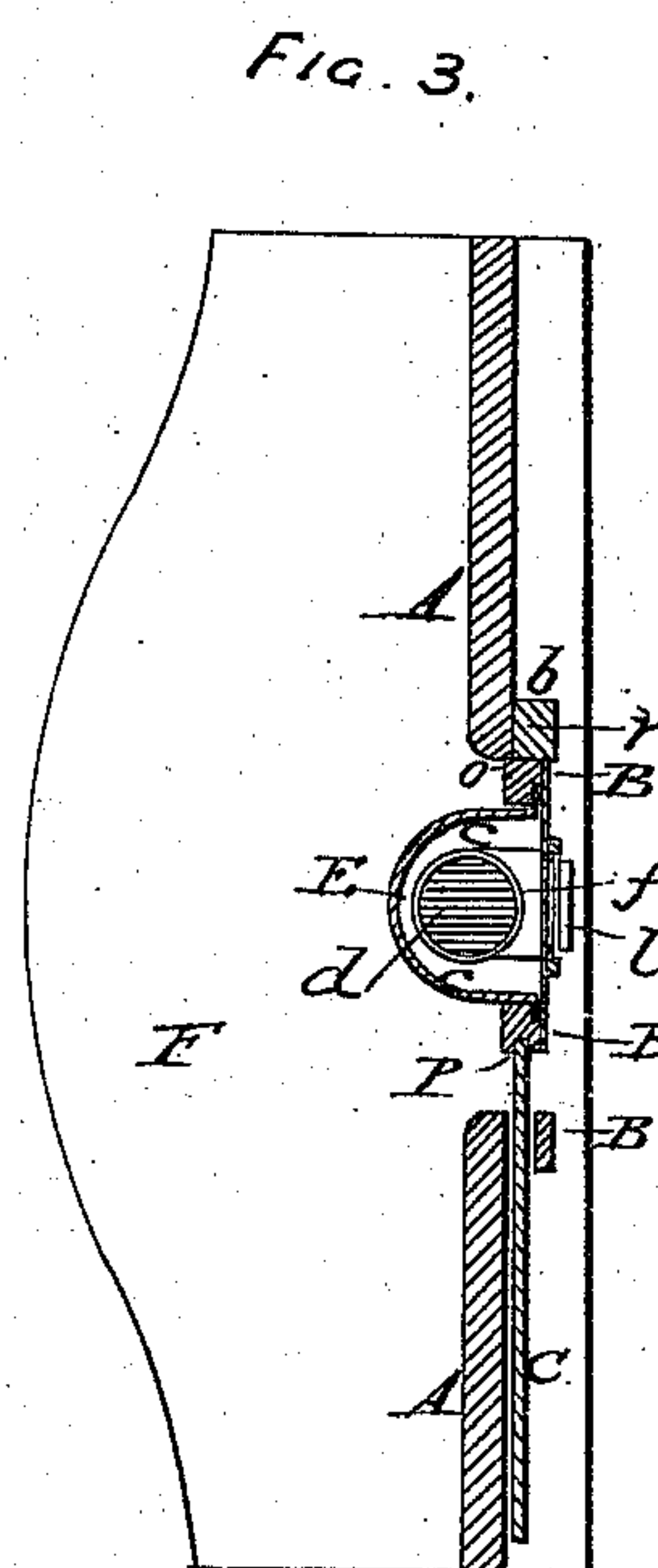
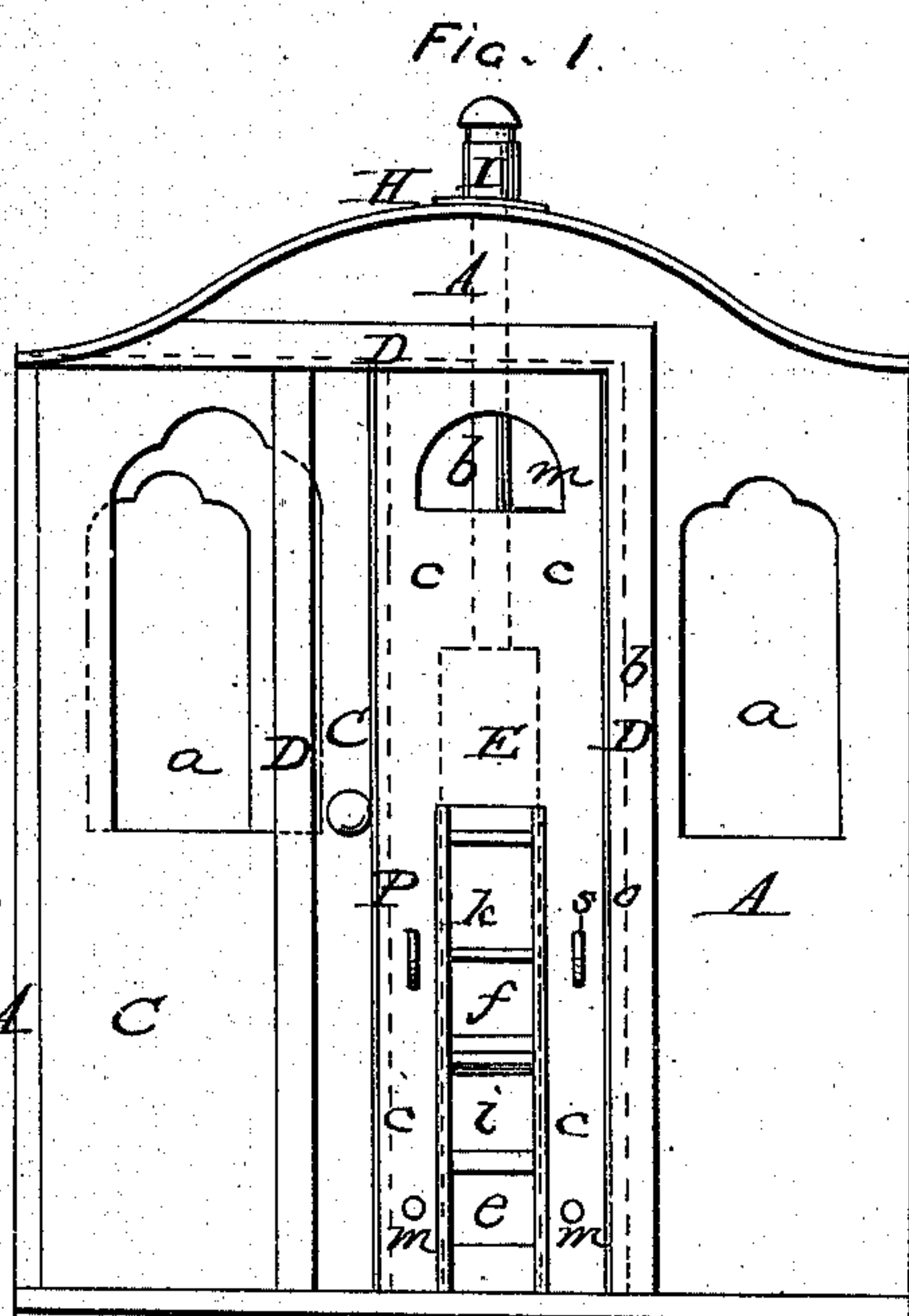
