(No Model.)

M. SETER.

SPRING JACK CLEANER.

No. 521,223. Patented June 12, 1894.

Fig. 1.

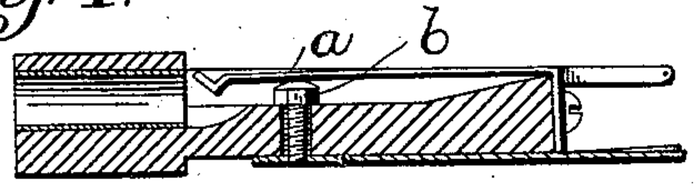


Fig 2.

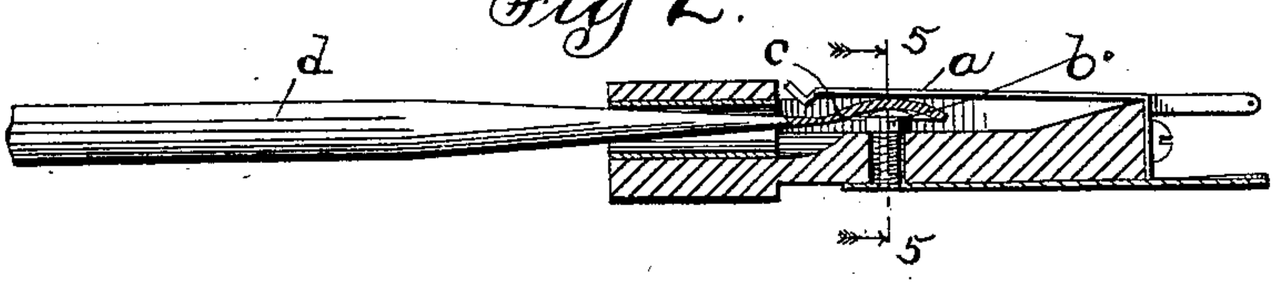


Fig. 3.

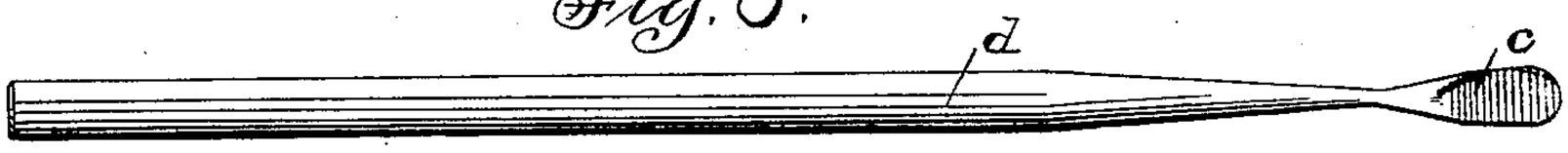


Fig. 4.

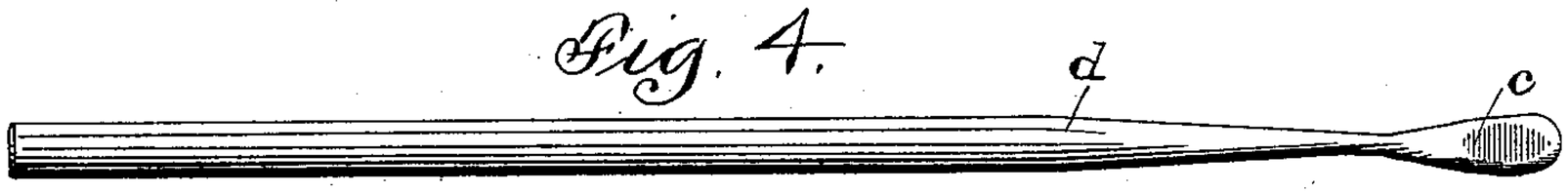
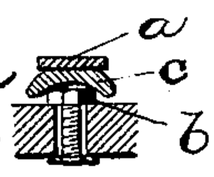


Fig. 5.



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SPRING-JACK CLEANER.

SPECIFICATION forming part of Letters Patent No. 521,223, dated June 12, 1894.

Application filed April 26, 1893. Serial No. 471,873. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL SETER, 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 Cleaners, (Case No. 1,) 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 means for cleaning metal surfaces, and more particularly to a file for cleaning the contact points of spring jack switches; its object is to produce a cleaner which shall effectively clean the contact anvil without altering its form or impairing the smoothness of its surface, and which shall also clean the flat bearing surface of the line spring without scratching its surface or injuring the line spring.

