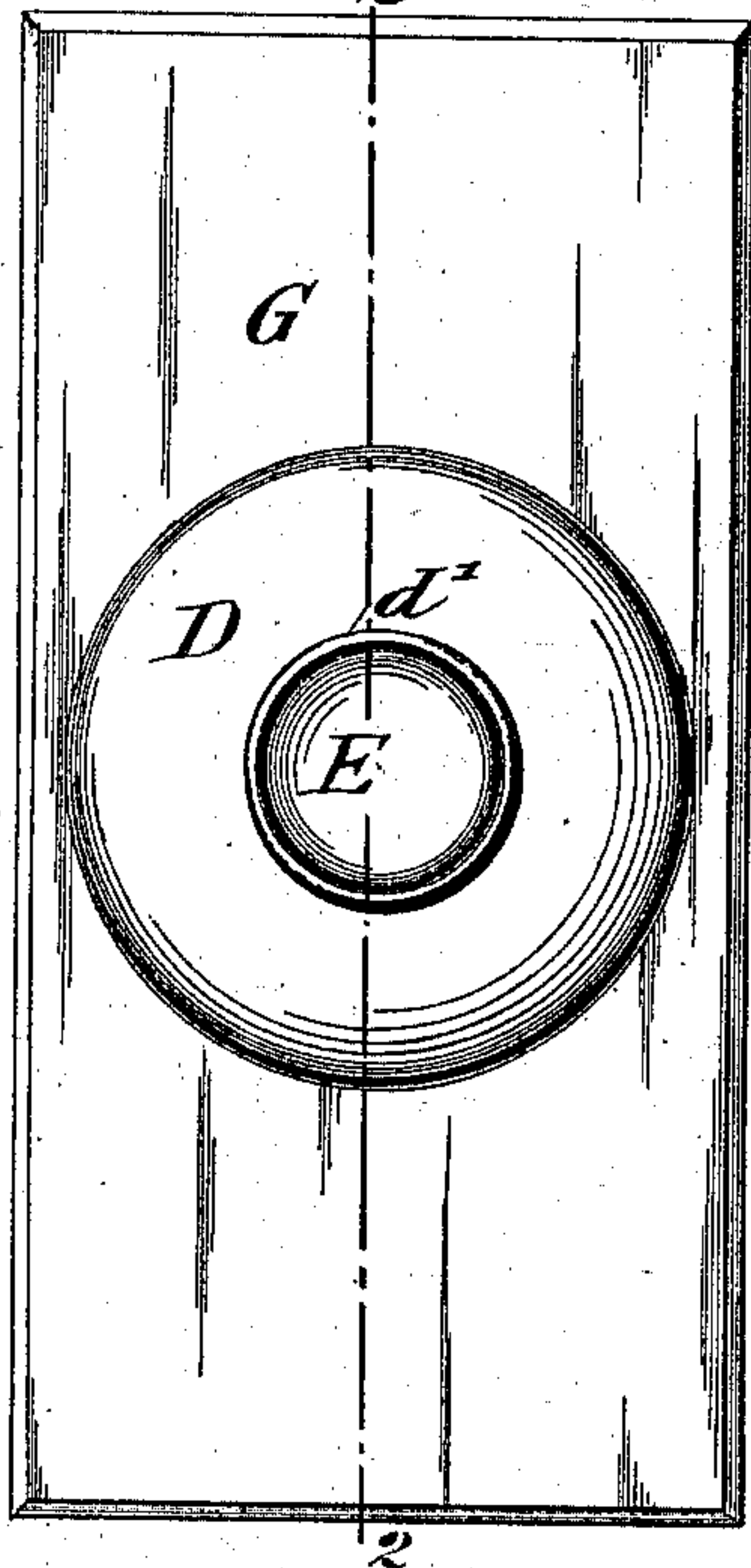


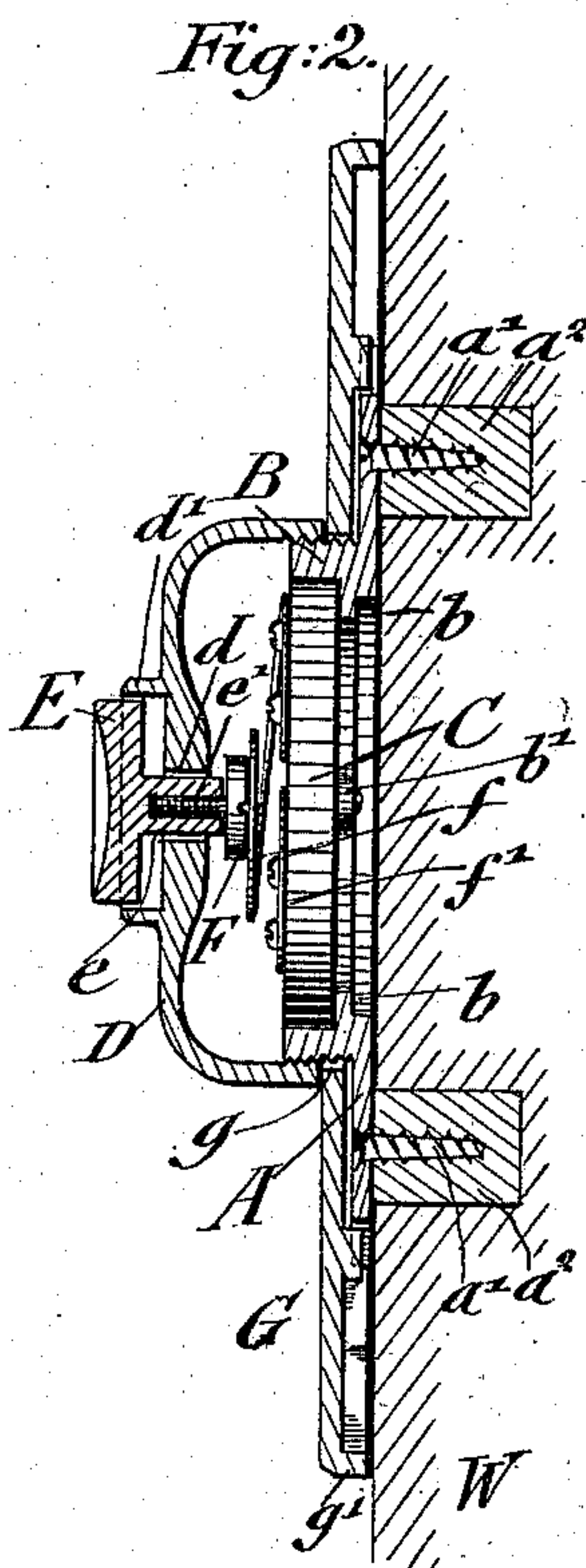
G. J. SOPER.  
ELECTRIC PUSH BUTTON.

Patented May 5, 1896.

