C. A. KELLER.

SWITCH BOX.

APPLICATION FILED MAR. 7, 1916.

1,296,811. Patented Mar. 11, 1919.

Fig. 1.

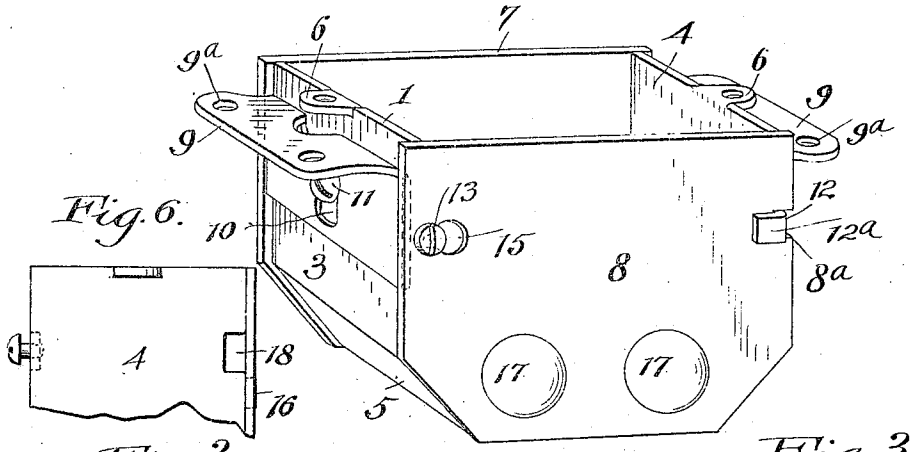



Fig. 6.




Fig. 2.

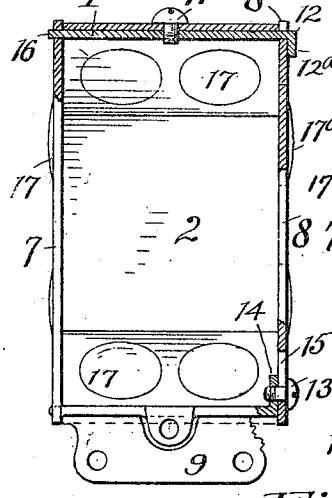



Fig. 3.

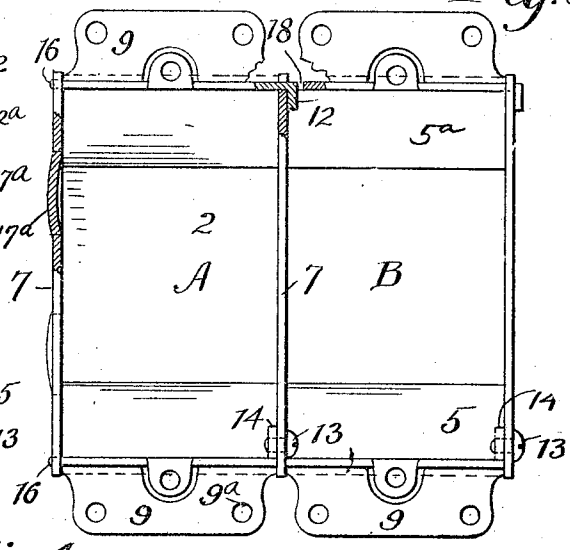



Fig. 4.

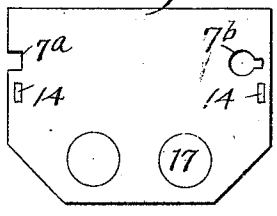
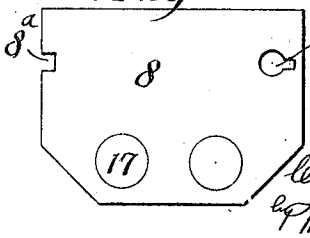



Fig. 5.




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# UNITED STATES PATENT OFFICE.

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## SWITCH-BOX.

1,296,811. Specification of Letters Patent. Patented Mar. 11, 1919.

Application filed March 7, 1916. Serial No. 82,638.

*To all whom it may concern:*

Be it known that I, CLAUDE A. KELLER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Switch-Boxes, of which the following is a full, clear, and exact description.