My invention consists in a spring jack cleaner substantially of spoon shape, the bowl being provided with a cutting or scraping surface upon its concave side adapted to make contact with the contact anvil, and being provided upon its convex side with a cutting or scraping surface adapted to make contact with the bearing surface of the line spring.

Heretofore spring jacks have been cleaned principally in two ways. By one method a fine file is used which is thrust into the spring jack between the contact anvil and the line spring; while by the other, strips of fiber or paper are similarly inserted. The disadvantage of using the flat file is that the tip or top of the contact anvil is flattened and worn away until the line spring fails to make contact with it; and, again, the line spring may be so weakened from continual wear by the file that it will fail to close upon the contact anvil; the disadvantage in the use of fiber or paper strips is that they do not effectively remove the dirt, but merely burnish the surfaces.

My invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a sectional view of a spring jack. Fig. 2 is a similar view of a spring jack showing my cleaner inserted between the contact anvil and the line spring thereof, the bowl of the cleaner being shown in section. Fig. 3 is a view of my cleaner looking upon the concave side of the bowl. Fig. 4 is a similar view looking upon the convex side. Fig. 5 is a sectional view on line 5—5 of Fig. 2.

Like letters refer to like parts throughout the several figures.

The spring jack usually comprises a line spring *a* which normally rests against a contact anvil *b*, which contact anvil usually consists of the rounded head of a screw. When a plug is inserted the line spring *a* is raised out of contact with its contact anvil, returning again when the plug is removed. It is essential to the proper working of the telephone system that the line spring and contact anvil make good electrical contact, and its efficiency is impaired to the extent that dirt or other foreign substance collects upon the contact anvil or the bearing surface of the spring.

My cleaner comprises a bowl or concavo-convex piece of metal *c* mounted upon any suitable handle *d*. Both surfaces of the bowl are provided preferably with transverse parallel cutting or scraping edges which may be formed similar to the cutting edges of a file. The longitudinal curve of the concave side of the bowl has a greater radius of curvature than the corresponding curve of the contact anvil, so that as the cleaner is thrust into the spring jack the rear portion of the scraping surface makes contact with the front curved surface of the contact anvil, and as the cleaner is drawn back the end portion of the scraping surface makes contact with the back curved surface of the contact anvil.

As best illustrated in Fig. 5 the transverse curve of the concave side of the bowl coincides closely with the curve of the contact anvil, so that as the cleaner is moved back and forth over the surface it will not form a flat surface on the end of the contact anvil.

By the combination of transverse and longitudinal curves, as above described, all parts of the curved surface of the contact anvil may be effectively cleaned.

The convex side of the bowl is flattened along that portion containing the cutting surface, whereby it always makes contact with the bearing surface of the line spring along a straight line. The edges of the spoon are made smooth and curved so that the spring

jack will not be injured when the tool is inserted.

It is evident that other forms of cutting or scraping surfaces may be used without departing from the spirit of my invention.

The method of using my cleaner is as follows: The bowl is inserted into the spring jack between the contact anvil and the line spring and given a back and forth movement, whereby the concave scraping surface makes contact with and cleans the contact anvil, and the flat scraping surface upon the convex side makes contact with and cleans the line spring.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A spring jack cleaner provided with a concave scraping surface adapted to make contact with the contact anvil, said surface having a radius of curvature in a longitudinal direction greater than the radius of curvature of the contact anvil, and a radius of curvature in a transverse direction substantially equal to that of the contact anvil, said cleaner being also provided with a convex scraping surface adapted to make contact with the line spring, said surface being curved in a longitudinal direction, but rectilinear in a transverse direction, substantially as described.

2. In a spring jack cleaner, a scraping surface having a radius of curvature in a longitudinal direction greater than the radius of curvature of the contact anvil and a radius of curvature in a transverse direction substantially conforming to the corresponding curvature of the contact anvil, substantially as described.

3. In a spring jack cleaner, a convex scraping surface adapted to make contact with the line spring, said surface being curved in a longitudinal direction and rectilinear in a transverse direction, substantially as described.

In witness whereof I hereunto subscribe my name this 11th day of April, A. D. 1893.

MICHAEL SETER.

Witnesses:
ELLA EDLER,
W. CLYDE JONES.