

(No Model.)

F. W. JANDELL.
SAFETY ATTACHMENT FOR ELEVATORS.

No. 521,589.

Patented June 19, 1894.

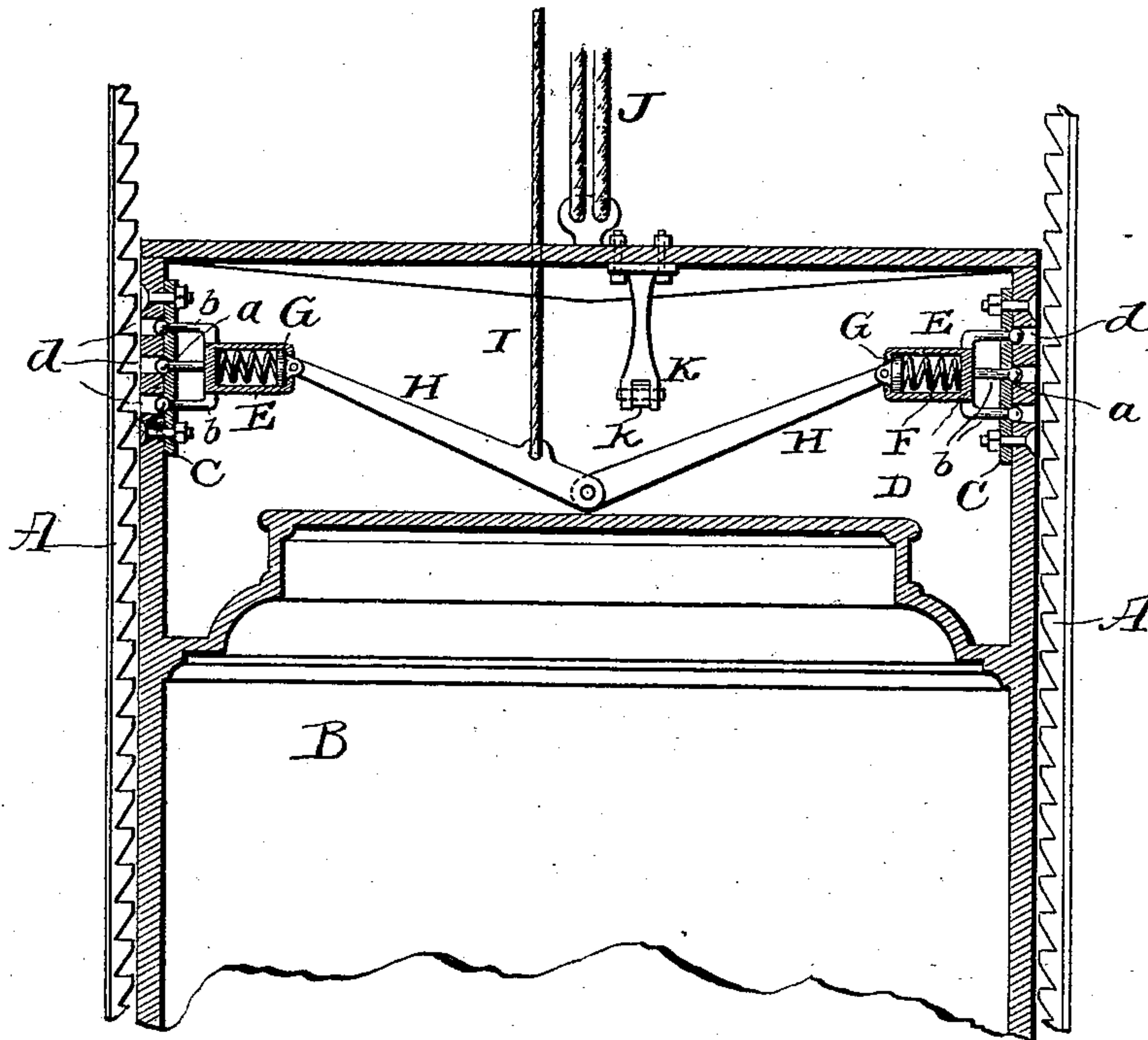


FIG. 1.

