

(No Model.)

2 Sheets—Sheet 1.

L. DAVIS, Jr.

CAR COUPLING.

No. 271,609.

Patented Feb. 6, 1883.

Fig. 1.

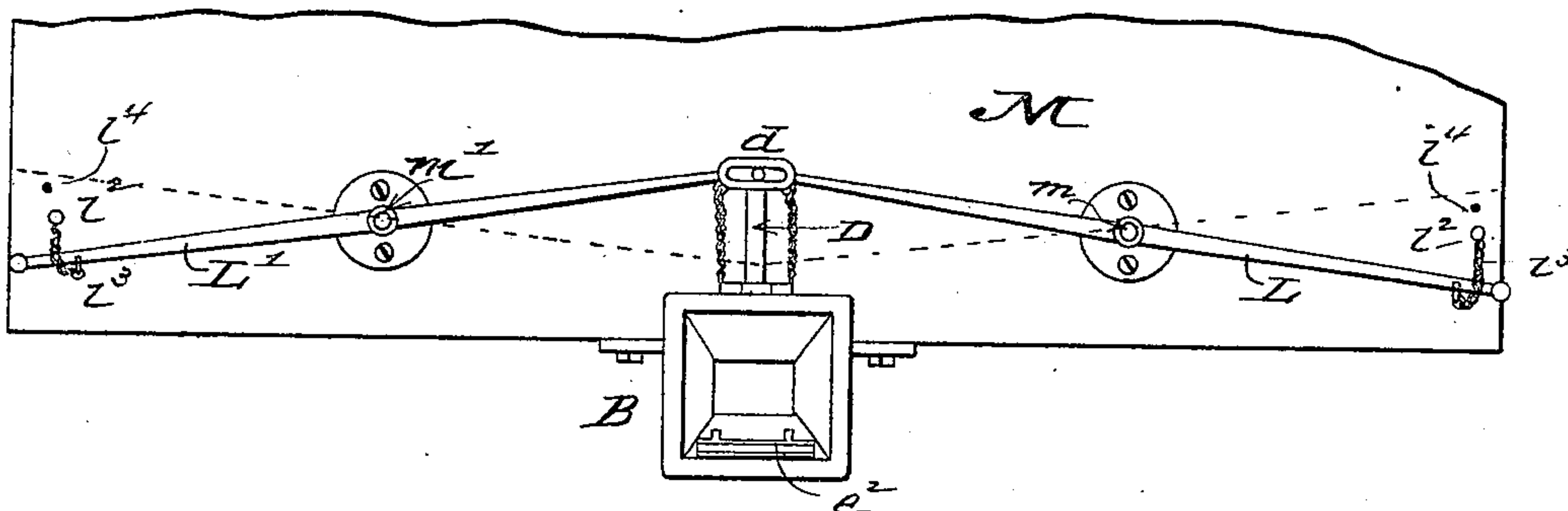


Fig. 2.

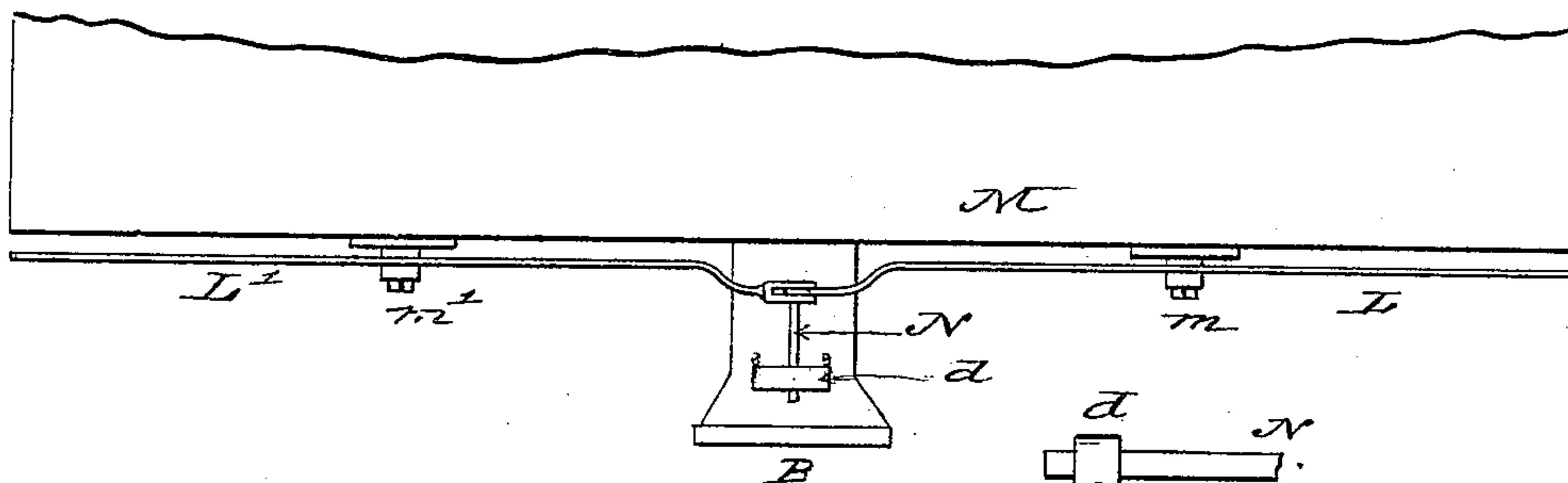


Fig. 3.

