

J. A. SCHAEFER.  
ELECTRICAL SWITCHBOARD.  
APPLICATION FILED JULY 15, 1907.

959,886.

Patented May 31, 1910.

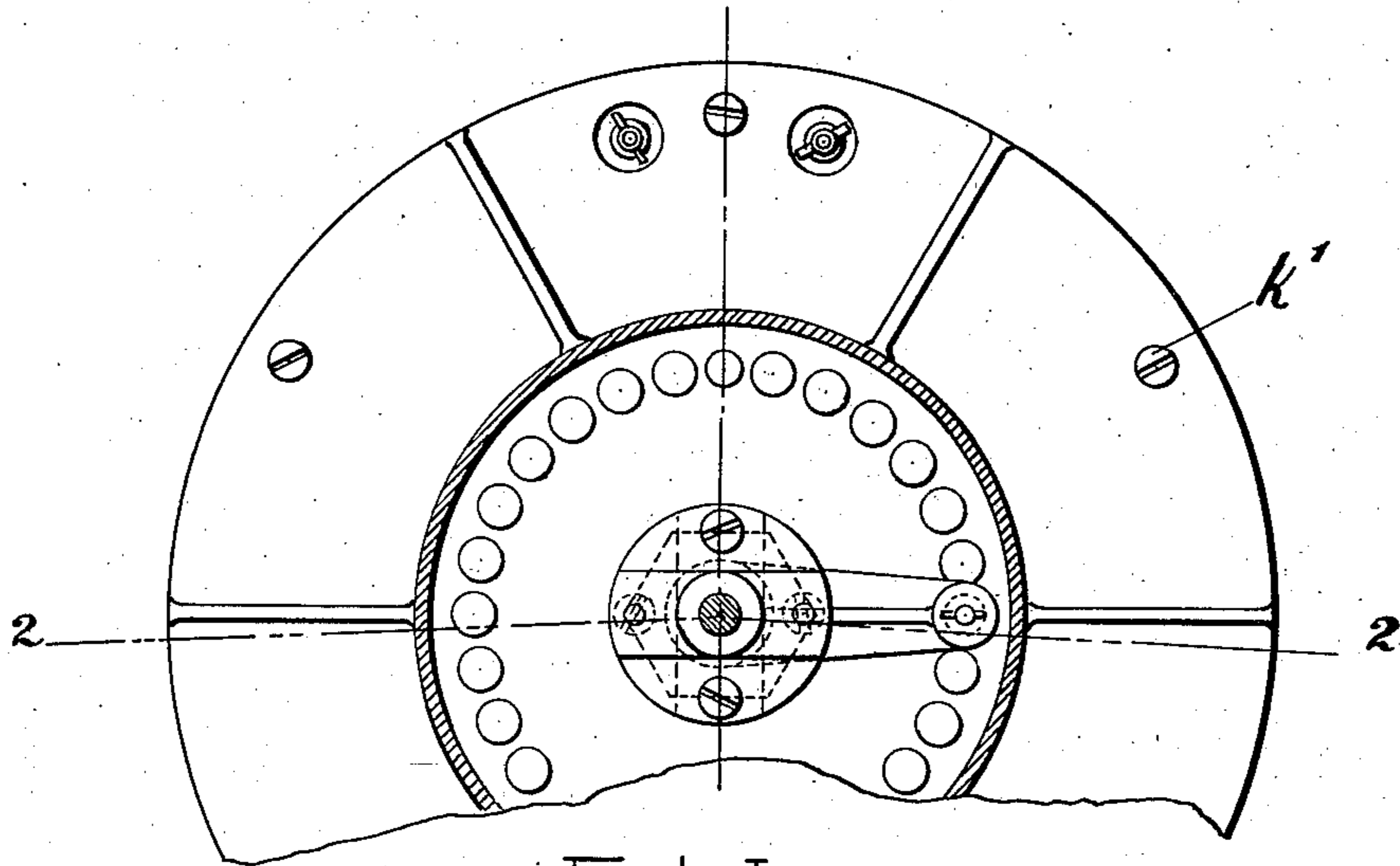


FIG. 1.