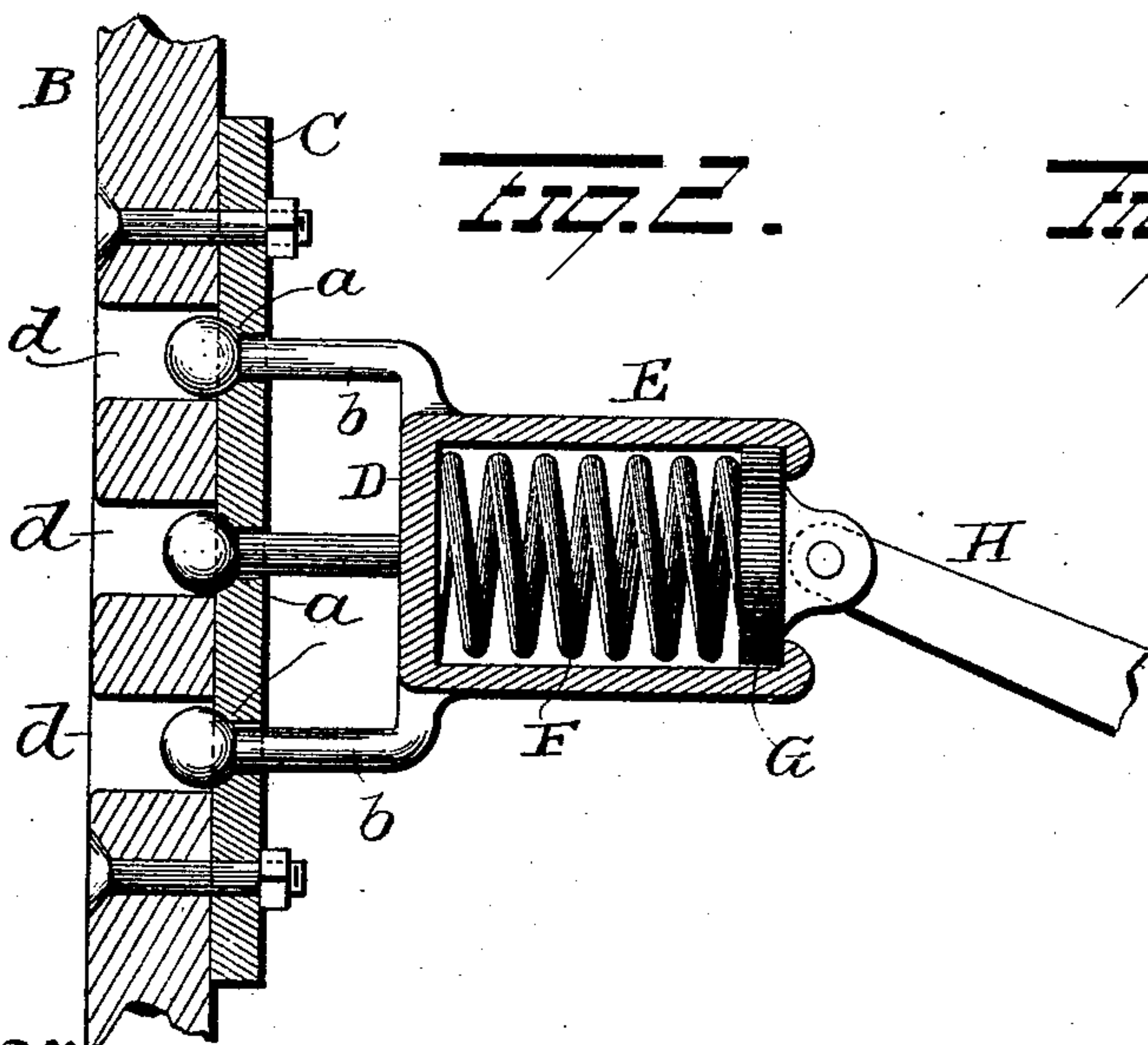
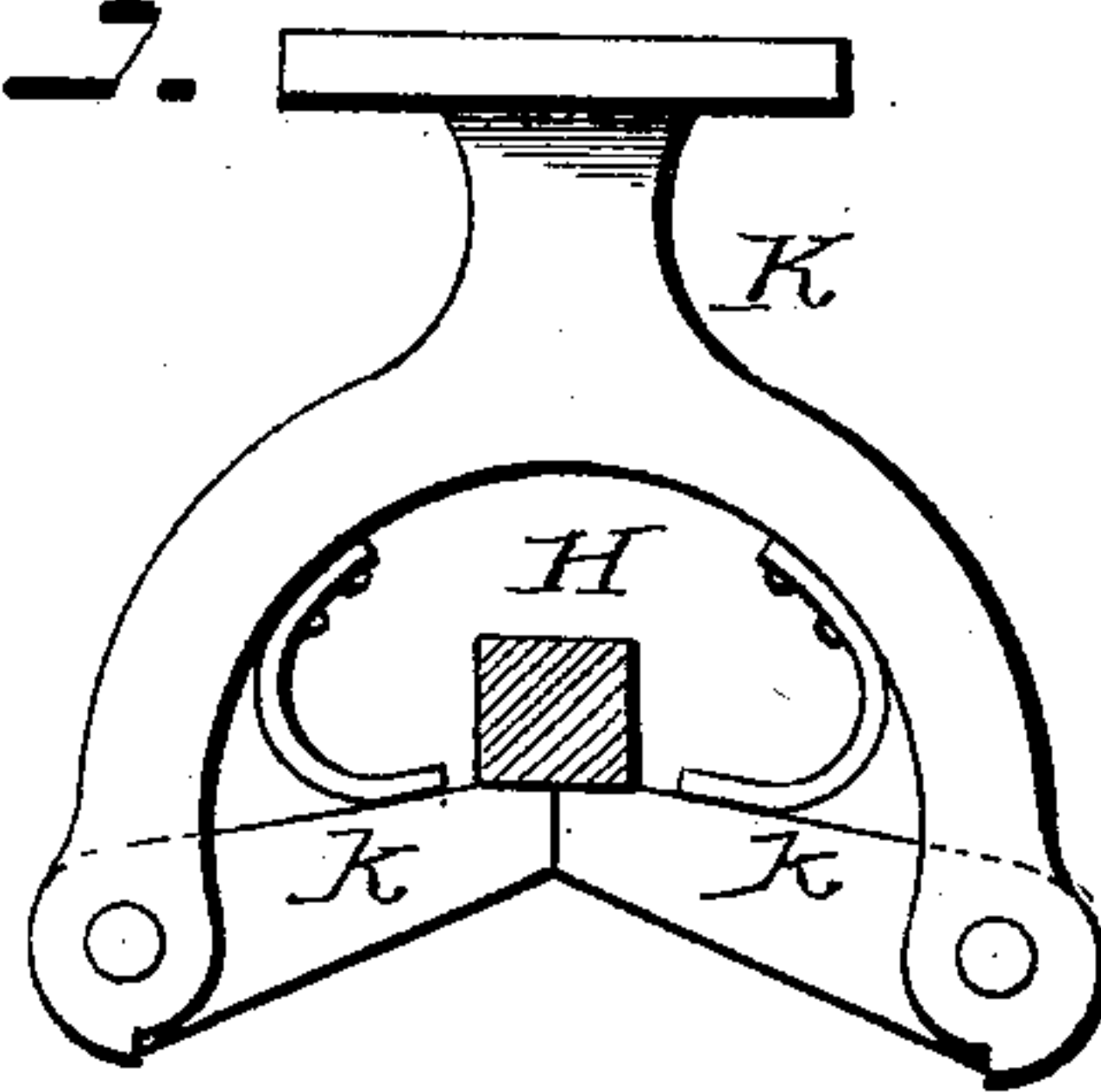


