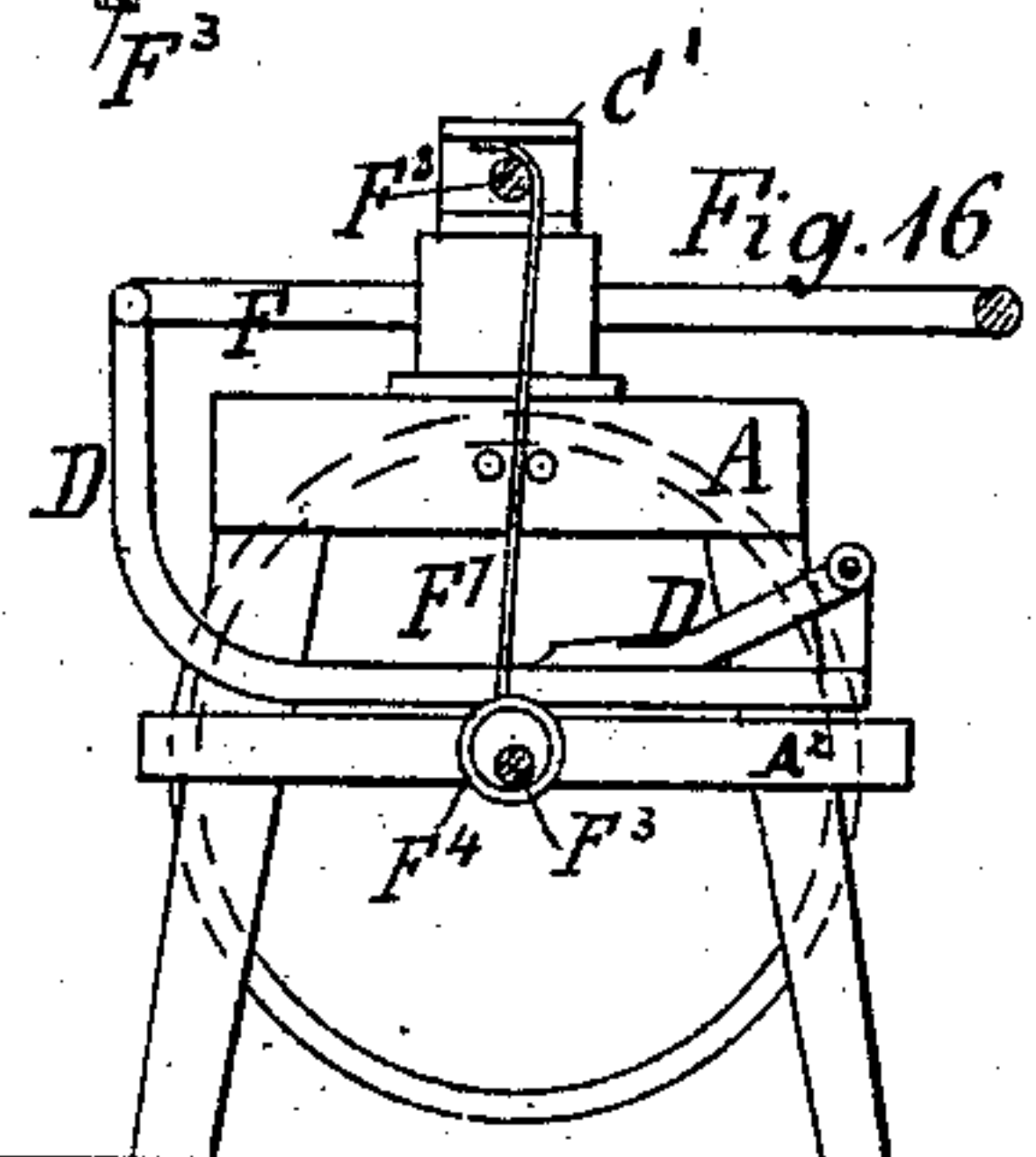
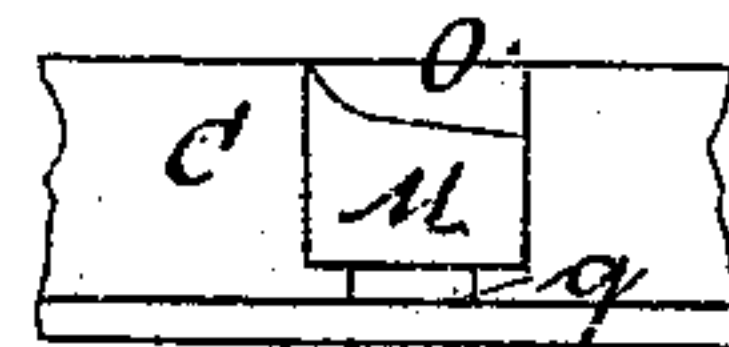