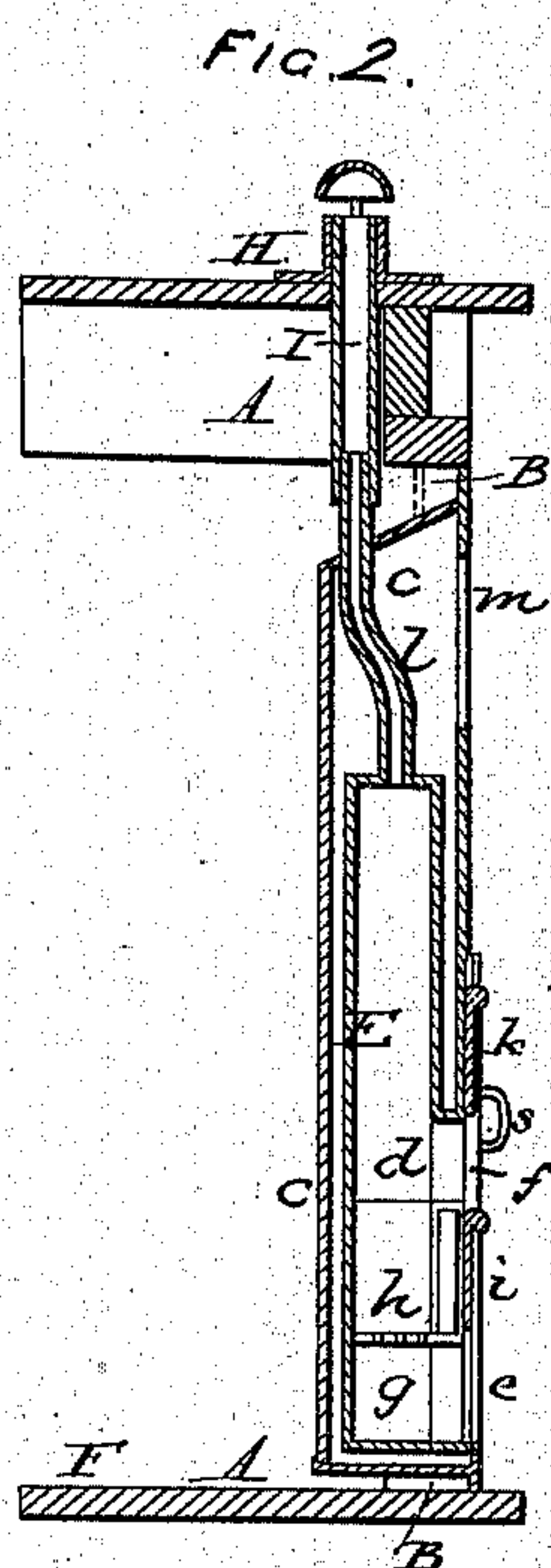


