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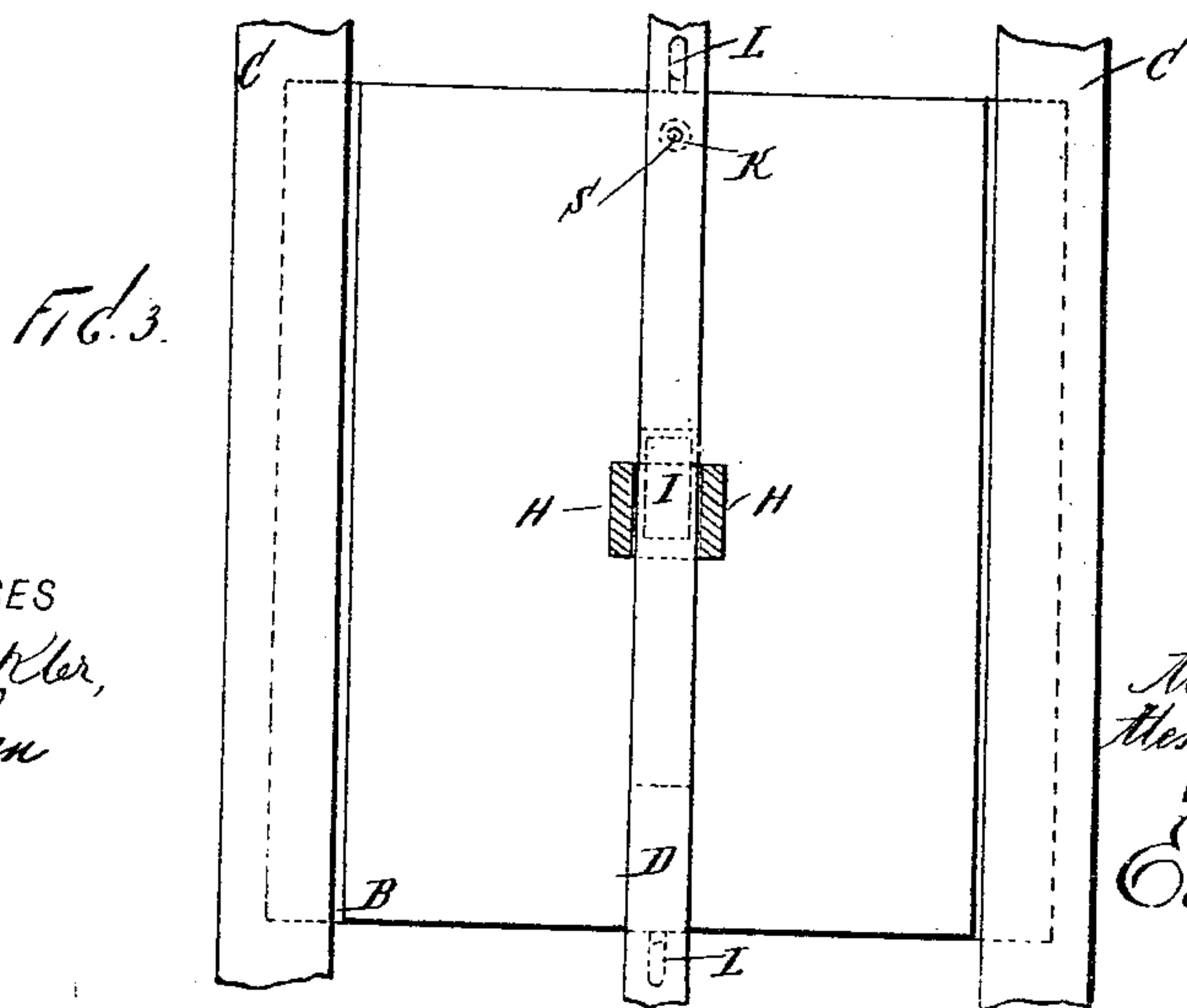