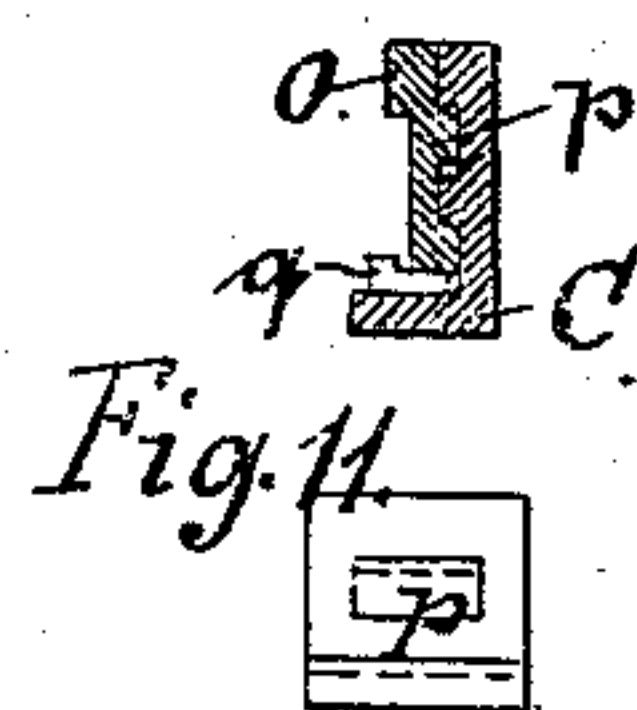