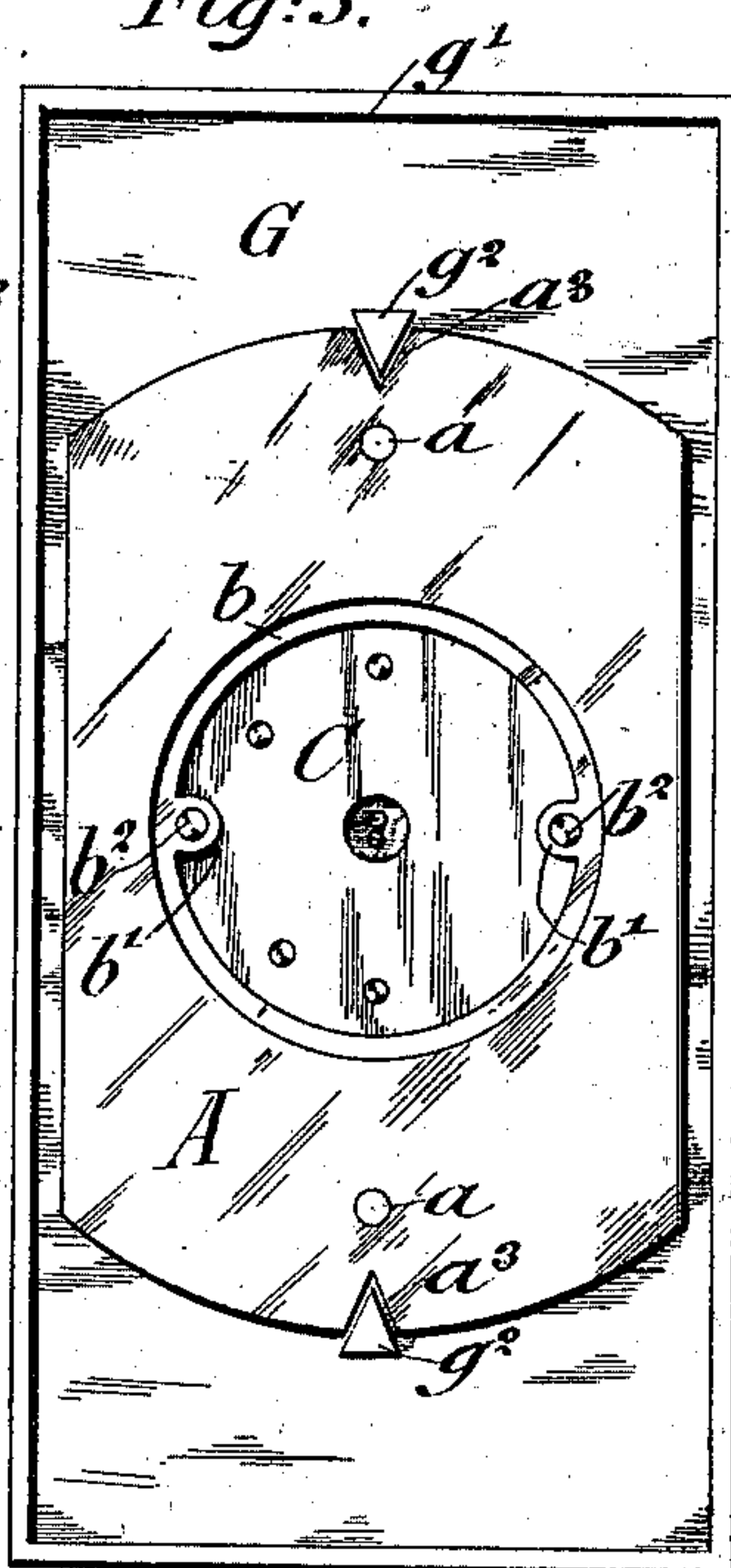
*Fig: 1.*  
