

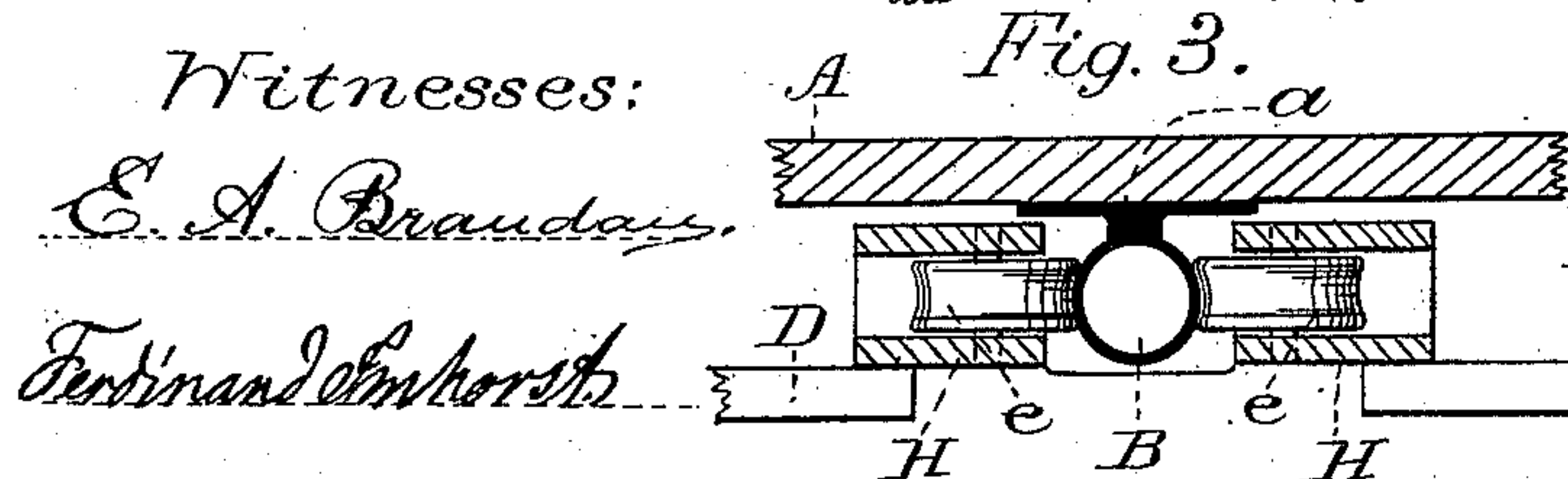
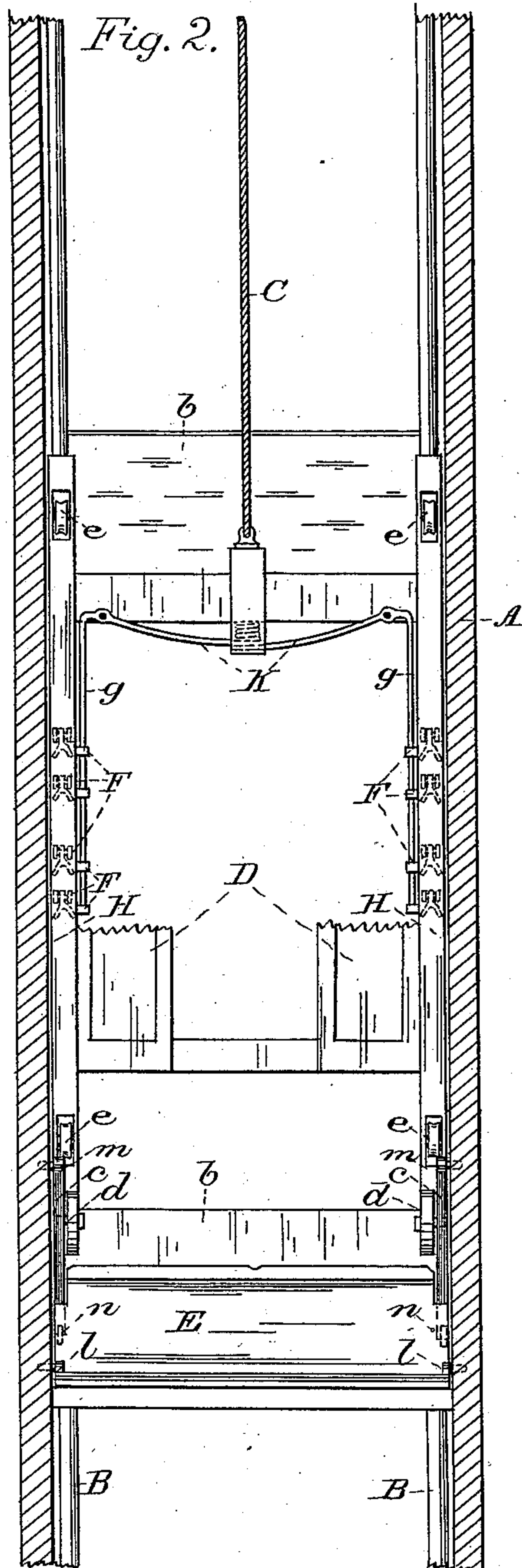
