

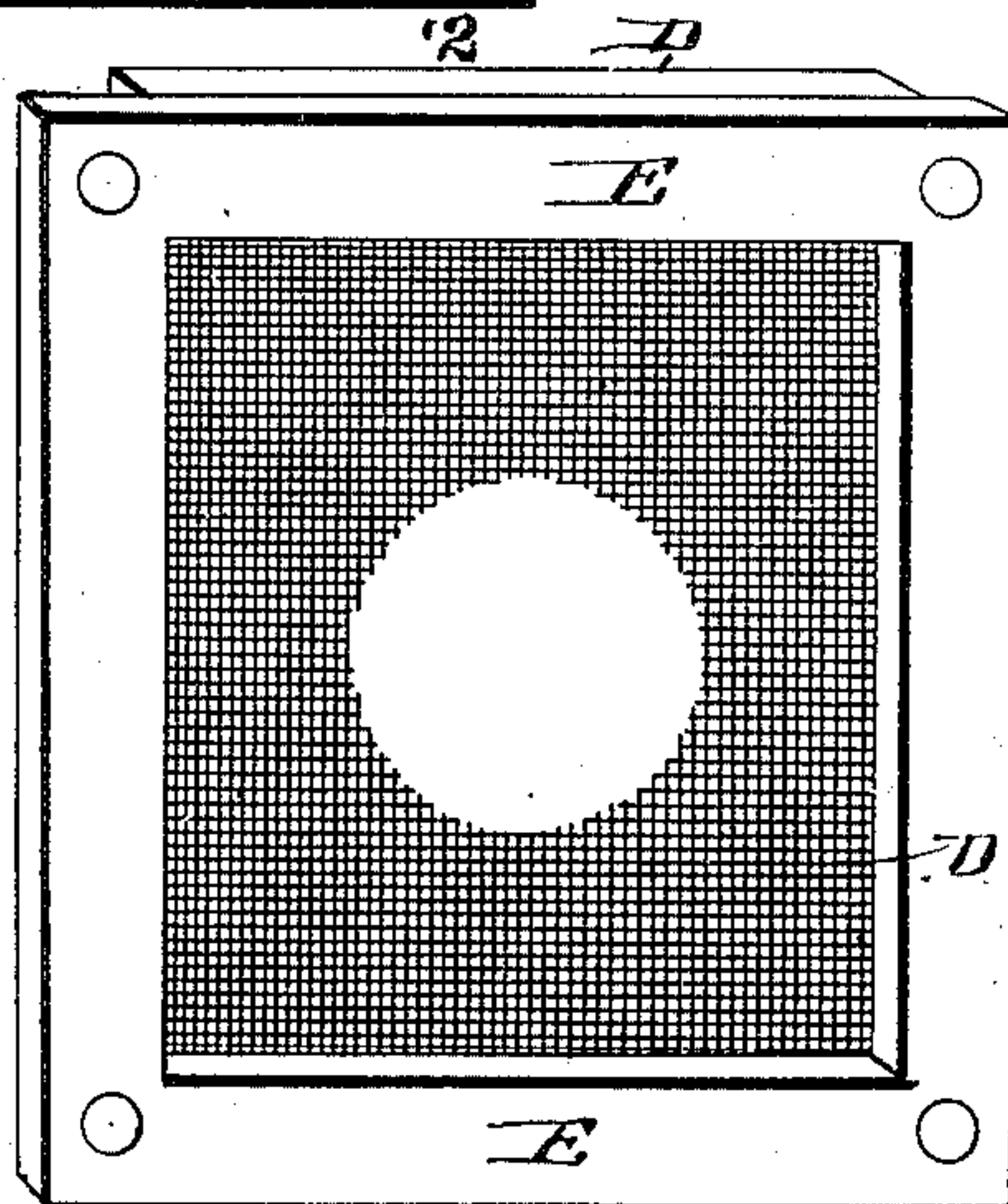
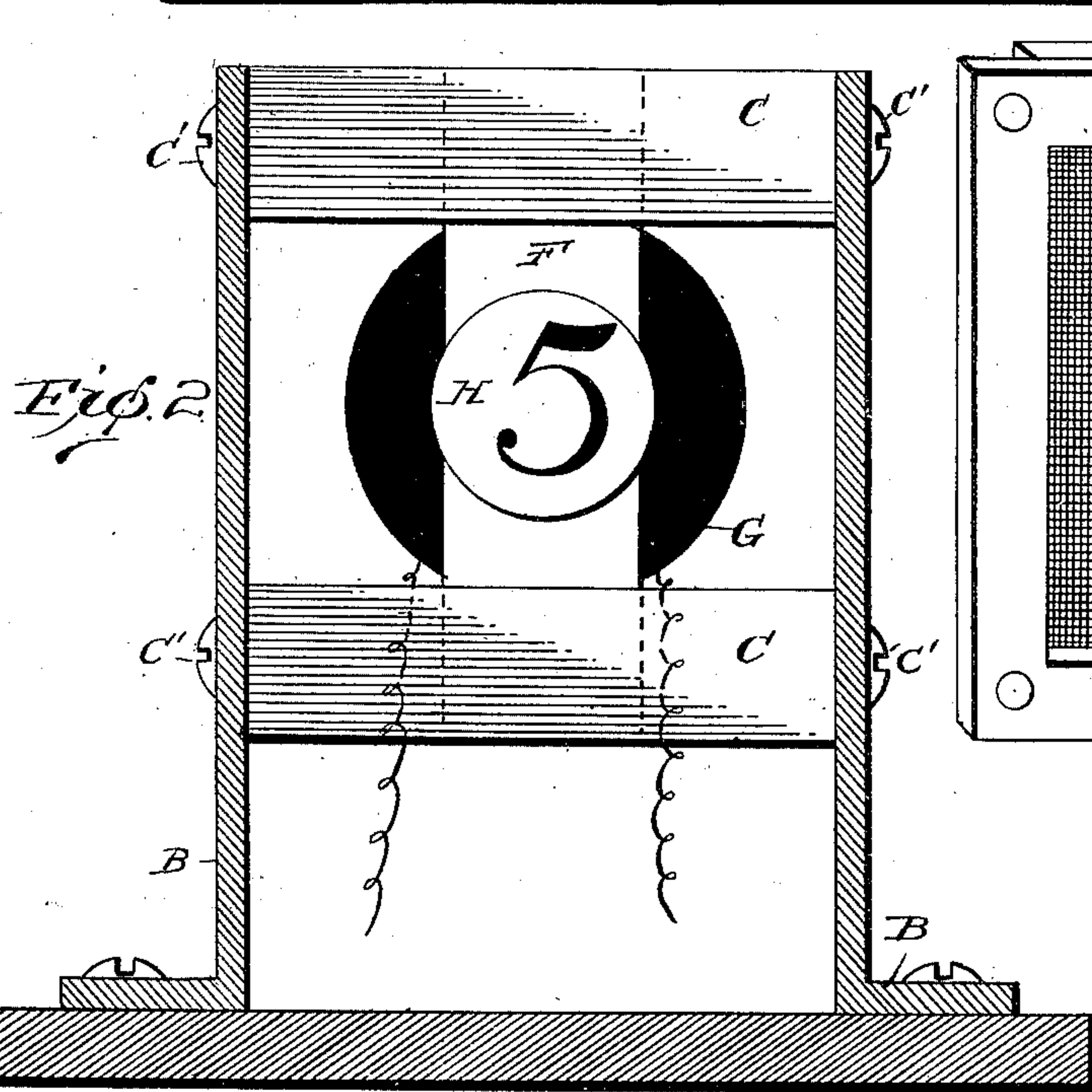