2



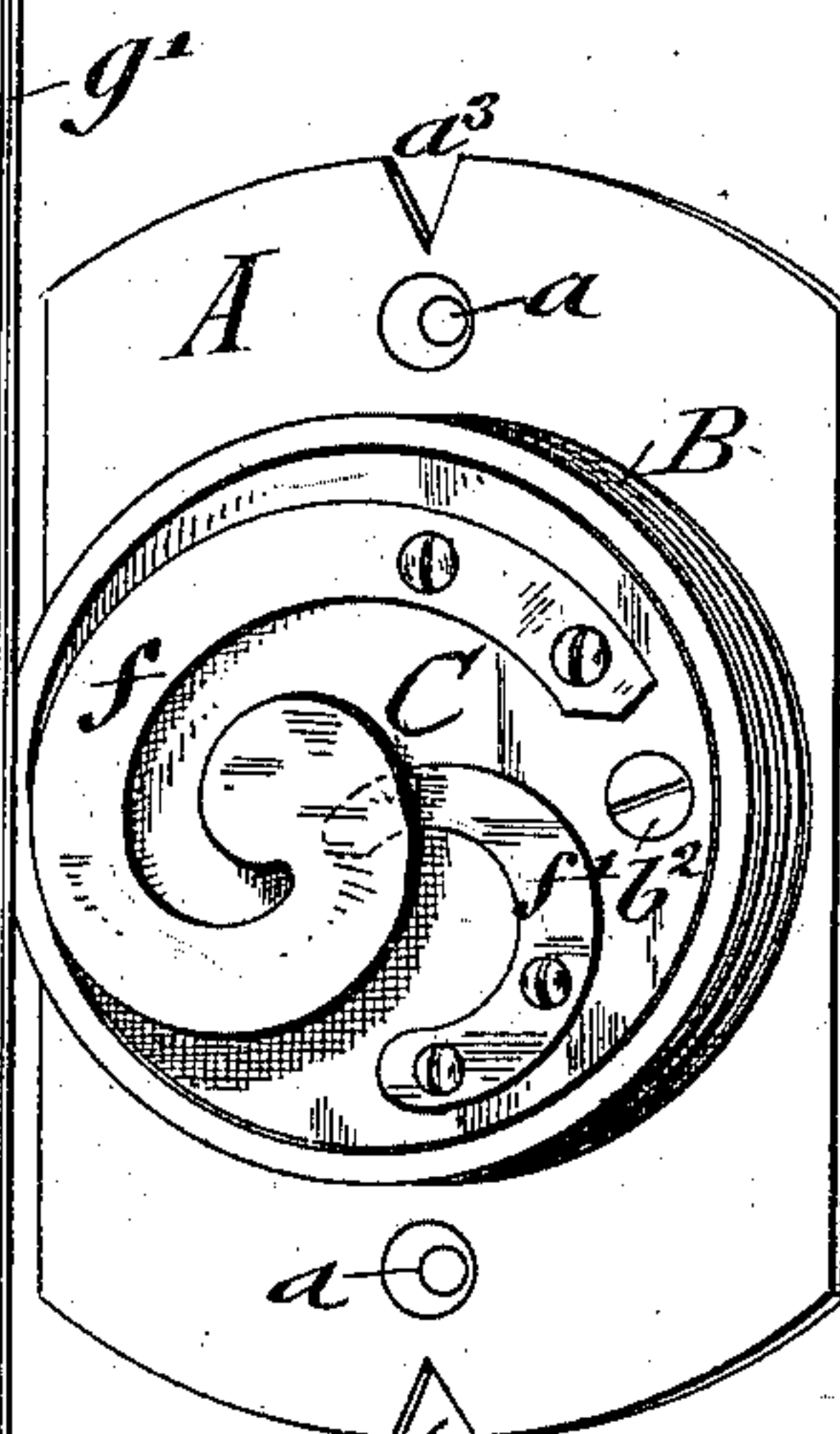
