

(No Model.)

A. T. BROWN.  
CONTROLLING DEVICE FOR ELEVATORS.

No. 512,677.

Patented Jan. 16, 1894.

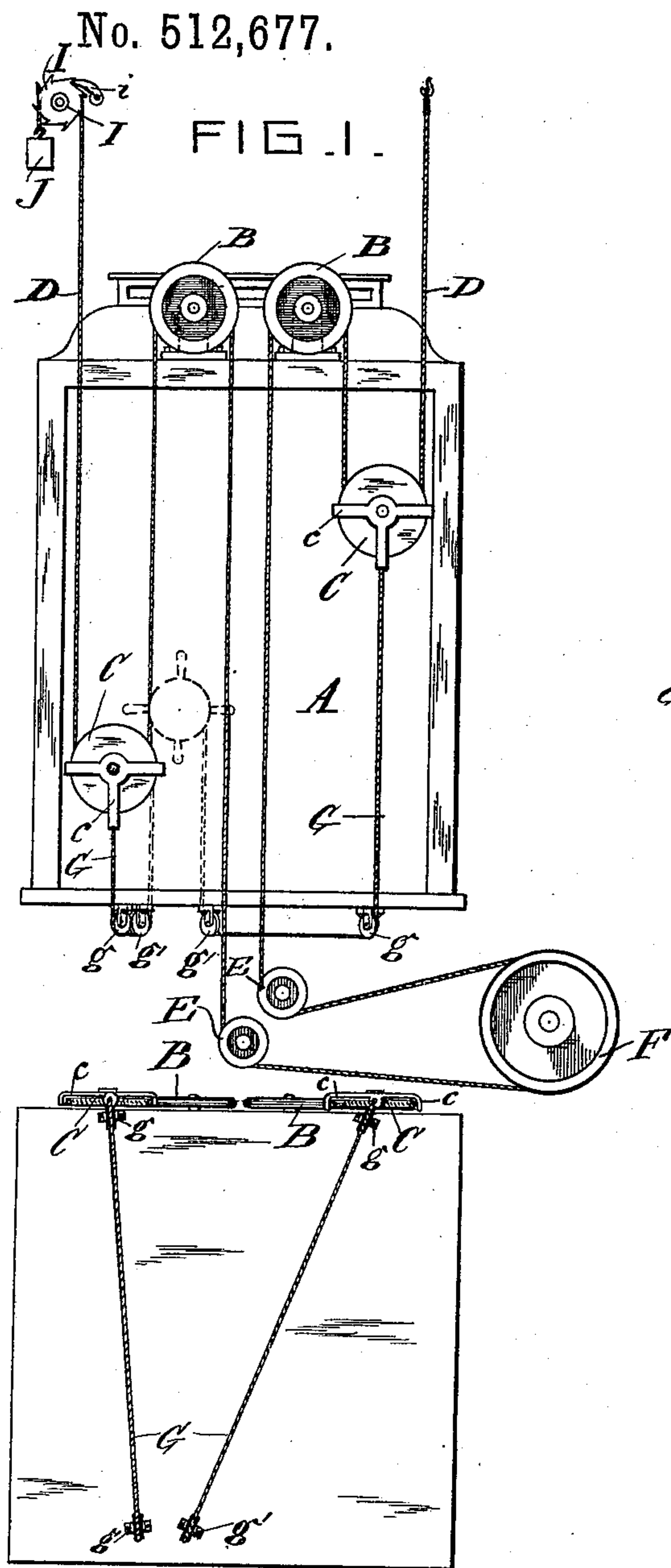


FIG. 2.



FIG. 3.