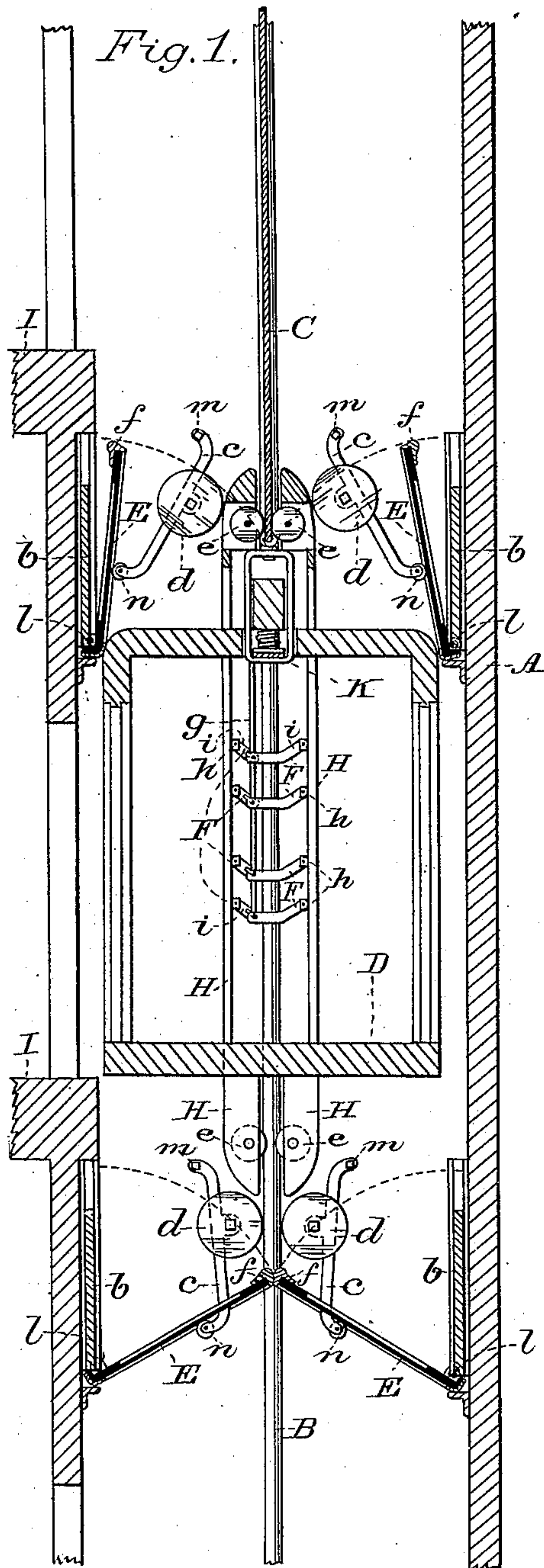
(No Model.)