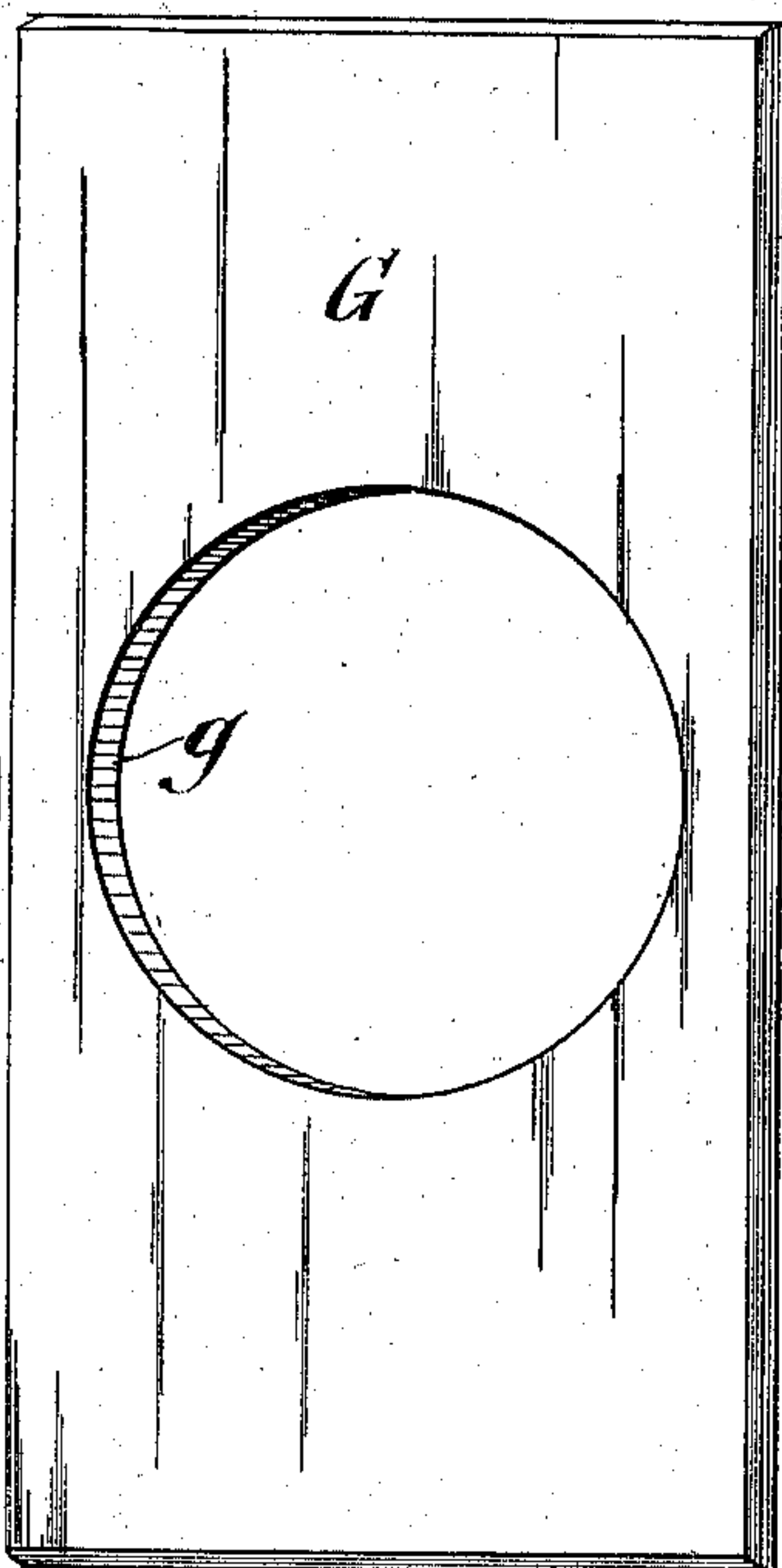