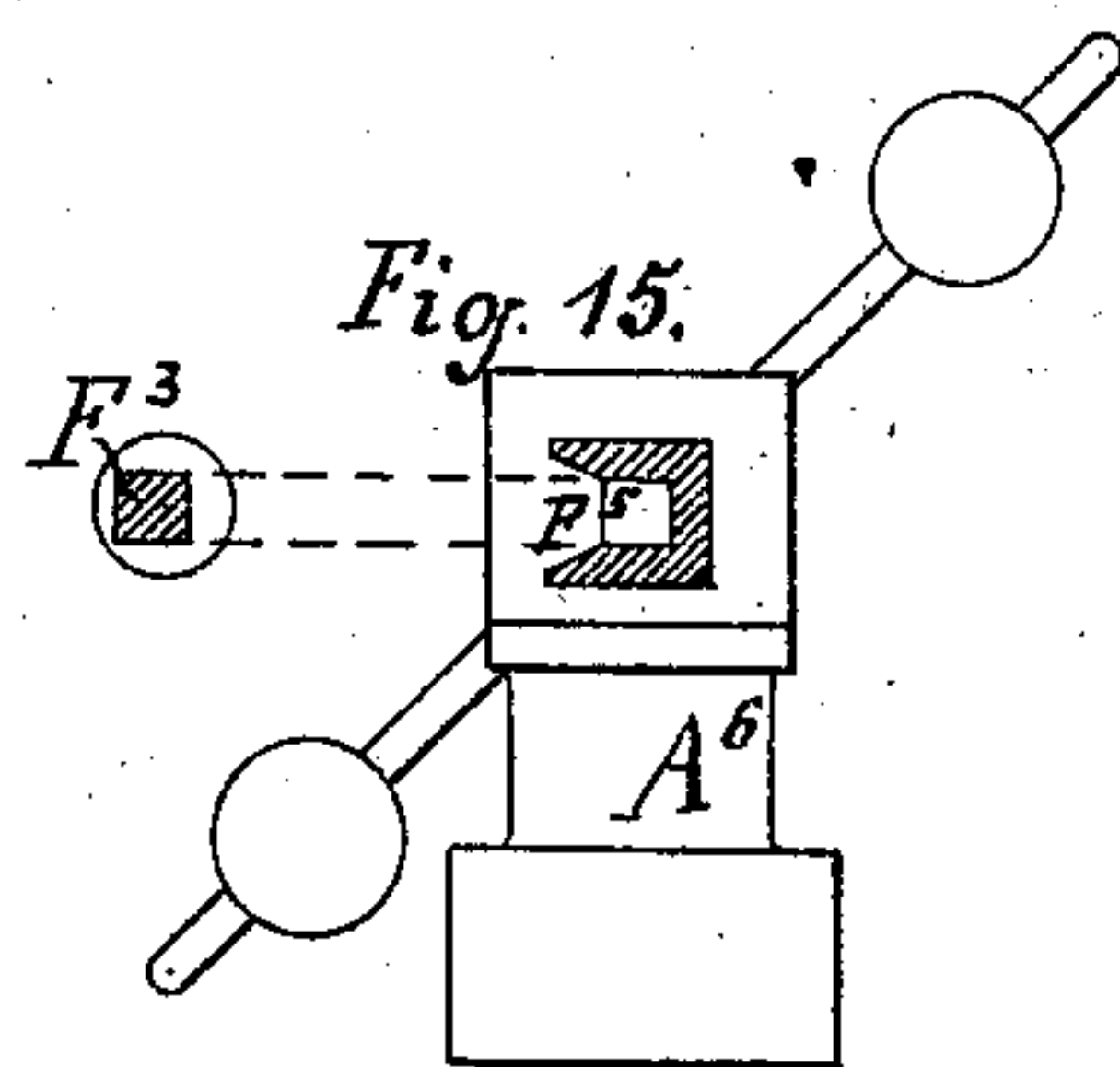
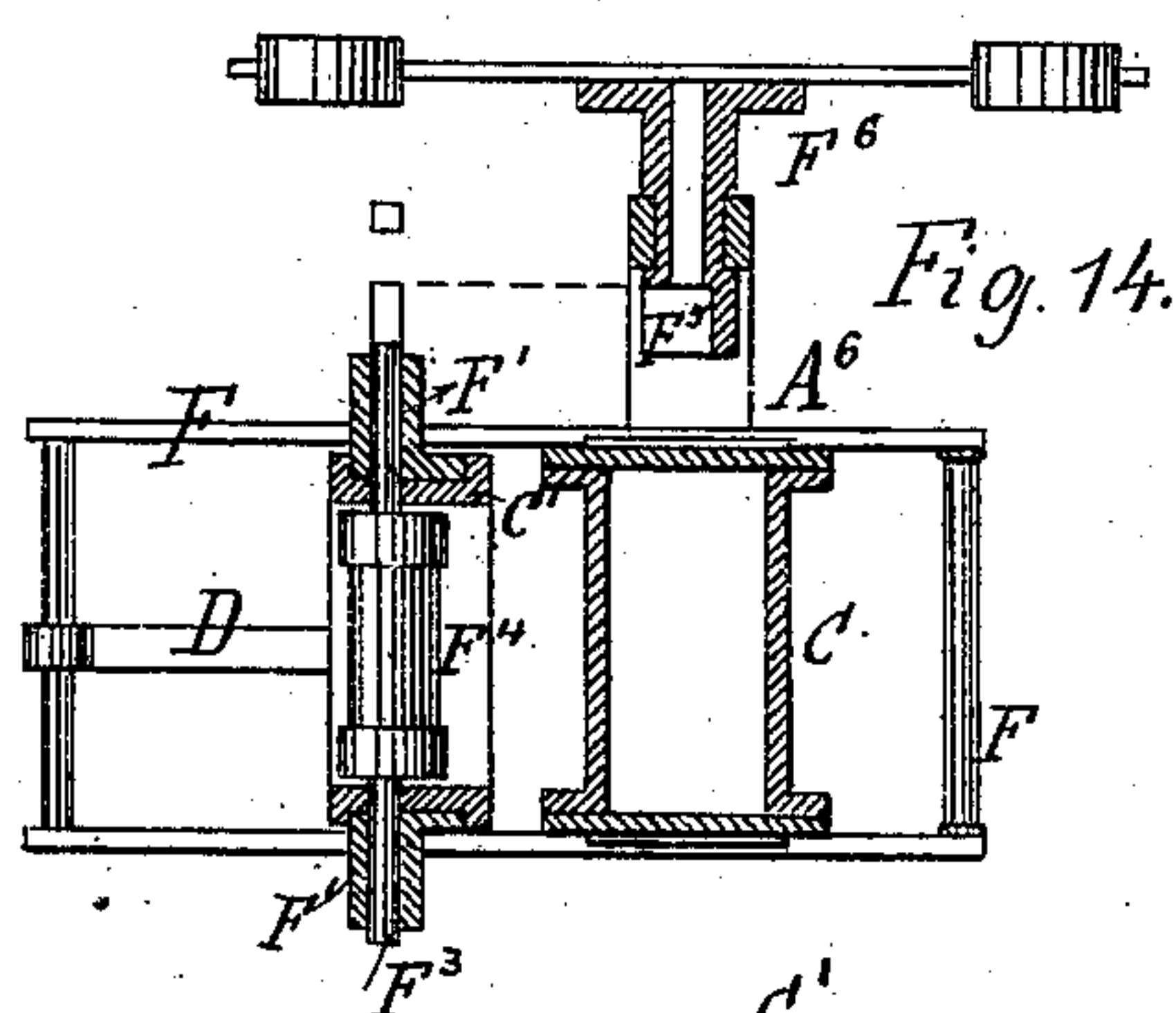