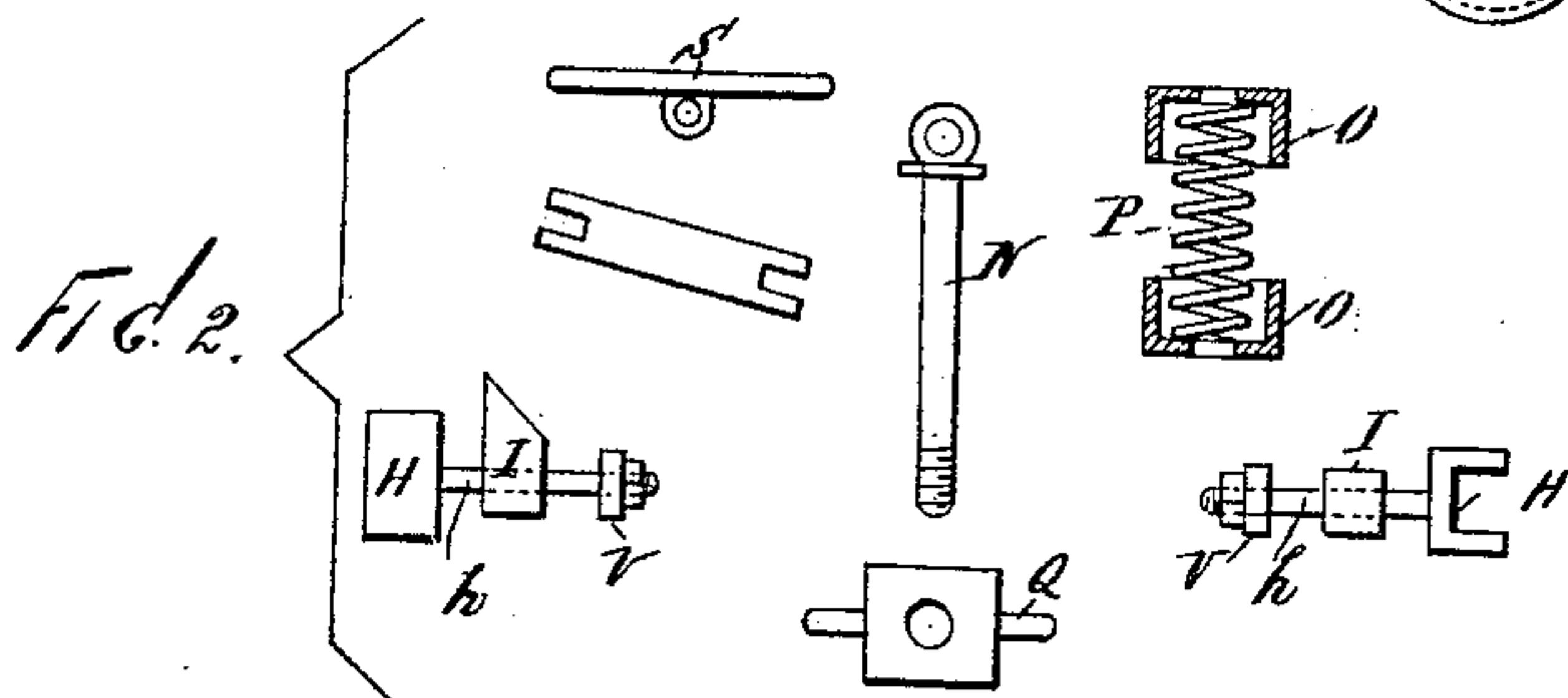
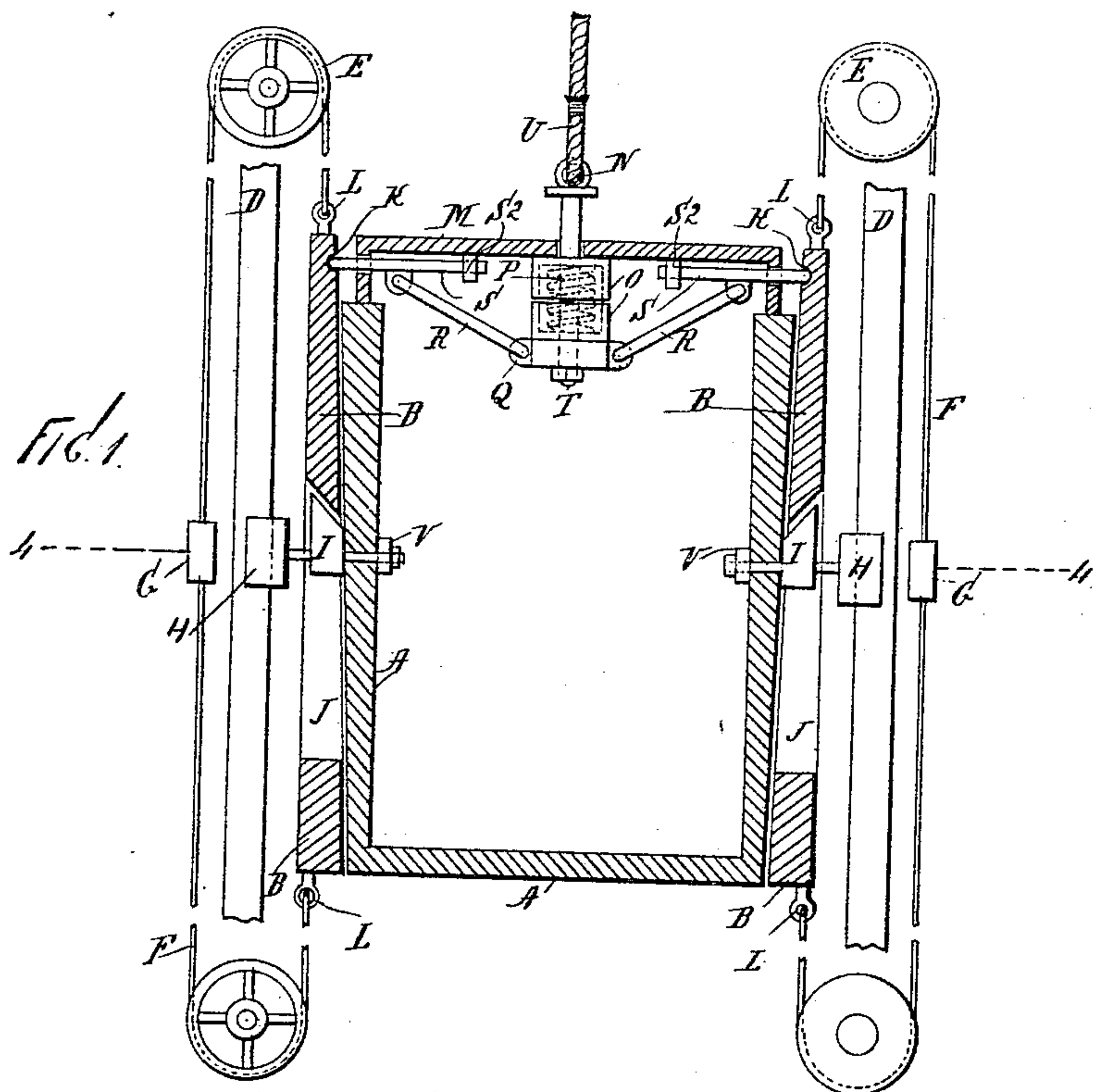
Patented Jan. 24, 1899.