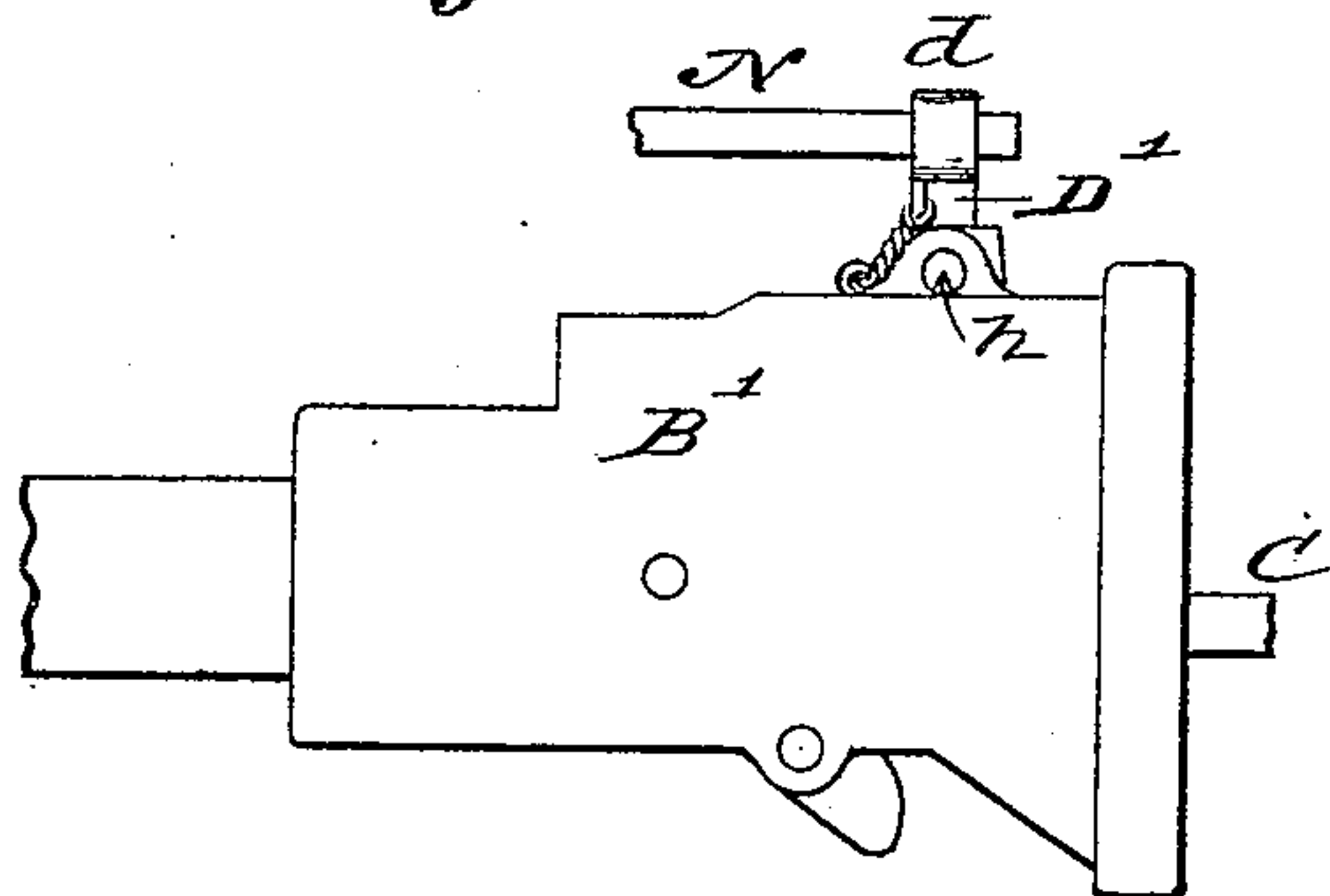
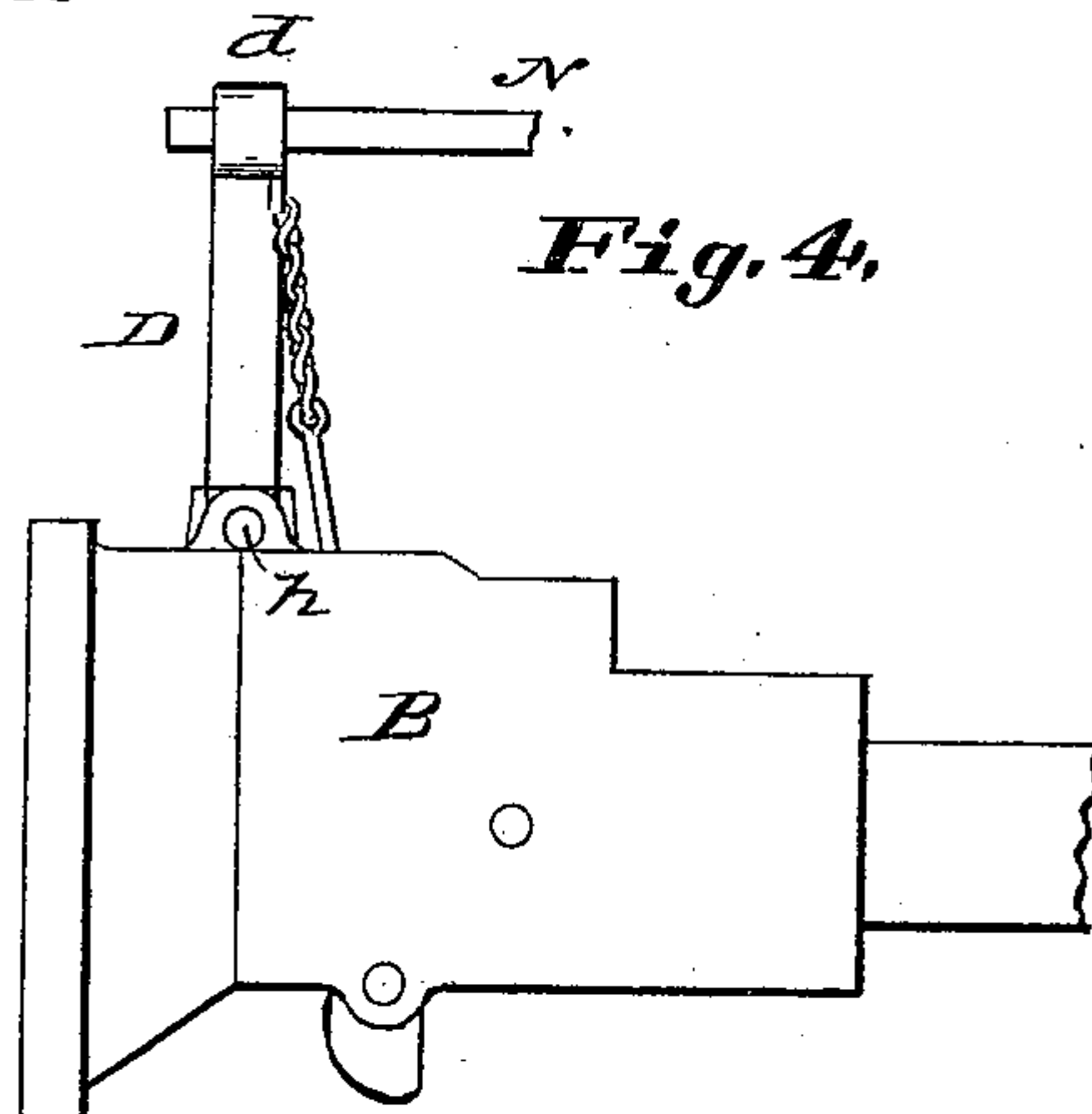


Fig. 4.



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Fig. 5.

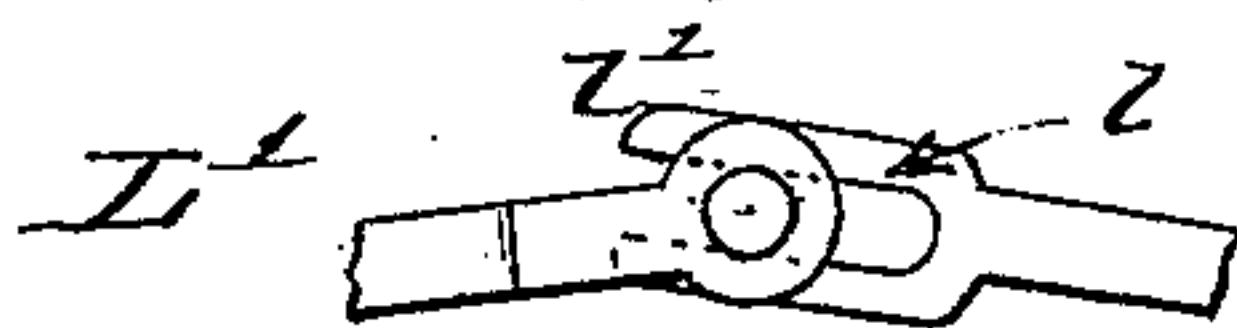
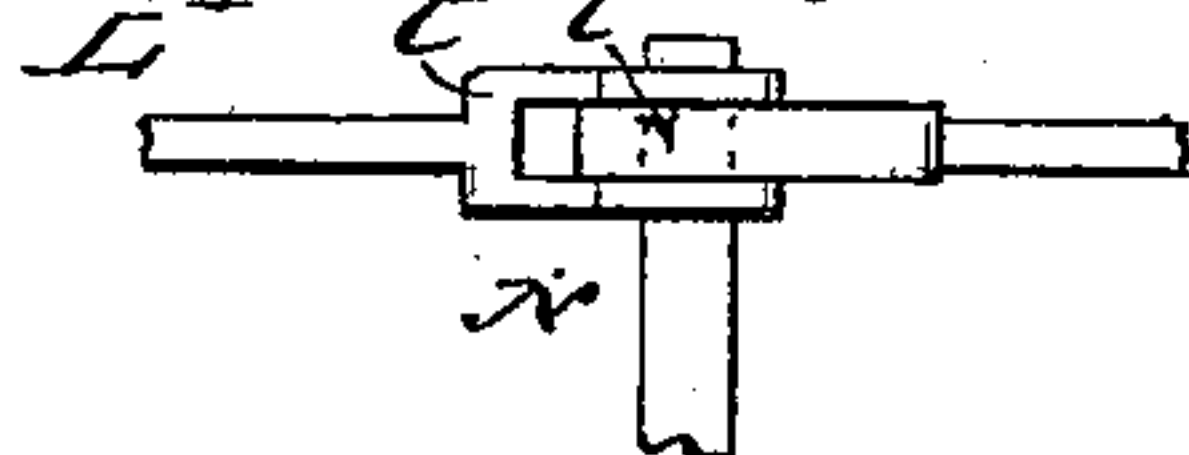


Fig. 6.



