March 24, 1925. 1,530,640

E. BATCHELDER

JACK

Filed March 19, 1924

Fig. 1.

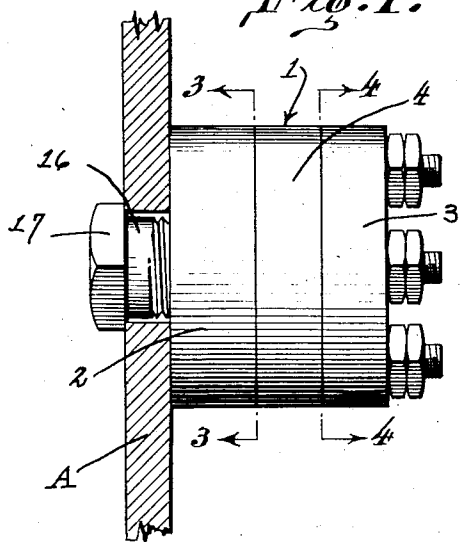


Fig. 2.

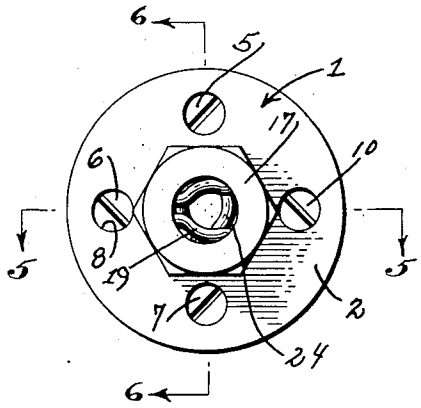


Fig. 5.

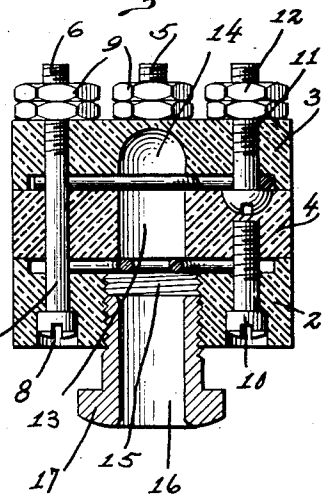


Fig. 3.

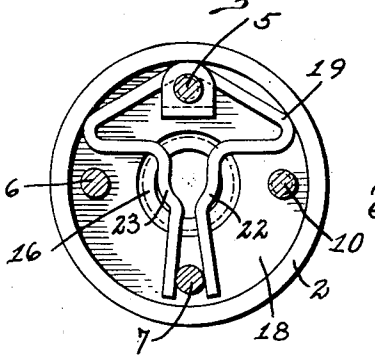


Fig. 4.

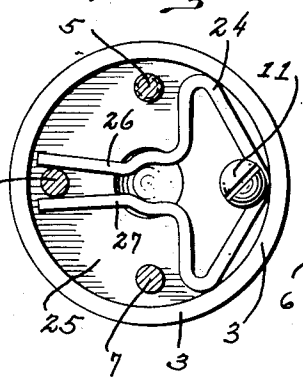


Fig. 6.

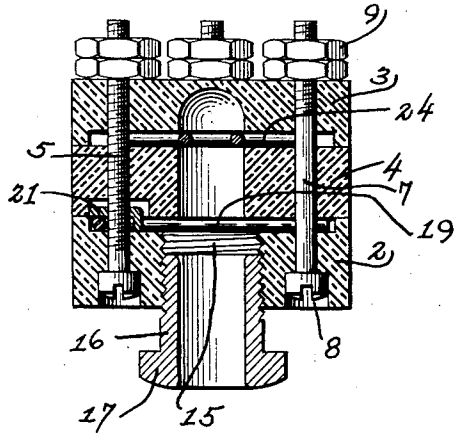
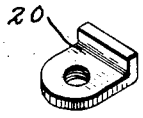


Fig. 7.



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UNITED STATES PATENT OFFICE.

EDMUND BATCHELDER, OF NEW YORK, N. Y.

JACK.

Application filed March 19, 1924. Serial No. 700,300.

To all whom it may concern:

Be it known that EDMUND BATCHELDER, a citizen of the United States, residing at New York, in the county of New York and State of New York, has invented certain new and useful Improvements in Jacks, of which the following is a specification.

This invention relates to new and useful improvements in jacks which are more particularly adapted for use in connection with telephone or telegraph systems and also in the transmission of messages by radio.

A further object of the invention is to provide a jack of the above mentioned character which is of such a construction as to enable the same to be readily placed in use, the parts being so arranged as to enable the ready disassembling of the same whenever necessary.

A still further object of the invention is to provide a jack of the above mentioned character, wherein an important feature resides in effecting a very small capacity between the several sections comprising my jack which is very essential when in use in connection with radio circuits.