A. NORTH & A. PATERSON.
ELEVATOR CAR.

(No Model.)

(Application filed Jan. 24, 1898.)

2 Sheets—Sheet 1.



WITNESSES
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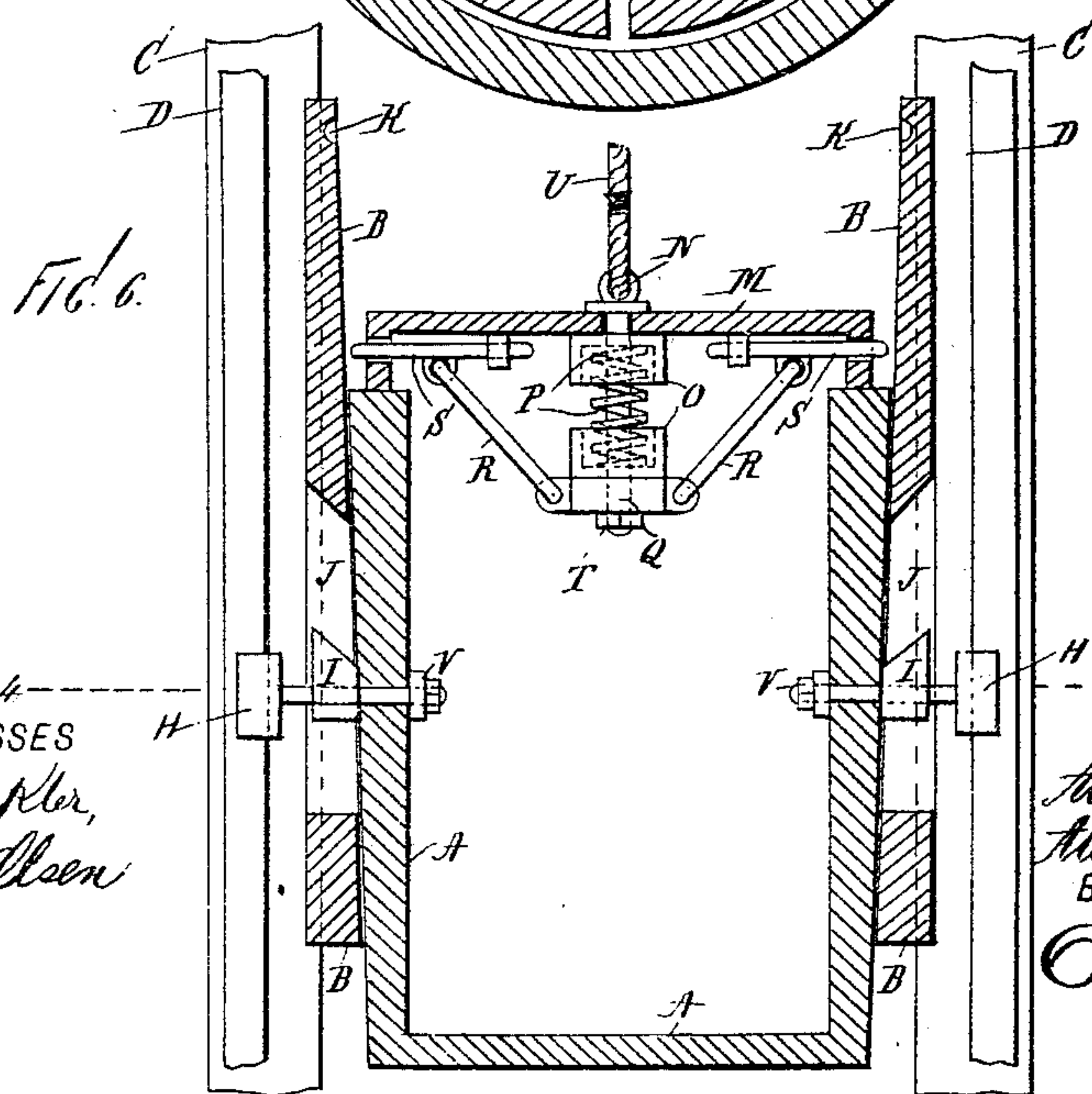