2 Sheets—Sheet 2.

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Fig. 7.

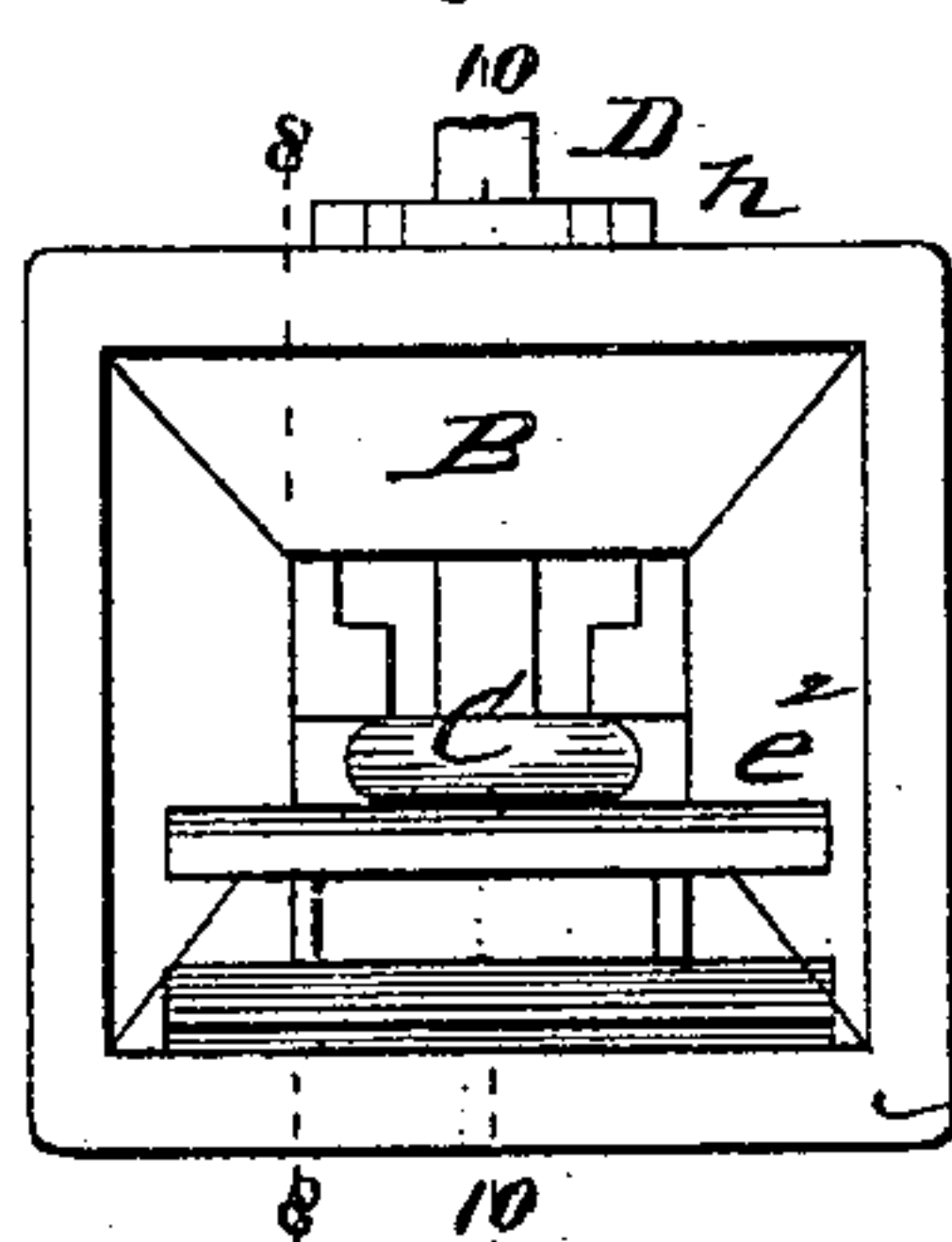


Fig. 15.

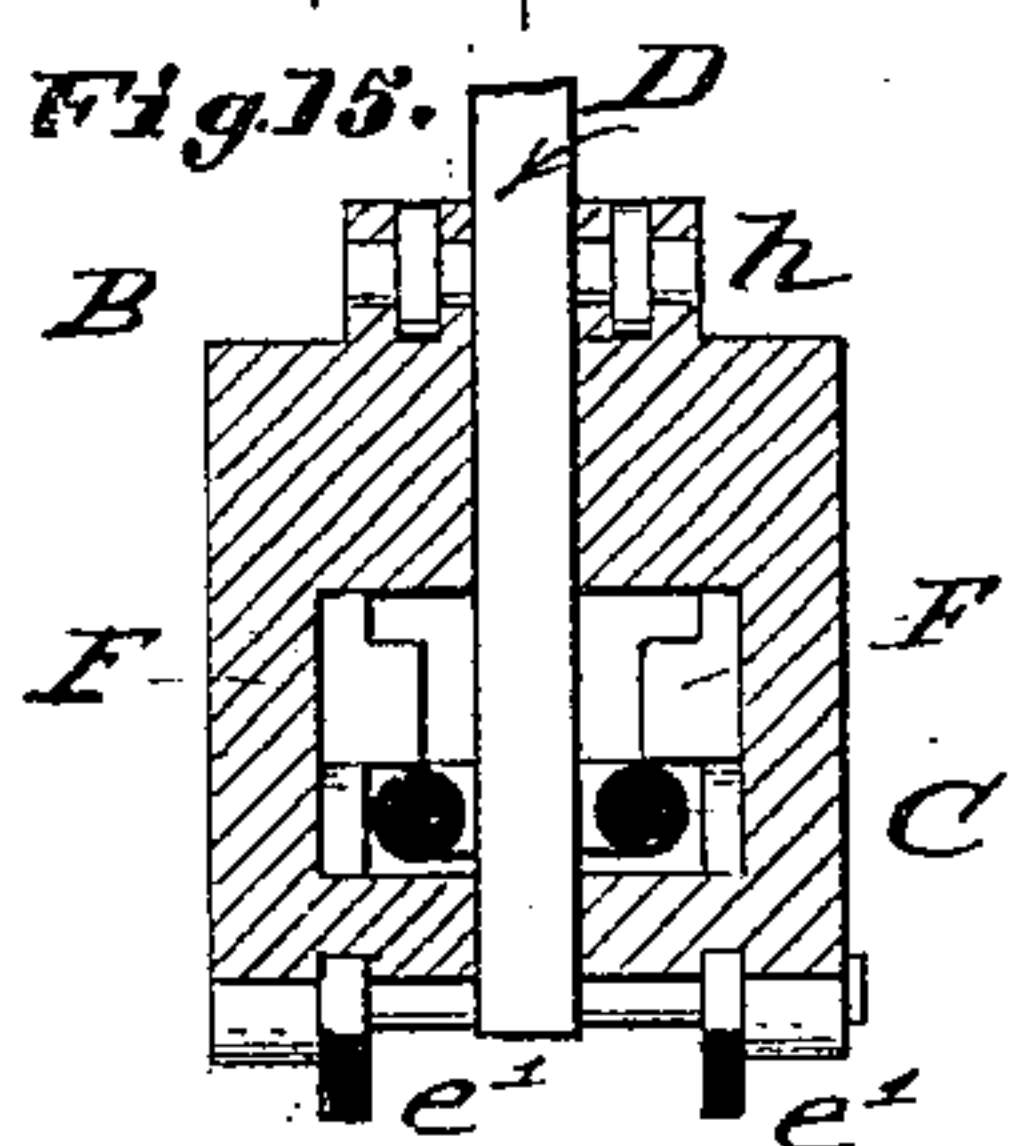


Fig. 16.