Car Heater.

Patented June 17, 1862.



H. W. Eddy
Chas. A. Staley

Joseph B. Johnson.

UNITED STATES PATENT OFFICE.

JOSEPH B. JOHNSON, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN WARMING PASSENGER-CARS.

Specification forming part of Letters Patent No. 35,612, dated June 17, 1862.

To all whom it may concern:

Be it known that I, JOSEPH B. JOHNSON, a citizen of the United States of America, and a resident of Lynn, in the county of Essex and State of Massachusetts, have made a new and useful invention having reference to the Warming of Passenger-Carriages, and particularly those used on Street-Railways; and I do hereby declare the said invention to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 denotes an inner side view, Fig. 2 a vertical section, and Fig. 3 a horizontal section, of the end portion of a street-railway carriage as provided with my invention, the nature of which consists in arranging a stove, furnace, or heating apparatus within the doorway of the carriage, and also in the application of such heating apparatus within such doorway and with respect to the door in such manner as to be held in place in the doorway by the door; also, in the arrangement of an auxiliary chimney or flue-pipe relative to one end of the carriage and the driver's platform, or to the latter and the roof projecting over it when the heating apparatus is placed within the doorway of a carriage.

It has long been a desideratum to find some suitable and economical means of warming a common street-railway car or carriage during winter or cold weather and while in use. The usual aisle or passageway between its two rows of seats is not, generally speaking, of sufficient width to receive a stove and allow a passenger to safely pass by it in going toward either end of the carriage, whether to take or to leave a seat. The removal of even a portion of the long seat of a street-car in order to make room for a stove would often not only be an inconvenience to passengers, but a serious loss, as it would lessen the capacity of the carriage for transportation, and of course create a diminution of pecuniary receipts during each trip of the carriage over the railway.