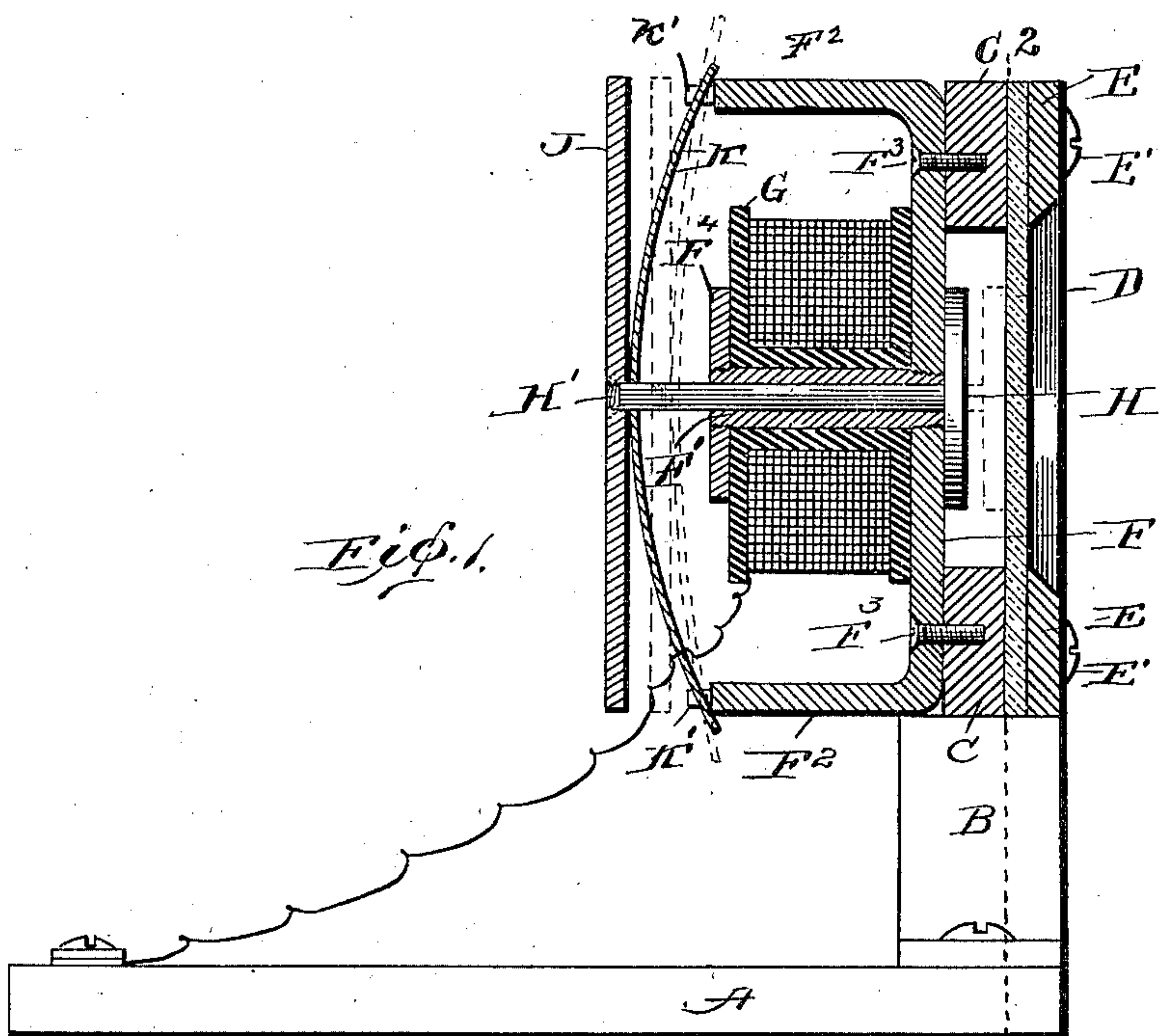
No. 701,460.

