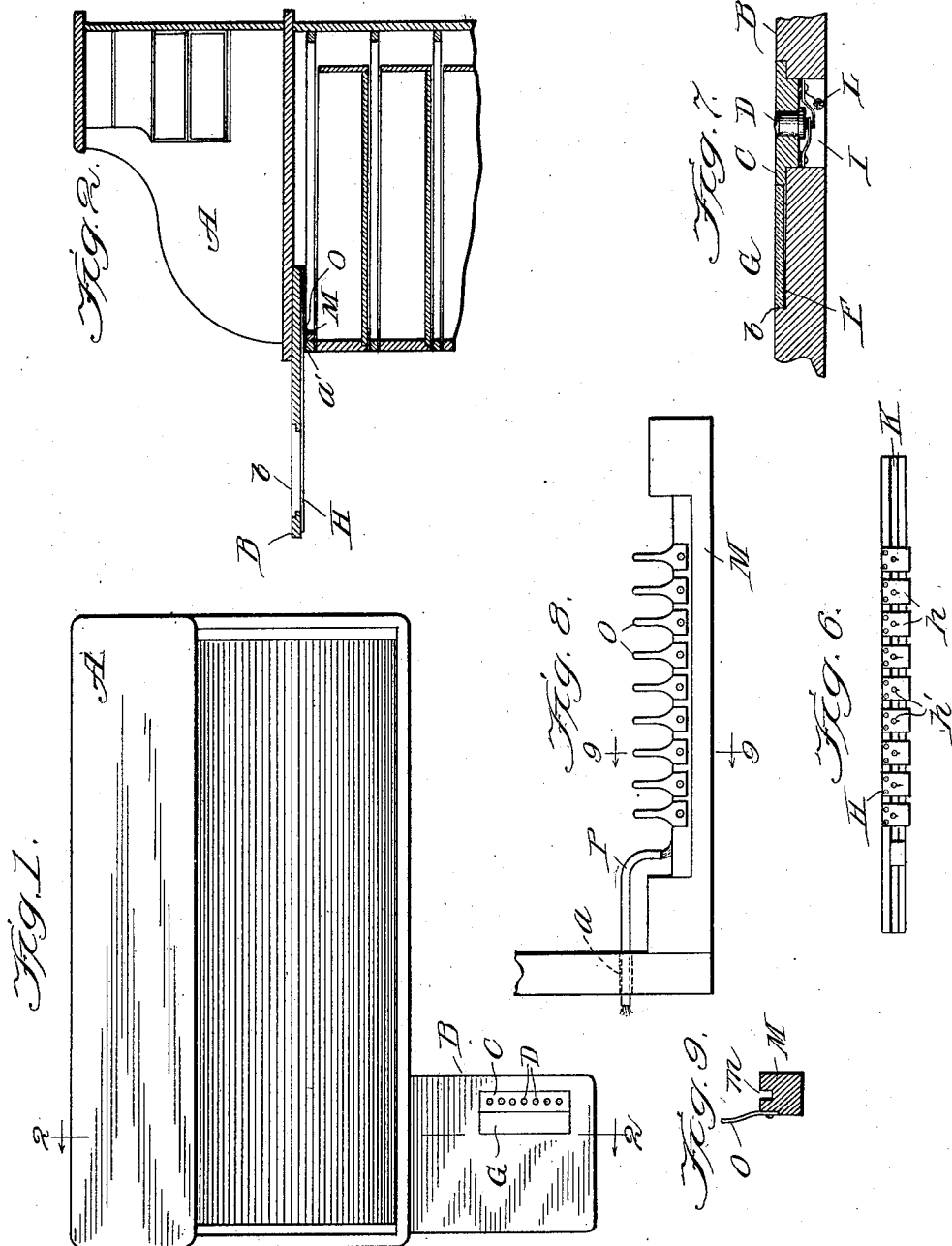


B. L. WEAVER & W. R. MILLER.
 PUSH BUTTON SYSTEM FOR DESKS AND THE LIKE.
 APPLICATION FILED DEC. 17, 1910.

1,003,677.