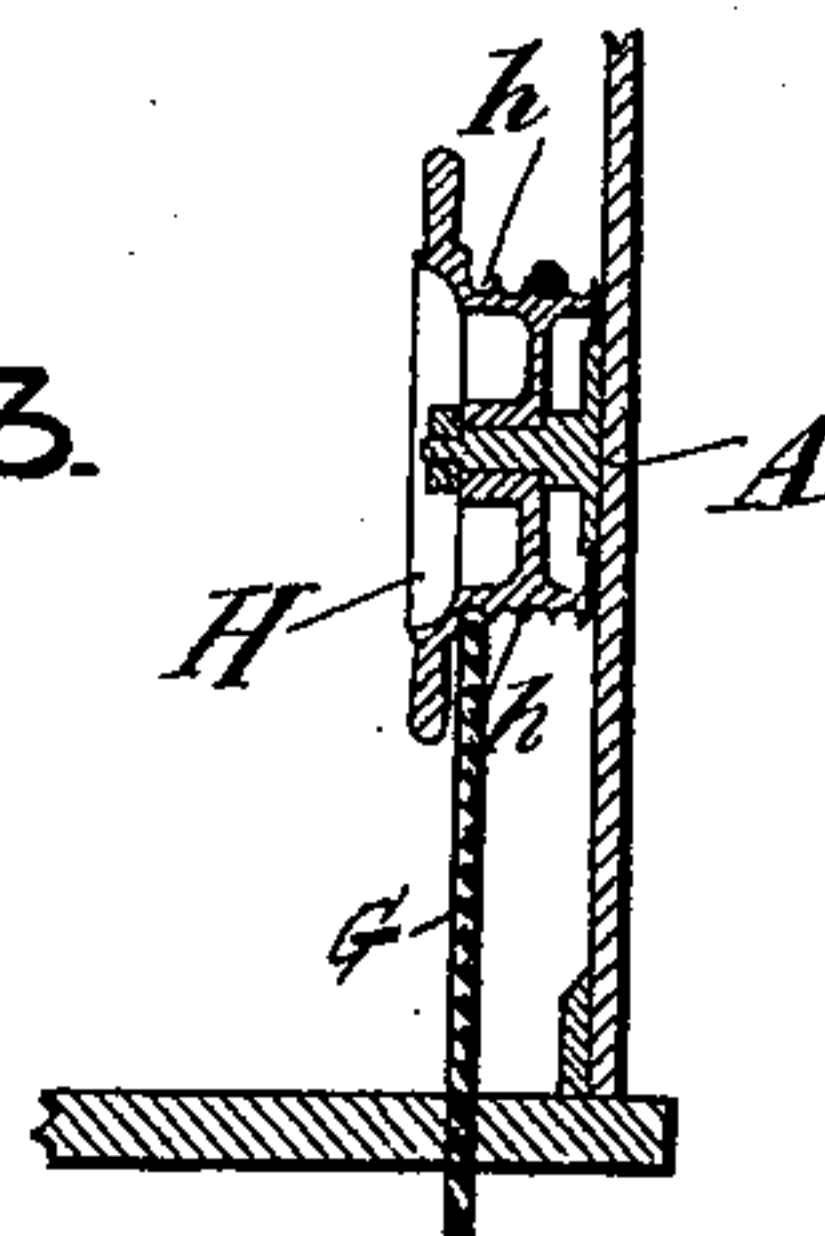


FIG. 4.

