

No. 637,496.

Patented Nov. 21, 1899.

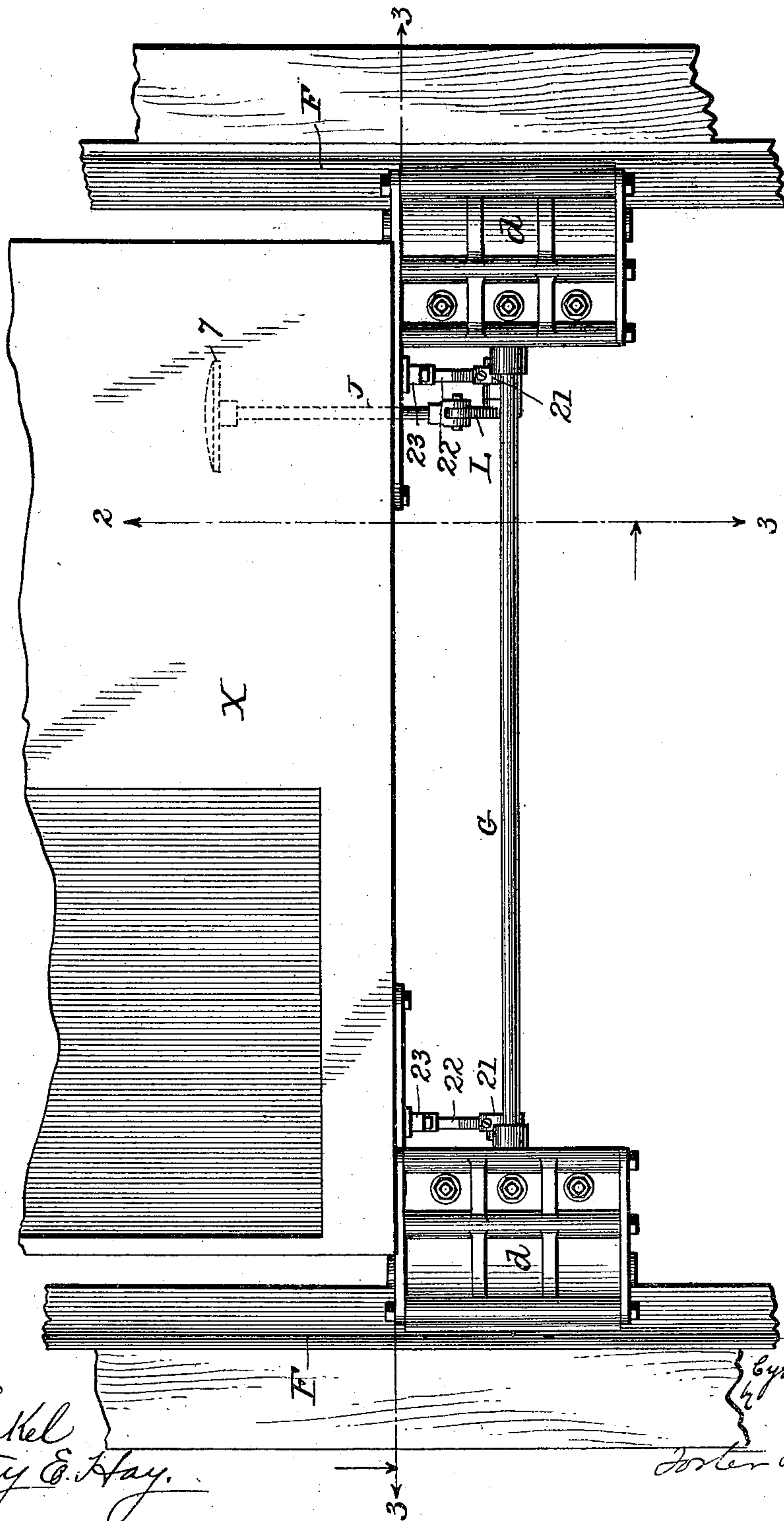
C. W. BALDWIN.
SAFETY DEVICE FOR ELEVATORS.

(Application filed Jan. 28, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



Witnesses
J. Hinkel
Harry E. Hay.

Inventor
Cyrus W. Baldwin
Forster & Freeman
Attorneys

No. 637,496.

Patented Nov. 21, 1899.

C. W. BALDWIN.
SAFETY DEVICE FOR ELEVATORS.

(Application filed Jan. 28, 1898.)

(No Model.)

3 Sheets—Sheet 2.

Fig. 2.