Patented Sept. 19, 1911.

2 SHEETS—SHEET 1.



WITNESSES
Harry S. Gaither
Wm. Graham
 BY *Chamberlain & Henderson*
 attys

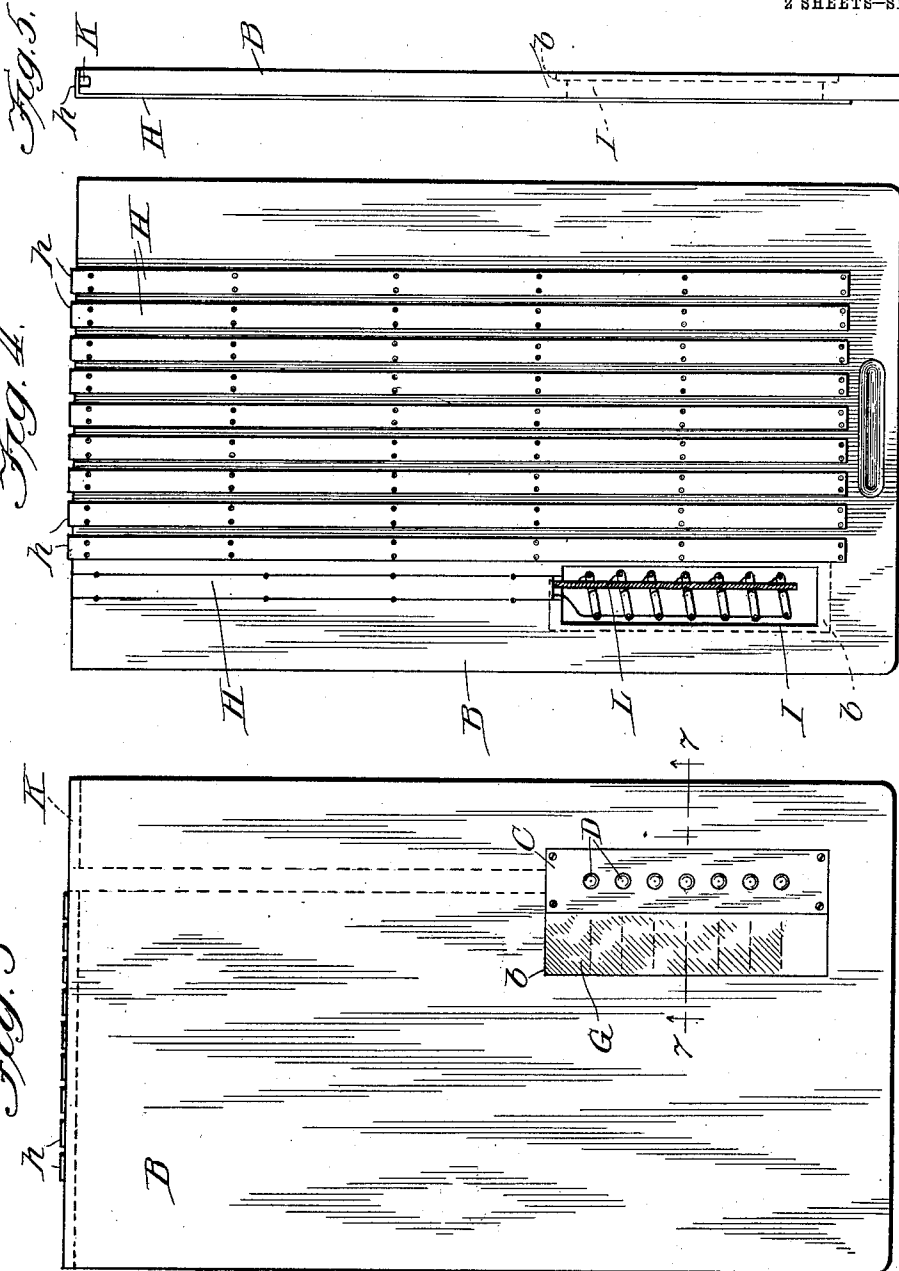
INVENTORS:
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UNITED STATES PATENT OFFICE.