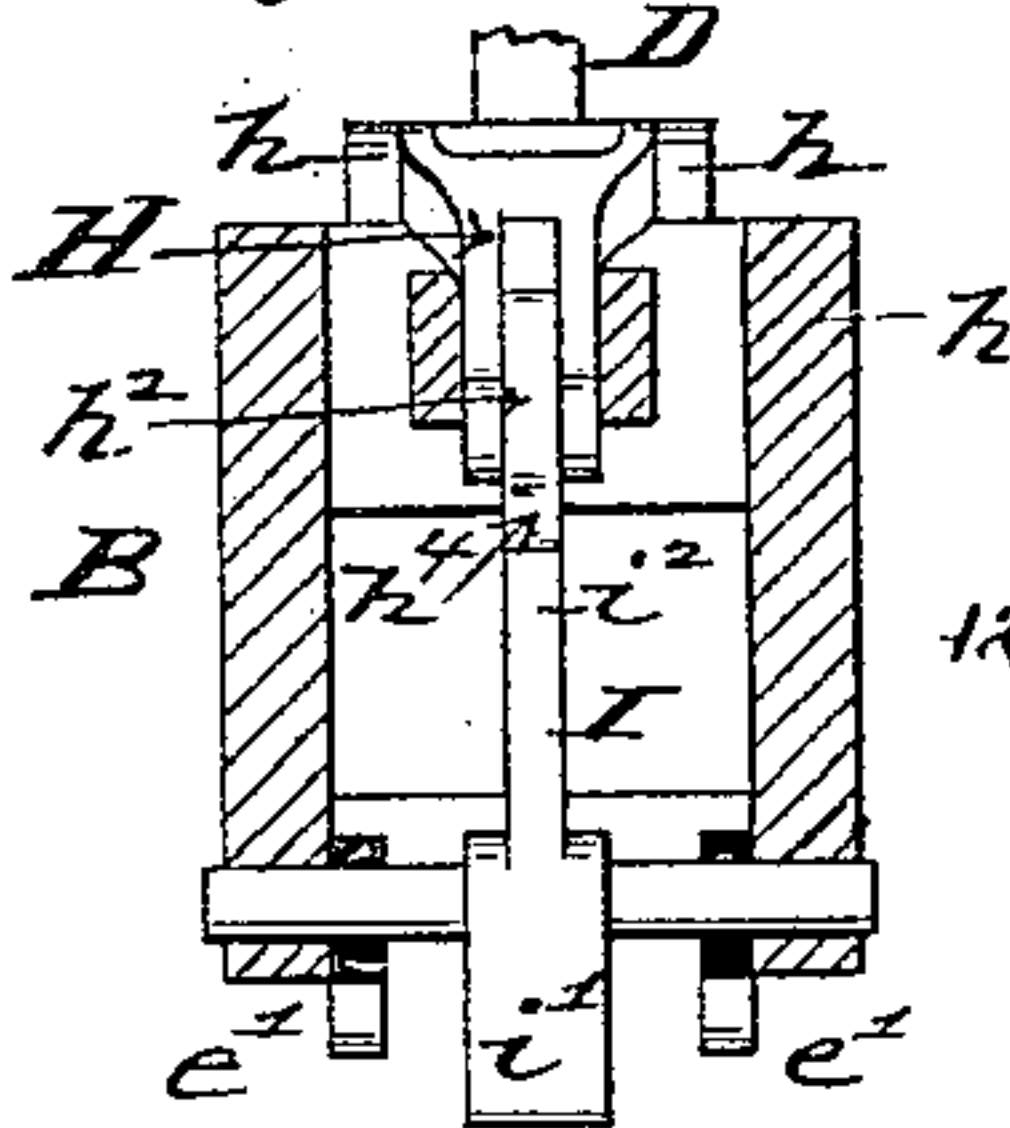


Fig. 8.

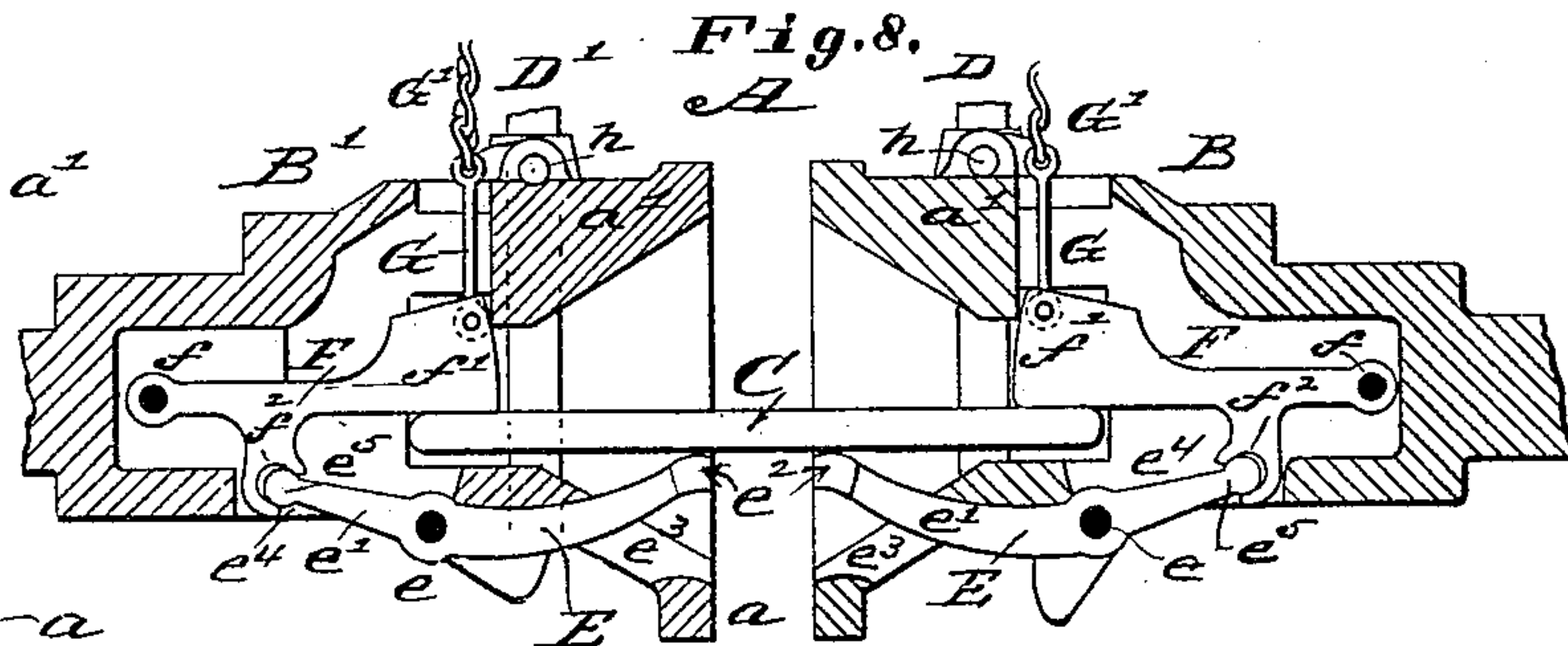


Fig. 9.