2 Sheets—Sheet 1.

A. G. PAGE.  
ELEVATOR.

No. 362,653.

Patented May 10, 1887.



Witnesses:  
*E. A. Brauday.*  
*Ferdinand Emborsh.*

Inventor:  
*Albert G. Page*  
By his Atty  
*Alphonso J. Smith*

A. G. PAGE.  
ELEVATOR.

No. 362,653.

Patented May 10, 1887.

Fig. 4.

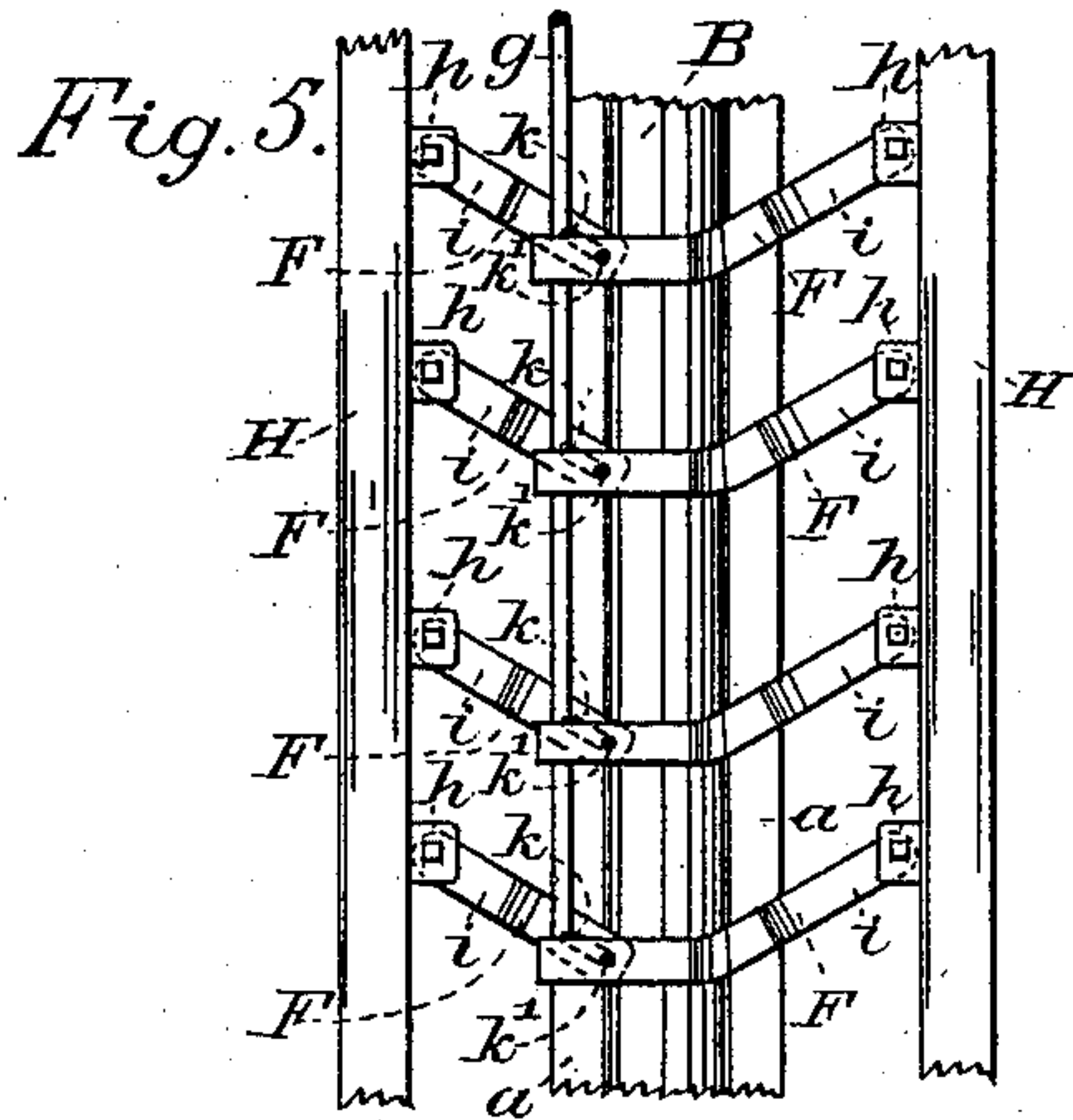
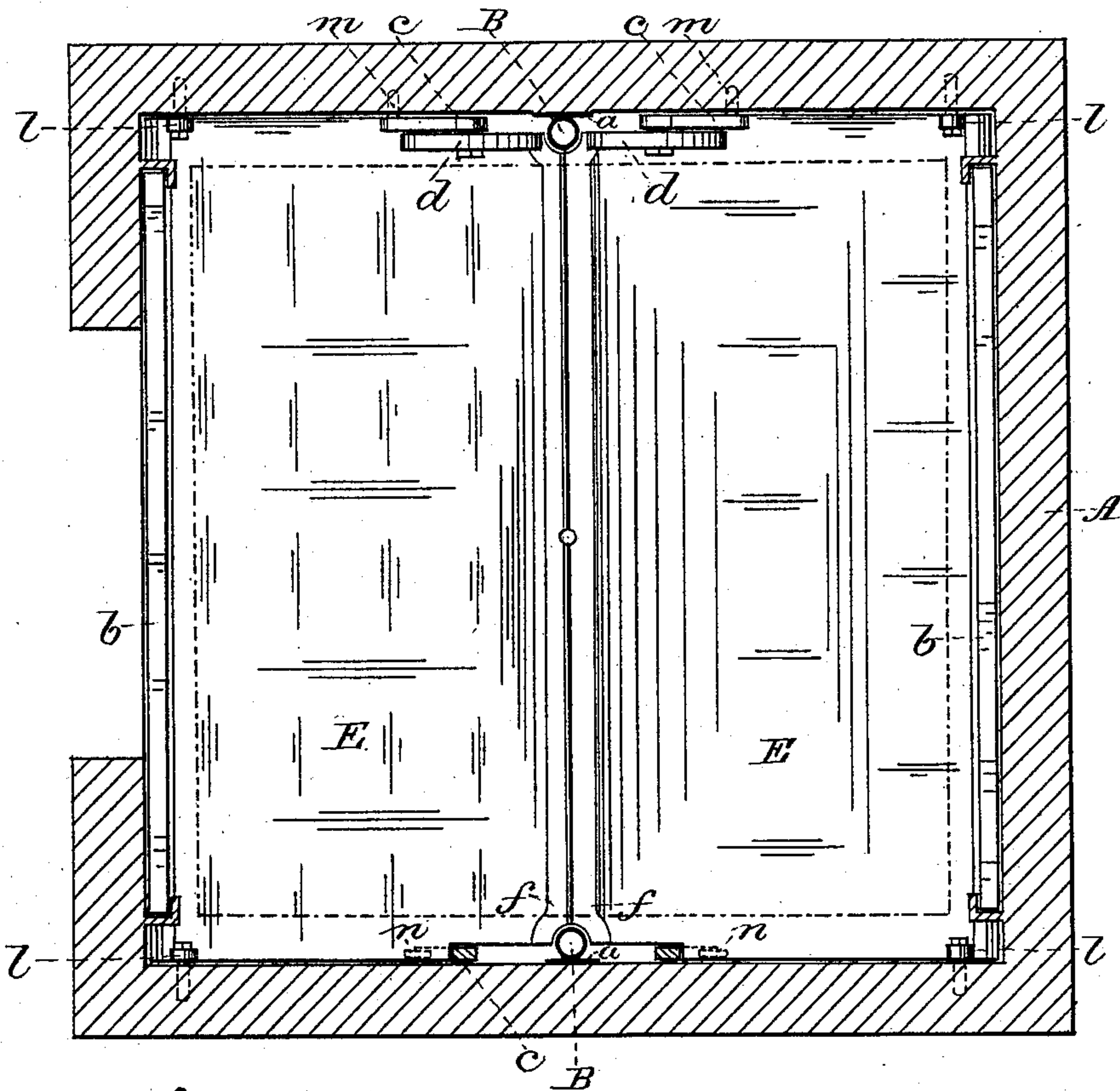


