

3 Sheets—Sheet 1.

Patented Aug. 28, 1888.

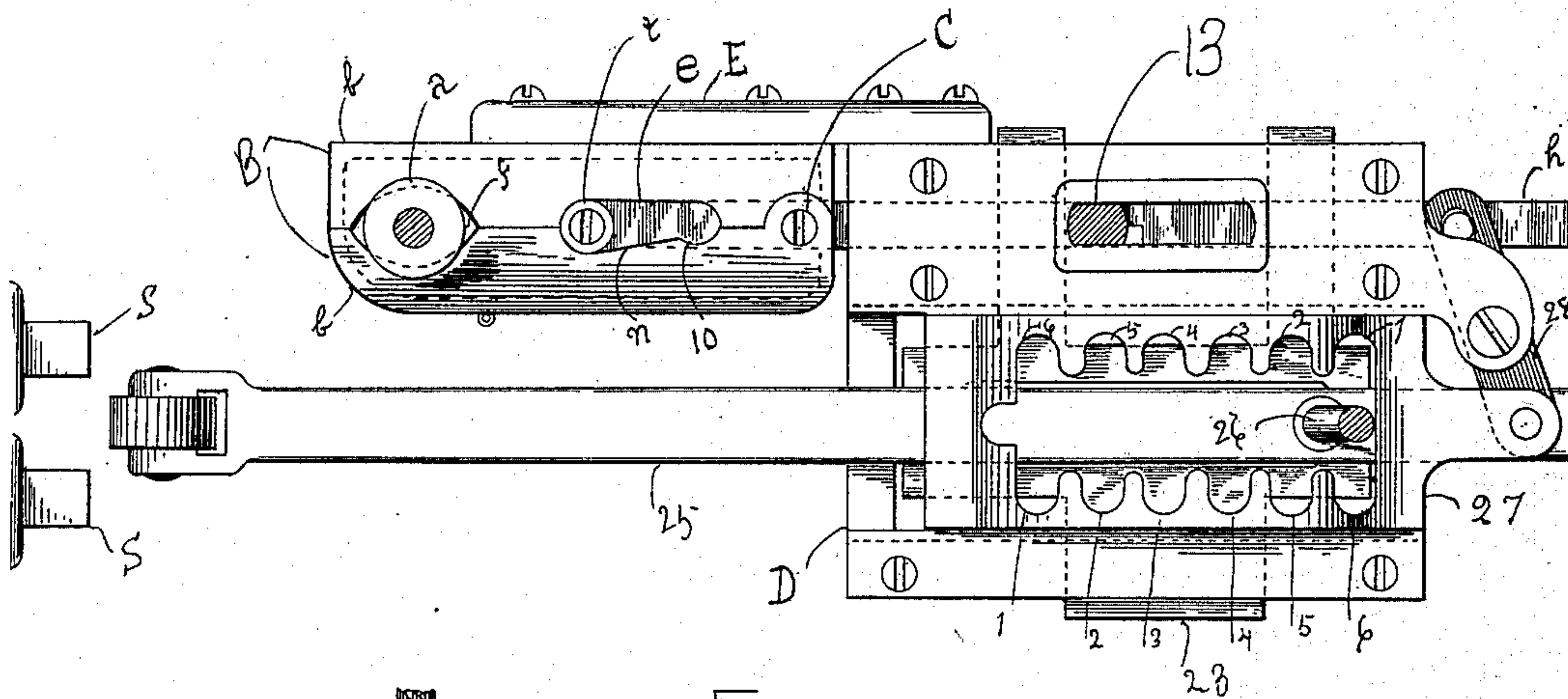


FIG. 7

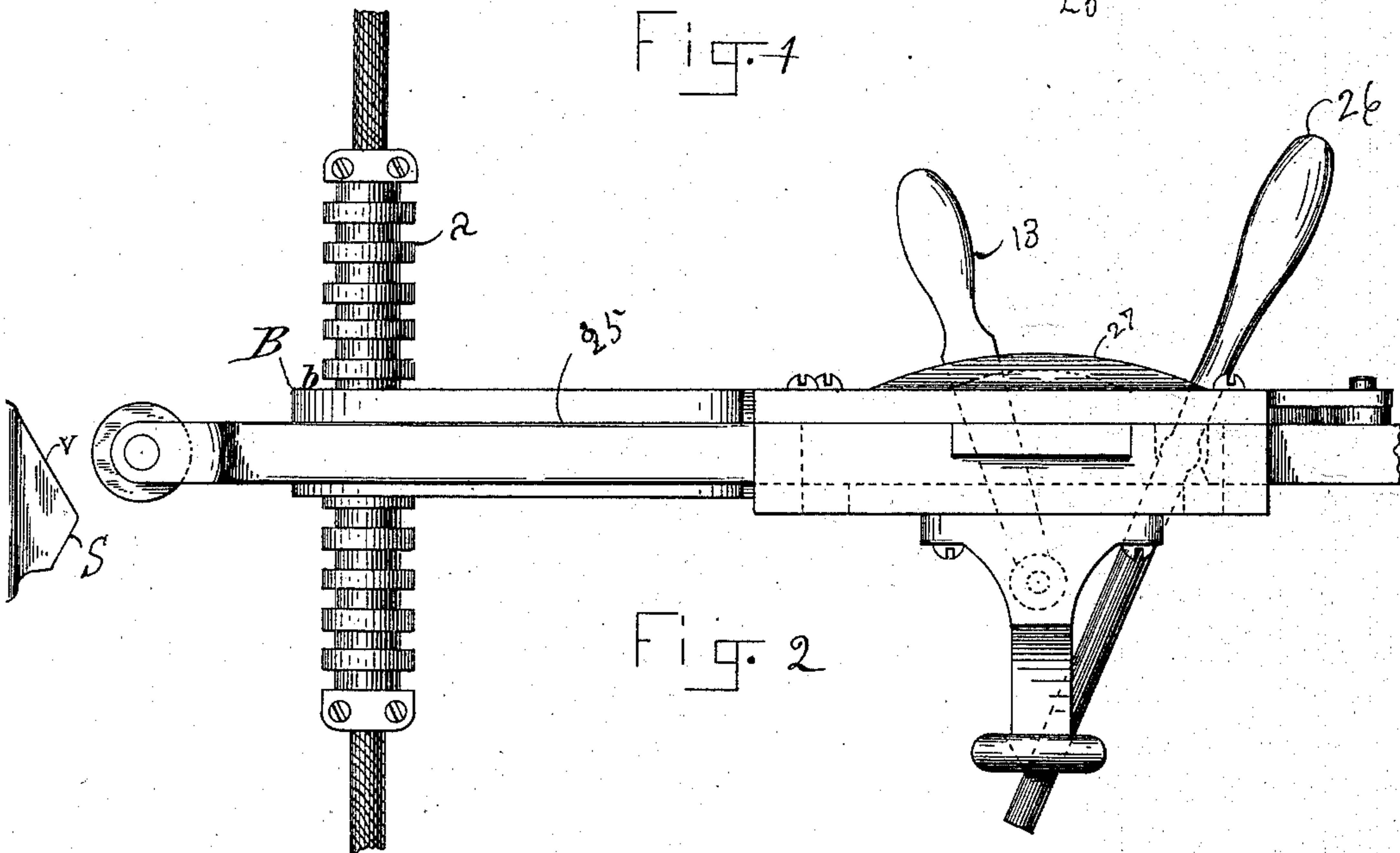


Fig. 2

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(No Model.)

3 Sheets—Sheet 2.

W. F. BULLOCK & W. F. HANSON.
ELEVATOR.

No. 388,627.

Patented Aug. 28, 1888.