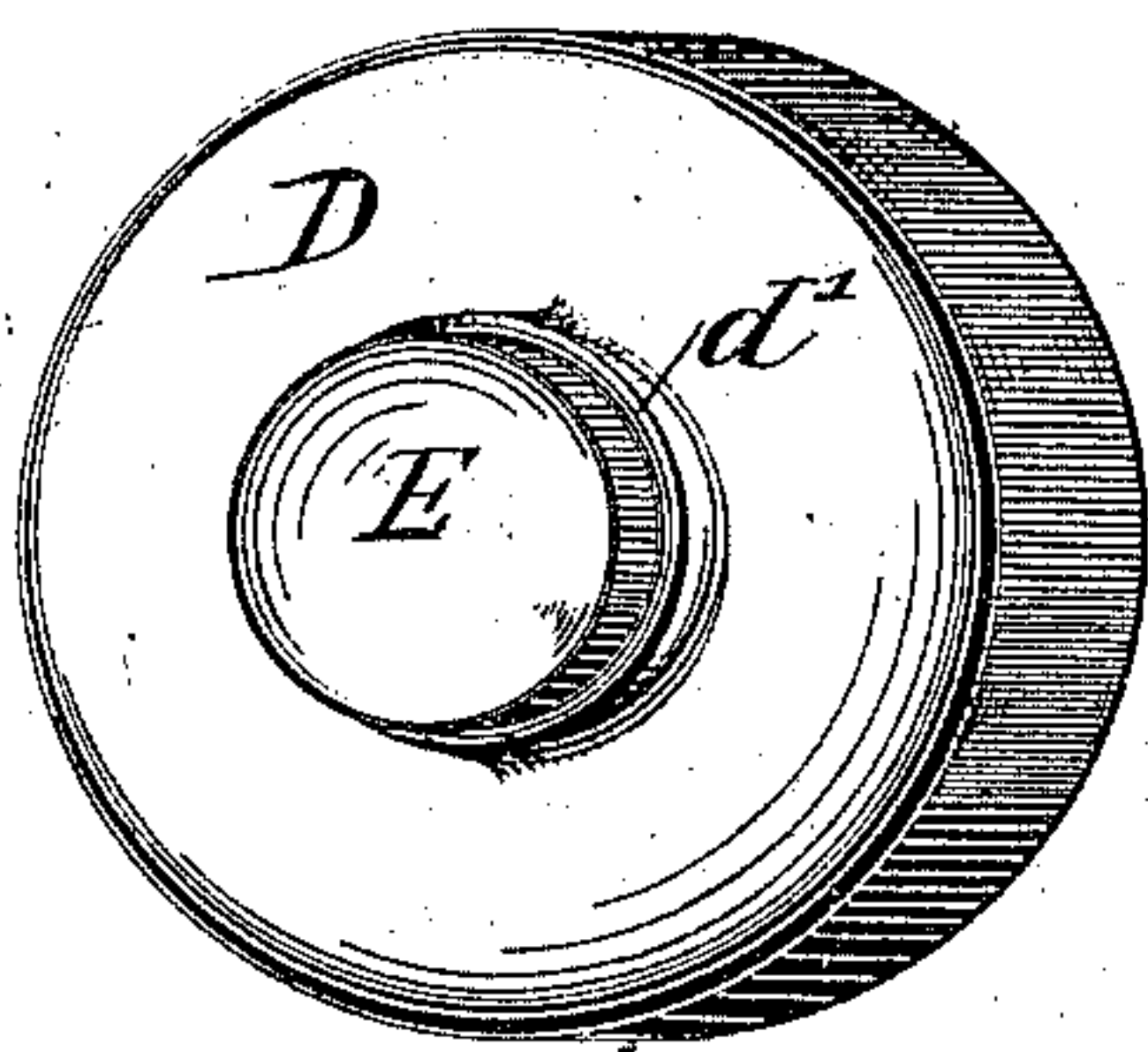
*Fig:2.*