Fig. 6.

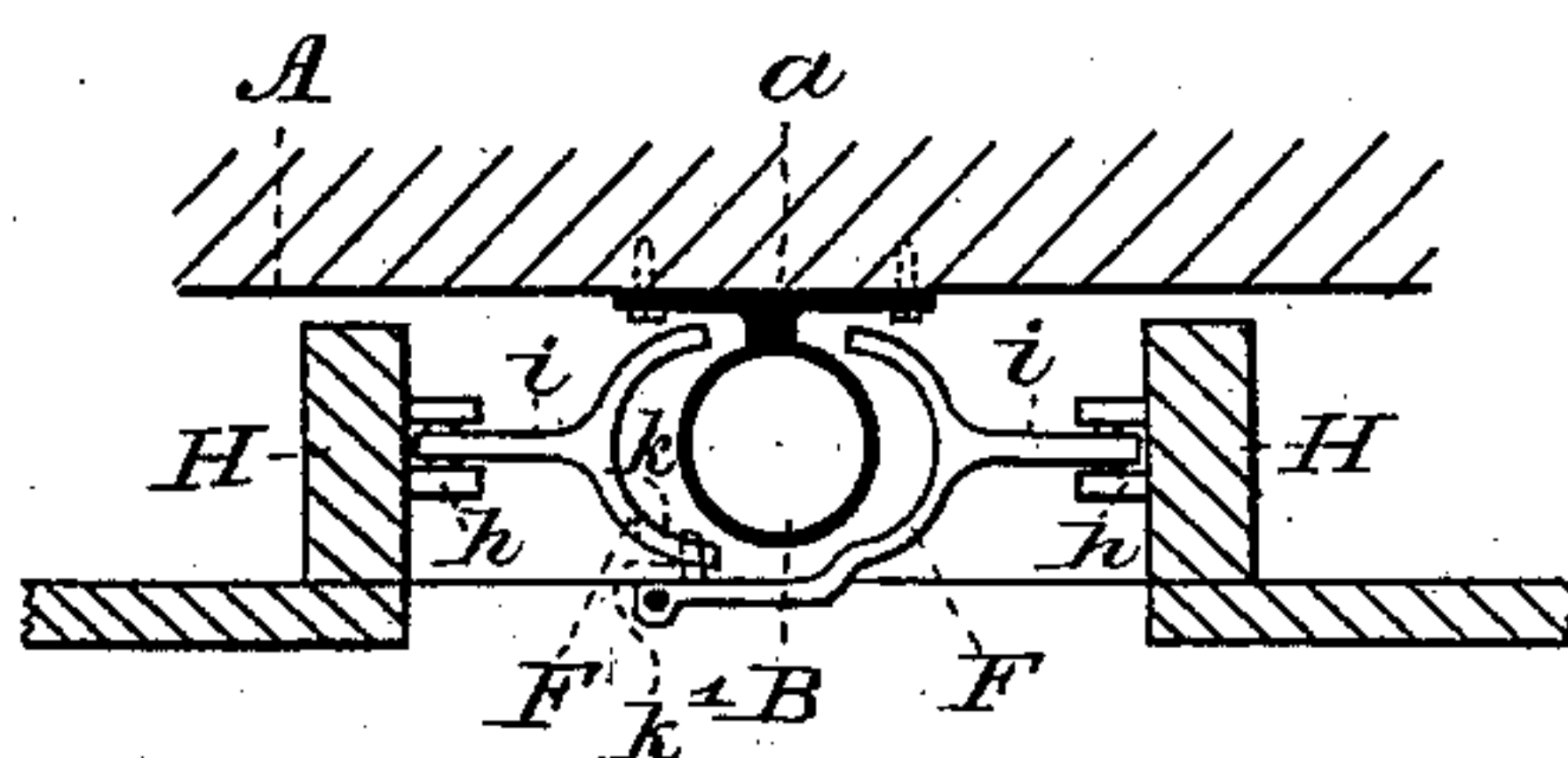


Fig. 8.