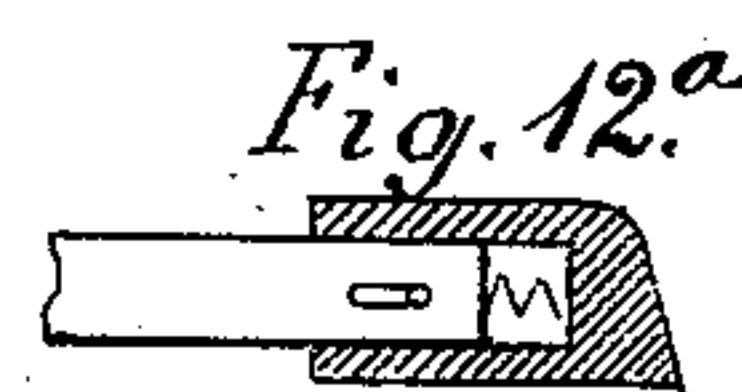
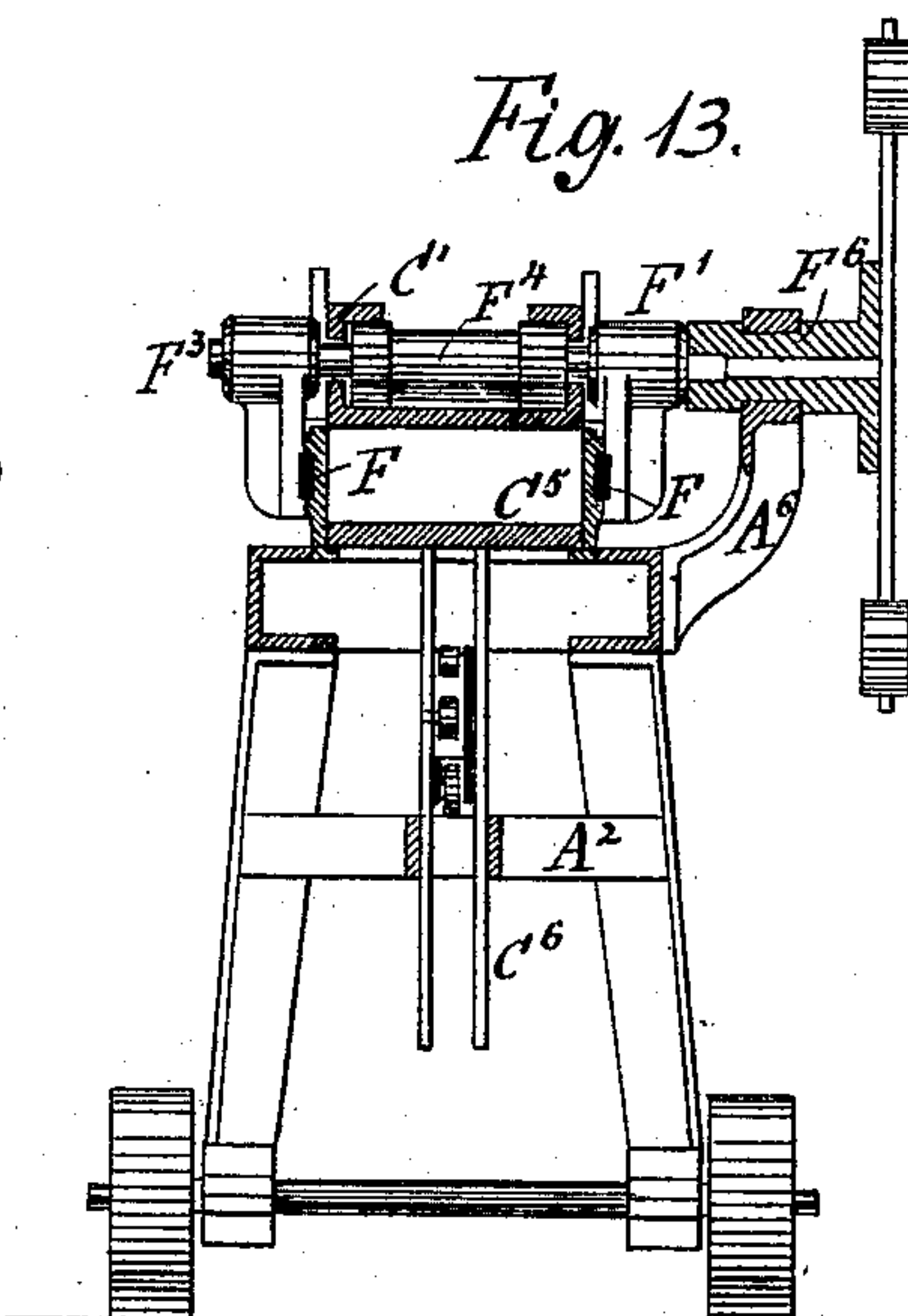