FIG. 2.

FIG. 3.



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SAFETY ATTACHMENT FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 521,589, dated June 19, 1894.

Application filed April 17, 1894. Serial No. 507,885. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. JANDELL, of Mapleton, in the county of Cass and State of North Dakota, have invented certain new and
5 useful Improvements in Safety Attachments for Elevators; 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 appertains to
10 make and use the same.

My invention relates to an improvement in safety attachments for elevators, the object being to provide a device capable of being attached to the ordinary passenger and freight
15 elevators, and adapted to be operated by the weight of the car being transferred from the ordinary hoisting cables or ropes, to a safety rope attached to the safety attachment.

My invention consists in the parts and combinations of parts as will be more fully explained and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of a section of an elevator embodying my invention. Fig. 2 is a
25 view of one of the devices detached, and Fig. 3 is a view of one form of device for holding the levers elevated.

A represents the rack bars bolted to guides, not shown, and extending approximately
30 throughout the length of the guides, and B is the car. While the device can be attached to any make of car, I prefer cars having a compartment or space between the ceiling and roof, and locate the safety devices in such
35 compartment as shown, but the safety attachment can be located below the ceiling or above the ceiling as desired, or as necessity demands.

As the safety devices on the two sides are
40 alike a description of one will suffice for both.

C is a plate provided with one or more, (in the present instance three) holes *a*, for the passage of the catches *b*. These catches or bolts *b* are integral with the plate D, and pass
45 through the holes *a* in plate C, the ends of said bolts or catches being enlarged for preventing the complete withdrawal of the bolts *b*, from plate C. The plate C is secured by bolts or otherwise to the side of the car B,
50 and the latter is provided with openings *d* registering with the holes in plate C for the passage of the ends of the bolts *b*. The bolts

or catches are preferably located a distance apart equal to the length of a tooth of the rack bar, so that when the bolts or catches
55 are operated each will rest on a tooth, thus throwing the weight of the car and its load on the series of teeth or catches and not on any one of them.