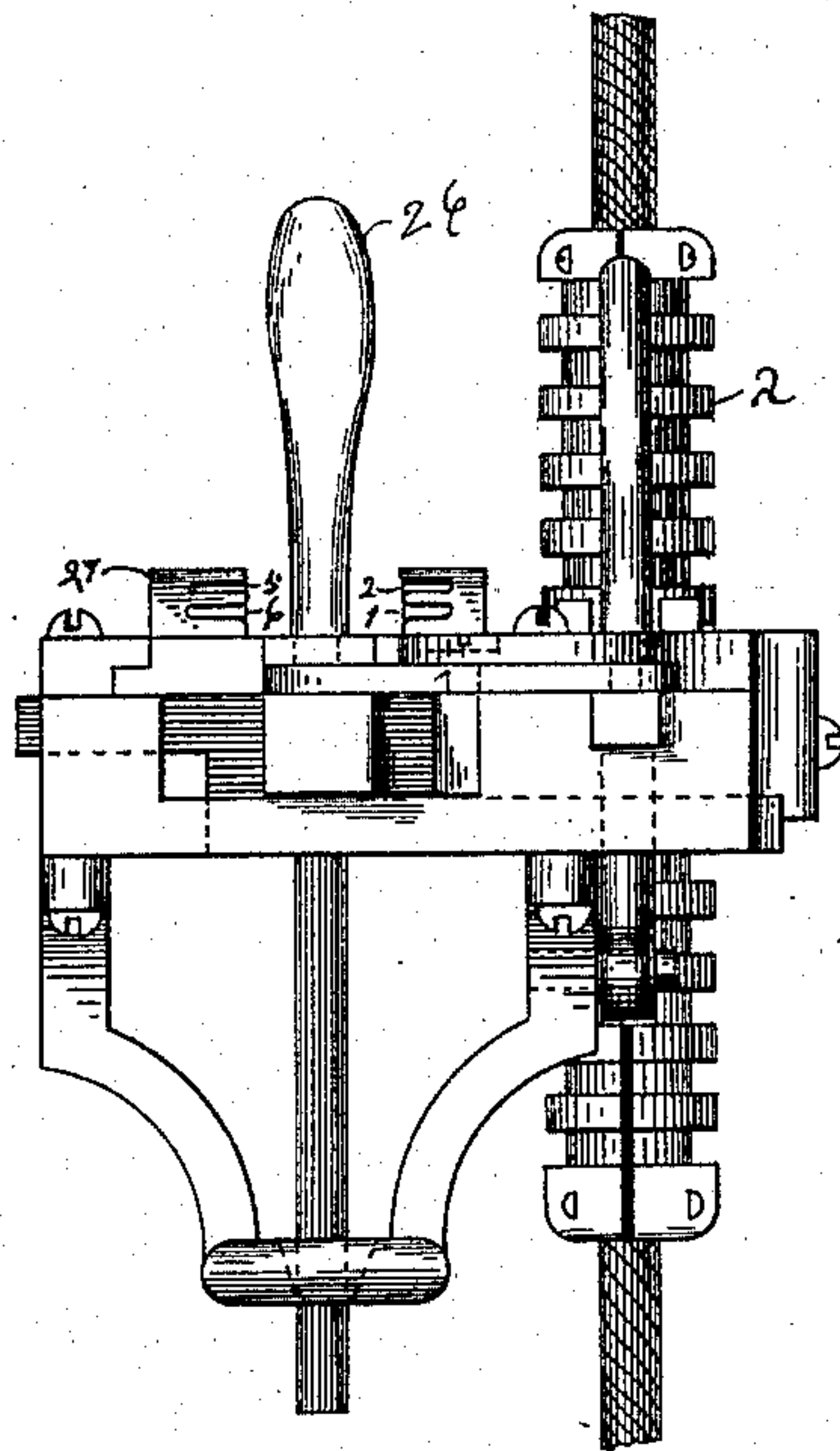


Fig. 3

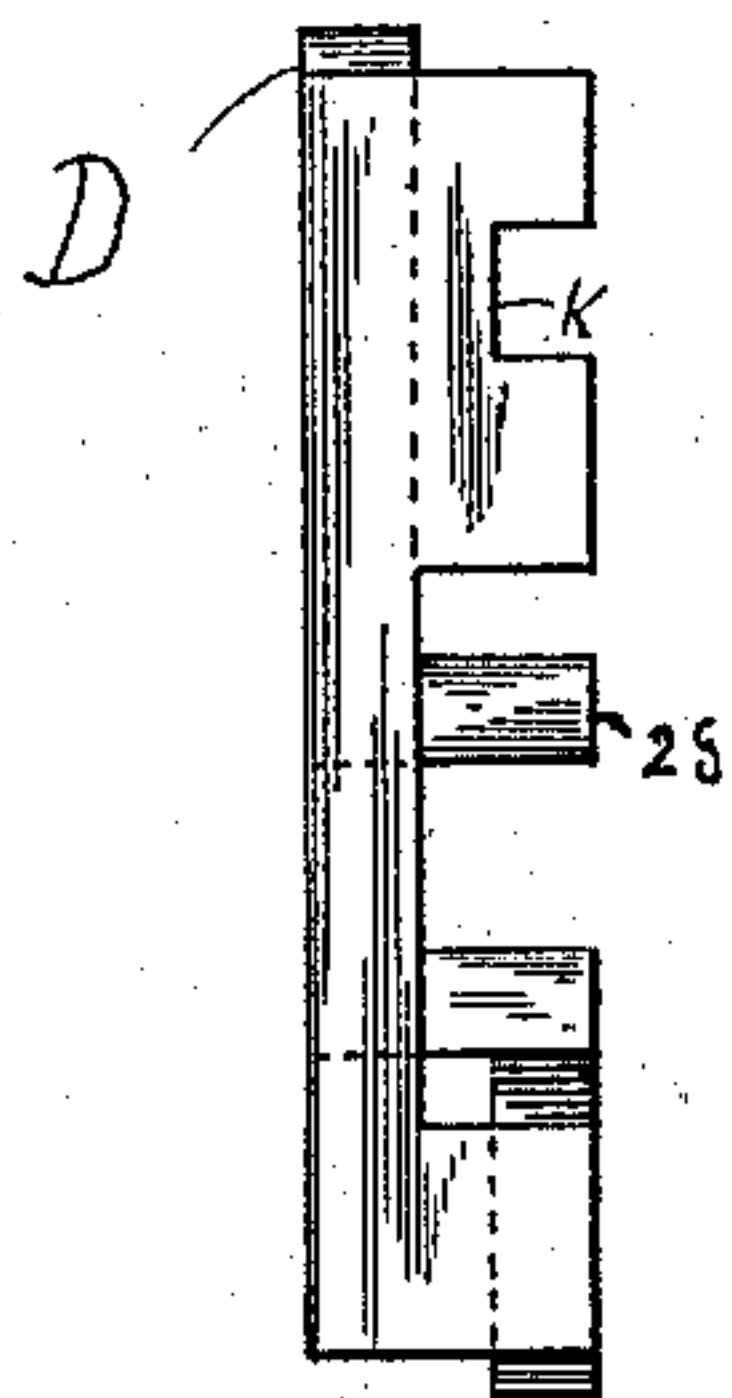