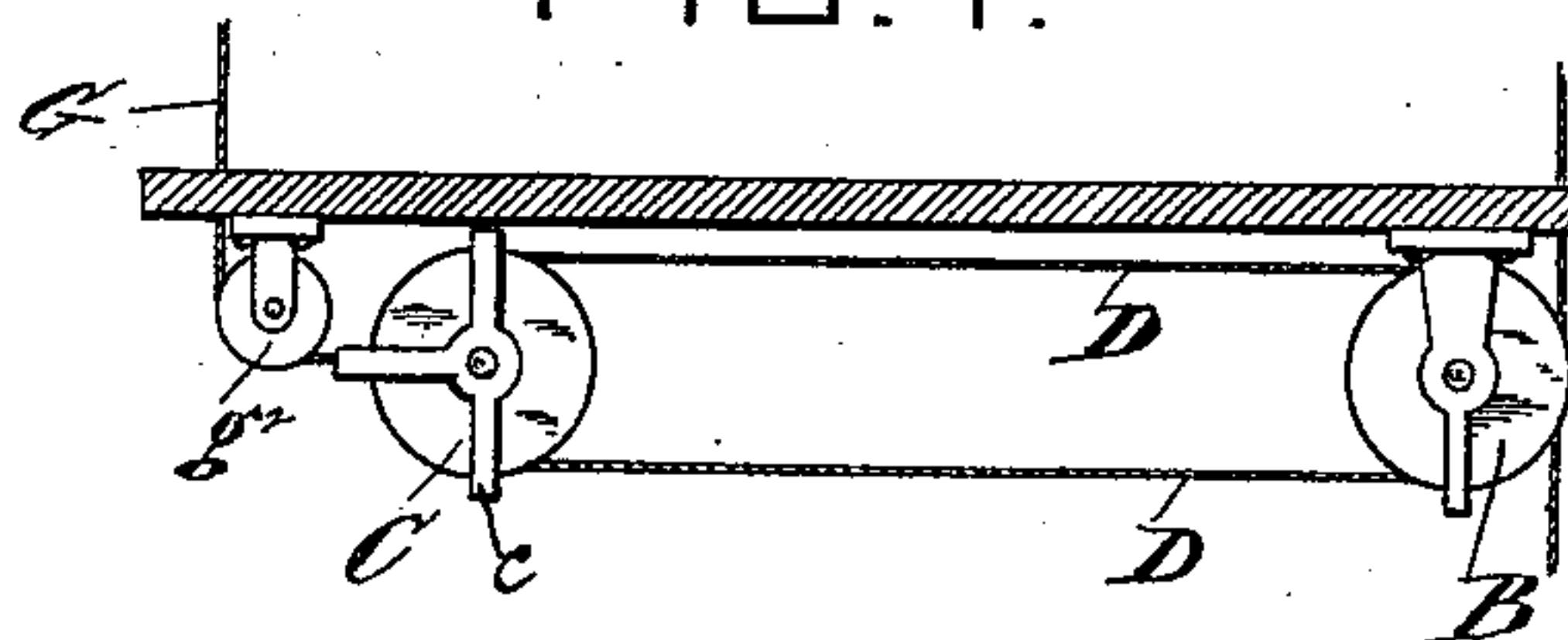


FIG. 5.

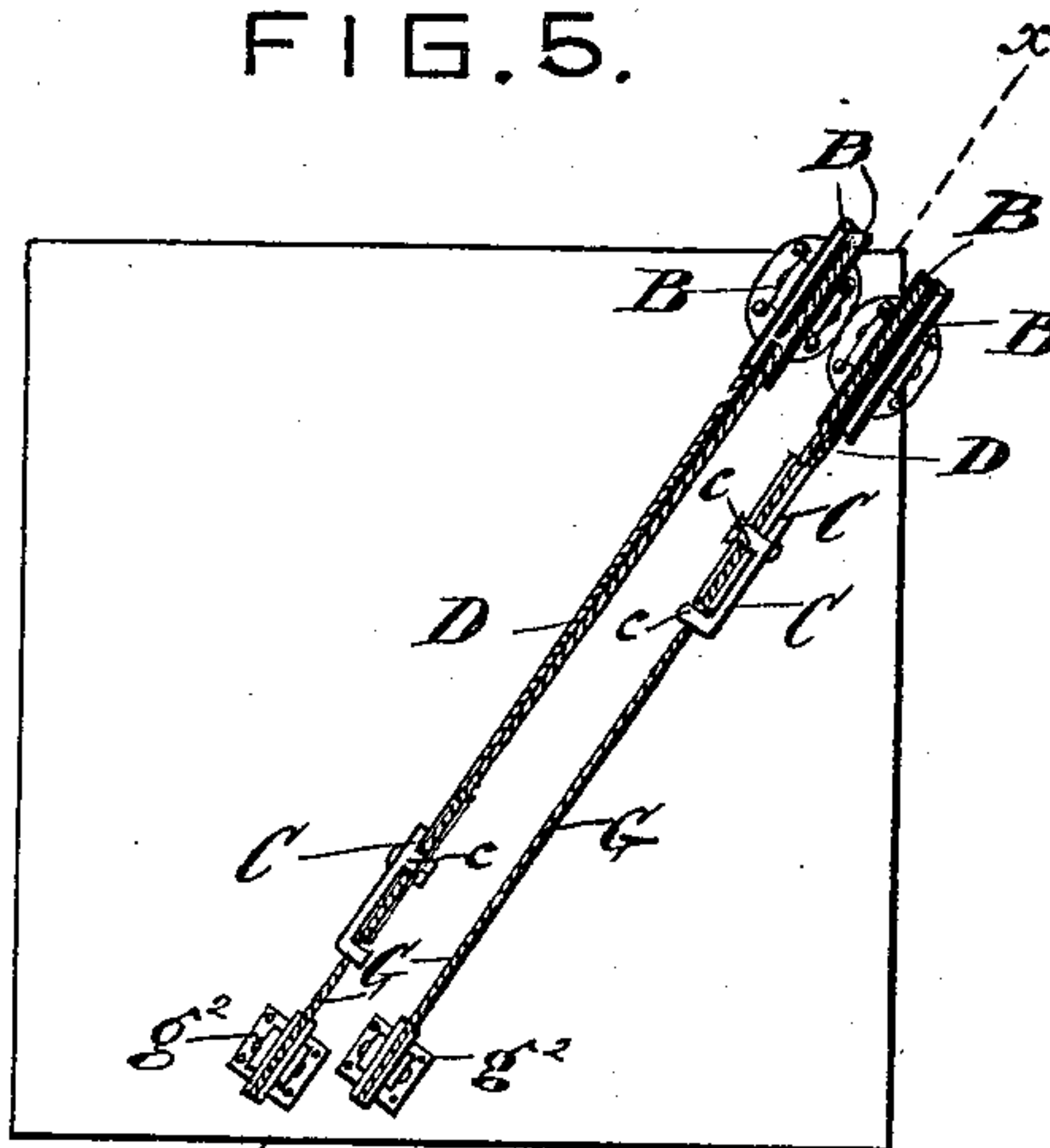
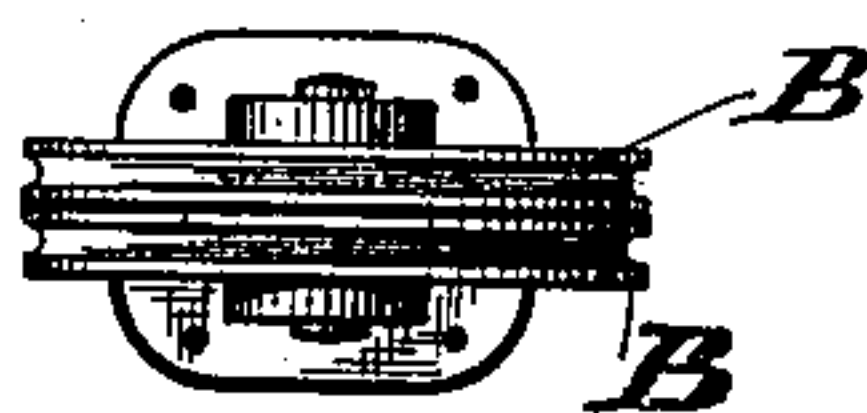