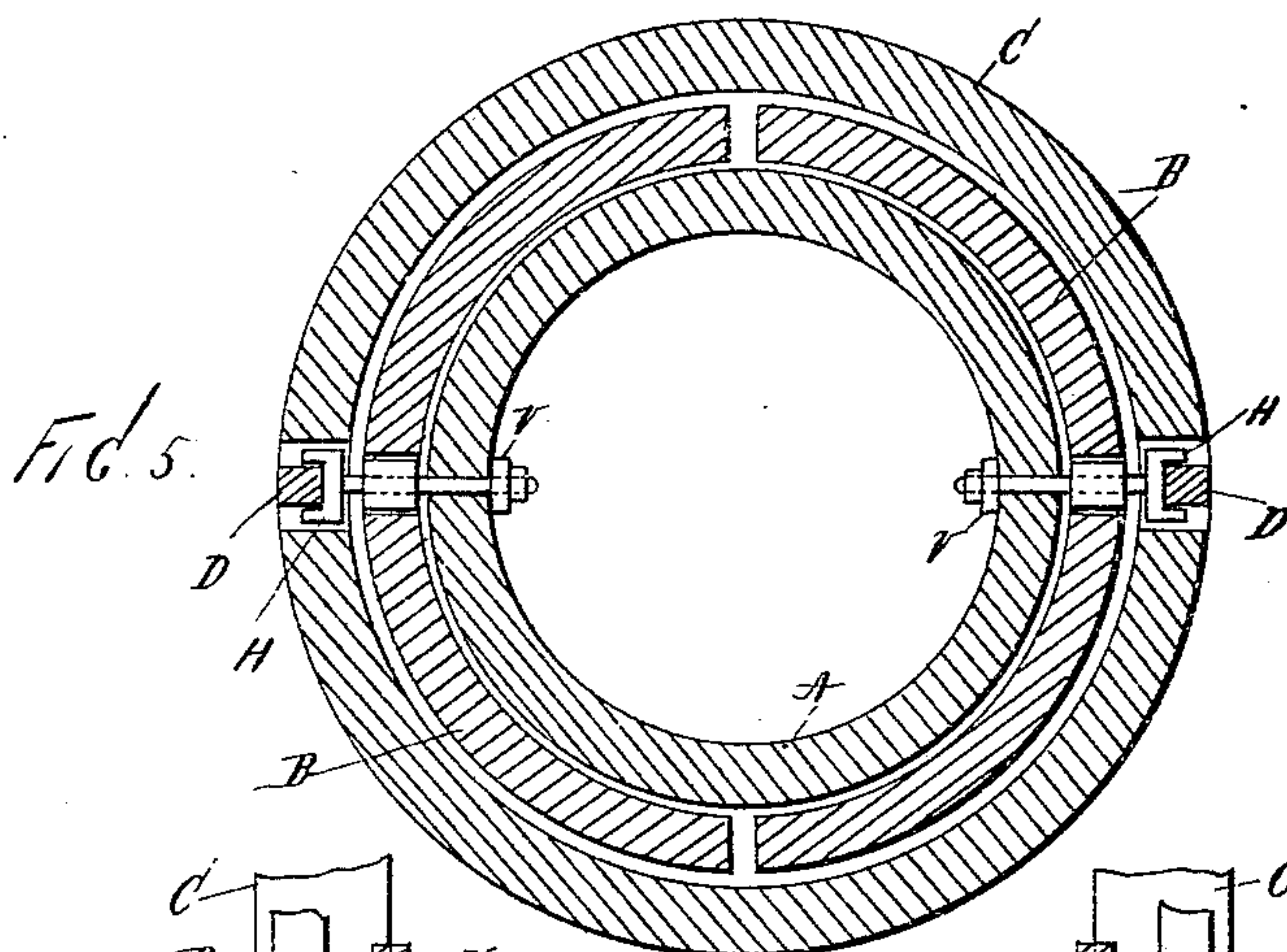
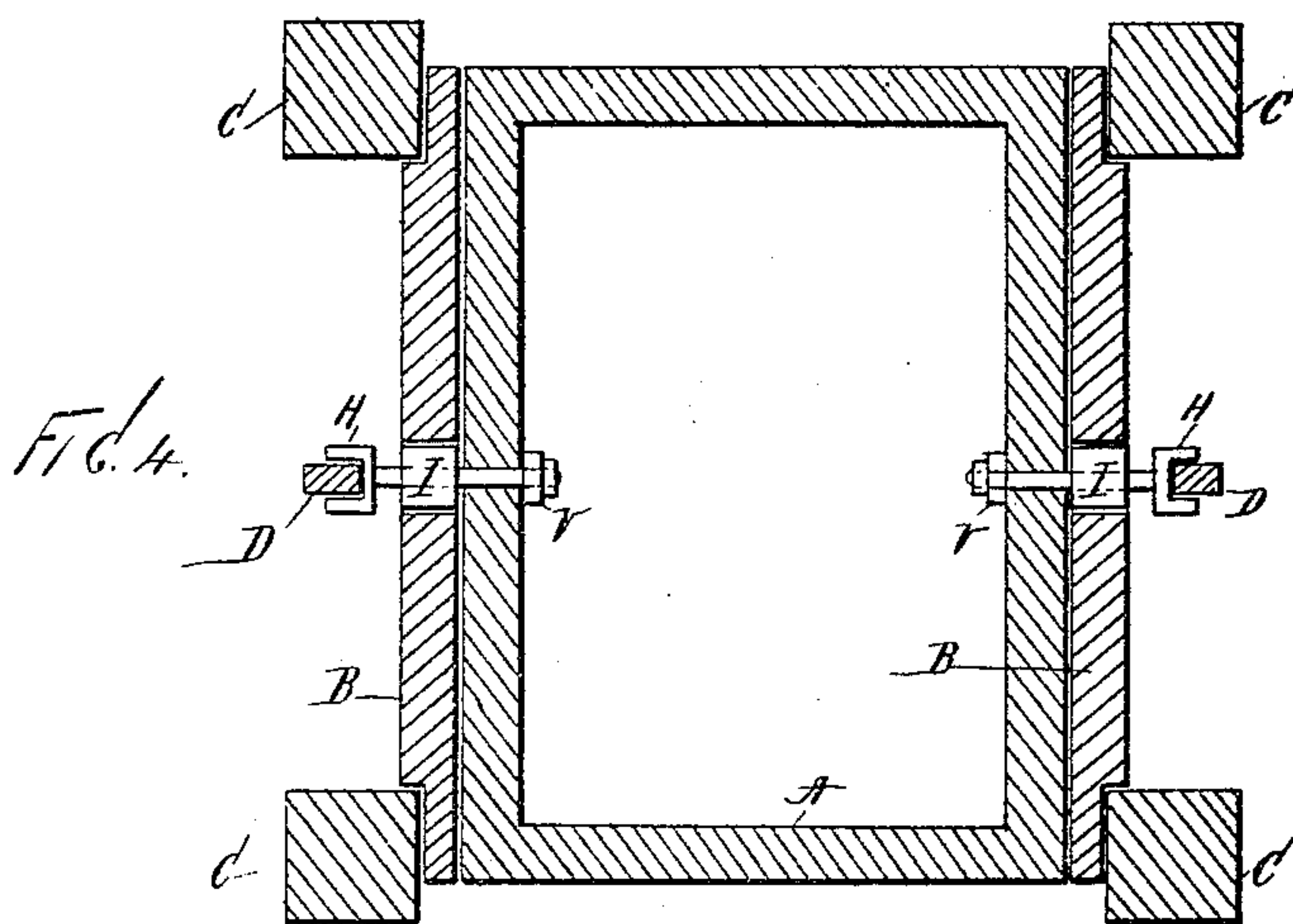
Patented Jan. 24, 1899.