Fig. 4

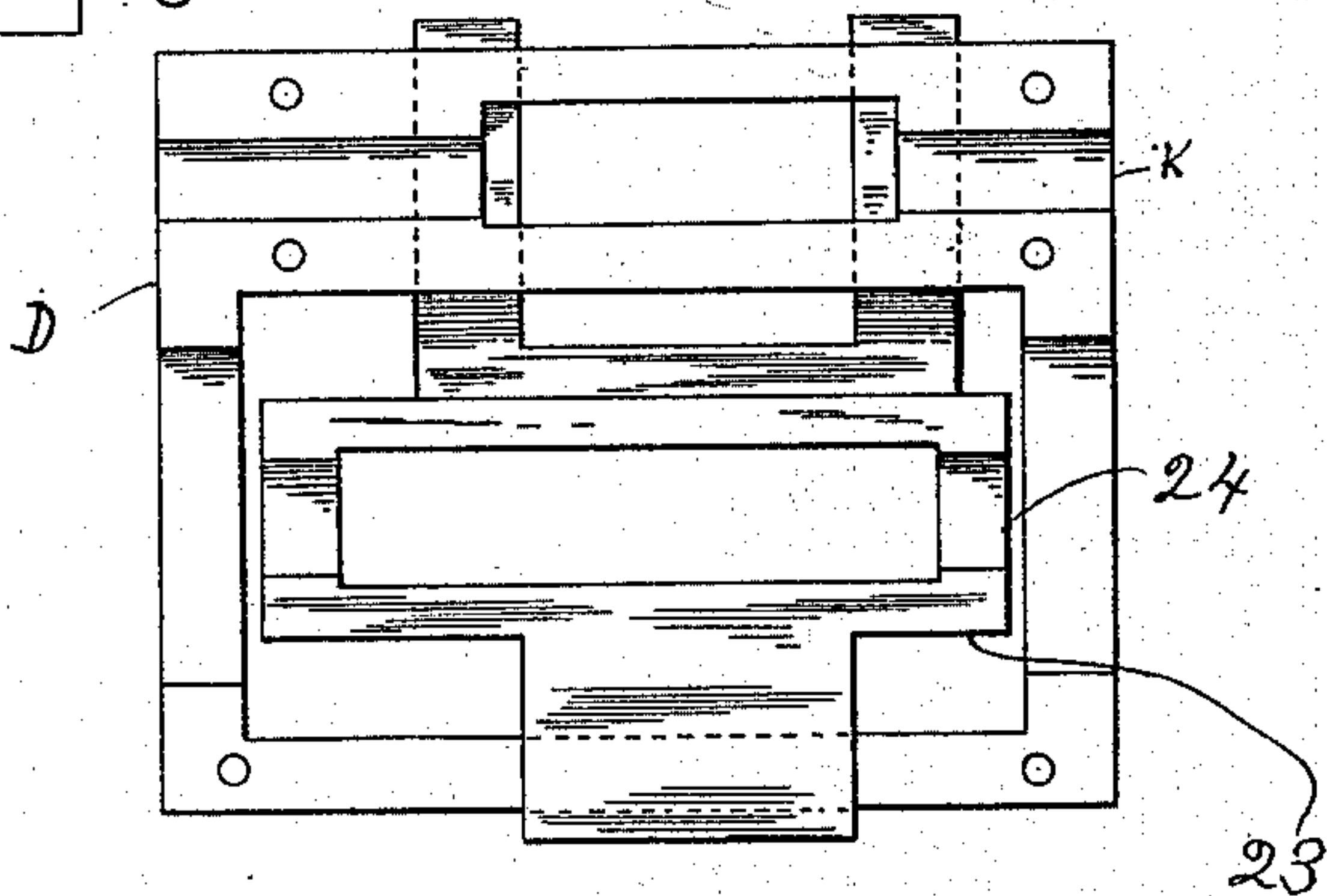


Fig. 5

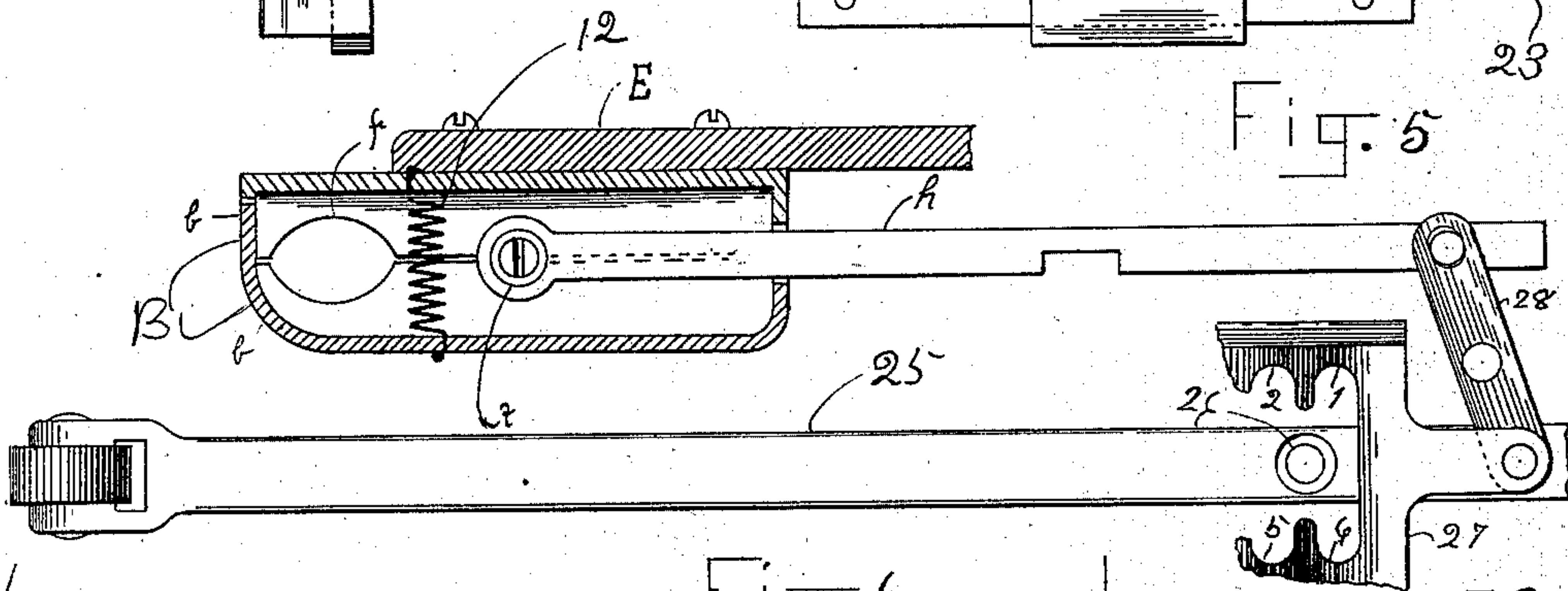


Fig. 6

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(No Model.)

3 Sheets—Sheet 3.

W. F. BULLOCK & W. F. HANSON.
ELEVATOR.

No. 388,627.

Patented Aug. 28, 1888.