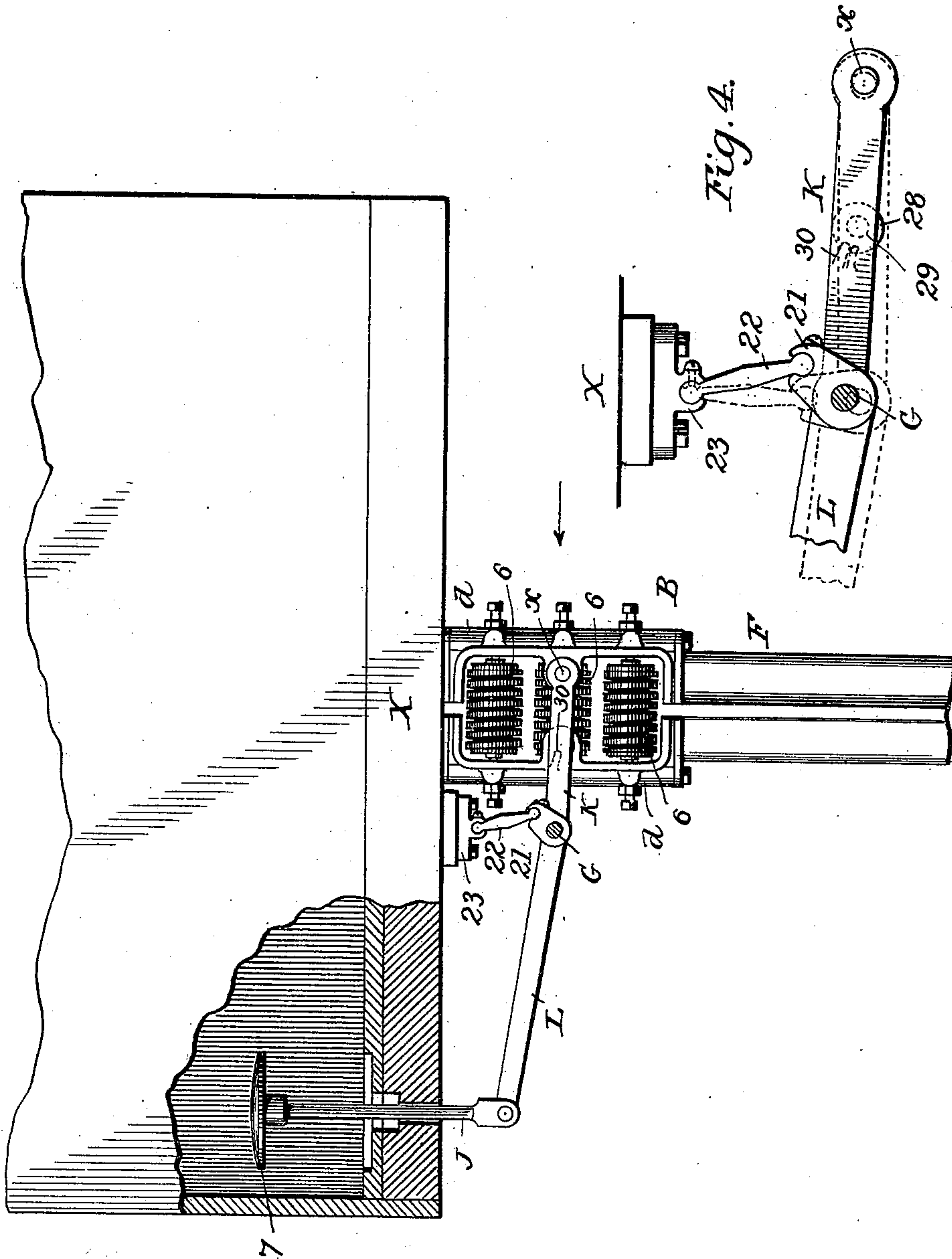