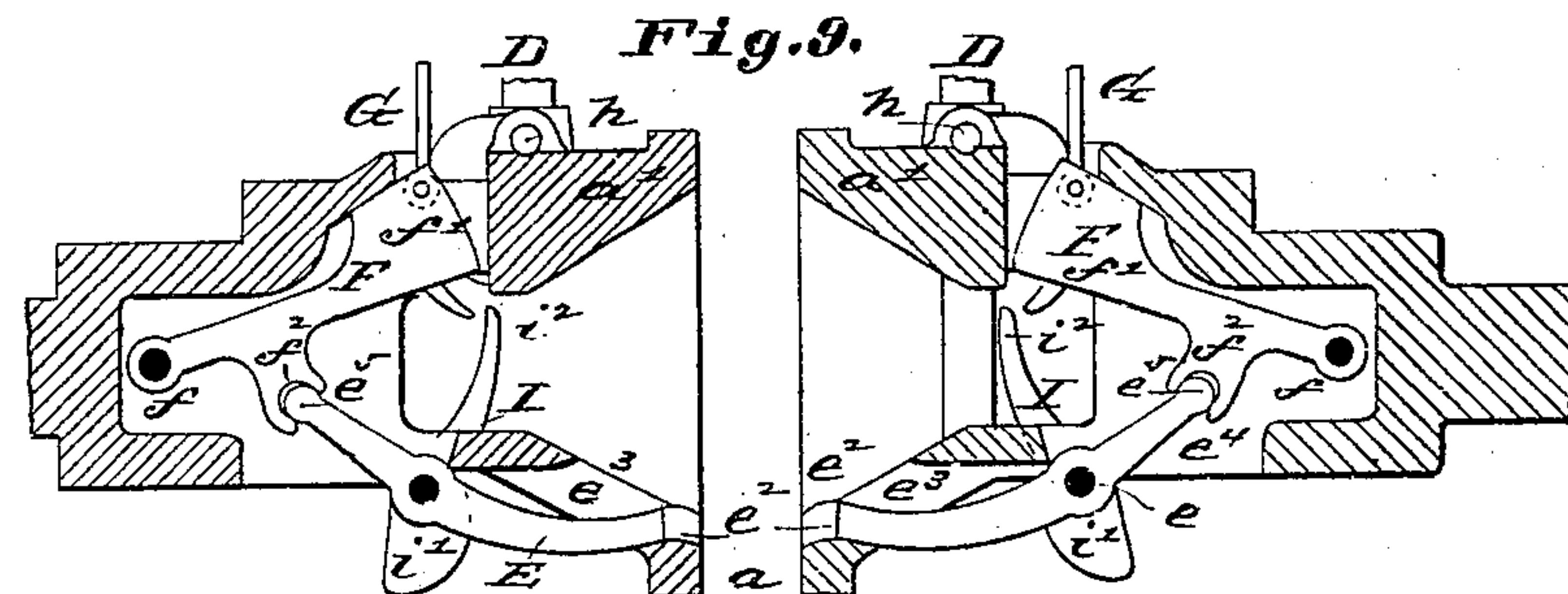


Fig.10

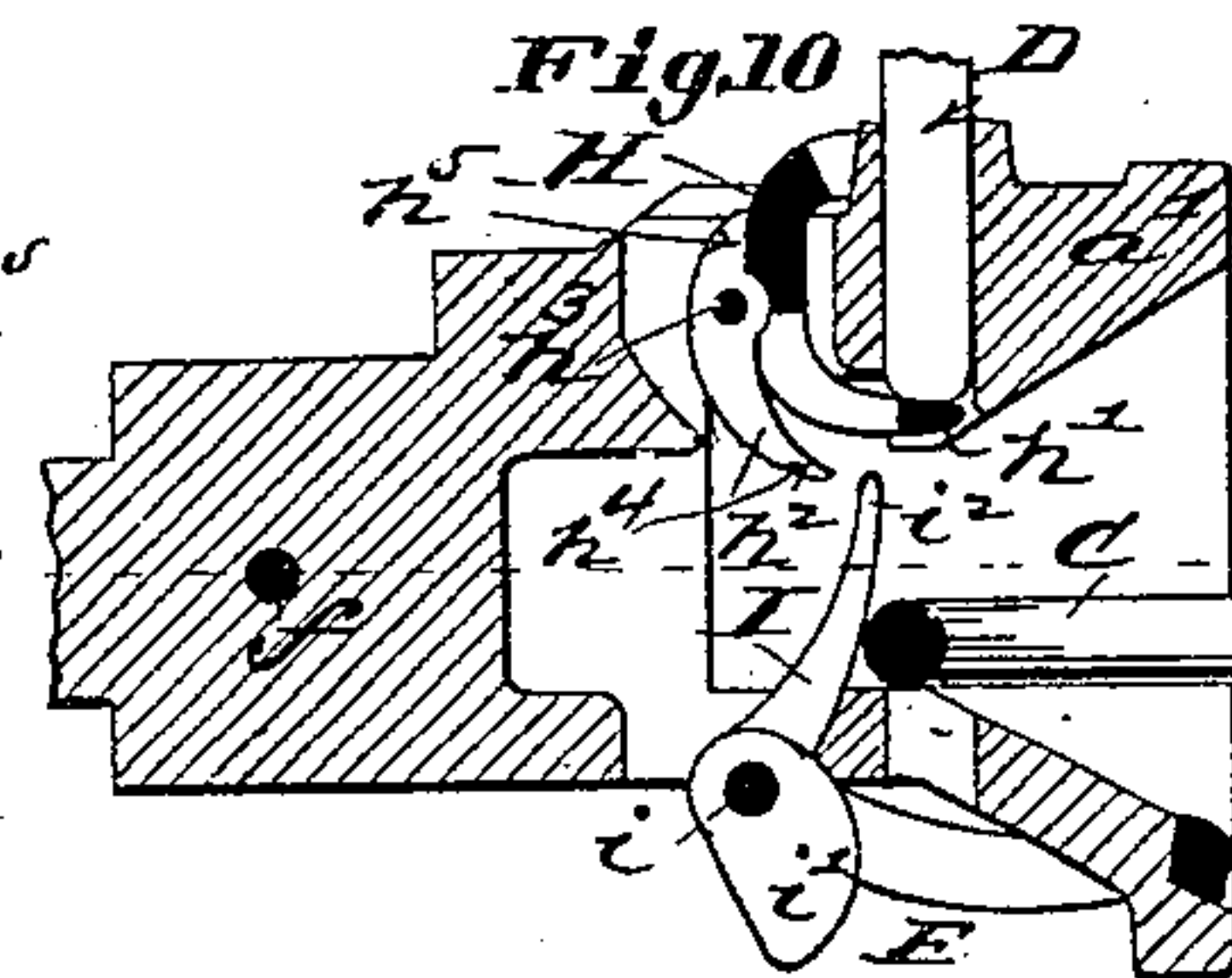


Fig. 11.