Patented June 3, 1902.

J. B. BAKER.  
SIGNAL.

(Application filed Nov. 20, 1901.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JOSEPH B. BAKER, OF BOSTON, MASSACHUSETTS.

## SIGNAL.

SPECIFICATION forming part of Letters Patent No. 701,460, dated June 3, 1902.

Application filed November 20, 1901. Serial No. 82,999. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH B. BAKER, a citizen of the United States, residing at Boston, Suffolk county, Massachusetts, have invented a new and useful Improvement in Signals, of which the following is a specification.

The object of my invention is the production of a signal which shall be applicable generally, but which is particularly useful in that type of signals known as "annunciators," whether they be used in hotels, telephone-switchboards, or elsewhere.

My invention is based on the principle that translucent material will effectually conceal a body placed at a short distance behind it, but that the degree with which the posterior body is rendered visible through the translucent body increases with extreme rapidity as the posterior body approaches the translucent material. I embody this principle in a signal the details of construction of which may vary almost indefinitely, but which all have the generic combination in common in which my invention, broadly stated, consists—namely, a translucent body and a movable signal emblem or device moving toward and from it from behind. In the posterior position the signal emblem or device may be rendered entirely invisible, if desired, by removing it to a sufficient distance from the translucent body. In the anterior position the signal device may be rendered about as clearly visible as if the translucent material were removed by having the emblem contact with the translucent material, or, if a lesser degree of visibility suffices, the signal emblem in its anterior position is made to lie near to without touching the translucent substance. The translucent body may naturally be made of a variety of materials. I have found ground glass to answer excellently. So, too, I may use plain glass and cover it with some liquid preparation that gives upon drying a semi opaque or translucent surface. Again, I may cover plain glass with tissue-paper of various sorts and tints, or I may place the tissue-paper between the two plates of plain glass. Then I may use celluloid of various grades and degrees of translucency, either alone or in combination with plain glass. These are examples of a number of translu-

cent materials which will answer my purpose. The movable signal emblem or device may also assume a variety of shapes and colors. It may consist of a disk or plate colored white or black, or it may be colored black with a white mark, ring, numeral, or letter, or it may be colored red or in some other pronounced color with a contrasting number or mark in white, and so on.