A. NORTH & A. PATERSON
ELEVATOR CAR.

(Application filed Jan. 24, 1898.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES
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UNITED STATES PATENT OFFICE.

ARTHUR NORTH, OF JERSEY CITY, NEW JERSEY, AND ALEXANDER
PATERSON, OF NEW YORK, N. Y.

ELEVATOR-CAR.

SPECIFICATION forming part of Letters Patent No. 618,124, dated January 24, 1899.

Application filed January 24, 1898. Serial No. 667,776. (No model.)

To all whom it may concern:

Be it known that we, ARTHUR NORTH, residing at Jersey City, in the county of Hudson and State of New Jersey, and ALEXANDER PATERSON, residing in New York, borough of Brooklyn, county of Kings, and State of New York, citizens of the United States, have invented an Improvement in Elevator-Cars, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in elevator-cars; and the object thereof is to provide means whereby the falling of the car under any condition is prevented, as is also the running thereof, unless the hoisting and lowering lines or attachments are under full working strain; and with these and other objects in view the invention consists in the construction, combination, and arrangement of parts hereinafter described and claimed.

In our invention we employ two cars, one of which is arranged within the other, and if these cars are rectangular in cross-section the outer car will consist simply of side plates or frames which are thicker at their lower than at their upper ends or wedge-shaped in form, and if said cars are circular in form the outer car will consist of two segmental parts which are thicker at their lower than at their upper ends, and in either event the inner car will be formed to correspond with the outer car, said inner car being larger in transverse section at its upper than at its lower end and the walls thereof being inclined inwardly and downwardly.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a vertical section of our improved cars in working order; Fig. 2, separate detail views of a part of the accident-preventing mechanism; Fig. 3, a vertical side view, partly in section, of the outside car. Fig. 4 is a partial section on the line 4 4 of Fig. 1 and a section on the line 4 4 of Fig. 6; Fig. 5, a similar view of a modified form of construction; and Fig. 6, a view similar to Fig. 1, showing the parts in the position they oc-

cupy after the strain or weight on the hoisting and lowering lines or attachments has been removed.