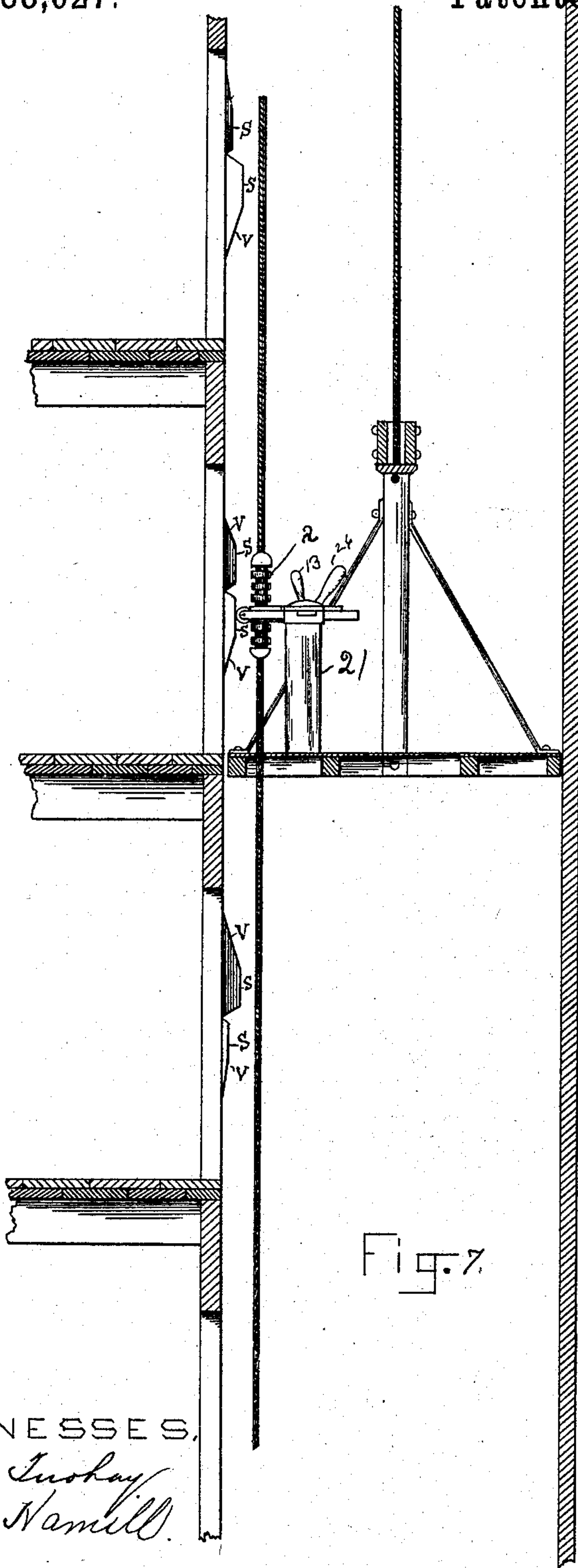


Fig. 7

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UNITED STATES PATENT OFFICE.

WILLIAM F. BULLOCK AND WILLIAM F. HANSON, OF LYNN, MASSACHUSETTS.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 388,627, dated August 28, 1888.

Application filed September 3, 1887. Serial No. 248,665. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM F. BULLOCK and WILLIAM F. HANSON, both of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented certain Improvements in Elevators, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to elevators, and the nature thereof will be fully described hereinafter, and specially pointed out in the claims.

Referring to the drawings, Figure 1 is a plan view of our invention. Fig. 2 is a side elevation thereof. Fig. 3 is an end elevation thereof. Figs. 4, 5, and 6 are details further described hereinafter. Fig. 7 is a side elevation and illustrates the invention in practical use.

It is the object of this invention to provide a device that may be attached to and carried by an ordinary elevator-carriage, and that may be operated by a person riding on the elevator and caused to lay hold of the shipper-cord for stopping the elevator, and that may be set in position while the elevator is at any one room of the building, and caused to automatically lay hold of the shipper-cord and stop the elevator when it arrives at any other predetermined room of the building. To this end we combine spools *a* with the shipper-cord. Said spools are securely fastened to the cord, one at each place where it is intended for the elevator-carriage to be stopped, and the outer surface of the spool is corrugated, substantially as shown, to better adapt it to be engaged by the clutch B.

The clutch B is composed of two (2) jaws, *b b*, which are made with an opening, *f*, to receive the shipper-cord, as shown. The jaws are hinged together by a rivet, C, and one of the jaws is fixed relatively to the frame-plate D by means of the connecting-piece E, to which the jaw is attached, the outer jaw being left free to turn on its hinge or joint, and may be opened or closed for releasing or grasping the spool *a*. The opening of the jaws is effected by means of the rod *h*, which for this purpose carries on its end the anti-friction roll *t*, that operates on the straight face *e* of one jaw and against the inclined face *n* of the other jaw, and obviously a rearward move-

ment of the rod *h* will force the jaws apart and thereby release the spool. The jaws are forced apart against the tension of the spring 12, so that when the power which draws back the rod *h* is removed the spring, operating upon the rod through the inclined faces of the jaw, will draw the rod *h* forward and bring the jaws together for engaging the spool. When the rod *h* is drawn back to open the jaws, the roll *t* may be allowed to enter the recess 10, and the tension of the spring 12 will not then affect the forward movement of the rod, and the jaws will not close until some external force is applied to the rod *h* and it is carried forward, bringing the roll out of the recess 10 and upon the inclined face of the jaw. While the jaws are thus opened the elevator-carriage can pass up and down and the spools *a* will pass freely between the jaws of the clutch.

