

(No Model.)

C. H. SHUTTS.
SHADE FOR FURNACE DOORS.

No. 413,570.

Patented Oct. 22, 1889.

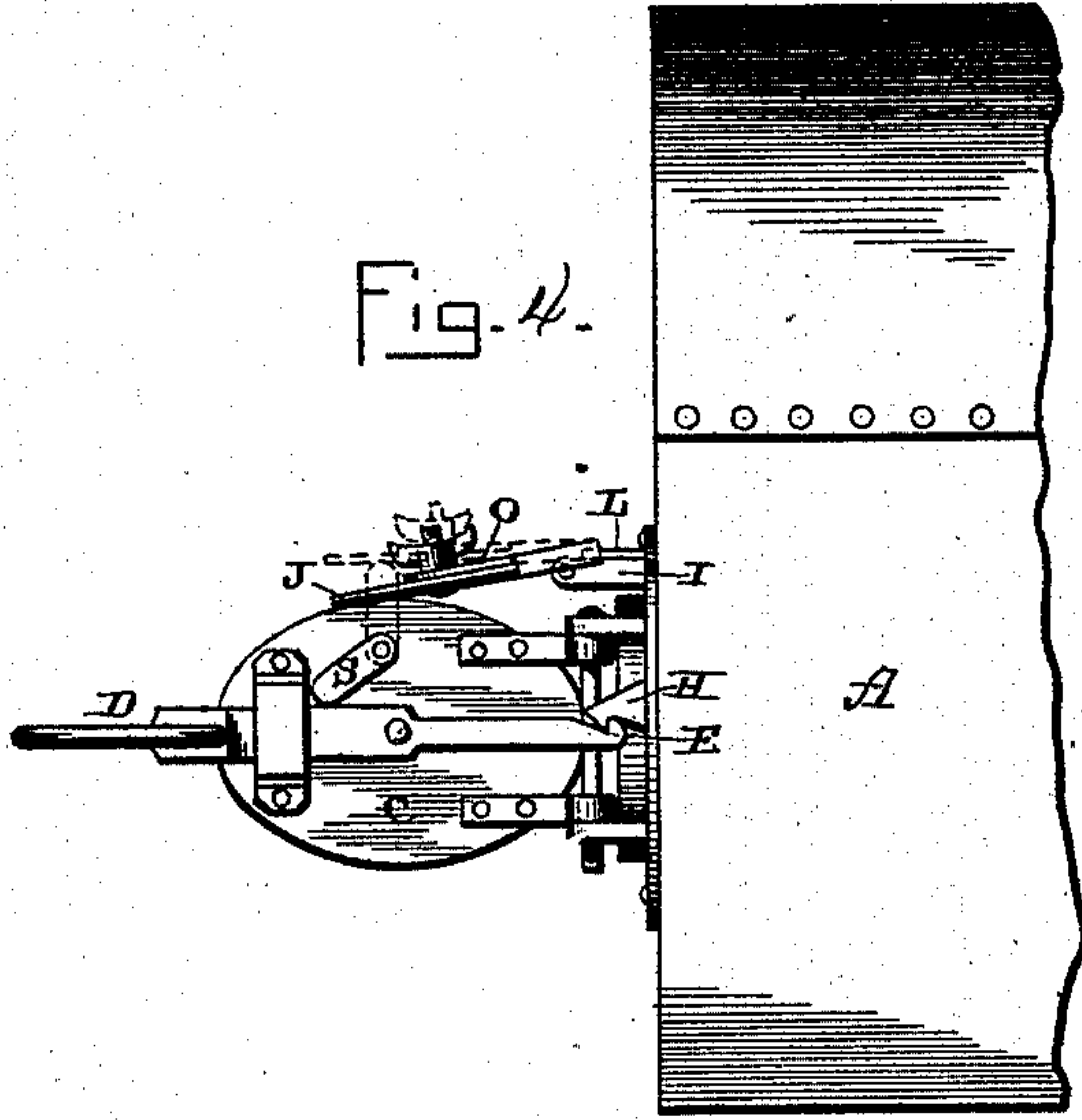