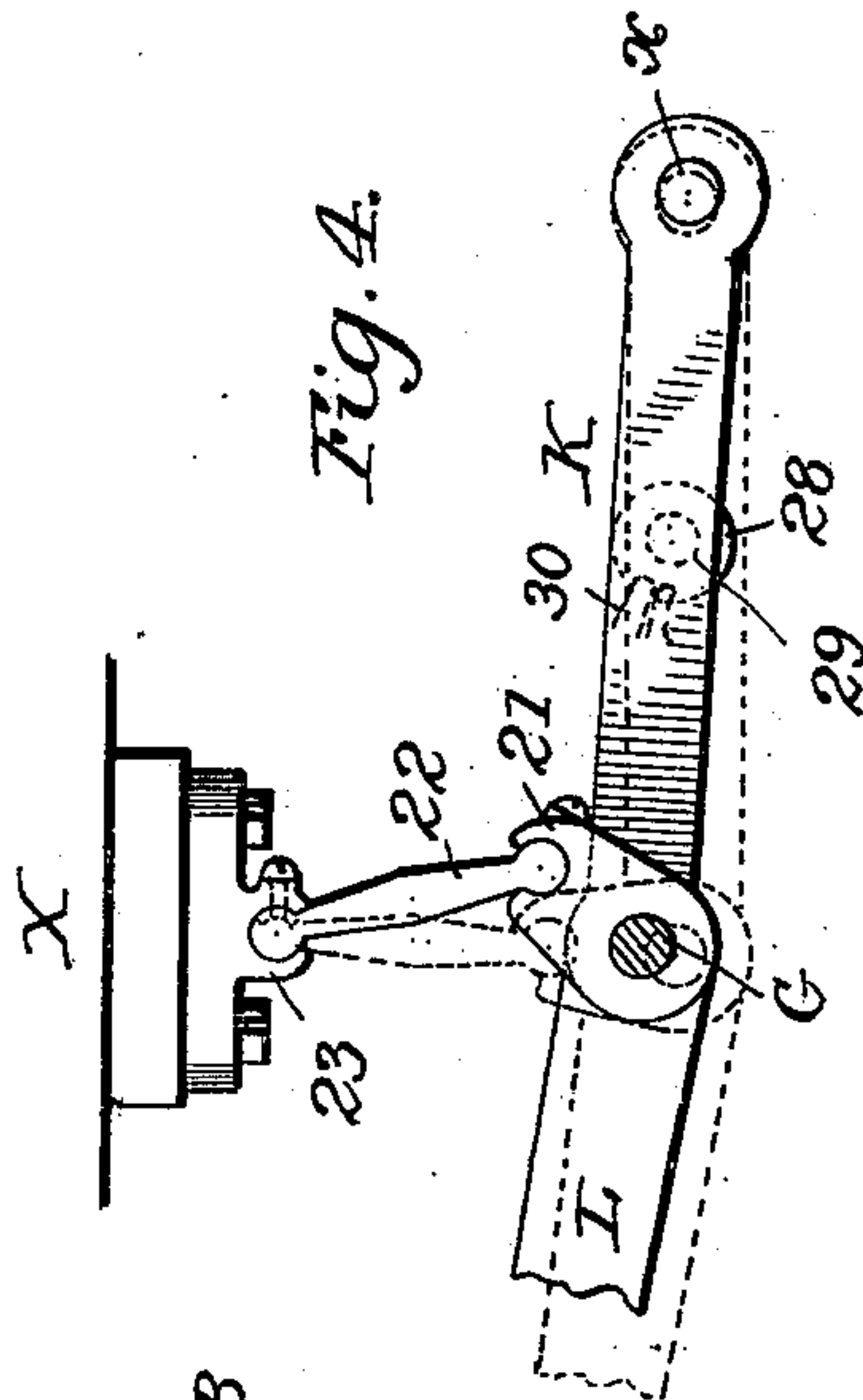