From the foregoing it will be understood that in order to stop the elevator it is necessary, first, to apply some external force and start forward the rod *h*, and thereby allow the clutch to close upon the spool. This power and forward movement of the rod may be effected at any time by the person on the elevator-carriage, and to this end the rod is provided with a suitable handle, 13; but when there is no person on the elevator-carriage it is still necessary to apply external force in order to stop the elevator, and we now proceed to describe the mechanism which we have devised and made use of for such purpose.

We provide a frame-work, D, (see Fig. 5,) and arrange therein a suitable groove, *k*, for the rod *h* to slide in. This frame-work is secured to the elevator-carriage by an intermediate post, 21, as shown, or otherwise, so that the shipper-cord will pass through the jaws of the clutch. (See Fig. 7.) Said frame D is also provided with a movable slide, 23, which in turn is provided with a groove, 24, to receive the rod or bar 25. Said bar 25 is provided with the handle 26, that projects upwardly through an opening in the indicator 27. The indicator 27 has on each side a series of notches or recesses corresponding to the number of places at which the elevator-carriage is intended to stop, and these recesses are numbered 1 2 3 4, &c., to corre-

spond with the numbers of the stopping-stations. The recesses on one side are used while the carriage moves upward, and those on the other side are used while the carriage moves downward. The handle 26 may be seized and moved forward or backward into line with any particular recess, the bar 25 being for this purpose arranged to permit endwise movement in its bearings. The handle 26 may also be moved laterally in either direction and set into any particular recess, the slide 23 being for this purpose arranged to permit movement on the frame D and carry the bar 25 in either direction laterally. The indicator-plate 27 is connected to the rod *h* by a link, 28, and the indicator is also arranged to slide in suitable ways on the frame D and permits being moved endwise in either direction. The movement of the indicator-plate is transmitted through the link 28 to the rod *h*, and consequently the endwise movement of the indicator-plate operates to open or close the jaws of the clutch in a manner quite obvious.

Attached to the building on the side of the elevator-well are cams S, consisting of short inclined planes, as shown. These cams are arranged in two (2) vertical parallel lines, and each line contains a cam for each place where the elevator is intended to be stopped. The cams in one series have their faces all inclined in one (1) direction, while those in the other line have their faces inclined in the other direction. One (1) series of cams is designed for use when the elevator-carriage travels upward, and the other series is for use when the elevator-carriage travels downward. The arrangement and forward projection of the cams is made with due regard to the relative positions of the corresponding recesses in the indicator 27, and so that if the handle 26 is set into any particular recess of the indicator, and the elevator is then set moving in the appropriate direction, it will continue moving until it arrives at the cam whose number and series correspond with the number and series of the recess, and this cam will then engage

the end of the rod 25, and as the carriage moves onward the rod 25 will be forced backward by the cam, and will carry with it the indicator-plate 27. This motion of the indicator is transmitted through link 28 to rod *h*, and the clutch is made to grasp the spool *a*, and any further movement of the elevator operates to draw the shipper-cord and stop the elevator. To this end each cam in either series is set forward so as to engage the rod 25 after it has escaped all preceding cams in that series.

If it is desired to run the elevator up and down without using this mechanism in any way, then it is only necessary to position the handle 26 in the center of the indicator-slot, as with the handle in this position the bar 25 will travel between the two (2) lines of cams, and the whole mechanism which constitutes this invention will be practically out of use.

We claim and desire by Letters Patent to secure—

1. The combination of the rod 25, the indicator 27, each adapted to be moved independent of the other, an operating-lever for locking the rod *h* and indicator together, cams S on the elevator-well for engaging and moving the rod 25, and a clutch mechanism, in connection with the indicator, adapted to be set in motion by moving the rod 25 and to automatically grasp the shipper-cord, substantially as described.

2. The combination of the movable rod 25 and independently-movable indicator 27, engaging cams S, the connecting-link 28, the rod *h*, and a clutch mechanism, substantially as described.

3. The combination of the rod 25, the frame D, slide 23, and movable indicator 27, substantially as described.

Dated at Lynn this 11th day of June, A. D. 1887.

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