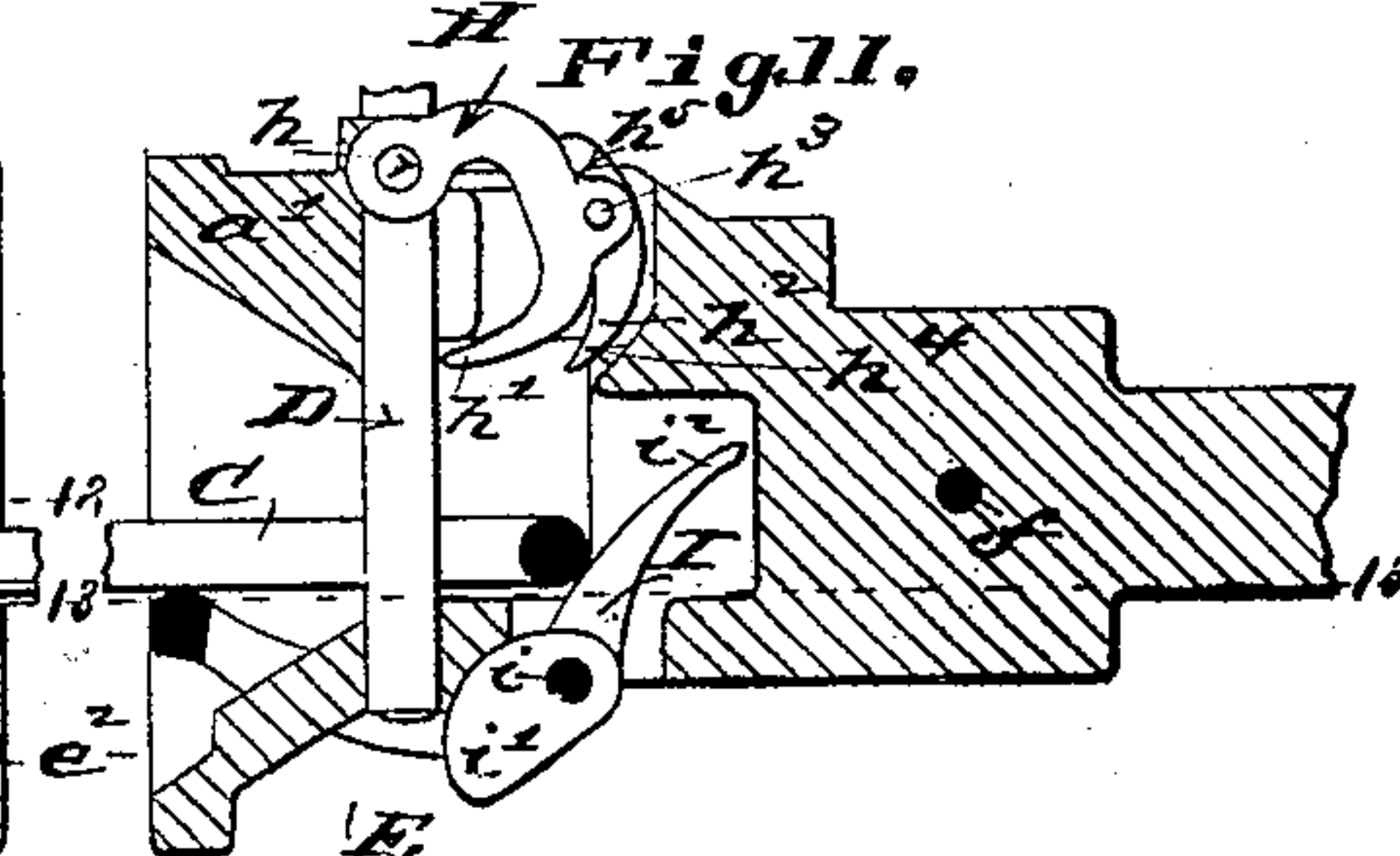


Fig. 12.

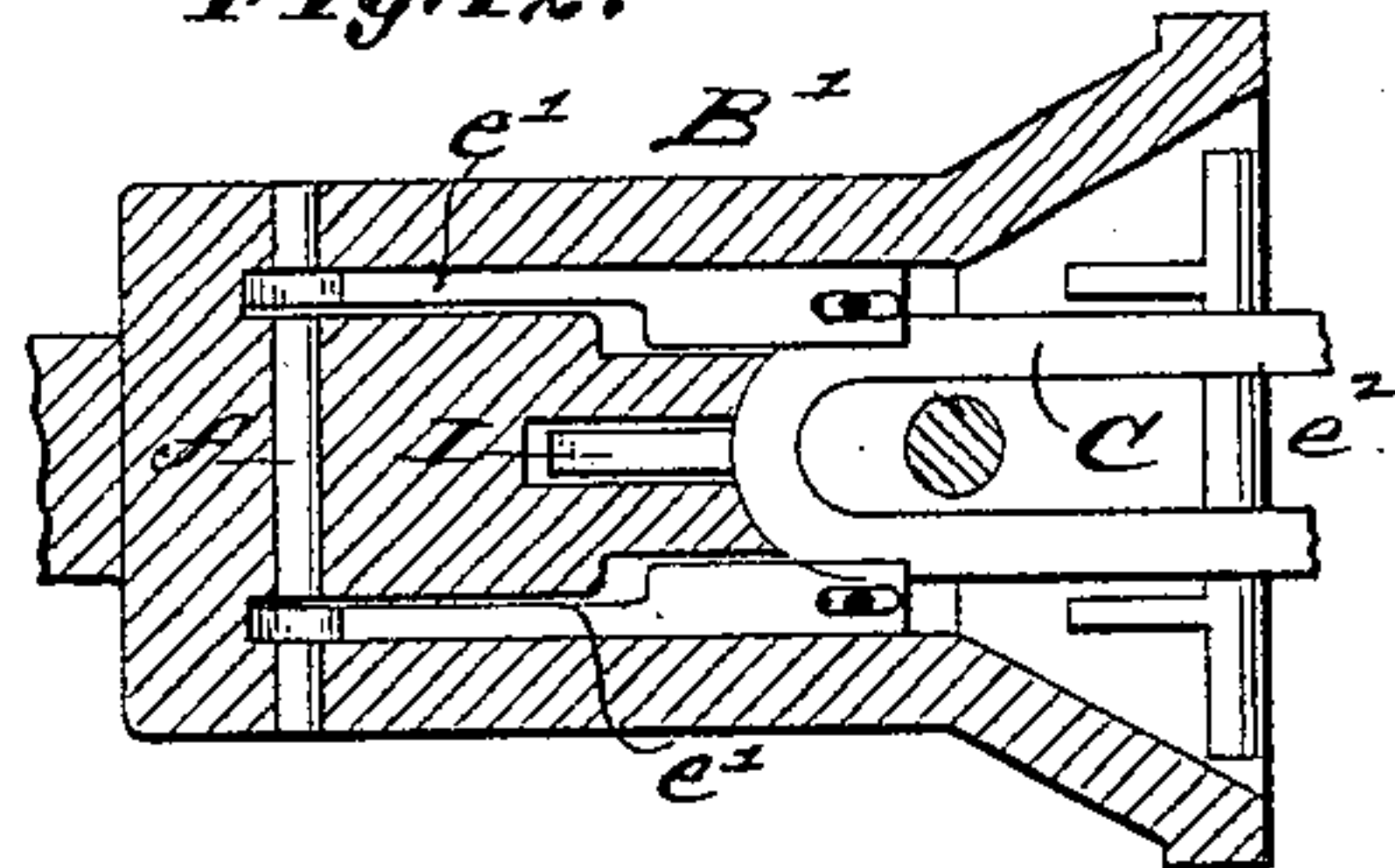
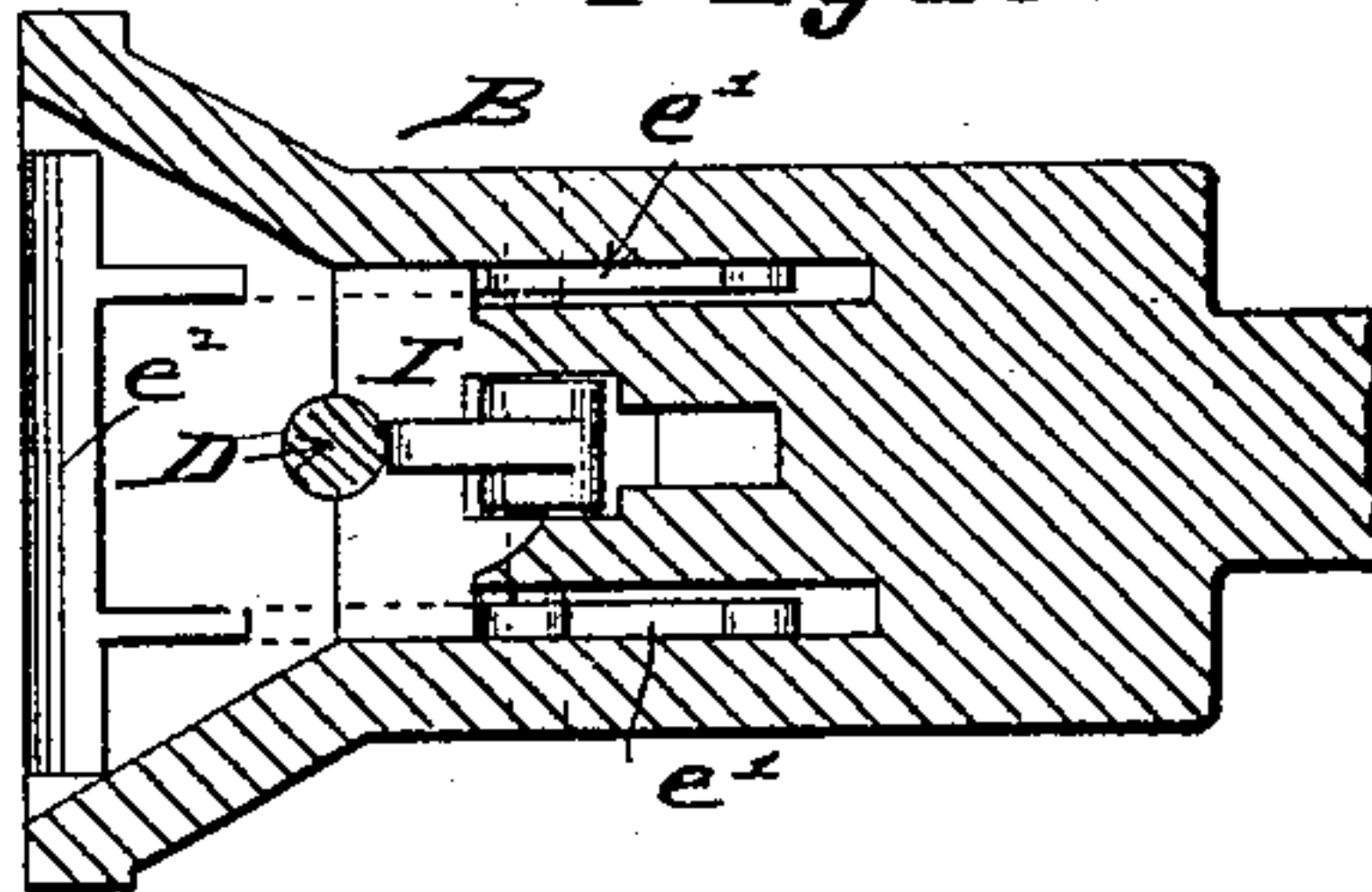