*Fig:3.*



*Fig: 4.*



WITNESSES:

WITNESSES:  
George W. Jaekel  
Geo. L. Wheelock

INVENTOR

George J. Soper

BY

ATTORNEYS



# UNITED STATES PATENT OFFICE

GEORGE J. SOPER, OF BROOKLYN, NEW YORK.

## ELECTRIC PUSH-BUTTON.

SPECIFICATION forming part of Letters Patent No. 559,416, dated May 5, 1896.

Application filed May 17, 1895. Serial No. 549,616. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE J. SOPER, a citizen of the United States, residing in the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Electric Push-Buttons, of which the following is a specification.

This invention relates to an electric push-button, and has for its objects the hiding of the fastenings of the base-plate of the device, the ornamental finishing off of the device, the exclusion of rain and dirt from the interior of the same, the reduction of the danger of the corrosion or rusting of the interior parts to the lowest degree, and the provision of means whereby the nature and character of the button proper can be changed at pleasure.

The base-plates of push-buttons heretofore in use are left bare and uncovered, so that the heads of the screws or other fastenings can readily rust and impart an unsightly appearance. It is also very difficult to clean and polish the faces of the base-plates to the extent desired, as the same are fixed permanently to the wall of the building, and, besides, while scouring or rubbing the faces of the base-plates the stone or other material which immediately surrounds the base-plates is seriously damaged and injured to a very unsightly extent.