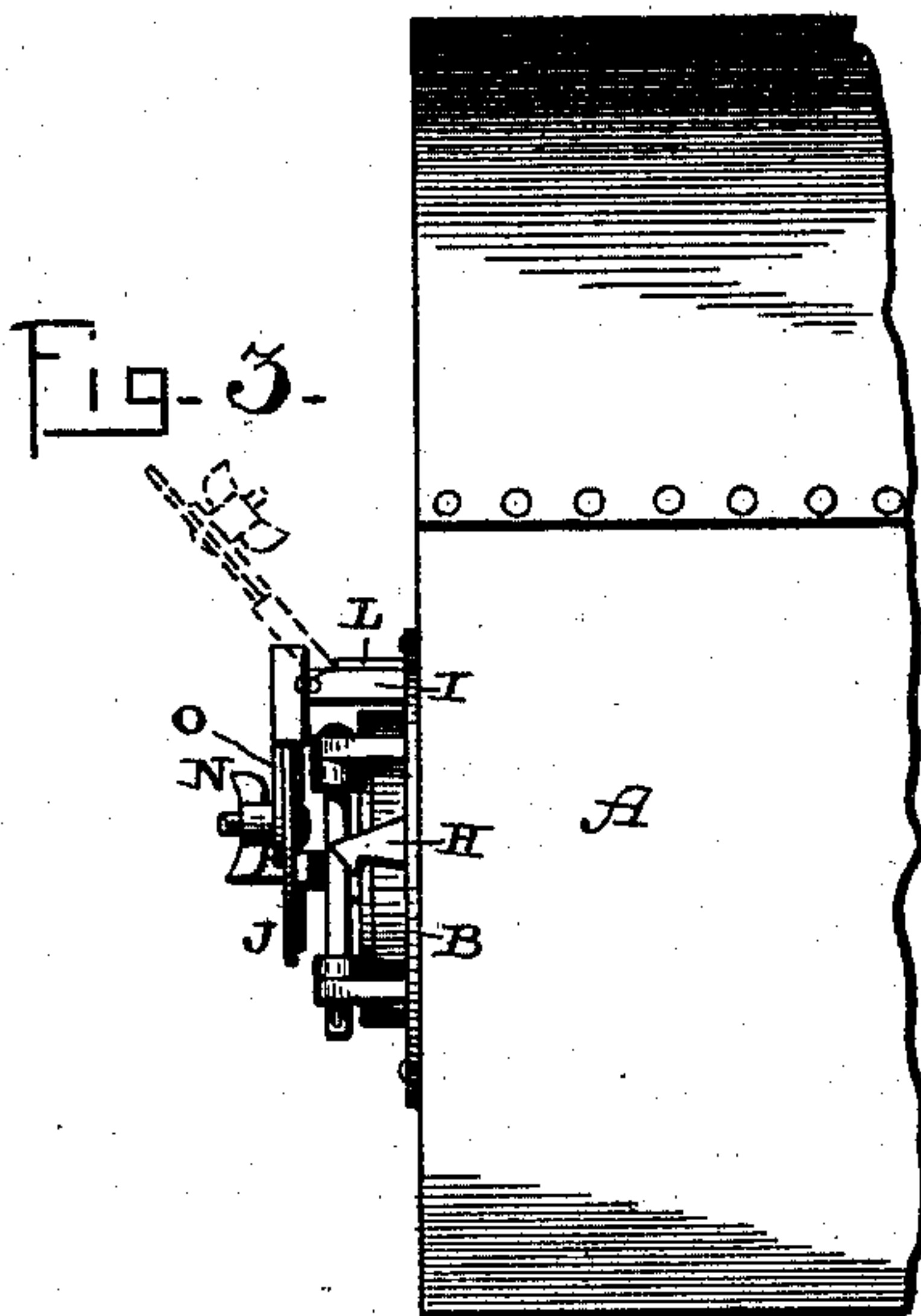
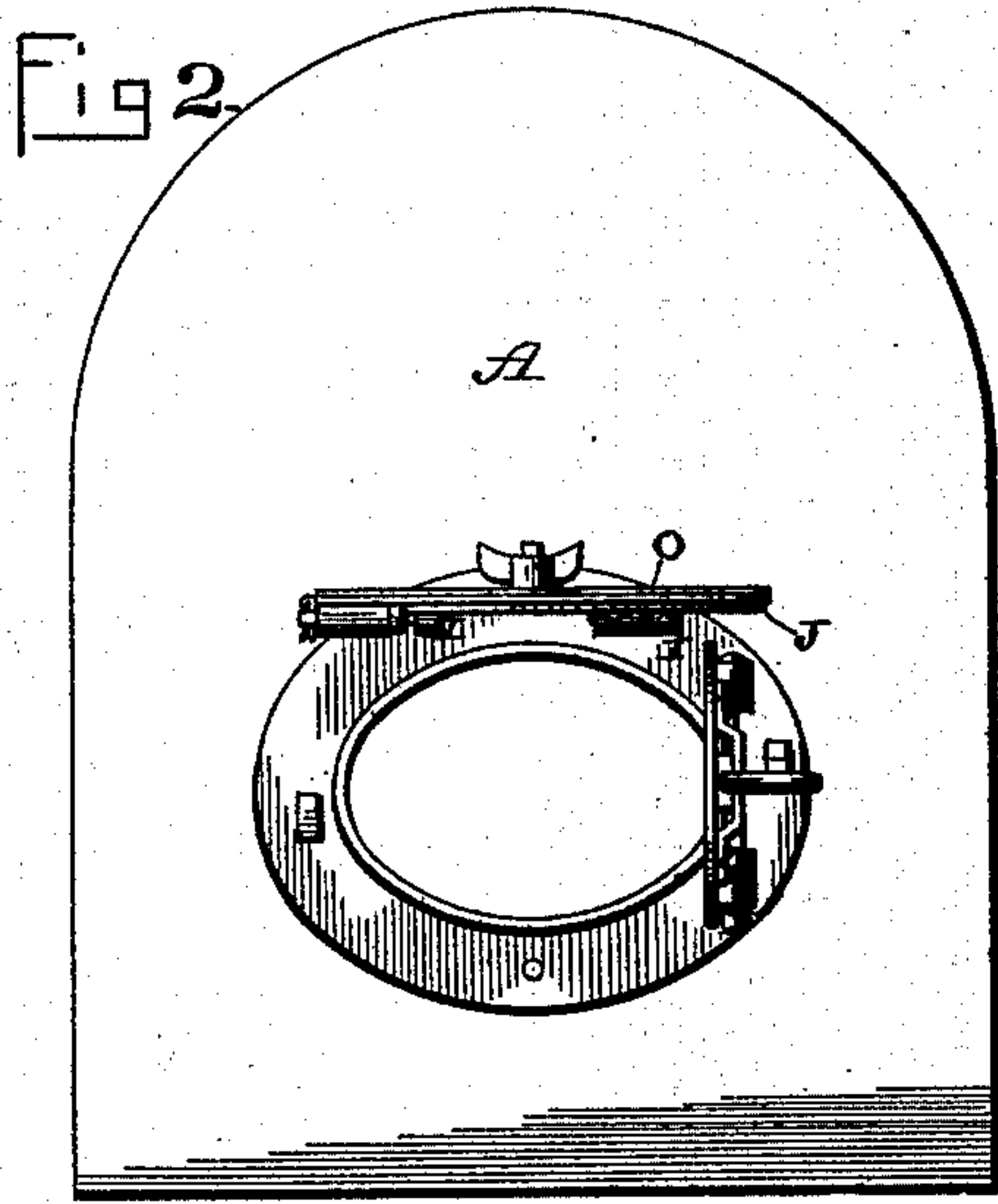