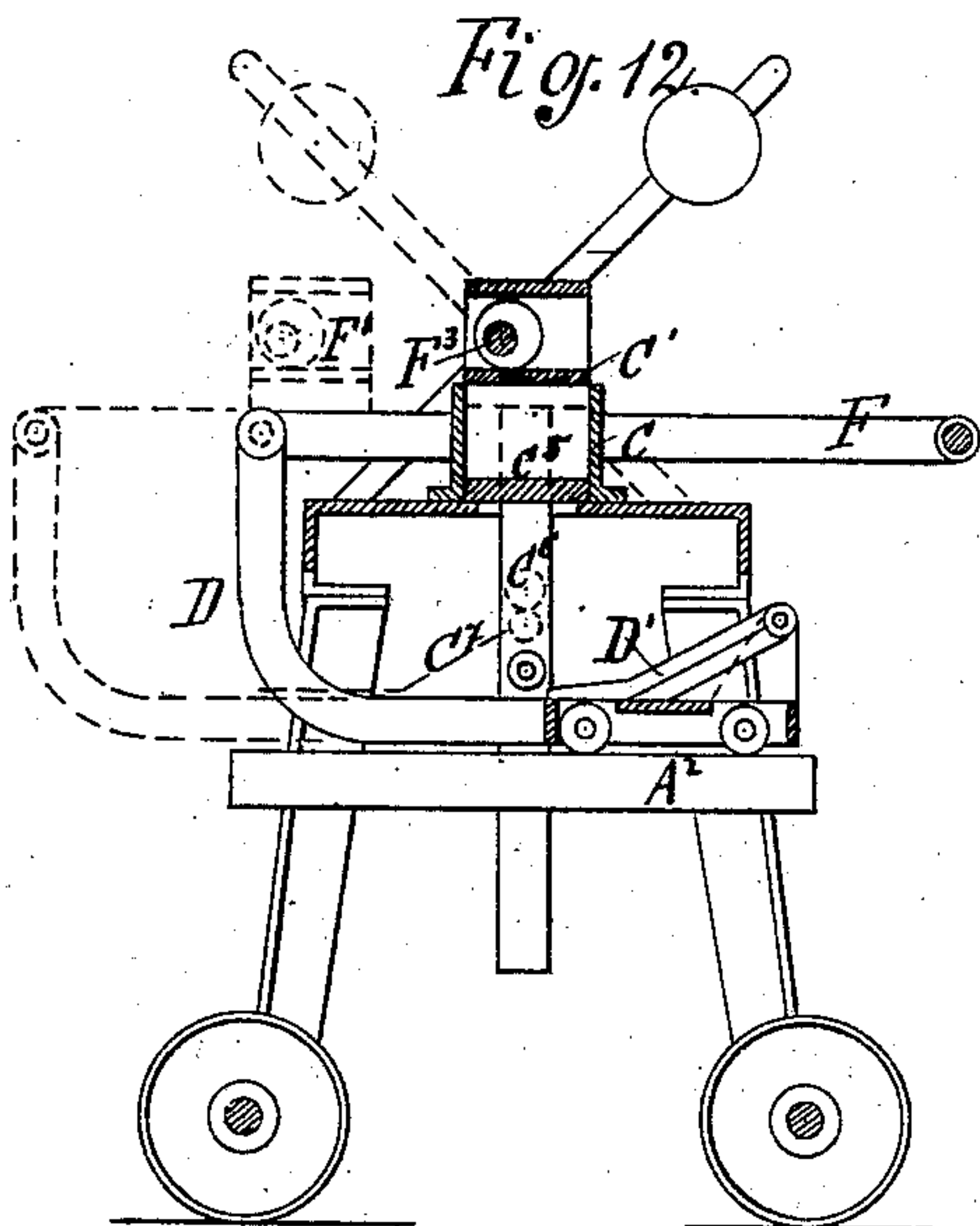
(No Model.)