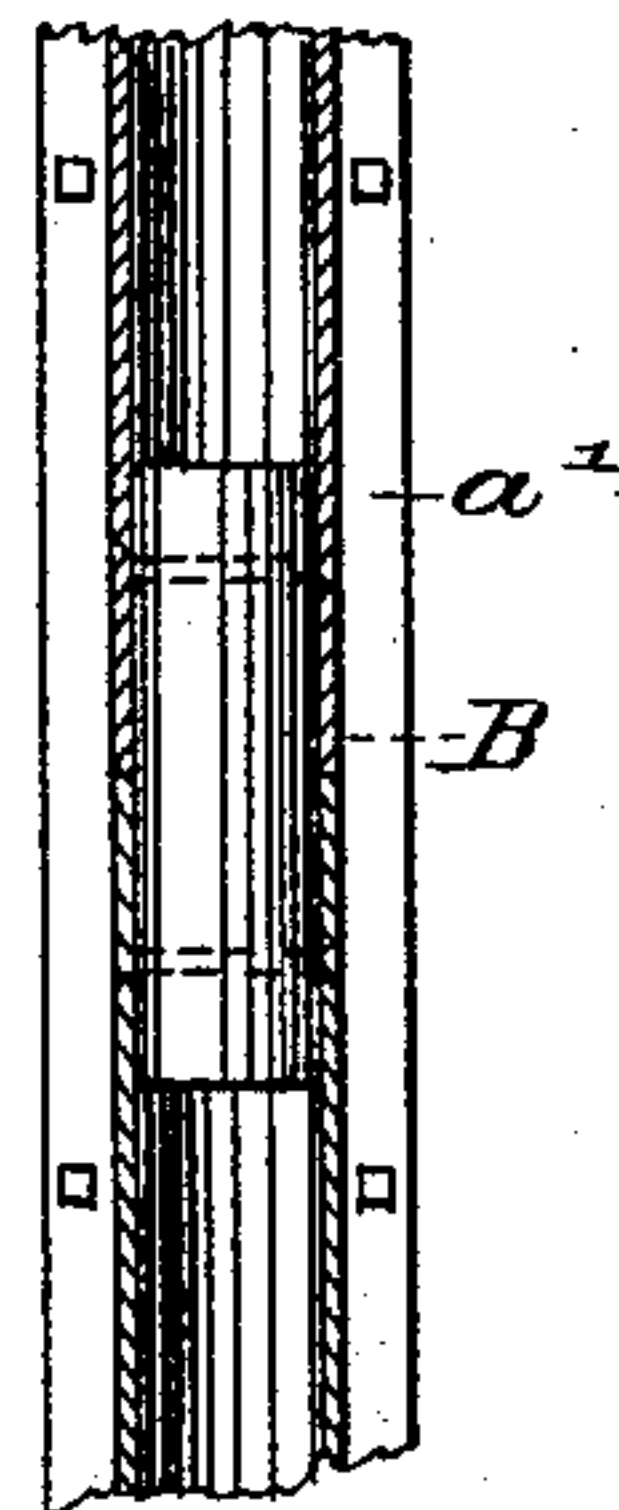
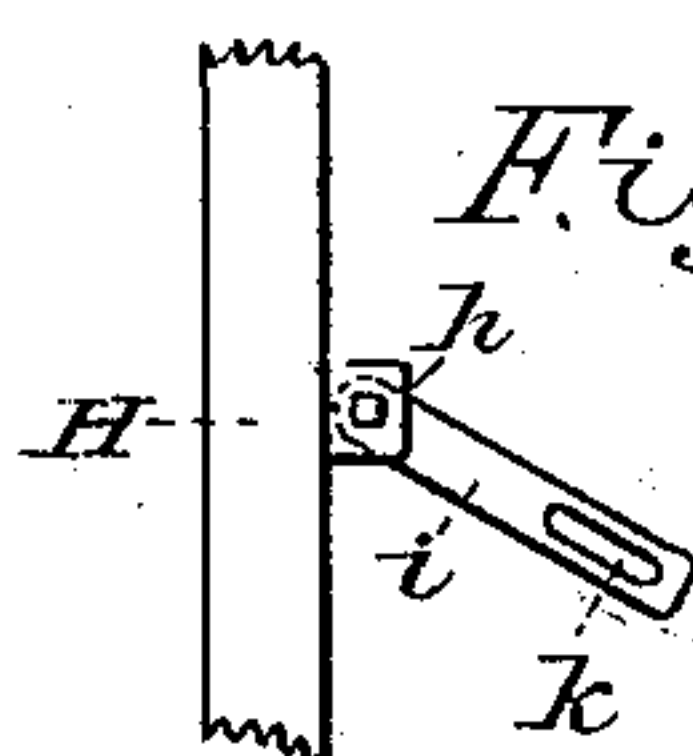