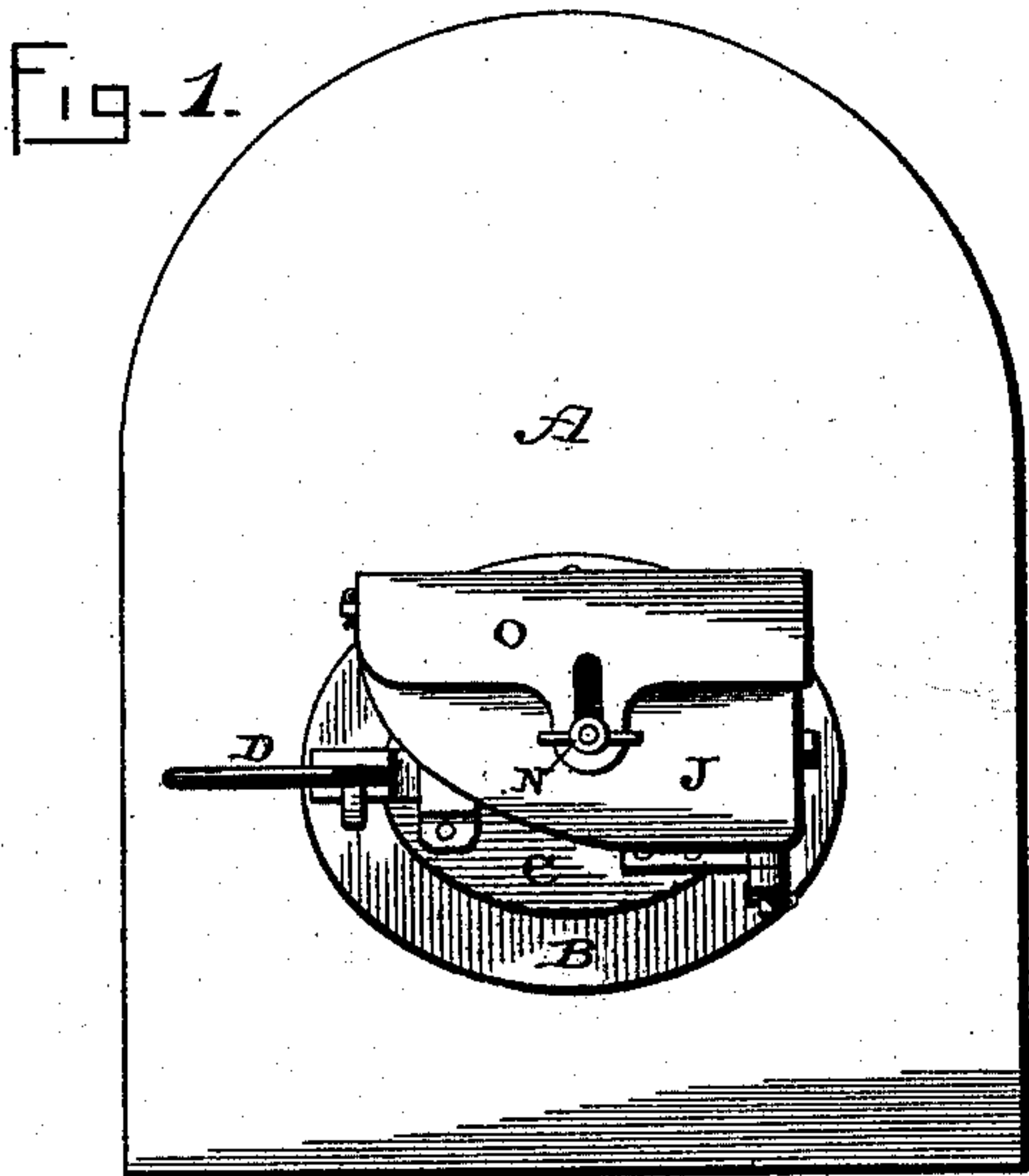
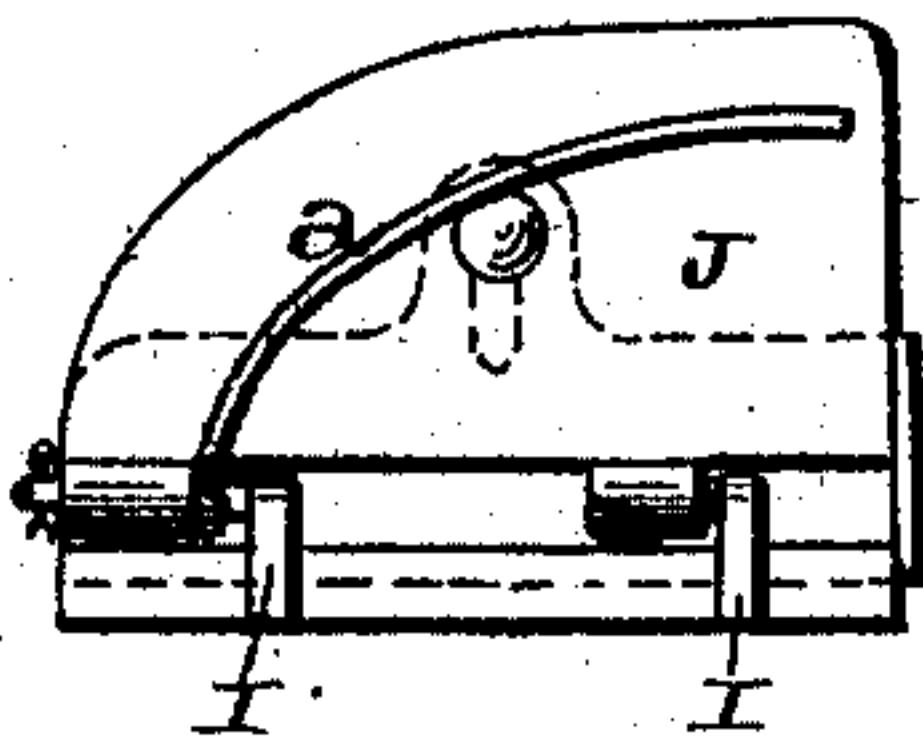