In addition to the several objects above enumerated another and important object of my invention is to provide a removable finishing-plate which covers over the heads of the screws which pass through the base-plate, and also which can, by reason of its removability, be readily taken off and cleaned without danger of causing an unsightly appearance to the wall, the same being replaced after it has been cleaned and polished.

To these ends my invention consists of a base-plate adapted to be secured to a wall and provided with an exteriorly-screw-threaded neck, within which is seated the insulating-block, which carries fixed and movable contacts, an internally-screw-threaded cap or casing provided with an opening and adapted to be screwed onto the said screw-threaded neck, a push-button proper which moves in the opening of the cap, so as to press the movable contact against the fixed contact, and a

removable finishing-plate provided with a central opening to receive the screw-threaded neck and with an external guard-flange which is pressed firmly against the wall of the building when the cap is screwed onto the neck over the finishing-plate; and my invention also consists of certain other features of construction and combinations of parts to be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of my improved device. Fig. 2 is a longitudinal section on line 2 2, Fig. 1. Fig. 3 is a rear view of the same, and Fig. 4 is a perspective view of the three main portions of my device shown separated and in the position in which they are placed together.

Similar letters of reference indicate corresponding parts.

A indicates a base-plate provided with screw-holes *a* at each end, through which the fastening-screws *a'* are passed, said screws being secured in the usual lead or other plugs *a''*, which are anchored in the wall *W* of the building to which my improved push-button is applied. The base-plate *A* is provided with an outwardly-projecting externally-screw-threaded annular neck *B* and with an internal annular shoulder *b*, said neck receiving within it the insulating-block *C*, which is seated permanently against the annular shoulder *b*. Diametrically-opposite lugs *b'* extend inwardly from the shoulder *b* and are perforated to receive the screws or other fastenings *b''*, whereby the insulating-block is permanently secured within the neck *B*. An internally-screw-threaded dome-shaped cap *D* is screwed onto the neck *B* and is provided with a central opening *d* and with an outwardly-extending annular flange *d'*, which is concentric with said opening, for a purpose to be hereinafter stated.

The shank *e* of the push-button proper is guided in the central opening *d* of the cap, while the head *E* of the push-button proper is guided and located within the annular flange *d'*. In order that the head *E* and the shank *e* may be interchanged with one of another design—so that, for instance, a metallic push-button proper can be exchanged with a hard-rubber or other push-button proper—said shank is provided with a screw-threaded



axial bore  $e'$ , which receives the screw-threaded portion of the headed screw F, the head of said screw being of greater diameter than the diameter of the central opening  $d$ , so that the push-button proper is retained on the cap and cannot be removed without unscrewing the latter. When the push-button proper is pressed against the movable contact-spring  $f$ , contact is established between the latter and the fixed contact  $f'$  and the electric circuit closed through said contacts  $f f'$  in the usual manner. An additional advantage of this device is that by reason of the separate bearings obtained by the shank  $e$  and head E of the push-button proper on the wall of the opening  $d$  and the inner wall of the flange  $d'$  the perfect centering of said push-button is obtained, so that after the latter has been depressed to close the circuit the same is always returned to normal position by the action of the spring-contact  $f$  and the continued closing of the circuit and the running down of the battery thereby prevented.