Fig. 7.



Witnesses:

E. A. Brandau

Ferdinand Imhorst

Inventor:

Albert G. Page

By his Att'y.

Alphonso J. Smith



# UNITED STATES PATENT OFFICE.

ALBERT G. PAGE, OF SAN FRANCISCO, CALIFORNIA.

## ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 362,653, dated May 10, 1887.

Application filed July 9, 1886. Serial No. 207,623. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT G. PAGE, a citizen of the United States of America, and a resident of the city and county of San Francisco, State of California, have invented a new and useful Improvement in Elevators, of which the following description is a full, clear, and exact specification.

My invention relates to improvements in elevators by means of which I prevent the elevator-cage from falling if the hoisting-rope were to break or become disengaged from the upper support of the cage and from the spring; also, trap-doors and devices for opening them, for letting the cage pass up and down the well, and cushions on the trap-doors to prevent or deaden the noise when closing. I attain these objects by the devices and mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical side elevation of the well, the elevator-cage and mechanism, the trap-doors and devices for opening them, the guide rods or pipes for holding the cage in position, the check-clutches provided to prevent the cage from falling, and the rope or cable by which the cage is hoisted or lowered. Fig. 2 is a vertical front section of the well, the elevator-cage, guide rod or pipes, the clutches, trap-door, and devices for opening same. Fig. 3 is a vertical section, looking down, of the guide rod or pipe for guiding the cage, the bracket for supporting and holding the guide in position, and the runners or friction-wheels as secured to the uprights of the elevator-cage. Fig. 4 is a horizontal section. Fig. 5 is a front view of the clutches and the guide-pipe. Fig. 6 is a vertical section, looking down, of the clutch and guide-pipe. Fig. 7 is a side view of portion of the standard H and pivoted slotted link i. Fig. 8 is a front view section of the guide-pipe and its support.

Similar letters refer to similar views throughout the several parts.