Another important object is to provide a jack of the above mentioned character wherein the contacts associated therewith are not subjected to any foreign substance such as dampness, dust, or the like, when the jack is in use, thus rendering the same very efficient in its operation.

A further object is to provide a jack of the above mentioned character, which is of such a construction as to enable the same to be used in a single circuit either open or closed, a double closed circuit or a filament control circuit.

A still further object is to provide a jack which is simple in construction, inexpensive, strong and durable, and further well adapted for the purposes for which it is designated.

Other objects and advantages of this invention will become apparent during the course of the following description.

In the accompanying drawing forming a part of this specification, and in which like numerals designate like parts throughout the same,—

Figure 1 is a side elevation of my improved jack showing the same supported on a panel board.

Figure 2 is a front end elevation of the jack.

Figure 3 is a sectional view taken on line 3—3 of Fig. 1.

Figure 4 is a similar view taken on line 4—4 of Fig. 1.

Figure 5 is a sectional view taken on line 5—5 of Fig. 2.

Figure 6 is a sectional view taken on line 6—6 of Fig. 2, and

Figure 7 is a detail view of the fastening element.

In the drawing wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 1 designates my improved jack and comprises the inner and outer sections 2 and 3 respectively, and the intermediate section 4. These sections are substantially circular in cross section and are formed of any suitable non-conducting material such as hard rubber, fibre, or the like, and I do not wish to limit myself to the particular material used.

For the purpose of holding the sections together in alignment, I provide the fastening bolts 5, 6 and 7, respectively, which extend through the sections in the manner as shown in Figs. 5 and 6 of the drawing, the heads of the bolts being adapted to be received in suitable depressions 8 formed in the outer face of the inner section 2. The opposite ends of these bolts extend through the outer face of the outer section 3 and are threaded for the purpose of receiving the nuts 9, whereby connection may be made in the usual manner for connecting the device with which the jack is associated for the purposes well known in the art. The fastening bolts are also adapted to provide binding posts in connection with the contacts which will hereinafter be more fully described.

Extending through the inner section 2 at a point diametrically opposite the fastening bolt 6, is a similar fastening bolt 10. The latter is adapted to be threaded into a suitable threaded aperture provided in the intermediate section 4 which extends from the inner face of the intermediate section 4 to a point adjacent the outer face thereof. Extending through the outer section 3 at a point diametrically opposite the fastening bolt 6 and in vertical alignment with the fastening bolt 10, is the binding post 11. The head of the latter is receivable in a suitable cavity formed in the outer face of the intermediate section 4 and the threaded end thereof extends beyond the outer face of

the outer section 3 in the manner similar to the other fastening bolts 5, 6 and 7 respectively, and carries thereon the nuts 12 similar to the nuts 9 on the last mentioned fastening bolts. The binding post 11 will be slightly spaced from the fastening bolt 10 in the manner as shown more clearly in Fig. 5 of the drawing, so as not to be in contact therewith.

Each of the sections are provided with central registering openings and as is more clearly illustrated in Figs. 5 and 6 of the drawing, the opening 13 provided in the central or intermediate section 4 extends completely therethrough whereas the central opening provided in the outer section 3 is in the form of a cavity as shown at 14. The central opening 15 formed in the inner section 2 is slightly larger than the aforementioned openings and is also threaded for the purpose of receiving the threaded end of the thimble 16. The latter is provided with the enlarged head 17 whereby the jack may be held in proper position on the panel board A by having the head 17 of the thimble 16 engaging the outer face of the panel board while the outer face of the inner section 2 of the jack is held in engagement with the inner face of the panel board in the manner as clearly shown in Fig. 1 of the drawing.

Formed in the inner face of the inner section 2 is the enlarged recess 18 which forms a pocket for receiving the spring contact 19, the latter being formed preferably of wire. The spring contact 19 has the head thereof in engagement with the binding post 5 and is adapted to be held in position with respect thereto by means of the threaded clamp 20 which is receivable in a suitable recess 21 provided in the adjacent face of the intermediate section 4, in the manner as clearly shown in Fig. 6 of the drawing. The contact 19 has its arms 22 and 23 respectively extending across the enlarged recess 18 so that the opposite ends or the outer free ends of the arms will be in engagement with the diametrically opposite binding post 7 as is clearly illustrated in Fig. 3 of the drawing. It is to be understood that the intermediate portions of the arms 22 and 23 will extend across the central registering openings formed in the inner section 2 and the intermediate or central section 4, for the purpose hereinafter to be more fully described.