In carrying out my invention I place the heating apparatus within the doorway or the front end of a carriage. In street-railway carriages the door at each end is not generally hung on hinges, but is usually so applied to its opening or doorway in such manner as to be capable of being slid laterally either to uncover or to close the said opening.

In the drawings, A exhibits the end of a street-railway carriage or car, while B is the doorway and C the door thereof, *a a* being the windows or window-openings of such end. The door is represented as held in place by a frame, D, so made as to enable the door to be slid laterally either toward or away from the post *b* of such frame. Within the doorway I arrange the heating apparatus or furnace shown at E, which, as represented in the drawings, consists of a long vertical chamber or case, *c*, containing a stove, *d*, the throats *e f* of whose ash-pit *g* and fire-chamber *h* open toward the interior of the carriage, and are provided with sliders or doors *i k* for closing them, as circumstances may require. A flue-pipe, *l*, extends upward from the stove and through the top of the case *c*, such case being an air-chamber or air-heating space and furnished with air induction and eduction holes arranged as shown at *m m n*.

The front side of the case *c*, I construct flat or a plane surface, the remainder, or that which projects outside of the doorway and over the driver's platform F, being curved or otherwise properly formed. I also make the said case with a long tongue, *o*, and a long groove, *p*, arranged on opposite edges of it, as shown in section in Fig. 3, the tongue being to enter a groove, *r*, of the door-frame, while the groove *p* is to receive the door when the latter may be forced close up to the heating apparatus. By means of such appliances the door and its frame will operate to keep the heating apparatus in place in the doorway, and particularly if the door be fastened in position while being within the frame *p*.

The heating apparatus is constructed in the above-described manner in order that it may be readily removed from one doorway and placed in the other, which may be done by the conductor prior to the starting of the carriage on each trip. To render the apparatus easily removable from one end of the carriage to the other, I provide it with handles *s s s'*, by which it may be lifted by the conductor or one or more persons. I have found in practice that a portable air-heating furnace made as above described, and suitable for warming an ordinary street-railway carriage capable of carrying twenty-five or thirty passengers, need weigh only about forty pounds—a weight which

is not unfavorable to its being easily removed from one end to the other of the carriage.

Each portion H, or that part of the roof of the carriage which projects over each of the driver's platforms at the two ends of the carriage, has a chimney or discharge-pipe, I, affixed to it and extended through it and both above and below it, as shown in Fig. 2. It is intended that this pipe I shall be separate from and come directly over or in a line with the pipe l of the stove or heating apparatus, in order that the smoke discharged from the latter may be led off through the said pipe I and be discharged above the roof of the carriage.

As passengers usually enter and depart through the rearmost doorway of the carriage, the front one may be easily employed for the purpose of receiving the heating apparatus.

By having the pipe I arranged in that part of the roof which projects over the driver's platform, instead of running it up through any part of the remainder of the roof, I avoid the dropping of soot into that part of the carriage in which the passengers are to sit. It will readily be seen that after the heating apparatus may have been removed from one end to the other of a carriage and the carriage

is set in motion more or less soot would be likely to fall or be jarred out of that discharge-pipe I whose lower end may not be in connection with the smoke-pipe of the heating apparatus. My arrangement of the pipe I prevents any soot from falling inside of the carriage.

I claim—

1. The arrangement of a stove or heating apparatus within the doorway of a carriage, as described.

2. The construction of the heating apparatus with the tongue and groove, or their mechanical equivalents, arranged on opposite sides or edges of it and so as to enter the door-frame and receive the door of the carriage when such heating apparatus is arranged within the doorway of such carriage, as set forth.

3. The arrangement of the auxiliary pipe I relatively to the driver's platform, or in the projecting roof thereof, as explained, when the heating apparatus is arranged in the doorway, as set forth.

JOSEPH B. JOHNSON.

Witnesses:

R. H. EDDY,

F. P. HALE, Jr.