Referring to the several views, letter A shows the elevator-well; D, the cage; B, the guide rods or pipes; C, the rope or wire cable; E, the trap-doors; F, the clutch; H, uprights on cage, with curved ends shaped to work on levers for opening trap-doors; I, the several floors of the building.

The elevator-cage D is held suspended,

hoisted, and lowered by rope or wire cable C. This cable is secured to the top of the cage and on the spring K, which is similarly constructed as those in common use and constructed to work upon the clutch or brake-shoes F by means of rod g. The clutches have a different form from those in common use, and which I will now describe. The object of these clutches is to prevent the cage from falling to the bottom of the well whenever the cable C should ever become disengaged or loose its tension on the spring K. Whenever the tension of the cable is released on the spring, it draws downward to its natural position, when the side rods, g, which are connected with the ends of the spring, are pulled upward, thereby closing the clutches on the guide-pipe B, and the weight of the cage, pressing heavily on the outer arms or levers and mechanism of the clutch, will stop the cage effectually and prevent its falling.

I construct my clutch in the following manner and form, as shown in Figs. 5, 6: H are the upright standards secured to the cage; h, hinges; F, clutch or brake-shoe; k', slotted hole in arms or levers i; k, pin working in slotted hole loosely. The clutch or brake-shoe F is formed to grip and cover as much surface of the pipe B as possible. The clutch or brake-shoe F is made of metal.

For securing the guide rods or pipes B inside the well I have secured to it brackets a. The feet of these brackets are secured with screws or bolts to the beam of each. The brackets are constructed and secured in such a manner as to leave suitable space around the pipe B for working the clutch.

To the inner surface of and between the uprights H, near their top and bottom, I have attached suitably constructed and situated anti-friction rollers, e, Figs. 1, 2, 3, which impinge on pipe B. Between these uprights the clutch or brake-shoes F and mechanism are properly secured.

For the purpose of preventing a draft of air in the well in case of fire, I have provided suitably constructed trap or closing doors, which I prefer to make of iron, to each floor, and suitable devices for opening same whenever the cage passes up or down the well.

E shows the trap or closing doors; l, the pivotal or hinging point of trap or closing door;



6, the weights resting on the end of trap or closing door, provided for the purpose to counterbalance the weight of the larger section of the trap or closing doors. *f* are rubber  
5 cushions secured to the middle of the trap or closing doors, and are provided for the purpose to obviate the noise when closing the trap or closing doors. For opening the trap-doors E by means of the uprights H, I have constructed arms *c*, and pivoted same at point *m*  
10 to the side walls of the well near the trap or closing doors, in such a manner that the lower section of the arm, which is provided with a friction-roller, *n*, presses against and lifts the  
15 trap or closing doors E. Whenever the cage D passes upward, then the upper curved sections of the uprights H press against the friction-rollers *d*, which are secured to the arms *c* near its center, thereby pushing the lower ends  
20 of the arms outward. The friction-rollers *n* of the arms, pressing against the lower surface of the trap or closing doors, will lift them and allow the cage to pass between them and upward, and when the cage has passed the trap

or closing doors they will close again by their own weight, and when the cage is passed downward the operation is the same as described, with the only difference that the curved bottom sections of the uprights H press against the friction-rollers *d*. 25

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is— 30

1. The combination, with the uprights H, of the clutch or brake-shoes F, pipes B, anti-friction rollers *e*, arms *i*, having slotted openings, pins *k*, working therein, spring K, and rod *g*, substantially as set forth. 35

2. The combination of the trap-doors E, provided with rubber cushions *f*, weights *b*, and lever-arms *c*, provided with friction-rollers *d* *n*, and the elevator-car having wedge-shaped projections, substantially as set forth. 40

ALBERT G. PAGE. [L. S.]

Witnesses:

ALPHONSO B. SMITH,  
JOHN M. BRYAN.