Fig. 4.



Witnesses
J. H. Hinkel
Harry E. Hay.

Inventor
Cyrus H. Baldwin
By Foster & Freeman
Attorneys

No. 637,496.

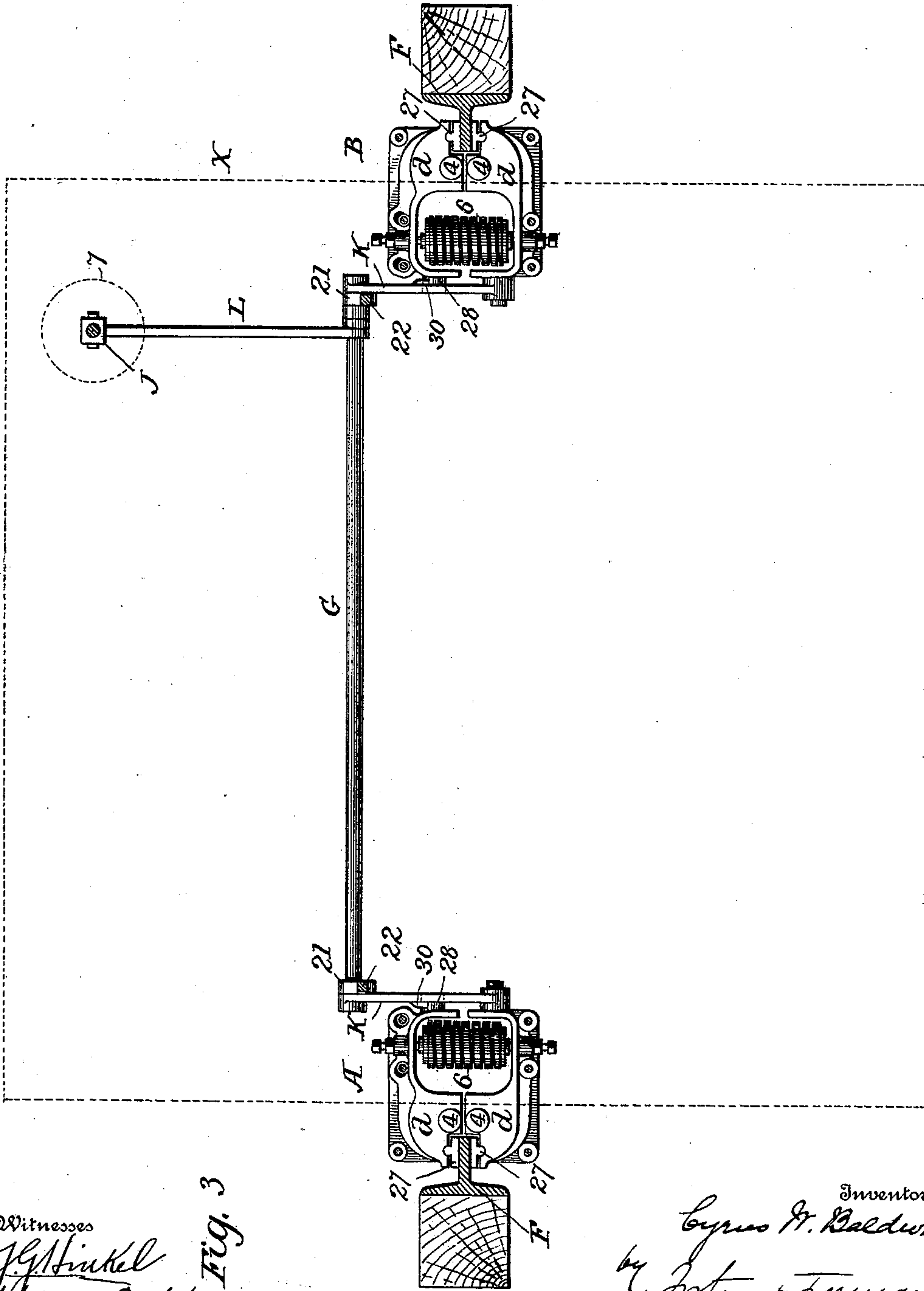
Patented Nov. 21, 1899.

C. W. BALDWIN.
SAFETY DEVICE FOR ELEVATORS.

(Application filed Jan. 28, 1898.)

(No Model.)

3 Sheets—Sheet 3.



Witnesses

J. G. Hinkel
Harry E. Hay.

Fig. 3

Inventor
Cyrus W. Baldwin
by Foster & Freeman
Attorneys

UNITED STATES PATENT OFFICE.

CYRUS W. BALDWIN, OF YONKERS, NEW YORK, ASSIGNOR TO THE NATIONAL COMPANY, OF CHICAGO, ILLINOIS.

SAFETY DEVICE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 637,496, dated November 21, 1899.

Application filed January 28, 1898. Serial No. 668,324. (No model.)

To all whom it may concern:

Be it known that I, CYRUS W. BALDWIN, a citizen of the United States, residing at Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Safety Devices for Elevators, of which the following is a specification.

My invention relates to safety devices for elevators; and it consists in providing the elevator with clamping devices adapted to engage the guides or bars arranged vertically within the well with novel means for controlling the movements of the clamping devices, together with an operating device within the cage, whereby the clamping devices may be unclamped and held in an unclamped position so long as the pressure is applied to the operating device, and in certain features of construction, as fully set forth hereinafter and illustrated in the accompanying drawings, in which—

Figure 1 is a side view of part of an elevator and the guides thereof sufficient to illustrate my invention. Fig. 2 is an end view in part section. Fig. 3 is a plan view in part section. Fig. 4 is a detail view.