4 Sheets—Sheet 4.

C. F. SCHLICKEYSEN.
BRICK-MOLDING MACHINE.

No. 275,715.

Patented Apr. 10, 1883.



Witnesses,

J. A. Kitcherford
Robert Everett.

Inventor,

Carl F. Schlickeysen.

By James L. Norris,
Atty.

UNITED STATES PATENT OFFICE.

CARL F. SCHLICKEÿSEN, OF BERLIN, GERMANY.

BRICK-MOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 275,715, dated April 10, 1883.

Application filed January 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, CARL FRIEDRICH SCHLICKEÿSEN, of Berlin, in the Kingdom of Prussia and German Empire, have invented
5 an Improvement in Brick-Molding Machines, of which the following is a specification.

My invention refers to an improved brick-molding machine in which the pressing-cover is lifted or shifted from the press-box by means
10 of a direct movement of the hand; and it is based upon the application of the said direct movement of the hand in lifting the said pressing-cover and dropping the same in proper time.

15 My invention is illustrated in the accompanying drawings, showing the several modifications of my said machine, like letters indicating the same or identical parts of the same. I have chosen the said letters of reference in
20 such a manner as to have each main part of machine indicated by a separate letter, while the under parts belonging to the said main parts are indicated by the same letter and continuous numbers attached to the latter.

25 Figure 1 is a side view, showing one modification of my improved machine in vertical section. Fig. 2 is an end view, showing the same in transverse section; and Fig. 3 is a top view of the same modification.

30 A is a table-plate on the standards A', being connected by the cross-piece A², said table-plate having an inclined arm bifurcated at its upper end and carrying the shaft B'. Upon the latter is fastened a star-piece, B, with
35 striking-lever B⁴, weighted lever B³, and pushing-lever B².

The brick-mold C is screwed upon the fore part of A, said mold having a movable bottom, C⁵, and a cover, C', fastened to the striking-lever B⁴. The small shaft C² is journaled
40 in bearings on the cover-plate C', said shaft being provided with two catches, C⁴, the fore one of which having a lever, C³, extending in an upward direction. Said catches C⁴ catch
45 under another pair of catches formed on the mold C for the purpose of fastening the cover upon the mold while the brick is being pressed.

C⁶ are two hanging arms connected with each other and carrying the said movable bottom C⁵. They are provided with the roller C⁷.
50

D is a double rail moving between the fixed

rollers A³, and having a small catch-lever, D', pivoted to its end, which can turn in a backward direction only. The fore part of the rail D is provided with the inclined loop D², pivoted at its lower fore end, and being made
55 adjustable at its upper end in an upward and downward direction. The roller C⁷ runs in the said loop D². The bent lever D⁴, with weight D⁵, is pivoted at A⁵ to the cross-piece A², and
60 its upper end is held between the pins D⁹ D¹⁰ and the double rail D, so that it is bound to move with the latter.

E is a shaft journaled underneath the table-plate A, having between the arms C⁶ a cam, E',
65 and a lever, E², the latter being connected to the lever E⁴, pivoted at E⁵ by means of the connecting-piece E³.

The operation of the machine is as follows: By raising the striking-lever B⁴ the pushing-lever B² strikes against the catch-lever D' and moves it forward. At the same time the loop D² lifts the roller C⁷, and thereby the mold-bottom C⁵ is raised above the upper edge of the mold C. The brick molded in C is consequently brought to the outside, and can be taken off, whereupon the pushing-lever is pushed entirely over the lever D'. The weight D⁵, having been raised by the forward movement of D, drops down again and presses the
80 rail D back again by means of the pins D⁹ and D¹⁰. The same effect on the rail D might be produced by the weight D⁵ being connected to the latter by means of a rope and pulley. In consequence of the backward movement of
85 D the roller C runs down again until the bottom C⁵ rests on table A, as before. Loam is then inserted in the mold C and beaten down by the striking-lever B⁴ and cover C', whereupon the latter is fastened to the mold by
90 means of the catches C⁴. Hereupon the lever E⁴ is pressed down, which causes the brick in the mold now to receive a pressure from below after it has been beaten down from above. Finally the cover is unloosened, and lever B⁴
95 is raised again to bring bottom C', with the molded brick, to the outside, as above described. If one blow by the lever B⁴ and cover C' should prove to be insufficient, and several strokes must be made, then the catch-lever D' must be
100 brought out of action, so that in raising the striking-lever the pushing-lever will not move

forward the rail D. For this purpose a drawing-rod, R, is pivoted to the table-plate A, as shown in Fig. 4 of the drawings, the lower end of said drawing-rod being held in a perpendicular position by the weight R², and being connected by means of a light chain, R', to the lower end of the catch-lever D'. The drawing-rod is also provided with a light rod, R³, extending with its handle through an aperture in the frontispiece of the table-plate A, and having a catch, R⁴. By drawing the rod R³ to the outside until R⁴ catches behind the lower edge of the said aperture the catch-lever D' assumes an inclined position, so that the moving pushing-lever B² cannot touch it. The entire apparatus and the lever D', by means of the drawing-power of the weight R², will at once assume their normal position again as soon as the catch R⁴ is set free.