This invention relates to a switch box, the object of the invention being to provide certain improvements and construction whereby the operation of forming the various parts and assembling the parts of the box is greatly facilitated and the cost of production kept low.

Generally speaking, the invention comprises the elements and combinations thereof set forth in the accompanying claims.

Reference should be had to the accompanying drawings forming a part of the specification, in which Figure 1 is a perspective view showing the assembled box; Fig. 2 is a top plan view of a single box; Fig. 3 is a top plan view of a series or gang arrangement of boxes; Fig. 4 is an end elevation of one form of end plate; Fig. 5 is an end elevation of another form of end plate; Fig. 6 is an end elevation of a portion of the box.

It will be readily understood that in devices of the type to which this application relates it is almost a prime requisite that the box be constructed as cheaply as possible. This is accomplished by securing a set-up box with as few forming operations as possible, and, furthermore, it may be accomplished by eliminating parts, such as screws, which, of course, require threaded receiving openings. And this is what I have done in providing the box disclosed in this application.

The box comprises what may be termed a central portion 1, this being formed preferably from a single strip of metal bent so as to provide a bottom portion 2, side portions 3 and 4, and intermediate slanting portions 5 and 5ª. The upper portion of the sides 3 and 4 are provided with outwardly extending lugs 6 to which a cover is adapted to be secured.

As shown in Figs. 1 and 2, the box is provided with end pieces 7 and 8. These end pieces are made to extend a slight distance beyond the side pieces 3 and 4. Cooperating with the side pieces 3 and 4 are brackets 9 by which the box is mounted. Each bracket being of similar construction and similarly placed on the box, I will describe but one bracket. The bracket is formed preferably from a single piece of metal bent so as to have portions extending at right angles to each other. One of the portions is provided with holes 9ª adapted to receive screws by which the box is fastened and mounted. The width of the bracket is the same as the width of the side 3, so that the bracket is held against sidewise movement or torsional movement by engagement between the edges of the bracket and the extending end pieces 7 and 8. The bracket is so secured upon the side that it has a sliding engagement with the extension of the end pieces 7 and 8.

The portion of the bracket 9 which lies in contact with the side 3 is provided with a slot 10. This slot receives a screw 11 which engages with a threaded opening in the side 3 of the central portion of the box. The length of the slot is such that the bracket 9 may be adjusted upwardly so as to lie substantially flush with the open end of the box, or it may be adjusted downwardly to any desired extent. It will be appreciated that this construction requires only one screw for holding the bracket, which saves not only in the cost of production of the box, but also it effects a considerable saving of time in adjusting the bracket 9 due to the fact, that only one screw need be manipulated.

The end plate or piece 8 is at one portion thereof provided with a slot 8ª, and extending from the side 4 so as to register with the slot 8 is a lug 12. This lug is folded at right angles to form a head as indicated at 12ª so as to engage with the outer face of the end piece 8. The end piece engages with the lug 12 and beneath the head or folded portion of the lug, so that this portion of the end plate 8 is held against movement. The opposite portion of the plate 8 is held by means of a screw 13 which engages with a lug 14 formed upon the side 4 of the central portion of the box. The screw 13 extends through a slot 15, which at one end is provided with an enlarged portion, so that the head of the screw may be accommodated, while the portion of the slot through which the screw extends when the end piece 8 is in place is of less width,

It will be seen that it requires but a single screw to hold the end piece 8 in place, which permits a quicker manipulation or removal of the end piece 8, and also provides a construction which is cheaper to manufacture than where two or more screws are used in securing the end piece.

The end piece 7 is provided with slots which are indicated at 14 in Fig. 4. These slots coöperate with extending lugs 16, which are formed upon the edges of side pieces 3 and 4 of the box as indicated in Figs. 3 and 6. When the end piece 7 is assembled with respect to the box, the lugs 16 will be swaged, thereby firmly attaching the end piece 7 to the central portion of the box. It will thus be seen that this operation does away with the necessity for the use of screws or similar securing means. Furthermore, due to the fact that the end piece 7 extends beyond the side pieces 3 and 4 of the box, it requires but a simple slot and a straight lug or tang construction to effect the joining of the end piece 7. There is no necessity for offsetting the lug or the slot, thus producing the very cheapest form of connection between the parts.