BENT L. WEAVER, OF MIDDLETOWN, AND WILLIAM R. MILLER, OF PENBROOK, PENNSYLVANIA, ASSIGNORS TO R. & W. COMPANY, A CORPORATION OF MAINE.

PUSH-BUTTON SYSTEM FOR DESKS AND THE LIKE.

1,003,677.

Specification of Letters Patent. Patented Sept. 19, 1911.

Application filed December 17, 1910. Serial No. 597,821.

To all whom it may concern:

Be it known that we, BENT L. WEAVER, residing at Middletown, county of Dauphin, State of Pennsylvania, and WILLIAM R. MILLER, residing at Penbrook, county of Dauphin, State of Pennsylvania, have invented a certain new and useful Improvement in Push-Button Systems for Desks and the Like, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Our invention has for its object to provide a simple and novel arrangement and disposition of wiring for desks and the like which will give the user convenient control over a signal or annunciator system without taking up space which is needed for other purposes. To accomplish this end we place the controllers, such as push buttons, in the sliding panel or ledge of the desk; thus leaving the top of the desk unobstructed and placing the controlling devices in a position where they cannot be actuated accidentally unless the panel or ledge is pulled out.

Since we propose to place the controlling device on the sliding ledge or panel of a desk or the like, our invention, viewed in another aspect, has for its object to provide a simple system of connections which will be operative in any position of the ledge or panel and which will not interfere with the use of the latter in the ordinary way.

The various features of novelty whereby our invention is characterized will be hereinafter pointed out with particularity in the claims; but for a full understanding of our invention and of its object and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawings, wherein:

Figure 1 is a plan view of a desk arranged in accordance with our invention, the ledge or panel being drawn out; Fig. 2 is a section on line 2—2 of Fig. 1; Fig. 3 is a top view of the ledge or panel on an en-

larged scale; Fig. 4 is a bottom view of the ledge or panel; Figs. 5 and 6 are respectively side and end views of the panel; Fig. 7 is a section on line 7—7 of Fig. 3; Fig. 8 is a view on the same scale as Fig. 3 showing the upper edge of that portion of the desk immediately beneath the panel; and Fig. 9 is a section on line 9—9 of Fig. 8.

Referring to the drawings, A represents a desk of any suitable construction and B the usual ledge or panel which may be drawn out beyond the desk or pushed back into the desk.

In accordance with our invention we place the push buttons or other controlling devices near the front end and at one side of the panel so that they will not interfere with the use of the panel for writing. The push buttons or other controlling devices may take any usual or preferred form. In the arrangement shown, we have cut an opening *b* of the proper size through the panel and have mounted therein a slab C carrying a series of push buttons D. If desired, a recess E may be cut in the top of the panel beside the slab so as to permit a slip of paper or the like, bearing descriptions of the push buttons, to be laid beside the push buttons. A piece of glass G may be placed in the recess above the slip, protecting the same and leaving the surface of the panel smooth. On the underside of the panel we arrange a series of parallel metal strips H, preferably of copper or other good conducting material, these strips extending lengthwise of the panel. As many strips are employed as are necessary to give the requisite number of conductors leading to and from the push buttons. The strips are electrically connected to the terminals of the push buttons by suitable conductors. This connection may conveniently be accomplished by cutting a groove I in the underside of the panel from the opening *b* to the rear edge, cutting a second groove K along the rear edge, and placing a cable L in these grooves. The wires at one end of the cable are connected to the push buttons while at the other end they are connected to the

strips H. This latter connection may conveniently be accomplished by bending the ends of the strips over the rear edge of the panel as indicated at *h*, each wire being connected to its proper strip by being led through an opening *h'* in the member *h* thereof and soldered in place.

In the front of the desk directly beneath the panel is secured a bar M of wood or other suitable material carrying a series of contact pieces O, preferably in the form of spring fingers. There are as many contact pieces as there are strips and the contact pieces are so positioned that each will engage with one of the strips on the panel. The member M may be provided with a groove *m* in one of its faces for receiving a cable P which passes through an opening *a* in the side of the desk. The members of the cable are secured to the contact pieces in any suitable way.