Projecting inwardly from the plate D is the
60 sleeve or cylinder E carrying the spiral or other spring F, which latter forms a yielding abutment for the plunger G, which is located within the sleeve or cylinder E, and is locked therein against outward displacement by any suitable
65 means. This plunger G is connected by a hinge joint with the lever H which latter projects inwardly toward the vertical center of the car and is connected by hinge or other loose joint to the inner end of the other lever H, which
70 leads from a similar safety attachment located diametrically opposite the one described. The levers H when in their normal positions rest with their meeting ends considerably below the level of the sleeves D, as shown, and
75 are connected near their meeting ends to the lower end of the safety rope I. This safety rope passes up alongside of the hoisting ropes J, and may lead to the drum, weights, or other device which actuates the hoisting ropes. By
80 this arrangement it will be seen that should the hoisting rope or ropes break, the weight of the car will be transferred to the safety rope, (which under ordinary conditions runs slack,) and operates to elevate the meeting
85 ends of the levers H, and each lever taking a bearing against the other is caused to move endwise and force its connected plunger outwardly, and the springs acting against the plates D cause the latter to move out-
90 wardly, thus carrying the bolts or catches into engagement with the teeth of the rack bars. By locating springs between the plungers G and the plates D, the levers H are free to move to a horizontal position, without nec-
95 essarily moving the bolts or catches their full throw, thus if the bolts in moving should engage the extreme inner edges of the teeth, instead of wedging the parts, the springs would simply be compressed and as the bolts moved
100 downwardly they would be forced out by the springs and engage the teeth next below them.

The safety rope I would hardly be of suffi-

cient strength to sustain the weight of the car and would probably be broken by the strain thereof after elevating the levers, and hence to prevent the levers from falling and thus withdrawing the bolts, I have provided the lock K, which consists simply of an inverted U-shaped bracket suspended from the roof of the car or other convenient part above the levers H, and provided with the spring tongues *k*, which latter open upwardly. Thus when the levers H are elevated by the safety rope, one of them enters between the members of the inverted U-shaped bracket K and elevates the spring tongues *k*, which latter fall to their normal positions with their ends against each other, as shown in Fig. 3, as soon as the lever passes them, and lock the lever in a horizontal position. After the ropes have been repaired this lever is released, and the weight of the levers operates to withdraw the bolts.

If desired I can employ guides K located on opposite sides of one or both of the levers H, for preventing any swinging motion of the levers and to cause them to move in a vertical plane while shooting the bolts.

From the above construction it will be seen that should the bolt or bolts on one side of the elevator, become wedged from any cause whatever, and refuse to work, the strain or pressure of the two levers would then be transmitted to the device on the other side, and as the safety devices on one side are usually sufficient to sustain the weight of a car, it will be seen that with this device all danger of accident is avoided so long as one of the attachments is in working order.

It is evident that many slight changes might be resorted to in the relative arrangement of parts herein shown and described without departing from the spirit and scope of my invention, hence I would have it understood that I do not care to limit myself to the exact construction of parts herein shown, but,

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

1. In a safety attachment for elevators, the combination with a car, a movable bolt adapted to pass through the side thereof, a spring bearing at one end against the base of the

bolt and a movable plunger bearing against the other end of the spring, of an inclined lever attached at one end to the plunger, a safety rope attached to the lower end of the lever and means for moving said lever in the direction of its length when its lower end is moved vertically by the safety rope, substantially as set forth.

2. The combination with bolts located on opposite sides of an elevator, springs bearing against said bolts, and a movable plunger behind each spring, of a lever connected to each plunger, the two levers being connected at their inner ends, and a safety rope attached to one of said levers, substantially as set forth.

3. The combination with bolts located on opposite sides of an elevator, a sleeve carried by each set of bolts, a spring in each sleeve and a plunger bearing against each spring, of a lever connected to each plunger the two levers being connected at their inner ends and a safety rope attached to one of said levers, substantially as set forth.

4. The combination with bolts located on opposite sides of an elevator, a sleeve carried by each set of bolts, a spring in each sleeve and a plunger bearing against each spring, of a lever connected to each plunger, the two levers being connected at their inner ends, a safety rope attached to one of said levers, and a lock for holding the levers elevated after they have been raised by the safety rope, substantially as set forth.

5. The combination with plates C having holes therein and adapted to be secured to an elevator car, plates D each having a series of bolts passing through the holes of its respective plate C, a sleeve on the inner face of each plate D, a spring in each sleeve and a plunger bearing against each spring, of the levers connected to the plungers and to each other and safety rope for raising the levers to approximately horizontal positions, substantially as set forth.

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

FRANK W. JANDELL.

Witnesses:

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