The said Fig. 4 shows another modified construction of my improved machine. The loop or incline D² has been substituted by a rack, D⁶, and pinion D⁷. Part of the said pinion D⁷ is made with a smooth rim, D⁸, and acts like a cam carrying the roller C⁷, with bottom C⁵. By raising the striking-lever B⁴ the rack D⁶ is pushed forward and rotates the said pinion D⁷, the smooth part D⁸ of the latter thereby lifting the roller C⁷ until the mold-bottom, with the brick, lies free above the mold C. Now, when raising the lever B⁴ is continued, the lever D' will swing free, and rail D will be pushed back again by the weight D⁵ coming down.

The pushing-lever may in some instances be dispensed with, and the movement of raising the said striking-lever by means of lever-pressure may be applied in a direct manner for lifting the mold-bottom and dropping the same; but these are mere mechanical modifications and combinations of parts known. I therefore shall but refer to two of such modifications.

In the modification shown in Fig. 5 the hanging arm C⁶ is connected rigidly to an arm, C⁸, extending from the table behind the mold and terminating in a catch, B². The catch-lever D' is fastened to the striking-lever B⁴, and in raising the latter the said lever D' carries the catch B² and the mold-bottom C⁵ above the edge of the mold. When the brick has been taken off, the lever B⁴ is raised a little, whereupon the catch B² slides off the lever D', and then drops down. Now the mold is refilled and the striking-lever B⁴ is brought down, the catch-lever D' turning on its pivot, as hereinbefore described, as soon as it touches the said catch B².

In the modification shown in Fig. 6 the hanging arm H is made movable, the same, near its lower end, being guided between two rollers, A³, and having above the latter the catch B², rigidly connected to it. The catch-lever D' is applied to the hanging arm C⁶, while the manipulation and operation are the same as described with reference to Fig. 5.

In the modification shown in Fig. 7 a sec-

ond lever, K, is applied to the standard A', said lever K being connected to the striking-lever B⁴ by means of a drawing-rod, H. The catch-lever D' is arranged and operates the same as in the modification shown in Fig. 6.

In any of the instances referred to it is not material for the catch-lever to drop back again into its normal position by means of its gravity. Such movement may also be provided for by a spring combined with the said lever in any suitable manner. Neither will it be necessary that the said movement be a turning movement, as in some instances a sliding movement, as indicated in Fig. 12, may be applied with advantage.

Figs. 8, 9, 10, and 11 illustrate the construction and combination of the locking-catches with the two faces of the mold. The said catches consist each of a thin plate, M, fitting in a tapering slot cut in the said faces, and are tightly held in position by means of pivots N, extending from each face through each plate, and holding the latter in its place by means of a splint. The said plates M are provided with strong rims made of steel, the horizontal parts of which also serve for holding the toggle C⁴ of the cover during the pressing. Binding a thin plate like M by means of locking-catches may also be effected, as shown in Fig. 11. In this instance the said plate on its upper outside carries the locking-catch o, and on its inside it has several cross-pieces, p, the upper rim of which has an ascending form, and fits dovetail-like in a corresponding slot cut into the outer face of the mold. By means of a small wedge, q, the whole plate is then keyed in an upward direction, so as to be prevented from falling out. The said plate may be stiffened in any convenient manner, while it is obvious that the cross-pieces p may be arranged different from Fig. 11. The said cover-plate may enter the mold from about one-fourth to three-fourths inch, so as to compress the material in the latter just sufficiently to prevent its escaping from the mold.

In the modification shown in Figs. 12^a, 13, 14, 15, 16, and 17 the mold is laid open by means of shoving or pushing off the cover-plate, instead of raising the same, as in the modification hereinbefore described. With this modification the pushing movement is utilized in the same manner as the said lifting movement—that is to say, the movable bottom is brought out of the mold while the latter is open, and is dropped again in proper time for refilling. With this modified form of my improved machine, beating down the brick is dispensed with, while the mode of pressing is the same as hereinbefore described. The table-plate A is provided with two grooves for sliding the frame F in a forward and backward direction. The said frame F is connected with two standards, F', wherein is journaled a cam-shaft, F³, carrying the cam F⁴. Between the said standards the ram or stamper C' slides up and down, inclosing at the same time the