In all cases the movable emblem is nearly or quite invisible through the translucent material in its posterior position, and it becomes plainly visible in its anterior position.

The means which are used to actuate the movable signal device or emblem may be mechanical or pneumatic. The invention is, however, particularly useful in connection with annunciators in which the movable emblem is actuated by an electric current through electromagnetic devices. I shall therefore describe a specific embodiment of this form of my invention in the drawings, in which—

Figure 1 is a transverse section of the annunciator embodying my invention. Fig. 2 is a longitudinal section on line 2 2, Fig. 1; and Fig. 3 is a detail of the translucent plate.

There is a base-board A supporting standards B, between which are fastened by screws C' a pair of cross-bars C C. A plate D, of translucent material, is firmly held against the cross-bars C C by means of an aperture-plate E, through which pass screws E', threading into the cross-bars C C. To the back of the cross-bars C C is secured by screws F<sup>3</sup> a U-shaped soft-iron pole-piece F, having the legs F<sup>2</sup> at each end and carrying a soft-iron core F' at the center. Over the core F' is slipped a wire-wound spool G, which is held in place by the soft-iron pole-piece or plate F<sup>4</sup>, threaded upon or otherwise secured to the core F'.

The armature of the electromagnet is composed of a soft-iron plate J, to which is rigidly secured a rod H', which may be of brass or other non-magnetic material. This armature is held away from the pole-pieces by means of a blade-spring K, which may be secured at its center to the armature-bar J and the ends of which slide against the ends of the legs of the V-shaped pole-piece F, being kept from slipping off by guides or lugs K',



secured to the legs  $F^2$  on each side of the spring K.

To the end of the rod  $H'$  nearest the translucent plate D is secured the signal-disk H, which may be of any of the shapes or colors previously referred to.

The operation of the device will now be clear. When the signal-disk is in its retracted or posterior position, as shown in full lines in Fig. 1, the signal-disk is substantially invisible from the front. When current is passed through the wire of the spool G, the armature J is attracted by its pole-pieces, and the signal-disk being brought into or nearly into contact with the translucent plate D becomes clearly visible from the front end through the plate. This anterior position is shown in dotted lines.

Fig. 3 shows a detail of the apertured plate E and the translucent plate D behind it. In this case the translucent plate is masked or covered with some opaque paint over its entire surface, except for a circular area at the center, which is translucent and active to permit the signal to show when in its anterior position. This masking of all but the active portion of the translucent body serves to prevent much light from reaching the signal emblem in its posterior position, and this heightens the contrast between the distinctness of the signal in its anterior and posterior positions.

I may manifestly use a number of magnets and signal-bodies mounted side by side in connection with a single translucent plate. So, too, I may vary the form of the electromagnetic actuating device, using solenoids instead of ordinary electromagnets and varying the shape and construction of the magnet in any desired way, or, as previously stated, I may use pneumatic, mechanical, or other actuating devices for moving the signal-body. Finally, it is clear that it would be a mere reversal to move the translucent body and keep the signal-body stationary, although this would not be so convenient in practice.

What I claim as my invention is—

1. A signal comprising a translucent body and a relatively movable signal device, therebehind, substantially as described.

2. A signal comprising a translucent body,

a signal device therebehind and means for moving it into a posterior position, in which it is practically invisible, and into an anterior position in which it is visible through the translucent body, substantially as described.

3. A signal comprising a translucent plate and signal-disk therebehind, movable away from and nearly or quite into contact with the plate, to render the disk invisible and visible in turn, substantially as described.

4. A signal comprising a translucent body, a signal device therebehind and electromagnetic actuating means for moving the signal device toward and from the translucent body, substantially as described.

5. A signal comprising a translucent body, an electromagnet fixedly mounted at its back, an armature actuated thereby, a signal device placed behind the translucent body and an axial rod connecting it to the armature to be moved thereby, substantially as described.

6. A signal comprising a translucent body, an electromagnet fixedly mounted at its back and having a pole-piece or pole-pieces outside its coil, an armature cooperating therewith, a signal device placed behind the translucent body and a connection between the armature and signal device to move the latter with relation to the translucent body, substantially as described.

7. A signal comprising a translucent body, an electromagnet fixedly mounted at its back and having a pole-piece or pole-pieces outside its coil, an armature cooperating therewith, a signal device placed behind the translucent body and an axial connection between the armature and signal device to move the latter with relation to the translucent body, substantially as described.

8. A signal comprising a translucent body having a masked and an active portion and a relatively movable signal device behind the active portion, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH B. BAKER.

Witnesses:

THOMAS WESTON, Jr.,  
WILLIAM DOWSELL, Jr.