The clamping devices are supported by two brackets A B upon or below the cage or platform X, and in the construction shown each clamp has two jaws *d d* pivoted by pivots 4 4 to the brackets, with a series of springs 6 arranged between the inner or long arms of the jaws, so as to clamp the short arms of the jaws against the web of a guide F, extending vertically through the well. In order to secure a broad bearing against the faces of the guide, each jaw is provided with a flat face-plate 27, having a ball-and-socket connection with the jaw, so that the face of this face-plate will always be parallel to the face of the guide whatever may be the position of the jaw.

Normally the action of the springs 6 is such as to cause the jaws to clamp the guide, and as the springs are heavy and powerful the force thus applied to clamp the guide is sufficient to not only hold the cage in position upon the guide, but to arrest its movement and bring it to a stop within a short interval of time after the clamps are applied. This being the normal condition, it is necessary to

provide means whereby the clamps may be opened to permit the cage to traverse the guide without obstruction, and to this end I provide devices whereby the operator can overcome the tension of the springs. Such device may be differently constructed; but, as shown, it may consist of a lever arrangement controlled by a foot-plate 7 within the cage. Instead of a foot-plate a hand-lever or other suitable operating device may be employed; but in any case the arrangement is such that the operator must constantly bear upon the operating device to keep the clamps open, so that in case the operator at any time relieves the pressure upon the said device the clamps will at once close and arrest the movement of the cage.

In the construction of connecting devices shown between the clamps and the operating device in the cage there is a lever K, pivoted at *x* to the inner end of one of the jaws *d* and extending past the rear end of the other jaw, with a projection 30 on the inside having a rounded end entering a transverse socket or groove in a collar 28, turning freely on a pin 29, projecting from the other jaw. Normally when the inner ends of the jaws are separated the parts are so arranged that the end of the projection 30 and the groove which it enters are above a horizontal line passing through the pivot-point *x*, so that as the free end of the lever K is depressed the rear ends of the jaws will be brought toward each other and their other ends will be carried away from the guide.

In order to depress the outer ends of both the levers K simultaneously, a shaft G extends through these ends, turning freely therein, and upon this shaft are two short arms 21, having sockets for the lower ends of links 22, the upper ends of which have sockets in bearing-plates 23, so as to constitute toggle-levers, which when straightened or brought nearly into line by the rocking of the shaft G cause said shaft and the ends of the levers K to be depressed. The rocking of the shaft G is effected in any suitable manner—as, for instance, by means of an arm L, extending from the shaft and connected to the lower end of a rod J, to the upper end of which the foot-plate 7 is connected, so that

the operator by bearing with his foot upon the plate 7 and depressing the same can bring the toggle-levers into line, depress the levers K, and thereby bring the inner ends of the clamp-jaws together and remove the clamps from the guides. At once upon releasing pressure upon the plate 7 the springs 6 separate the inner jaws of the clamp and bring the outer jaws to bear against the guide, so as to clamp the same and arrest the cage and hold it in place.

While I have illustrated certain forms of springs, it will be evident that rubber or other springs may be substituted in some instances or that any equivalent means may be employed for normally spreading apart the inner ends of the clamps or jaws, and it will also be evident that one of the jaws, if desired, may be in a fixed position on the cage, the other jaw being pivoted, and that different connections may be interposed between the operating device within the cage and the jaws.

While I have shown a foot-plate as the operating device within the cage and levers connecting the same with the clamping devices, the same result may be otherwise secured.

Without limiting myself, therefore, to the precise construction and arrangement of parts shown, I claim as my invention—

1. The combination with clamping-jaws

pivoted to a cage and the springs, of levers K each pivoted to one jaw and having a bearing on a projection of the other jaw arranged to bring the ends of the jaws together as the levers are depressed and means for moving the levers from within the cage, substantially as set forth.

2. The combination of the clamping devices and levers K, toggles interposed between fixed bearings and the ends of the levers K, and means for operating the toggles from within the cage, substantially as set forth.

3. The combination of the clamping devices, levers K, rock-shaft carried by the levers, toggle-arms 21 on the rock-shaft, and toggle-bars 22, and means for rocking the shaft from within the cage, substantially as set forth.

4. The combination of the clamping-jaws, levers K, pivoted each to one of the jaws, a loose notched sleeve upon the other jaw, and a projection on each lever entering the notch of the adjacent sleeve, substantially as set forth.

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

CYRUS W. BALDWIN.

Witnesses:

GUY R. STEPHENS,
ABRAM E. SCHULTZ.