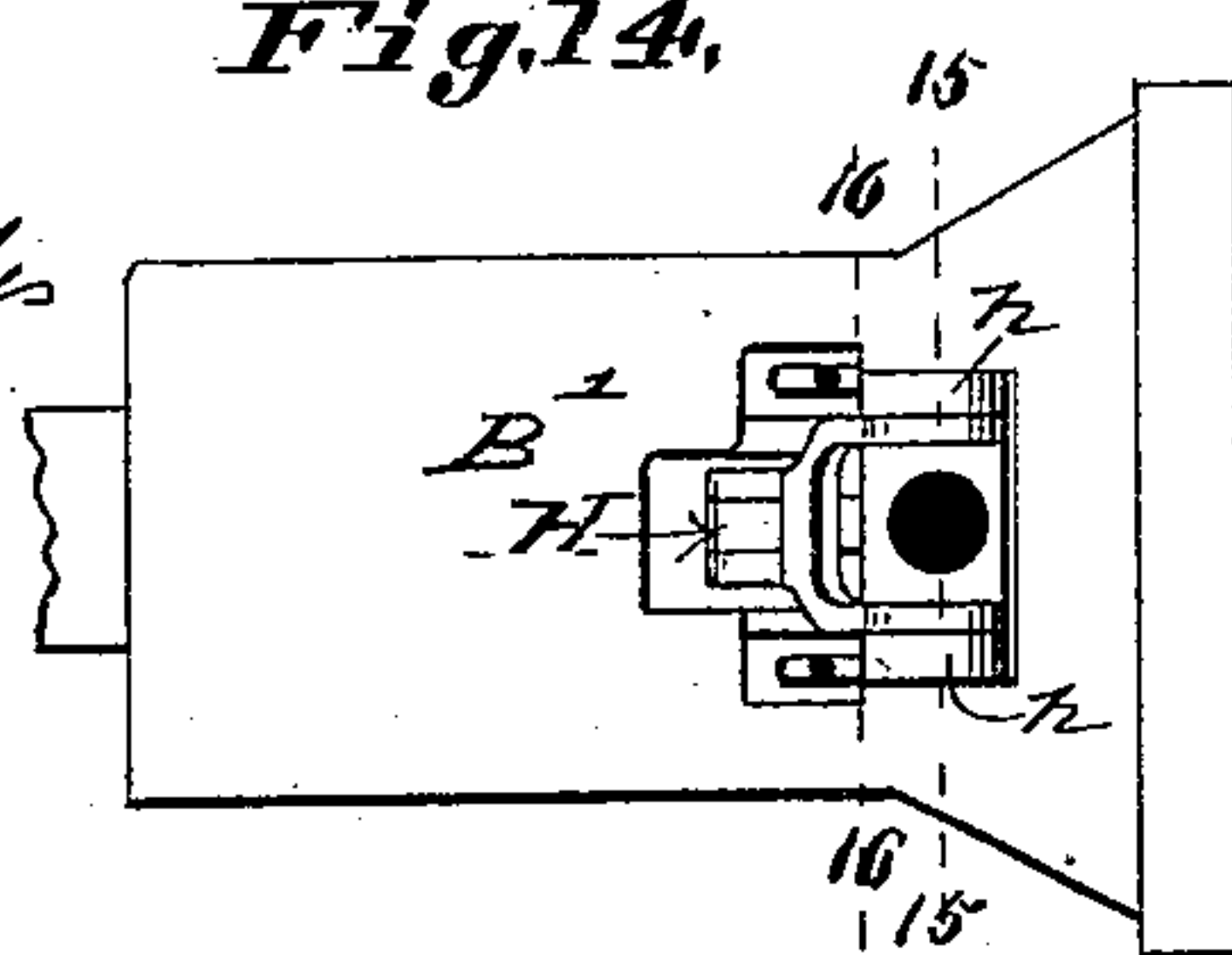
Fig 13.