FIG. 6.



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# UNITED STATES PATENT OFFICE.

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## CONTROLLING DEVICE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 512,677, dated January 16, 1894.

Application filed September 28, 1893. Serial No. 486,651. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED T. BROWN, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Controlling Devices for Elevators, of which the following is a specification.

The object of my invention is to provide a controlling device for elevators, whereby the active sheaves may be placed in any convenient position about the cab within the hatchway or shaft, and have their frames or bearings disconnected from the cab or motor mechanism, whereby they may have a greatly increased movement and also permit the use of large sheaves, thereby diminishing the wear upon the shipper ropes.

In controlling devices of the character to which my invention relates, the shipper ropes have usually been passed over movable sheaves supported in bearings connected to the cab or some part of the motor controlling mechanism, which arrangement admits of only a limited play of the active sheave or sheaves, while in my device the active sheaves are mounted in frames or bearings which are in no manner fixed to the cab or motor controlling mechanism, and may therefore be moved as far as desired.

The invention will be fully understood from the description of the accompanying drawings, in which—

Figure 1 is a side elevation of a cab having my controlling device attached. Fig. 2 is an inverted plan view of the cab. Fig. 3 is a detailed view in vertical section, taken axially through the pilot wheel, which is inside of the cab and shown in dotted lines, Fig. 1. Fig. 4 is a detailed view in vertical section through the bottom of the cab. In this view the fixed and movable sheaves are arranged underneath the cab, and the view is taken on line *xx* of Fig. 5. Fig. 5 is an inverted plan view of the arrangement shown in Fig. 4. Fig. 6 is a detailed plan view of a sheave.

Referring to the parts, which are indicated by similar reference letters wherever they occur throughout the various views, A represents the cab, B the fixed idle sheaves mounted in suitable bearings, which are secured to

the top of the cab as shown in Figs. 1 and 2, and to the bottom of the cab, as shown in Figs. 4 and 5, and C are the movable sheaves mounted in frames or hangers *c*, the cross arms of which extend over the edges of the sheaves C to retain the shipper ropes D in place on the movable sheaves.