In the drawings forming part of this specification the separate parts of our improvement are designated by letters of reference in each of the views, and in practice the inside car A is so formed that the outer walls thereof are tapered or wedge-shaped, the lower end being smaller than the upper end, and the outside car, which consists of two separate side sections, plates, or frames B, is also constructed in a similar manner, but with the thicker ends thereof directed downwardly, as clearly shown in Figs. 1 and 6, and the outside or sectional car B is run on the principle of a dumb-waiter, said car being provided with cables F, which are attached thereto by means of eyebolts and passed one turn around the pulleys E, supported at each side of the elevator-shaft, at the upper end thereof, and around corresponding pulleys at the lower ends of said shaft, and the ends of these cables are connected with weights G, which serve as counterbalances for the outside car.

The inside car A is suspended by an eyebolt N, which passes through the cross-head or girder M thereof and the lower end of which projects downwardly through two similar spring-boxes O and through a link-piece Q and is provided with a nut T, and between the spring-boxes O, which are shown in detail in Fig. 2, is a strong spiral spring P.

Pivotally connected with the link-piece Q are links R, the outer ends of which are pivotally connected with draw-bolts S, which slide in bearings S², secured to the cross-head or girder M. The strength of the tension-spring P is such that the full weight of the inside car A must be suspended from or on the hoisting-cable U in order to compress the spring P sufficiently for the spring-boxes O to meet, and these spring-boxes O serve to protect the spring P, and also form a lock when under working strain, or when additional weight or load is added to the inner car to prevent the draw-bolts S from being forced too far into the draw-bolt notches or recesses K, which are formed in the inner upper ends of the separate sides of the outside car, and the collar N² around the draw-bolt N is a safeguard

against the draw-bolts S being drawn back too far when the strain on the hoisting-cable U is released and said bolt is forced downwardly by the spring P.

5 We also provide car-guides H, which are attached to bolts h, as shown in Figs. 1 and 2, and mounted on said bolts are movable cam-blocks or clamps I, and said bolts pass through vertical slots J, formed in the separate sides
10 of the sections of the outer car and through the walls of the inner car and are secured inside the inner car by nuts V, and the guides H on the outer ends of said bolts slide on and act in connection with guide-posts D
15 and serve to form slides which guard the car in its vertical movement and also keep the inside car A in proper position after the tension of the hoisting-cable U has been released, when said cable is broken, the position the
20 parts then assume being shown in Fig. 6.

We also employ guide-posts C, rigidly fixed in the elevator-shaft, between which the outer car moves, and in the form of construction shown in Fig. 4 four of these posts are
25 employed, while in the form of construction shown in Fig. 5 only two are shown, and in this form of construction said posts or guides are segmental in cross-section and adapted for use in connection with an elevator which
30 is circular in form.

The cam-blocks or clamps I are tapered at their upper ends, and the slots J in the outside car B or the separate parts thereof are correspondingly tapered at the upper ends
35 thereof, as clearly shown in Figs. 1 and 6, and these clamps or cam-blocks cause the outside car B to clamp against the inside car A when in working condition in order to prevent friction of the outside car against the
40 corner-posts C, and said clamps or cam-blocks also after a released tension or in case of an accident, as shown in Fig. 6, prevent the inside car A from being hoisted out from the outside car when returning to working position, and the full strain or weight on the eye-
45 bolt N draws up the link Q and forces the outer ends of the links R outwardly, and this operation forces the draw-bolts S into the draw-bolt notches or recesses K, and the said
50 draw-bolts S carry the outside car B up and down in the shaft and connect said outside car with the inner car, as will be readily understood.

When the strain or weight is released from
55 the eyebolt N, the spring P forces down the link-piece Q and draws the bolts S inwardly, and this operation allows the inside car A to fall into the outside car B, and the clamps or cam-blocks I, which are attached to the sides
60 of the inside car A, operate to allow the separate parts of the outside car B to be extended or forced outwardly, and the inside car A by reason of its wedge or tapered shape forms a jamb with the outside car B or the separate
65 parts thereof against the corner-posts and prevents the falling of the car.

