

(No Model.)

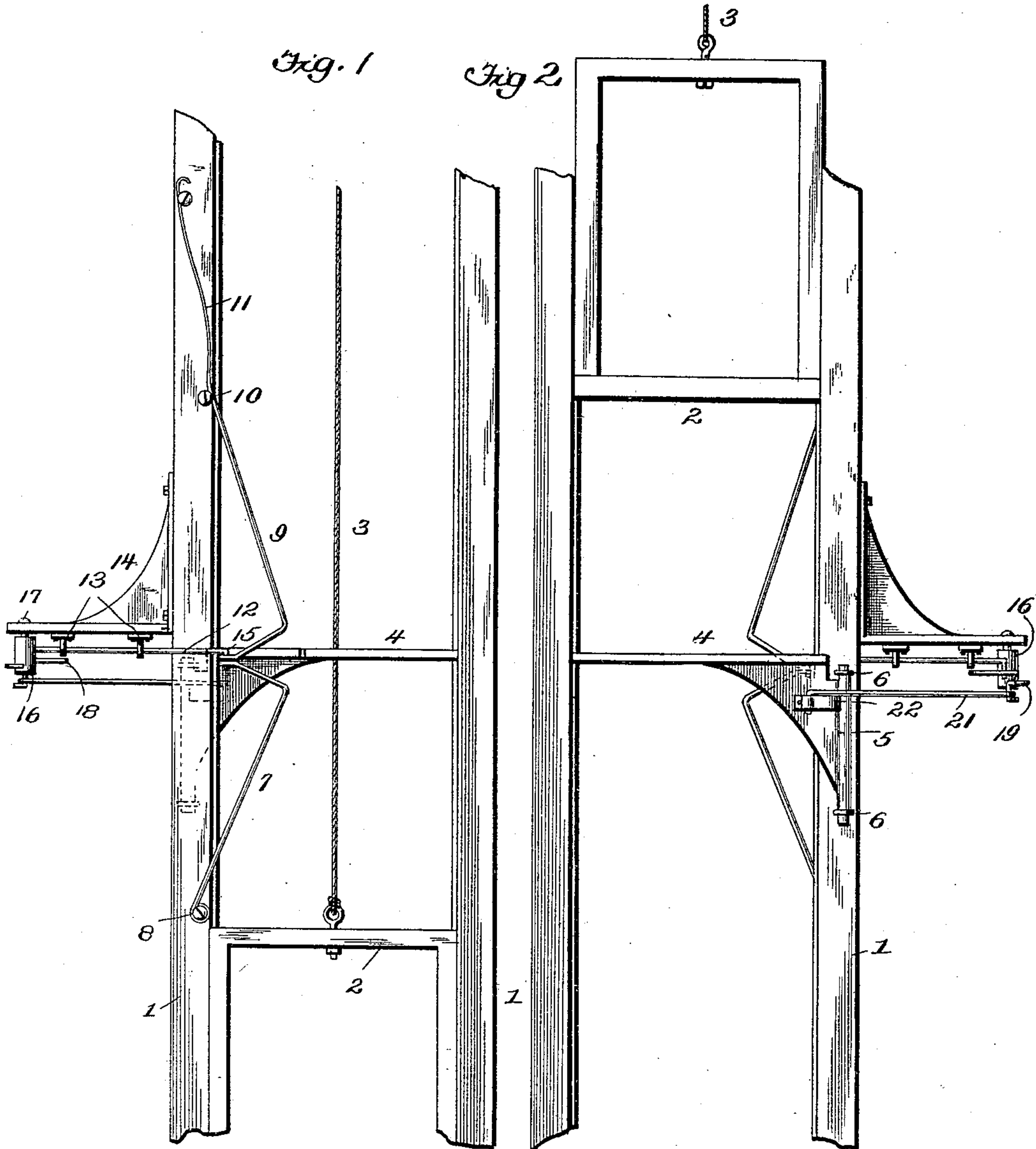
2 Sheets—Sheet 1.

E. M. BENSON.

MEANS FOR OPERATING ELEVATOR DOORS.

No. 496,039.

Patented Apr. 25, 1893.



Witnesses
John D. ...
H. Mac ...

