

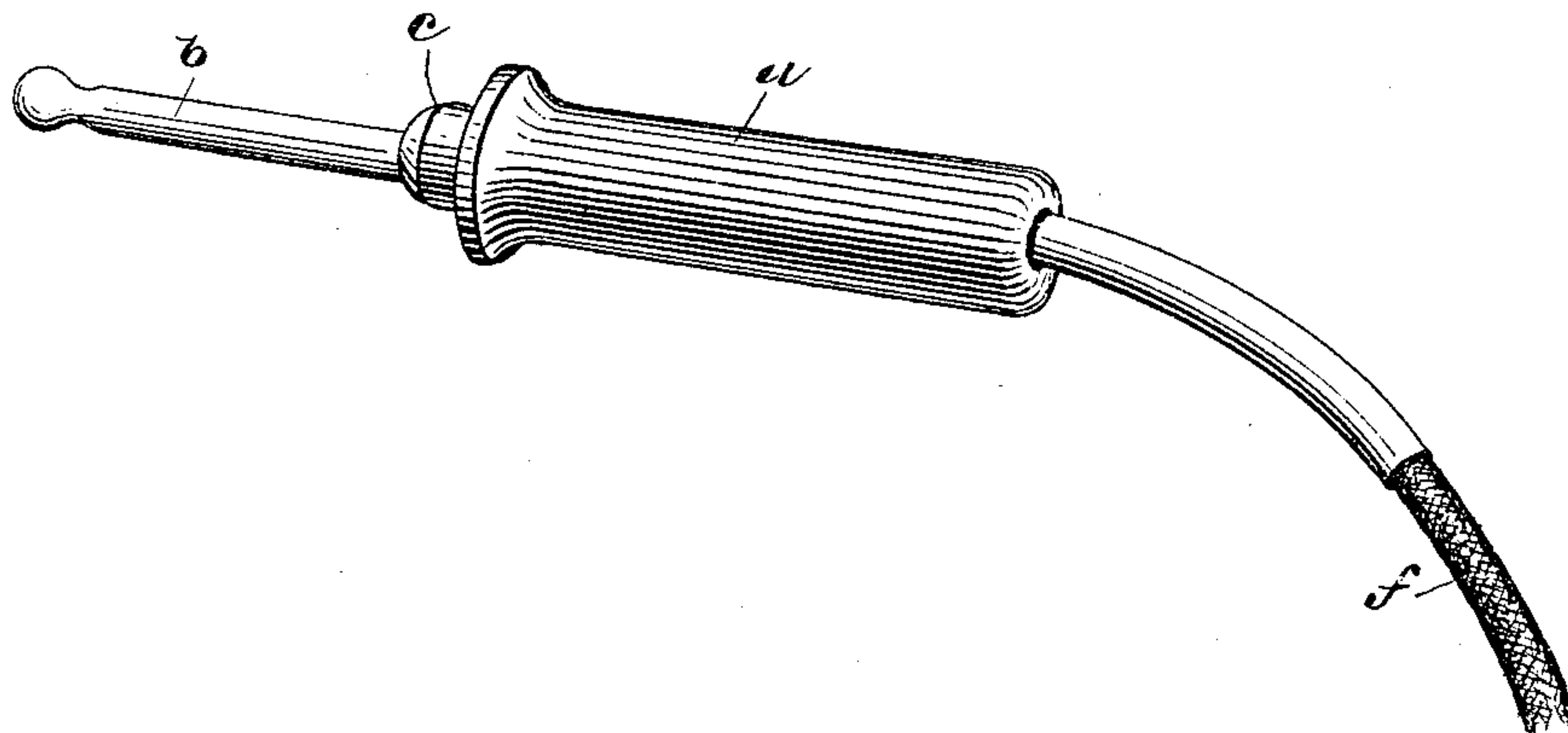
(No Model.)

J. C. WARNER.  
SPRING JACK PLUG.

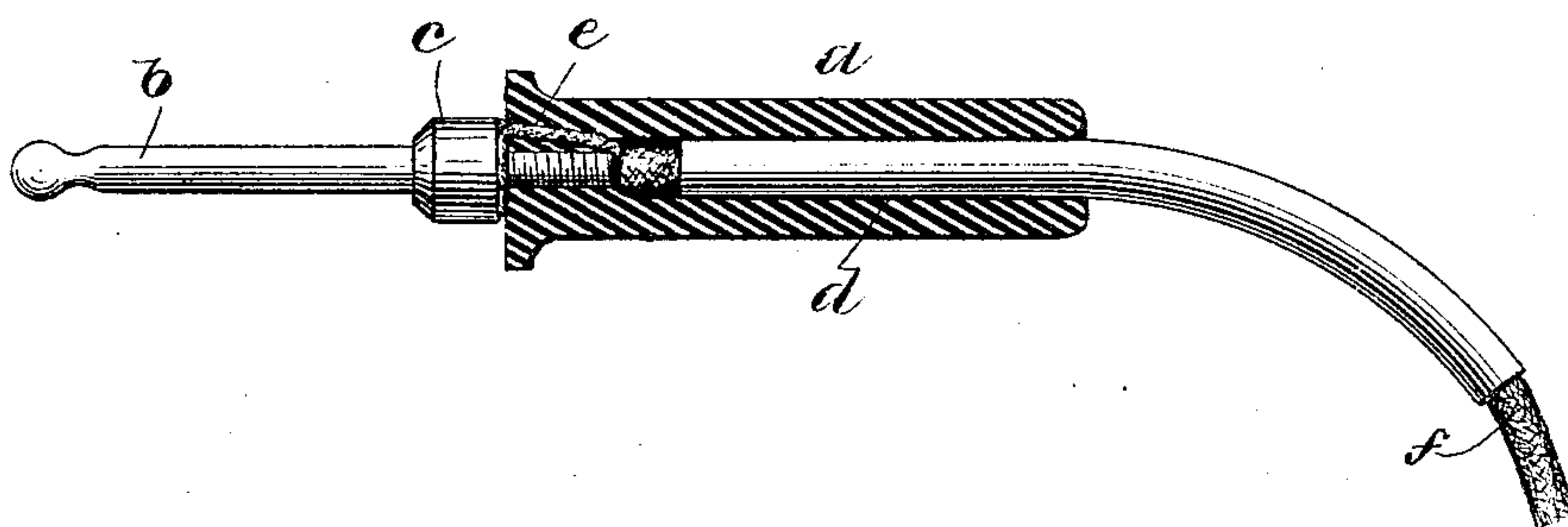
No. 273,648.