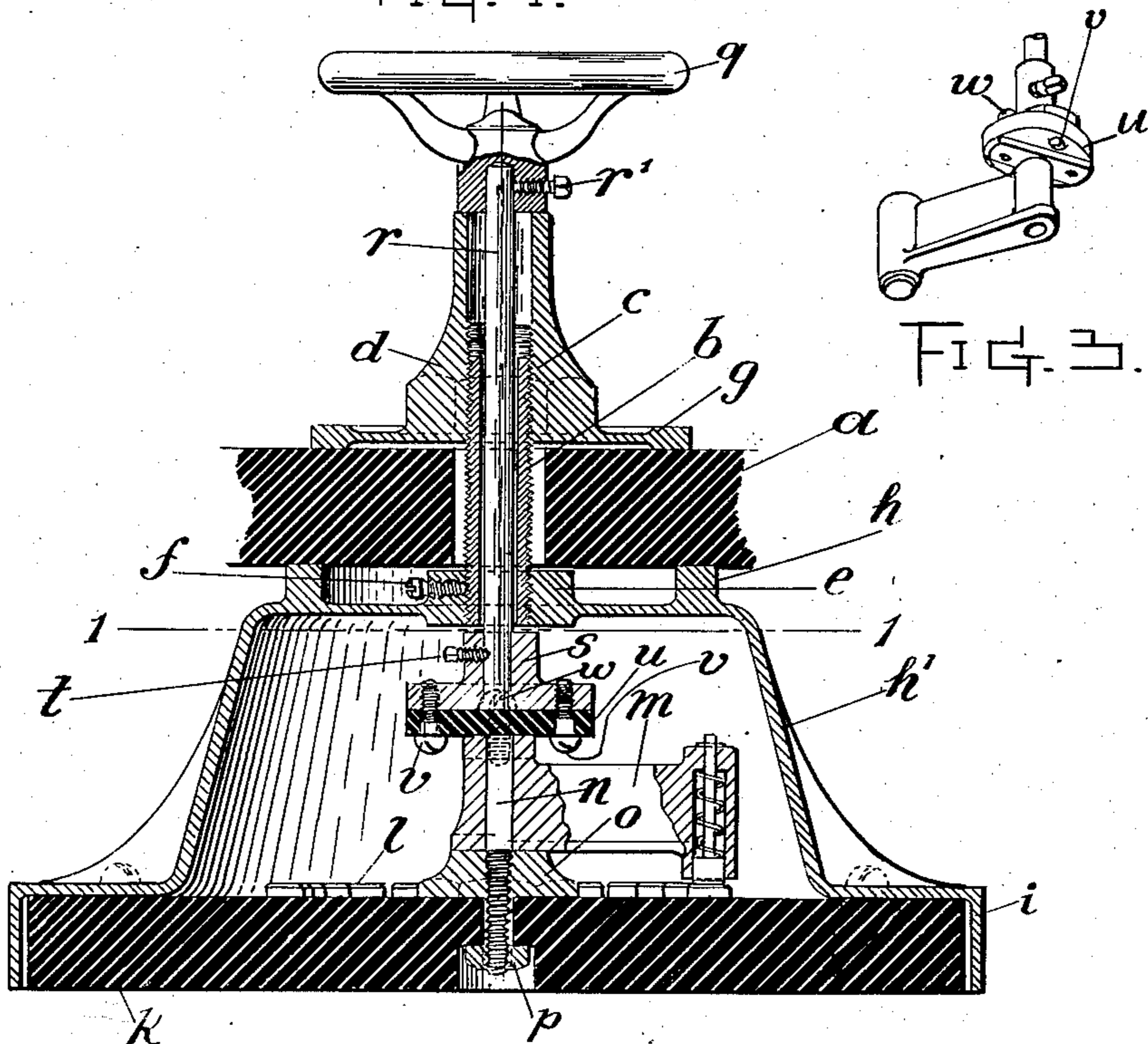


FIG. 2.