Our improved apparatus is simple in con-

struction and operation and well adapted to accomplish the result for which it is intended, and it will be apparent that changes in
70 and modifications of the construction described may be made without departing from the spirit of our invention or sacrificing its advantages.

Having fully described our invention, we
75 claim as new and desire to secure by Letters Patent—

1. In an elevator, two cars one of which is placed within the other, the outer car consisting of separate sides, said sides being thicker
80 at their lower than at their upper ends, and the outer walls of the inner car being tapered downwardly and inwardly, corner guide-posts between which the outer car is placed, a spring-depressed eyebolt passing through the
85 top of the inner car, links pivotally connected with the lower end thereof, and draw-bolts pivotally connected with the upper ends of said links, and passing outwardly through the sides of the inner car and adapted to operate in notches or recesses formed in the
90 sides of the outer car, substantially as shown and described.

2. An elevator, comprising two cars, one of which is placed within the other, the outer
95 car being composed of separate vertical sections, said sections being thicker at their lower than at their upper ends, and the side walls of the inner section being inclined inwardly and downwardly, guide-posts for said
100 elevator, a spring-depressed draw-bolt passing through the top of the inner car, links pivotally connected with the lower end of said bolt, draw-bolts pivotally connected with the upper ends of said links and passing out-
105 wardly through the opposite sides of the inner car, and adapted to operate in notches or recesses formed in the sides of the outer car, said inner car being also provided with rods having slides at their outer ends which op-
110 erate in connection with said guide-posts, and said rods being also provided with clamps or cam-blocks which move in slides formed in the opposite sides of the outer car, substantially as shown and described. 115

3. An elevator comprising two parts, one of which is placed within the other, the outer
120 part consisting of separate sides which are counterbalanced by means of cords or cables which pass over pulleys, and are provided with weights, said parts being also thicker at their lower than at their upper ends, and the outer walls of the inner part being tapered inwardly and downwardly, said inner part
125 being also provided with a draw-bolt which passes through the top thereof and by means of which it is suspended, spring-boxes mounted on said draw-bolt, a spring mounted on said bolt between said boxes, a link-block mounted on said bolt, below said spring-boxes,
130 links pivotally connected therewith, draw-bolts pivotally connected with the upper ends of said links, and passing outwardly through the opposite sides of the inner car, and oper-

ating in connection with notches or recesses
formed in the sides of the outer car, guide-
posts at the opposite sides of the outer car,
bolts passing through the sides of the inner car
5 and provided with guides which operate in
connection with said guide-posts, and clamp-
blocks mounted on said bolts and operating in
vertical slots formed in the sides of the outer
car, substantially as shown and described.

10 4. An elevator, comprising two cars one of
which is placed within the other, the outer
car being composed of two separate vertical
parts or sections, said sections being thicker
at their lower than at their upper ends, and
15 the side walls of the inner section being in-
clined outwardly and upwardly, guide-posts
between which said elevator is placed, and
devices for connecting the inner car with the
outer car, said devices being in operative con-
20 nection with the suspending-cable and adapt-
ed when said cable is broken to be thrown
out of the positions in which they connect the
cars, substantially as shown and described.

5. An elevator, comprising two cars one of

which is placed within the other, the outer 25
car being composed of two separate vertical
parts or sections, said sections being thicker
at their lower than at their upper ends, and
the side walls of the inner section being in-
clined outwardly and upwardly, guide-posts 30
between which said elevator is placed, and
devices for connecting the inner car with the
outer car, said devices being in operative con-
nection with the suspending-cable and adapt-
ed when said cable is broken to be thrown 35
out of the position in which they connect the
cars, said inner car being also provided with
guides which operate in connection with said
guide-posts at the opposite sides of the ele-
vator, and with clamp-blocks which operate in 40
slots formed in the opposite sides of the outer
car, substantially as shown and described.

ARTHUR NORTH.

ALEXANDER PATERSON.

Witnesses:

MABEL NORTH,

WILLIAM JOHNSTON.