The end pieces 7 and 8 are provided with knock-out slugs 17, as are likewise the slanting portions 5 and 6. These slugs 17 are assembled with respect to the parts containing them, as is usual in the art. However, I have found it advantageous to so form the slugs 17 that the outer surface is slightly raised, as indicated at $17^a$ in Fig. 3. This makes it much easier for persons using the box to remove the slugs, inasmuch as there is a portion of the slug which extends slightly above the surface of the surrounding metal. The raised portion of the slugs 17, however, is not so great, as to interfere with the use of the box, as the height of the raised portion makes the slugs extend but very little above the surface of the surrounding metal.

It will be noted that the end plates 7 and 8 are formed alike, with the exception that the end plate 7 is provided with slots 14, whereby the plate 7 is permanently fixed to the central portion of the box, whereas the plate 8 may be removed.

It is often desirable to arrange switch boxes in what is termed "in gang",—that is to say, arranging them in alinement and securing adjacent boxes together. This I accomplish with a box of my invention, in the manner shown in Fig. 3.

If it be desired to arrange the boxes A and B in gang, the removable end piece 8 of the box A is removed, and the fixed end plate 7 of the box B is so placed with relation to the box A that the folded tongue 12 enters a slot 18 formed in the side portion 4 of the box. This slot is shown in Fig. 6. The slot 18 is arranged so that it comes adjacent the slot $7^a$ formed in the end piece 7. Therefore, when boxes are joined in gang, the folded tongue 12 will slide into the slot 18 and seat itself within the slot $7^a$, the manner of engagement being exactly the same as that shown in Fig. 1 with respect to the plate 8.

The screw 13 which would be carried by the box A will extend through the slot $7^b$ formed in the end plate 7. This slot $7^b$ is formed with an enlarged end to receive the head of the screw. When the screw is inserted through the large end of the slot $7^b$ the whole box B will be moved so as to bring the tongue 12 into the slots 18 and $7^a$ and simultaneously move the screw 13 into the narrower part of slot $7^b$. The screw 13 may then be tightened, thereby holding the two boxes A and B together.

The open end of the box B will be closed by an end plate 8 in exactly the same manner as heretofore described.

Having described my invention, I claim:

1. A switchbox comprising a central portion forming bottom and sides, end plates secured to the central portion, brackets upon the sides of the box, said brackets having engagement with the ends of the box, thereby to prevent side or torsional movement of the brackets, and means for holding the brackets to the sides.

2. A switchbox comprising a central portion forming bottom and sides, end plates secured to the central portion, brackets upon the sides of the box, said brackets having portions engaging with the ends of the box, thereby to prevent sidewise or torsional movement, and a single screw adapted to engage each bracket with the side of the box.

3. A switchbox comprising a central portion forming the bottom and sides, end pieces secured to the central portion, brackets mounted upon the sides of the box, said brackets having portions engaging with the end pieces, thereby to prevent side or torsional movement, a slot formed in each bracket and a single screw extending through each slot and into a side of the box to hold the bracket.

4. A switch box comprising a central portion, forming bottom and sides, and end plates secured to the central portion, the end plates extending slightly beyond the sides of the box, supporting brackets slidably mounted upon the sides of the box and extending between and into engagement with the end plates of the box, and means for adjustably securing the brackets upon the sides.

5. A switch box comprising a central portion, forming bottom and sides, end plates secured to the central portion, the end plates extending slightly beyond the sides of the box, supporting brackets upon the sides of the box and extending between and into

engagement with the end plates of the box, there being a slot formed in the portion of each bracket which engages with the side of the box, a screw extending through the slot, said screw having threaded engagement with the side of the box.

6. A switch box comprising a central portion forming bottom and sides, end plates coöperating with the central portion, each of said end plates being formed with a notch in one edge and a slot having an enlarged part at another portion of the plate, the said end plates extending slightly beyond the sides of the box, one of the end plates having slots formed therein and adapted to receive lugs formed on the central portion, said lugs being swaged after insertion through slots in the end plates, whereby the end plate is secured.

In testimony whereof I hereunto affix my signature.

CLAUDE A. KELLER.