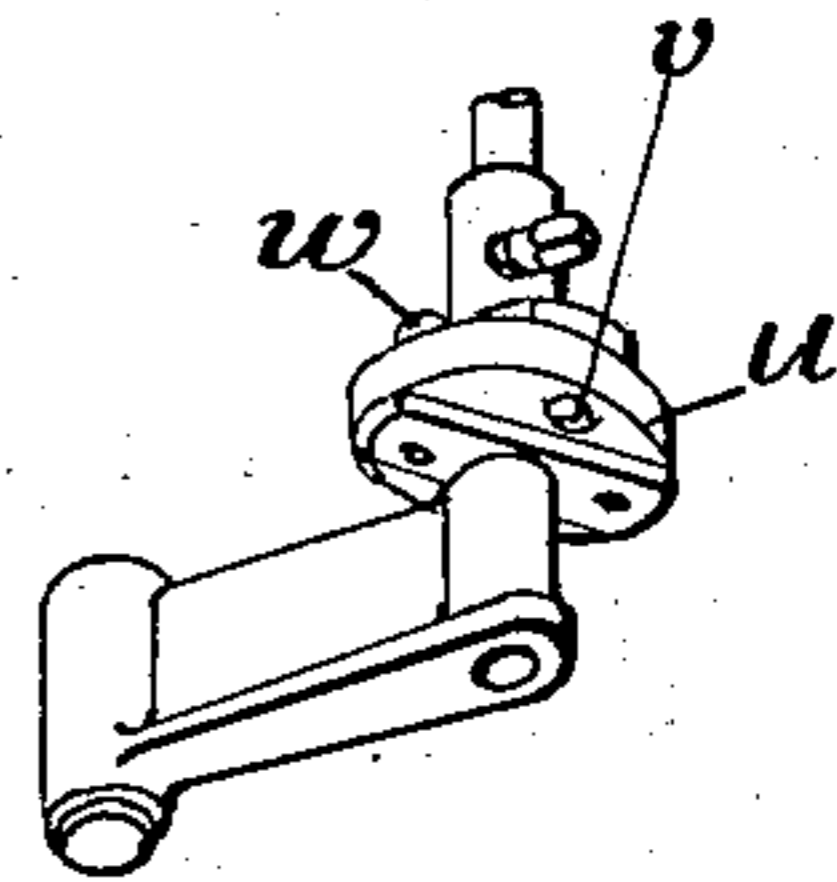


FIG. 3.

WITNESSES:

*Otto Rothenstein*  
*Emil Andersson*

INVENTOR

*Joseph A. Schaefer*

# UNITED STATES PATENT OFFICE.

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## ELECTRICAL SWITCHBOARD.

959,886.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed July 15, 1907. Serial No. 383,864.

*To all whom it may concern:*

Be it known that I, JOSEPH A. SCHAEFER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Electrical Switchboards, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to electrical apparatus, and has for its object the provision of an improved mounting therefor.

My invention finds a very useful application in connection with power switchboards, for by means of it, regulable electrical apparatus may be mounted, in improved fashion, upon one side of the switch-board, and the means for effecting the operation of the apparatus may be provided upon the other side of the switch-board.

In switch-board work, a very useful embodiment of the invention includes a rheostat.

My invention, in one of its preferred embodiments, will be very readily understood by reference to the accompanying drawing, in which—

Figure 1 is a sectional view on line 1—1 of Fig. 2. Fig. 2 is a vertical sectional view on line 2—2 of Fig. 1. Fig. 3 is a view in perspective illustrating the manner of coupling the switch-arm of the rheostat with the operating shaft.

Like parts are indicated by similar characters of reference throughout the different figures.

The switch-board includes a board or plate *a* of suitable insulating material, such as slate or marble, which has provided there-through an aperture *b*, through which aperture there is placed a sleeve or tube *c* threaded upon its exterior and clamped in position by means of a nut *d* upon the face of the board and a nut *e* upon the back of the board. The nut *e* is desirably constantly maintained in fixed relation with the tube *c* by means of a set-screw *f*, whereby the nut *e* and said tube may, in effect, constitute a unitary structure, the elements *c* and *e* being threaded together merely for purpose of structural convenience and assemblage. The clamping action whereby the tube *c* is held in place, is desirably adjustably effected by

the nut *d*, to which end the nut *d* is provided with a threaded bore that projects considerably forward of the sleeve *c* to afford sufficient room for adjustment. The nut *d* is desirably of special design, and preferably has an extended flange portion *g*, the rim of the flange portion alone bearing upon the board *a*, some clearance intervening between the balance of the face of the nut and the board, so as to permit a very firm clamping action, which is further promoted by the slight degree of resiliency that is afforded by reason of the aforesaid slight clearance between the face of the nut *d* and the board *a*. The nut *e*, similarly, is provided with a flange *h* that engages the back face of the board *a*, clearance intervening between the balance of the nut *e* and the board *a* for also serving to secure better clamping action.