said cam F^4 on both its upper and lower side, the said stamper C' , by these means, being bound to follow any movement of the said cam F^4 . To the said table is fixed the arm A^6 , having a collar for the short spindle F^6 , the latter on one side, being provided with an open slot, F^5 , while on the other side it carries a fly-wheel or pressing-lever. A square-edged pivot on the cam shaft F^3 fits in the said open slot F^5 . The arm D is fastened to the cross-piece on the back side of the frame F , said arm extending from under the table A , and is provided with a projection. An inclined bar, D' , is pivoted to one side of the said projection, and with its lower end rests upon the arm D , the latter, by means of two rollers applied thereto, being carried by the frame-piece A^2 . To the mold-bottom C^5 is suspended the arm C^6 , having a roller, C^7 , the latter being suspended within a short distance from above the arm D . The said roller is touched by the inclined bar D' , being pushed or moved underneath the same, so that in pushing backward the frame F with arm D the said inclined bar D' will raise the mold-bottom C^5 until the latter is raised above the upper rim of the mold C . The brick formed is then taken off the said bottom C^5 , and the frame F pushed backward a little farther, so that the roller C^7 , with hanging arm C^6 and bottom C^5 will drop down again, and fresh material may be inserted into the said mold C . The frame F is then pulled forward again, the said roller C^7 passing by the projection D^2 and raising the inclined bar D' , resting loosely upon the arm D and being pivoted to the said projection, as hereinbefore described. In pulling forward the frame F the edge of the cover-plate C' , sliding closely across the mold C , will take away all the loam jutting out of the latter. When the cover-plate C' has assumed its normal position above the mold C it is pressed down by means of turning the cam-shaft F^3 . The latter is then turned back again and the frame F pushed backward, as before described. The said cam-shaft may be turned by means of a lever or fly-wheel, either directly connected therewith or connected with its short slotted spindle F^6 , journaled in the arm A^6 . It is obvious that the said cam-shaft F^3 may also be applied to the frame A^2 of the table, and may be provided with one cam each outside of the said frame, as illustrated in Fig. 16 of the drawings. The cam F^4 is connected with the pressing-cover by means of two drawing-rods, F^7 , the upper ends of which are bent rectangular, the pressing-cover being kept continually in a raised position by means of springs or weights, and being provided with a cross-piece, F^8 , projecting laterally from its sides, said projections catching under the rectangular ends of the drawing-rods F^7 in pushing forward the frame F . The operation of the modification is obvious and need not further be described. With this modification, also, the raising of the molded brick may be effected by means of a combina-

tion of levers and catch-levers, as hereinbefore described, instead of applying an inclined plane for the said purpose. Fig. 17 of the drawings illustrates such combination of levers. One of the standards A' of the frame of the machine is provided with a projection having pivoted thereto the elbow-lever G G' , the lower part, G' , of which is connected to the hanging arm C^6 by means of the connecting-rod H . To the other or fore end of the bent arm D is suspended a catch-lever, D' , which, in pushing backward the frame F , with the said arm D fixed to the same, strikes against the lever-arm G , and carries the same along until, by means of lever-arm G' , connecting-rod H , and hanging arm C^6 , the pressing or mold bottom has been raised out of the mold. Then the operation is interrupted for a moment, and the molded brick is taken off the said bottom, whereupon frame F and arm D are pushed backward a little farther, so that the lever-arm G will slide off the catch-lever D' , in consequence whereof the parts G' H C^6 and the mold-bottom connected therewith will drop down again. The mold is then refilled, and frame F , with arm D , is pulled forward again, the catch-lever D' , pivoted to the arm D , sliding across the lever-arm G .

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

1. In a brick-molding machine, the combination, with the striking-lever B^4 , of a pushing-lever, B^2 , arranged in the extension of the said striking-lever, and of a rail, D , being movable in a forward and backward direction, and arranged underneath the same table supporting the said levers, the said rail D being provided at its rear end with a projecting catch-lever movable in one direction only, substantially as described, and for the purpose specified.

2. In a brick-molding machine, the combination, with the rail D , of a fixed or movable inclined loop, D^2 , a roller journaled to a hanging arm underneath the mold-bottom, and of a weight, D^5 , substantially as set forth, and for the purpose specified.

3. In a brick-molding machine, the combination, with the catch-lever D' , of mechanism for pulling the same in and out of contact with the pushing-lever, substantially as herein described, and for the purpose specified.

4. The combination, with the mold of a brick-molding machine, of locking-catches consisting of two plates, M , having near their upper outside the catch O , and being either smooth at their back side or provided with inclined projections p to fit in corresponding slots cut in the adjacent faces of the mold, said plates M being held in place by means of splints inserted in the pivots N , extending through the same, substantially as set forth, and for the purpose specified.

5. In combination with the table of a brick-

molding machine, a frame, F, moving in a forward and backward direction, a mold, C, fixed upon the said table, mechanism for holding down the frame F, standards F', carrying
5 a cam-shaft, F³, and a ram or stamper, C', arranged between the said standards, so as to pass over the molds C after being raised by means of the said cam-shaft, and to enter the said mold in turning down the said shaft, all

substantially as described, and for the purpose specified.

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

CARL FRIEDRICH SCHLICKEYSEN.

Witnesses:

ROBERT R. SCHMIDT,

CARL NEUER.