It will be seen that the strips on the underside of the panel are always in engagement with the contact fingers so that the circuit connections for the push button are complete in any position of the ledge or panel. The sliding contact between the strips and the contact fingers keeps the engaging surfaces clean and bright so that there is always good electrical connection. This effect may be increased by permitting the contact strips to project slightly below the bottom of the panel so that they form the bearing surface for the panel and are therefore scoured by the supporting edge *a'* on the desk.

It will be seen that no change need be made in the desk in order to equip it with a control system containing a considerable number of push buttons; all that is necessary being the boring of a hole in the side of the desk and the securing in place of the strip carrying the contact fingers. The alterations in the panel or ledge are only such as do not interfere with its use in the ordinary way. It will be seen that when the panel is pushed into the desk the push buttons are concealed so that they cannot be operated accidentally. Furthermore the push buttons are always within convenient reach even though the top of the desk is full, for it is only necessary to pull out the slide whenever it is desired to signal.

While we have referred to the system as a signaling system, it will of course be understood the push buttons may be used for any purpose desired, the conductors of the cable P leading to any desired electrically controlled devices.

While we have illustrated and described with particularity only a single form of our invention we do not desire to be limited to the specific details so illustrated and de-

scribed; but intend covering all constructions and arrangements which fall within the terms employed in the definitions of our invention constituting the appended claims.

What we claim is:

1. An apparatus having a sliding panel, parallel metal strips secured to one side of the panel and extending lengthwise of the same, contact pieces mounted adjacent to the panel in position to coöperate with said strips, push buttons mounted in the panel and connected electrically to said strips, and conductors leading from said contact pieces.

2. An apparatus having a sliding panel, a series of parallel metal strips secured to the underside of the panel and extending lengthwise of the same, a series of contact pieces mounted beneath the panel in position to coöperate with said strips, push buttons mounted in the panel, said panel being grooved so as to provide channels from the push buttons to a portion of each of said strips, and conductors lying in said channels and connecting the push buttons with said strips.

3. An apparatus having a sliding panel, a series of parallel metal strips secured to the underside of the panel and extending lengthwise of the same, a series of contact pieces mounted on said apparatus beneath said panel in position to coöperate with said strips, push buttons mounted in the panel, said panel having a groove extending from the push button to the rear edge of the panel and a second groove extending across the same in the rear edge and communicating with the other groove, and conductors lying in said grooves and connecting the push buttons with said strips.

4. A desk having a sliding panel, a series of parallel metal strips secured to the underside of the panel and extending lengthwise of the same, said strips projecting below the lower surface of the panel so as to form the bearing surface for the panel, a series of contact pieces mounted on the desk beneath the panel in position to engage with said strips, push buttons mounted in the panel, and conductors connecting the push buttons and the strips.

5. A desk having a sliding panel, a series of parallel metal strips secured to the underside of the panel and extending lengthwise of the same, said strips projecting below the lower surface of the panel so as to form the bearing surface for the panel, a series of contact pieces mounted on the desk beneath the panel in position to engage with said strips, push buttons mounted in the panel, the panel being grooved from a point adjacent to the push buttons to points adjacent to each of the strips, and conductors lying

in the grooved portions of the panel and connected respectively to the push buttons and to the strips.

6. A sliding panel for a desk having on
5 one side thereof a series of parallel metal strips extending longitudinally of the panel, push buttons mounted in the panel near the front end thereof, said panel having a groove therein extending from the push
10 buttons to the rear edge and having also a transverse groove in the rear edge, conductors lying in said grooves and connected

at one end to the push buttons, and the rear ends of the strips being bent over the rear edge of the panel and connected to the con- 15 ductors.

In testimony whereof we sign this specification in the presence of two witnesses.

BENT L. WEAVER.
WILLIAM R. MILLER.

Witnesses:

EDWARD M. WINTERS,
M. B. O'DONNELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."