When the controlling device is arranged at the side of the cab, as shown in Figs. 1 and 2, the shipper ropes D, which have their upper ends secured to the upper cross timbers of the well (not shown), pass down under the movable sheaves C, thence up over the fixed idle sheaves B, and thence down to the valve gear or other motor controlling mechanism. In the present instance, the ropes pass under guide pulleys E and around the shifting wheel F.

It is not necessary to more specifically describe the means of connecting the ends of the shipper ropes and the valve gear or the motor mechanism, as neither the valve gear nor motor mechanism forms any part of my present invention, nor is it material whether the ropes be single and secured to the wheel F, or whether there be two ropes having their lower ends secured to the motor wheel, lever or other actuating device. The auxiliary ropes G are connected to the sheave frames *c* at one end, thence pass down through the bottom of the cab over guide pulleys *g*, thence parallel with the bottom of the cab over similar guide pulleys *g'*, thence up through the bottom of the cab to the rope drum *h* of the pilot wheel H, to which drum the ropes are secured, one passing around it in one direction and the other in the opposite direction, so that by turning the wheel to draw upon one of the sheaves and tighten the shipper rope, the opposite sheave is released, and the shipper rope, of course, slackened.

In order to take up the slack of the shipper ropes, the upper end of one of them may be wound around a drum journaled in a bearing at the top of the well. A ratchet wheel I is secured to said drum and engaged by a pawl. Should the rope become slack, the drum is actuated by a weight J to wind up the rope D, and the pawl engaging the teeth of the ratchet, prevents the rope from unwinding.

The arrangements shown in Figs. 4 and 5



are applicable to large cabs or platforms. The shipper ropes D, which pass around the sheave C, pass under one and over the other fixed sheaves B; the end passing under one sheave extends up to the top of the well, and the end which passes over the other, passes down to the mechanism which controls the motor. In this form the two independent sheaves B are mounted upon the same journal, which is fixed in the lugs projecting from the bearing plates which are secured to the under side of the cab. The auxiliary ropes G, in this case, pass over guide pulleys  $g^2$ , which are journaled in bearings secured underneath the platform.

It is obvious that the arrangement of the guide pulleys and sheaves may be placed in any convenient position to suit the space upon either side, front or back, of the well, and that many mechanical changes may be made without departing from the spirit and scope of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In an elevator controlling device, the combination of the cab, the shipper ropes fixed to the top of the well and to the motor controlling mechanism, idle pulleys journaled in bearings fixed to the cab, movable sheaves, said ropes passing around said pulleys and sheaves, the shipper mechanism under the control of the operator, guide wheels mounted in bearings fixed to the cab, the auxiliary ropes passing around said guide wheels and each connected at one end to one of the movable sheaves and at the opposite end to the shipper mechanism, substantially as shown and described.

2. The combination of the shipper ropes fixed to the top of the well, and connected at the bottom of the well to the stopping and starting mechanism of the motor, idle pulleys journaled in bearings fixed to the cab, movable sheaves, said ropes passing around said pulleys and sheaves, the pilot wheel within

the cab, guide pulleys journaled in bearings fixed to the cab, and the auxiliary ropes connected at one end to the movable sheaves, passing around said guide pulleys, and connected at its opposite ends to said pilot wheel, substantially as shown and described.

3. The combination substantially as hereinbefore set forth of the cab, the motor controlling mechanism, idle pulleys journaled in bearings fixed to the top of the cab, movable sheaves, the shipper ropes fixed to the top of the well passing around said pulleys and sheaves and connected to the motor controlling mechanism, the pilot wheel and drum mounted upon a stud within the cab, guide wheels journaled on bearings fixed to the cab, and the auxiliary ropes connected at one end to the movable sheaves passing around said guide pulleys wound in opposite directions around the pilot wheel drum and connected thereto, whereby one of said shipper ropes is tightened and the other slackened by the revolution of the pilot wheel.

4. In an elevator controlling mechanism, the combination of the cab, the ratchet drum journaled in bearings fixed to the top of the well, the idle pulleys journaled in bearings fixed to the cab, movable sheaves, the shipper ropes passing around said pulleys, sheave and ratchet drum one of said ropes having its upper end hanging below said drum and the lower ends of both ropes being connected to the motor controlling mechanism, weights suspended from the upper ends of one of said ropes, the shipper mechanism under control of the operator, guide wheels mounted in bearings fixed to the cab, and the auxiliary ropes passing around said guide wheels and each connected at one end to the movable sheaves and at the opposite end to the shipper mechanism, substantially as shown and described.

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