Elias M. Benson
Inventor
by *Price Stuart*
his Attorney

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Fig. 3.

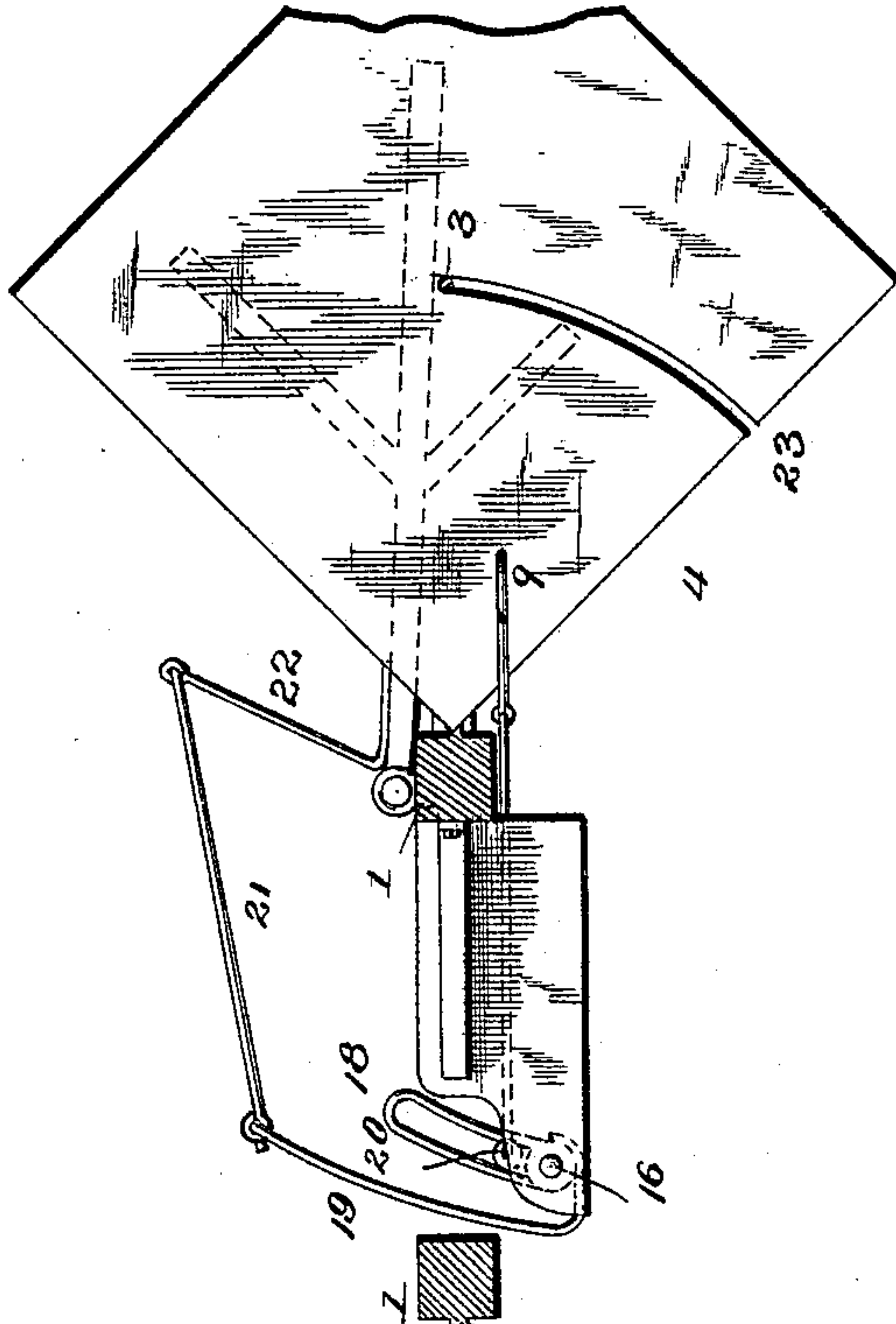
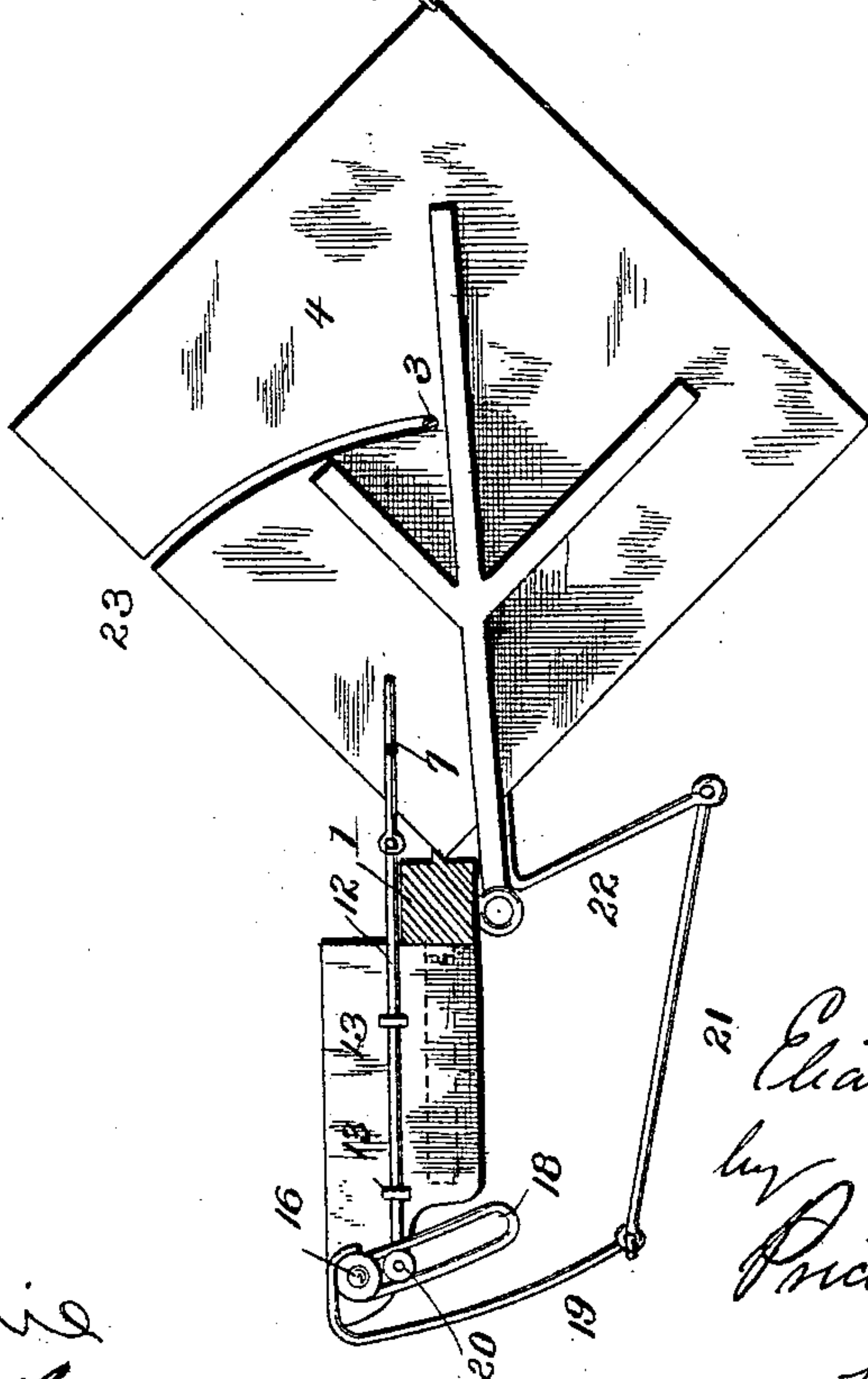