Patented Mar. 6, 1883.

*Fig. 1*



*Fig. 2*



Attest

*Paul A. Staley*  
*Louis Spahn*

Inventor

*James C. Warner*

By

*George P. Barton*

Attorney

# UNITED STATES PATENT OFFICE.

JAMES C. WARNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN  
ELECTRIC COMPANY, OF SAME PLACE.

## SPRING-JACK PLUG.

SPECIFICATION forming part of Letters Patent No. 273,648, dated March 6, 1883.

Application filed January 2, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES C. WARNER, 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 Spring-Jack Plugs, 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 spring-jack plugs for telephone-exchange use; and it consists in the combinations and construction of parts, as hereinafter described and claimed.

Prior to this invention the electrical connection between the shaft of the plug and the flexible cord attached thereto has been made by a screw which pierces the handle of the plug and screws into the said shaft, the flexible cord for this purpose being passed through a hole which starts through the center of the handle, but comes to the surface near the said screw.

The object of my invention is to dispense with the use of the screw for this purpose, and to make a direct connection between the cord and shaft of the plug. I attain this object by the construction shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a plug embodying my invention. Fig. 2 is a longitudinal sectional view of the same.

In said drawings, *a* represents the handle of the plug, which is preferably made of hard rubber, as usual.

*b* represents the shaft of the plug, or plug proper, provided with the customary collar, *c*, and made at the outer end in the usual form.

Running longitudinally through the handle *a*, at or near the center, is a hole, *d*, which is tapped out at the forward end to receive the end of the shaft *b*, said shaft being correspondingly screw-threaded to screw therein. This hole *d* is large enough to receive the flexible cord *f*, including its exterior covering or insulation.

Beginning at the forward end of the plug, at a distance from the center of a little less than the radius of the collar *c*, I drill a small hole, *e*, at such an angle that it will meet the

hole *d* at a point near the end of the shaft *b* when said shaft is screwed therein.

In connecting up the plug the shaft *b* is screwed partially into the handle *a*. The flexible cord is passed through the hole *d*, with the end of its conducting-core extending through the small branch hole *e*. The slack of the cord in the hole *d* is then all taken up, and the end of the conducting-core given a turn around the shaft *b*, between the collar *c* and handle *a*, in the direction the shaft *b* turns in screwing into said handle. The shaft *b* is now screwed into the handle *a* until the collar *c* binds tightly against the end of the conducting-core of the flexible cord *f*. The conducting-core being wrapped around the shaft *b* in the direction in which it turns in screwing into the handle *a*, the turning of the collar *c* against the core will have a tendency to draw on the said core, and thus take up any slack therein, besides making a direct and perfect electrical connection. The mouth of the small hole *e* coming within the circumference of the collar *c*, the end of the conducting-core will be entirely covered, and when the shaft *b* is screwed up tightly the conducting-core will be hidden from view. The hole *d*, as shown in the drawings, is reduced in size where the shaft *b* screws in. This of course may be varied to suit the size of the shaft.

I claim as new and original—

1. The combination of the handle *a* with cord *f*, shaft *b*, and collar *c*, whereby the slack of the conducting-core is taken up when the shaft is screwed into the handle, and direct electrical connection maintained between the collar and core, substantially as specified.

2. In a spring-jack plug, the handle *a*, having the longitudinal hole *d* and branch hole *e*, and the shaft *b*, provided with a collar, *c*, and screw-threaded to screw into the end of said handle *a*, in combination with the flexible cord *f*, substantially as and for the purpose specified.

3. The combination of the handle *a*, having longitudinal hole *d* and small branch hole *e*, and the shaft *b*, adapted to screw into the end of said handle, with a flexible cord, *f*, which passes through the holes *d* and *e* and makes electrical connection with shaft *b*, substantially as set forth.



4. The combination of a handle, *a*, provided  
with a hole, *d*, passing longitudinally through  
said handle, a plug or shaft, *b*, provided with a  
collar, *c*, said shaft adapted to screw into the  
5 end of said handle *a*, and a flexible cord, *f*, said  
flexible cord passing through the longitudinal  
hole *d*, and making direct electrical connection  
with plug *b*, substantially as specified.

In witness whereof I hereunto subscribe my  
name this 29th day of December, A. D. 1882. 10

JAMES C. WARNER.

Witnesses:

W. S. GRANGER,  
P. A. STALEY.