Another feature of my invention resides in providing a mounting for the electrical apparatus that is to be supported upon the rear of the board, which mounting is carried by the nut *e* and which is preferably integrally formed therewith. This mounting, in the embodiment of the invention illustrated, resides in a housing *h*<sup>1</sup> which is cup-shaped in the embodiment illustrated, this housing being outwardly flanged at *i* to receive an insulating base *k* upon which are mounted rheostat contacts *l*. The base *k* and the housing *h*<sup>1</sup> may be united in any suitable way, as, for example, by means of fastening screws *k*<sup>1</sup>. The housing incloses a traveling switch-arm *m* of well-known construction, which switch-arm has a stationary bearing *n* in the form of a stub-shaft threaded at its rear end where it passes through an aperture in the base *k*. The nut *o* is disposed upon one side of the base *k* and a second nut *p* is disposed upon the other side, these two nuts acting, by reason of their threaded engagement with the shaft *n* and their location with respect to the base *k*, to clamp said shaft in fixed position. The switch-arm *m* is provided with a suitable operating lever or handle, such as the hand-wheel *q*, upon the front face of the switch-board. This hand-wheel is united with the switch-arm, preferably by means of the structural parts illustrated. For the purpose of this union of said wheel and said switch-arm, I have provided a rotating shaft *r* which is clamped to the wheel *q* by means

of the set-screw  $r^1$ , this shaft  $r$  extending through the bores in the nuts  $d$  and  $e$  and the sleeve or tube  $c$ . The shaft  $r$  projects into the housing  $h$  and there supports a carrier  $s$ , a set-screw  $t$  fixing the relation of shaft and carrier. The carrier  $s$ , which is preferably of metal, supports a block of insulating material  $u$ , which block of insulating material is attached to said carrier by means of screws  $v$ . The switch-arm  $m$  is attached, in turn, to the block  $u$  by means of screws  $w$ . The portions of the carrier  $s$  and the switch-arm that are united with the block of insulating material  $u$ , are preferably shaped as indicated most clearly in Fig. 3, these portions of these elements being disposed angularly with respect to each other, whereby the screws  $v$  and  $w$  may find proper passage to effect mechanical union of the switch-arm with the operating shaft without occasioning electrical connection between these two parts.

By the construction thus described, the desired mechanical union between the operating handle  $q$  and the switch-arm is afforded, while electrical separation thereof is maintained.

While I have herein shown and particularly described one embodiment of my invention and one application thereof, I do not wish to be limited to the precise use to which my invention is put, nor to the precise embodiment thereof illustrated, as changes and adaptations thereof may be

made without departing from the spirit of my invention, but,

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

An electrical switchboard including a foundation plate  $a$  of insulating material, a housing  $h'$  disposed to the rear of said plate, said housing having a flange  $h$  that engages the back face of the plate, said housing also carrying a nut  $e$  inclosed by said flange, clearance intervening between said plate and nut to secure better clamping action between the nut and the part with which it has threaded engagement, a threaded sleeve  $c$  passing through an aperture in said plate and into threaded connection with said nut, a nut  $d$  on the opposite side of said plate from where the housing is disposed having threaded connection with said sleeve  $c$ , said nut  $d$  having an extended flange portion  $g$ , the rim of which alone engages the plate  $a$ , a shaft  $r$  passing freely through the nuts  $d$  and  $e$  and the sleeve  $c$  and into the housing  $h'$ , an operating lever  $q$  upon the front end of said shaft, and a switch arm within the housing  $h'$  upon the other end of said shaft.

In witness whereof, I hereunto subscribe my name this 12th day of July A. D., 1907.

JOSEPH A. SCHAEFER.

Witnesses:

G. L. CRAGG,

OTTO ROTHENSTEIN.