A similar spring contact 24 is adapted to be interposed between the outer section 3 and the intermediate section 4 and is receivable in a suitable enlarged recess 25 formed on the inner face of the outer section 3, whereby a pocket for the spring contact is provided. The head portion of the spring contact 24 is held in engagement with the binding post 11 by means of the headed end thereof and the arms 26 and 27 respectively extend across the enlarged recess and the free ends thereof are in engagement with the oppositely disposed binding post 6, as more clearly shown in Fig. 4 of the drawing. It is to be also understood that the intermediate portions of the arms 26 and 27 of the spring contact 24 will extend across the central opening formed in the intermediate section 4 and also the opening formed by the cavity 14 provided on the inner face of the outer section 3. It is to be also understood that for convenience in spacing the binding posts the spring contact 24 which is interposed between the intermediate section 4 and the outer section 3 may extend at substantially right angles to the spring contact 19 which is interposed between the inner section 2 and the intermediate section 4.

With the parts arranged as shown in the drawings, it will be readily understood that normally the pair of binding posts 5 and 7 are connected together by the spring contact 19, and the pair of binding posts 6 and 11 by the spring contact 24. Now when a plug of conventional construction is fully inserted in the jack, the arms 22 and 23 of the spring contact 19 will be spread apart and will make contact with one terminal of the plug, thereby breaking contact between the pair of binding posts 5 and 7, while the arms 26 and 27 of the spring contact 24 will also be spread and make contact with the other terminal of the plug, thereby likewise breaking contact between the binding posts 6 and 11. This arrangement permits of use of the jack in a variety of ways and in different kinds of circuits. For example, a single open circuit may be formed by securing the connecting wires of a device with which the jack is intended to be used to the binding posts 5 and 11, or a second device may be placed in circuit by fastening the connecting wires thereof to the binding posts 6 and 7, or otherwise. In the particular case where one device is connected to the binding posts 5 and 11, and another device to the binding posts 6 and 7, it will be understood that insertion of the plug in the jack will close the circuit of the device connected to the binding posts 5 and 11 and will open the circuit between the two devices.

It will thus be seen from the foregoing description, that a jack especially adapted for use in radio, although it is to be understood that the same may be used in connection with telephone and telegraph systems, has been provided wherein the same comprises a series of sections with the spring contacts interposed therebetween in such a manner as to insure the same against dampness, dust, and any other foreign substance which would cause injury thereto and prevent the proper operation of the device in making the necessary contacts to complete

the desired circuits. Further by providing a sectional jack of the above mentioned character, the same may be readily disassembled whenever necessary in order to replace or have access to the spring contacts interposed therebetween in a simple manner and does not necessitate the loss of considerable time in performing this operation. A jack of the class described can be manufactured at a very low cost and will not consume considerable space when the same is in use.

From the foregoing description of the construction of my improved device, it will be seen that I have provided a simple, inexpensive and efficient means for carrying out the objects of the invention, and while I have particularly described the elements best adapted to perform the functions set forth, it is obvious that various changes in form, proportion, and in the minor details of construction may be resorted to, without departing from the spirit or sacrificing any of the principles of the invention.

Having thus described my invention, what I claim is:—

1. A jack comprising a plurality of sections of non-conducting material, said sections having central registering openings therein, fastening means therefor, and spring contacts interposed between said sections and extending transversely across said openings, said fastening means forming binding posts and engaging said contacts.

2. A jack comprising a plurality of sections of non-conducting material, said sections having central registering openings therein, a series of binding posts extending through said sections and forming fastening means therefor, and a pair of spring contacts interposed between the respective sections and extending transversely across said openings, connecting said binding posts in pairs.

3. A jack comprising a plurality of sections of non-conducting material, said sections having central registering openings therein, a series of binding posts extending through said sections and forming fastening means therefor, spring contacts interposed between said sections and extending transversely across said openings, connecting said binding posts in pairs, said contacts being arranged at substantially right angles to each other, the intermediate portions of said spring contacts being adapted to be engaged by a plug when the latter is inserted in said registering openings.

4. A jack comprising a plurality of sections of non-conducting material, contacts supported therebetween, means for securing said sections in alignment, said means forming binding posts, and fastening means detachably associated with one of said sections for supporting the jack when in use.

5. A jack comprising a plurality of sections of non-conducting material, spring contacts interposed therebetween, said sections having central registering openings therein, a series of binding posts extending through said sections and forming fastening means therefor, said contacts supported in engagement with said binding posts in pairs, and a thimble removably associated with one of said sections for supporting the device in position when in use.

6. A jack comprising a plurality of sections of non-conducting material, said sections having central registering openings therein, a series of binding posts extending through said sections and forming fastening means therefor, and spring contacts supported between said sections and being in engagement with pairs of said binding posts, the intermediate portions of said contacts being disposed transversely across said openings.

7. A jack comprising a plurality of sections of non-conducting material having registering openings therein, transverse contact members interposed therebetween and extending across said openings, and contact posts in engagement with said transverse contacts.

8. A jack comprising a body of non-conducting material provided with a central opening, a transverse contact member projecting across said opening and a longitudinal contact member engaging said transverse contact member.

In testimony whereof I affix my signature.

EDMUND BATCHELDER.