Fig-5



Witnesses:

E. P. Ellis,
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Inventor:

C. H. Shutts,
per
J. A. Lehmann, atty

UNITED STATES PATENT OFFICE.

CHARLES H. SHUTTS, OF ELKHART, INDIANA.

SHADE FOR FURNACE-DOORS.

SPECIFICATION forming part of Letters Patent No. 413,570, dated October 22, 1889.

Application filed August 10, 1889. Serial No. 320,387. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. SHUTTS, of Elkhart, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Shades for Furnace and Fire-Box Doors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in shades for furnace and fire-box doors; and it consists in the combination of the door with a shade which is raised into position as the door is opened, and which sinks back into position of its own gravity when the door is closed, as will be more fully described hereinafter.

The object of my invention is to attach an automatic shade to the doors of furnaces and fire-boxes, so that when the door is opened for any purpose the shade will protect the eyes of the engineer and prevent him from being blinded by a glare of light from the furnace.

Figure 1 is a front view of my invention, showing the door closed. Fig. 2 is a similar view showing the door open. Fig. 3 is a side view showing the furnace-door closed. Fig. 4 is a similar view showing the door open. Fig. 5 is a detail view.

A represents the end of a locomotive-boiler or fire-box, and B the ring, which is secured thereto around the opening into the furnace. The door C may either be of the shape here shown or any other that may be preferred, and pivoted upon this door is the latch D, which has its inner end formed into the hook F, so as to engage with the catch H upon the ring B, for the purpose of holding the door open. Projecting from the top of the ring above the upper edge of the door are the two supports I, upon which the shade J is pivoted, and upon the top of the two supports is placed a horizontal plate L, which extends outward a suitable distance.

The shade is preferably made of the shape shown, and attached thereto by means of the thumb-nut N is an adjusting-plate O. This adjusting-plate is provided with a slot at its

lower edge, so that it can be adjusted upon the shade at the will of the operator. When it is desired to raise the shade to its full height, as shown in dotted lines, this adjusting-plate is moved downward upon the shade the full length of the slot, so that the adjusting-plate will not come in contact with the outer edge of the horizontal plate upon the shade-hinges. When the shade is to be only raised by the door, this adjusting-plate is adjusted so that it will make a tight joint with the outer edge of the horizontal plate, and thus prevent the reflection of the fire from passing between them. In proportion as it is desired to raise the shade upward, the adjusting-plate is forced downward upon the shade. To prevent the shade from rattling and making a noise while the locomotive is in motion, a spring *a* is secured to the under side of the shade, and this spring bears against one of the hinges upon the shade and forces the hinge tightly against the split key or spring locking-pin by which it is held in position. When it is desired to remove the shade for any purpose, it is only necessary to remove the split key. Pivotaly secured to the door near its upper edge is a rod S, which is sufficiently long when turned into a vertical position to have its upper end project above the top of the door, and then as the door is opened this projecting end strikes against the under side of the shade and forces the shade upward to a greater height than would be done by the door alone. This piece is used when the shade is fastened above the door-ring and drops downward upon the door, and shuts the mouth of the furnace to a greater degree than is necessary. The outer lower end of the shade being rounded away, as the door is opened the shade is automatically raised, and as the door is closed the shade drops down into position from its own weight, thus making it unnecessary for the fireman to do anything more than to simply open and close the door.

Having thus described my invention, I claim—

1. The combination, with a furnace or fire-box door, of an automatically-acting shade, which is raised by the opening of the door, substantially as shown.

2. The combination of the door, with a shade which is rounded away at its outer lower cor-

ner, so that when the door is opened the shade is automatically raised thereby, substantially as described.

3. The combination of the door, the automatically-acting shade and the adjusting-plate attached to the shade, substantially as set forth.

4. The combination of the furnace-door, the shade, the shade-hangers, the horizontal plate placed upon the hangers, and the adjusting-plate attached to the shade, substantially as specified.

5. The combination of the shade, the shade-hangers, a spring applied to the under side

of the shade, and a locking device, substantially as shown. 15

6. The combination of a furnace-door, a pivoted piece connected thereto, and the automatically-acting shade, substantially as described. 20

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. SHUTTS.

Witnesses:

LEVY CHAMBERLAIN,
CHARLES H. WATSON.