For the purpose of hiding the unsightly base-plate A and the screws which secure the same to the wall of the building and for the purpose of imparting a finished appearance to the device, and, besides, to enable the polishing of the parts which are disclosed to the public, I provide a finishing or covering plate G for said base-plate, said covering-plate being of oblong or any other suitable shape and highly polished on its face, or the same may be provided with any suitable ornamentation in any evident manner. The finishing-plate G is formed with a central opening  $g$ , which is of slightly greater diameter than the diameter of the screw-neck B of the base-plate, so that the neck can pass through the opening and the finishing-plate fit over the base-plate and rest by its inwardly-extending guard-flange  $g'$ , on all sides of the same, against the wall of the building. When the screw-cap D is screwed onto the neck B and is firmly pressed against the removable plate G, the guard-flange  $g'$  is seated firmly against the wall of the building, while the dislocation of the finishing-plate and the proper centering of the same are respectively prevented and established by means of diametrically-opposite lugs  $g^2$ , which are received in opposite notches  $a^3$ , formed in the edges of the base-plate A. As the flange  $g'$  of the finishing-plate entirely surrounds the base-plate and is seated against the wall of the building all rain and dirt are practically excluded from the interior of the device. Any child can unscrew the screw-threaded cap D from the neck B, remove the finishing-plate G, clean and polish the same, and replace the parts in position with comparatively little trouble, so that experience is not required to place the device in operative position, for the reason that the push-button proper is carried by the cap and the contacts remain on the building. It would not do with devices of this character

heretofore in use for an inexperienced person to meddle with the same; but by reason of the simple construction of my device the same can be readily taken apart and put together with little or no skill.

It is evident that various modifications can be made in my invention without departing from the spirit and scope thereof, and I do not therefore desire to limit myself to the exact construction and arrangement shown.

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

1. An electric push-button, consisting of a screw-threaded portion or neck adapted to be secured to the wall of a building and carry the usual movable and fixed contacts, a screw-threaded cap adapted to be screwed onto said screw-threaded portion and provided with an opening, a push-button proper guided by its shank in said opening, and a removable finishing-plate provided with a central opening to receive the screw-threaded portion and adapted to be pressed by the cap against the wall, substantially as set forth.

2. An electric push-button, consisting of a base-plate provided with an externally-screw-threaded neck and adapted to be fastened permanently to a wall, an insulating-block within the neck provided with fixed and movable contacts, an internally-screw-threaded cap adapted to be screwed onto the said neck and provided with a central opening, a push-button proper guided by its shank in said central opening, and a removable finishing-plate provided with an opening to receive said screw-threaded neck, and confined by said cap against the wall, substantially as set forth.

3. An electric push-button, consisting of a base-plate provided with an externally-screw-threaded neck, and adapted to be secured to the wall of the building, an insulating-block secured within the neck and provided with fixed and movable contacts, an internally-screw-threaded cap provided with a central opening, a push-button proper guided by its shank in said central opening, and a removable finishing-plate provided with an opening to receive the screw-threaded neck, and with an external guard-flange which is adapted to seat against the wall of the building, said finishing-plate being confined by said screw-cap, substantially as set forth.

4. An electric push-button, consisting of a base-plate provided with an externally-screw-threaded neck and adapted to be secured to the wall of a building, an insulating-block fastened within the neck and provided with fixed and movable contacts, an internally-screw-threaded cap adapted to be screwed onto said neck, and provided with an opening, a push-button proper guided by its shank in the opening of the cap, and a removable finishing-plate provided with a central opening which receives said screw-threaded neck, and with inwardly-projecting lugs which take into



recesses or notches in the base-plate, said finishing-plate being fastened in position by means of said cap, substantially as set forth.

5     5. An electric push-button, consisting of a base-plate provided with a screw-threaded neck and adapted to be secured to a wall, an insulating-block secured within the neck of the base-plate and provided with fixed and movable contacts, a removable screw-threaded hollow cap adapted to screw onto said neck, 10 said cap being provided with a central guide-opening and also a concentric and enlarged recess at its outer side, around the guide-opening, and a button guided in the central opening of, and removable with, the cap without removing or disturbing the contacts and 15

adapted to press the movable contact against the fixed contact, said button consisting of a head having a bearing against the wall of the recess, a shank projecting from the head and 20 having a bearing against the wall of the central opening, and means fitted to the shank of the button for holding the same in position on the cap, substantially as set forth.

In testimony that I claim the foregoing as 25 my invention I have signed my name in presence of two subscribing witnesses.

GEO. J. SOPER.

Witnesses:

PAUL GOEPEL,  
GEO. L. WHEELLOCK.