Fig. 4.



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UNITED STATES PATENT OFFICE.

ELIAS M. BENSON, OF BALTIMORE, MARYLAND.

MEANS FOR OPERATING ELEVATOR-DOORS.

SPECIFICATION forming part of Letters Patent No. 496,039, dated April 25, 1893.

Application filed November 21, 1892. Serial No. 452,740. (No model.)

To all whom it may concern:

Be it known that I, ELIAS M. BENSON, a citizen of the United States, and a resident of Baltimore city, in the State of Maryland, have
5 invented certain new and useful Improvements in Self Opening and Closing Elevator-Doors, of which the following is a specification.

My invention relates to an automatically
10 removable elevator shutter which is intended to be normally closed but which will be opened by the rise or descent of a car, permitting the car to pass, and closing again automatically.

In the drawings Figure 1 is an elevation of
15 one side of the elevator structure, the car being down and ascending. Fig. 2 is an elevation of the opposite side of the structure, the car being up and descending. Fig. 3 is a plan view of the elevator shutter, the elevator
20 guide being in horizontal section viewing the same from the top. Fig. 4 is a horizontal plan of the elevator shutter and elevator supports in section viewing the same from the bottom.

25 In the drawings similar figures of reference indicate similar parts.

1, 1 are the car guides.

2 is the car.

3 is the suspensory cord.

30 4 is the elevator shutter.

5 is the bracket or support upon which the shutter is mounted, which bracket is hinged to one of the elevator guides 1 at 6, 6.

Referring to Fig. 1, 7 is a right-angle bar
35 of iron pivoted to the elevator guide at 8 at its lower end, the upper end being turned inward toward the guide and having an eye upon its extremity. 9 is a similar right-angle bar pivoted at 10 on the same guide 1, the
40 lower end being turned toward the elevator guide and also having an eye upon its extremity which registers with the eye in the end of the bar 7. 11 is a spring rigidly secured to the upper end of the bar 9 which is
45 pivoted at 10. The spring 11 is held in a strained position by a stud in the side of the elevator guide 1 so as to exert a pull upon the

bars 9 and 7 so as to hold them in the position shown in Fig. 1. 12 is a push rod sliding in bearings 13, 13, which are mounted on
50 the under side of a projecting bracket 14 secured to the side of the elevator guide 1. The extremity of the push rod 12 is provided with a turned-down end 15 which enters the eyes in the extremities of the rods 7 and 9
55 and secures them to one another, by which the rod 12 is given a sliding motion in its bearings by either of these rods 7 or 9. 16 is a hub pivoted upon a stud 17 in the extremity of the bracket 14, to which are secured two
60 levers, one a link 18 shown in Figs. 3 and 4, and 19 a curved lever the end of which is bent into a hook and secured to the hub. The link and the lever are parallel to one another. 20 is a friction roller journaled on
65 the end of the push rod 12 and playing within the curved link 18. 21 is a connecting rod, one end of which is loosely secured to the end of the lever 19, while the other end is secured to the lever 22, which is rigidly secured
70 to and projects from the bracket 5. 23 is a curved slot in the shutter 4 through which the rope 3 passes as the shutter swings back and forth.

The operation of the device is as follows:
75 As the car rises it strikes upon the rod 7 and pushes it aside; in doing so, it pushes the push rod 12 and link lever 18, and this turns the hub 16 and lever 19, draws the rod 21 and lever 22, and swings the shutter 4 out of the
80 path of the elevator. As soon as the car has gone up, the spring 11 presses the rod 9 out again, draws the bar 12 and levers 18, 19, 21 and 22, and swings the shutter into place
85 again.

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

1. In an elevator, the combination of a shutter mounted upon a pivoted bracket so as to
90 swing out of the path of the elevator car, a pair of rods one pivoted to the elevator frame below the shutter and one above it and rods and levers connecting said pair of rods to the

shutter, whereby the shutter will be swung out of the path of the elevator car when the elevator is ascending or descending.

2. In an elevator, the combination of the
5 rod 7, rod 12, lever 18, rod 19, rod 21, lever 22 and pivoted shutter 4, all arranged substantially as described.

3. In an elevator, the combination of a piv-
oted rod standing in the path of the elevator
10 car, rod 12 connected thereto, lever 18, rod

19, rod 21, lever 22 and pivoted shutter 4, and spring 11 for restoring the shutter to its normal position, substantially as described.

Signed at Baltimore, State of Maryland, this
11th day of October, A. D. 1892.

ELIAS M. BENSON.

Witnesses:

JNO. T. MADDOX,
H. MACCARTHY.