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Albert G. Fish }

Fig. 14.



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UNITED STATES PATENT OFFICE.

LEVI DAVIS, JR., OF ALTON, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 271,609, dated February 6, 1883.

Application filed August 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, LEVI DAVIS, Jr., of Alton, Illinois, have made a new and useful Improvement in Car-Couplings, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a front elevation of improved draw-bar in position; Fig. 2, a plan; Fig. 3, a side elevation of one of the draw-bars, the pin being down; Fig. 4, a side elevation, showing the pin drawn up; Figs. 5 and 6, details, being respectively a side elevation and a plan, showing the joined inner ends of the levers used in operating the coupling-pin; Fig. 7, a front elevation of one of the draw-bars, showing the link upheld; Fig. 8, a vertical longitudinal section taken through the coupling on the line 8 8 of Fig. 7, the weights being down and the link upheld; Fig. 9, a section similar to that of Fig. 8, the weights being raised; Fig. 10, a section taken on the line 10 10 of Fig. 7; Fig. 11, a section taken on the line 10 10 of Fig. 7, but showing the link, pin, and trip in a different position; Fig. 12, a horizontal section taken on the line 12 12 of Fig. 10; Fig. 13, a horizontal section taken on the line 13 13 of Fig. 11; Fig. 14, a plan of one of the draw-bars; Fig. 15, a vertical cross-section taken on the line 15 15 of Fig. 14, and Fig. 16 a vertical cross-section taken on the line 16 16 of Fig. 14.

The same letters denote the same parts.

The present invention relates to the means for upholding the link in the draw-bar, to the means for operating and supporting the coupling-pin, to the mode of operating the pin-support, and to other minor details.

A, Figs. 8, 9, represents the improved coupling.

The draw-bars B B' are of the usual description, saving as modified by the present improvement.

C represents the coupling-link, and D D' the coupling-pins.

Pivoted at *e* in each of the draw-bars is an arm, E, the arm consisting of the side bars, *e'*, united at their outer ends by a cross-bar, *e²*. The draw-bar is chambered out at *e³ e⁴* to receive and provide for the working of the arm E. When the outer end of the arm is depressed, as in Fig. 9, the cross-bar *e²* is held in

an offset at the outer edge of the lower lip, *a*, of the draw-bar, forming, in effect, part of the lip, and the inner ends, *e⁵*, extend upward in the chambers *e⁴*, substantially as shown.

F F represent levers pivoted at their inner ends, *f*, in the draw-bar, at their outer ends, *f'*, weighted, and at *f²* bearing upon the inner ends of the bars *e'*, the bearings *f²* being shaped to turn upon the bar ends. These weighted levers F F act, when free, to depress the inner ends of the bars *e'*, and thereby to elevate the cross-bar *e²*. The cross-bar, as it rises, encounters the link C and supports it in a horizontal position. The outer ends, *f'*, of the levers F, when down, rest upon or come over the link C, and co-operate with the cross-bar *e²* in upholding the link.

The levers F F are lifted by means of connections attached to the weighted ends *f'*, and preferably as follows: A rod, G, extends from the lever upward through an opening in the top *a'* of the draw-bar, and from the upper end of the rod a chain, G', extends, and is attached to the coupling-pin D. Then when the coupling-pin is drawn up, as in coupling, the outer ends of the levers F are drawn up with it, and the arm E moves to bring the cross-bar *e²* into the offset in the lower lip, *a*, of the draw-bar.

The coupling-pin, when uplifted, is supported by the device H. This feature of the construction is shown more distinctly in Figs. 11, 14, 16. It is pivoted at *h* (in line with the coupling-pin) to the draw-bar, and extends thence downward, curving around, and at its lower end pointing toward the mouth of the draw-bar, and when the coupling-pin is sufficiently elevated the point *h'* of the part H comes beneath and supports the coupling-pin, as seen in Fig. 10.

In effecting the coupling the link C, as it passes into the draw-bar, encounters a trip-lever, I, which is pivoted at *i* in the draw-bar, and weighted at *i'* to cause the upper end, *i²*, when free, to move toward the mouth of the draw-bar, as in Fig. 10. The link entering the draw-bar pushes the upper end, *i²*, of the trip backward in the draw-bar, causing the end *i²* to strike a part, *h²*, which at *h³* is pivoted to the support H. The lower end, *h⁴*, of the part *h²*, by reason of the shoulder *h⁵* coming against the support H, cannot move backward, and in consequence the main support

H is turned on its bearing h , and its point h' dislodged from beneath the pin, whereupon the pin falls, passing downward through the coupling-link and coupling it, and bringing the parts into the position shown in Figs. 8, 7, 11, 15, for the dropping of the coupling-pin enables the weighted levers $F F$ to drop and act upon the arm E , and cause the outer end thereof to rise and support the link.

When the coupling-pin is drawn upward and the link withdrawn from the draw-bar the end i^2 of the trip-lever I moves forward again. As the end i^2 strikes the part h^2 the latter yields and turns upon its pivot h^3 , allowing the end i^2 to pass it and to fall into the position shown in Fig. 10. The levers F are also raised, and the arm E assumes the position shown in Fig. 9, and the point h' of the support H falls beneath and supports the coupling-pin. The support H being pivoted on a line with the center of the coupling-pin, the strain, when the pin is being upheld, is directly downward in line with the pin, and the point of the support is not liable to be accidentally displaced from beneath the pin. The trip-lever I , being weighted, falls forward, as shown, when the link is removed from the draw-bar, and when the link is inserted in the draw-bar the trip-lever can be turned backward sufficiently to allow the inner end of the link to pass in practice about two and a half inches beyond the pin-hole.

$L L'$ represent levers for operating the coupling-pin. They are pivoted to the car M at $m m'$, respectively, and are extended and arranged substantially as shown in Figs. 1, 2, the levers extending respectively from the sides of the car, and at their inner ends engaging, as shown more distinctly in Figs. 5, 6, one lever, L' , being forked at l' , and the other lever, L , having the eye l , which engages in the fork. A pin, N , is held in the lever L' , passing through the

eye l , serving partly to keep the levers $L L'$ in engagement, and also to connect the levers with the coupling-pin D , as shown in Figs. 1, 3, 4, the pin passing loosely through a horizontally-elongated eye, d , in the top of the pin. By moving the levers $L L'$, which, as seen, can be done from either side of the car, the coupling-pin D can be raised or lowered. The levers $L L'$ can be fastened by means of a pin, l^2 , and chain l^3 , the pin l^2 being inserted in suitable holes, l^4 , in car, according to the position of the levers. The eye d is elongated to provide for the lateral oscillation of the draw-bar. 55

I claim—

1. In a car-coupling, the combination of the link C and the pivoted arm E , for the purpose described.

2. In a car-coupling, the combination of the link C , the pivoted arm E , and the pivoted arm or arms $F F$, for the purpose described. 60

3. The combination of the draw-bar B , the pivoted support H , and the projection h^2 , pivoted to the support H , and the top lever, I , as 65 and for the purpose described.

4. The combination of the draw-bar B , the support H , the projection h^2 , the trip-lever I , and the link C , substantially as described.

5. The combination of the draw-bar B , the link C , the pin D , the arm E , the levers $F F$, the support H , and the trip lever I , substantially as described. 70

6. The combination of the draw-bar B , the pin D , the lever or levers $F F$, the connections, $G G'$, and the arm E , substantially as described. 75

7. The combination of the pivoted levers $L L'$, the coupling-pin D , having the elongated eye d , and the pin N , substantially as described. 80

LEVI DAVIS, JR.

Witnesses:

C. D. MOODY,
CHARLES PICKLES.