

No. 855,395.

PATENTED MAY 28, 1907.

O. F. FALK.  
TELEPHONE TRANSMITTER.  
APPLICATION FILED JULY 2, 1906.

Fig. 2.

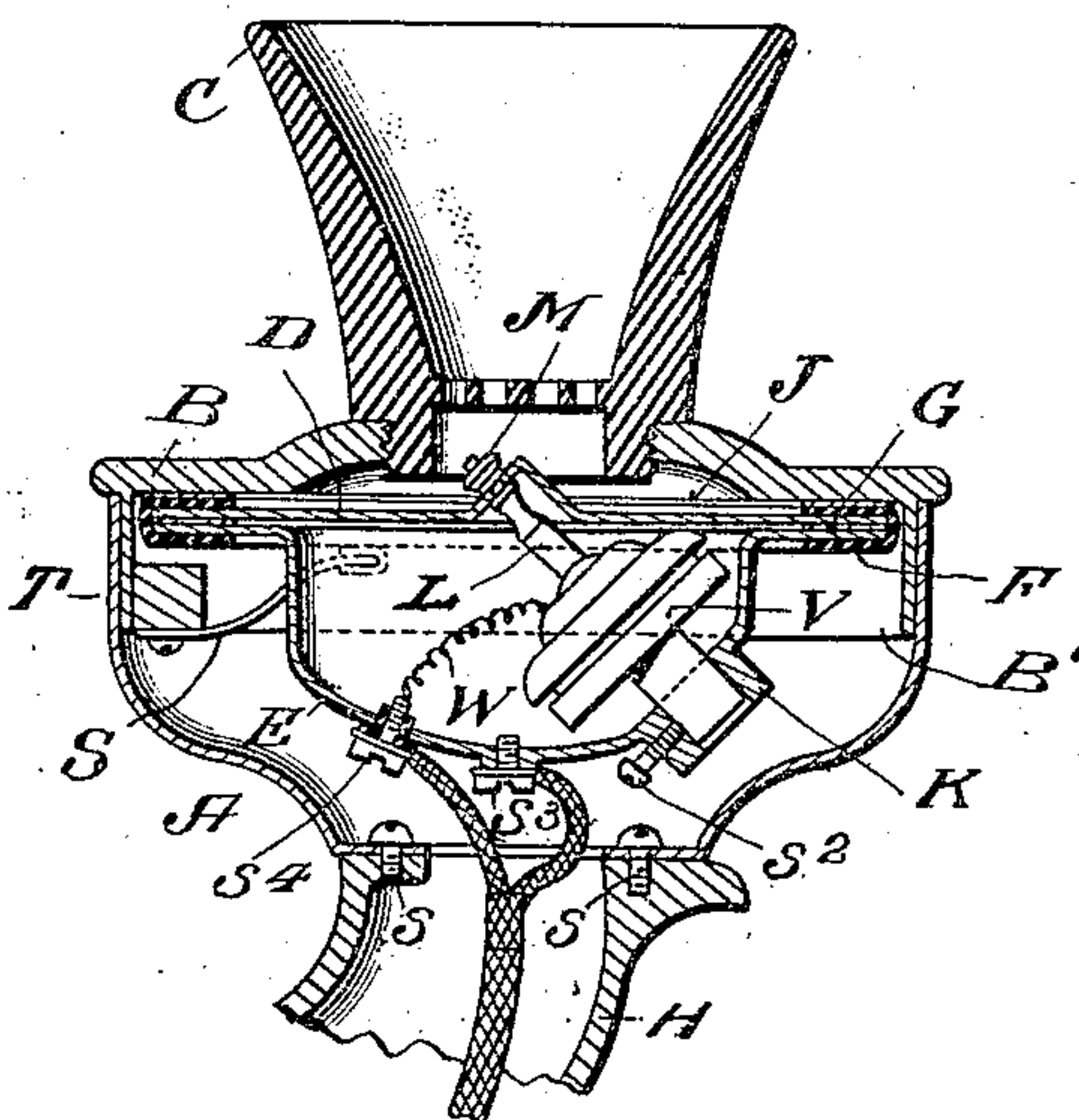


Fig. 1.

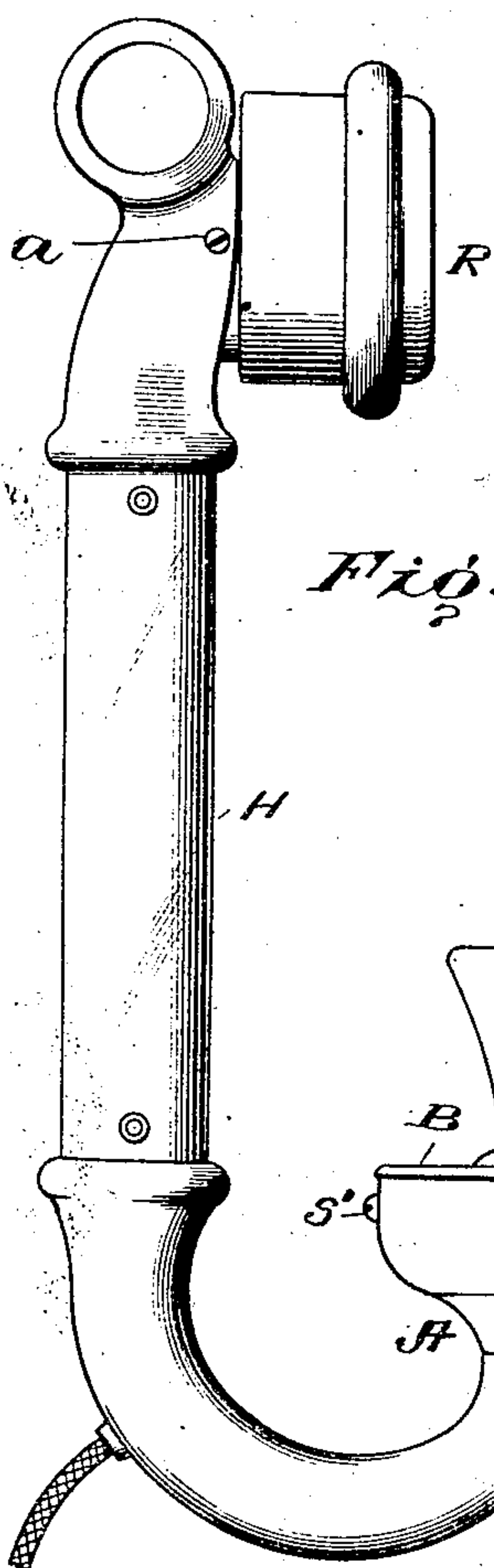
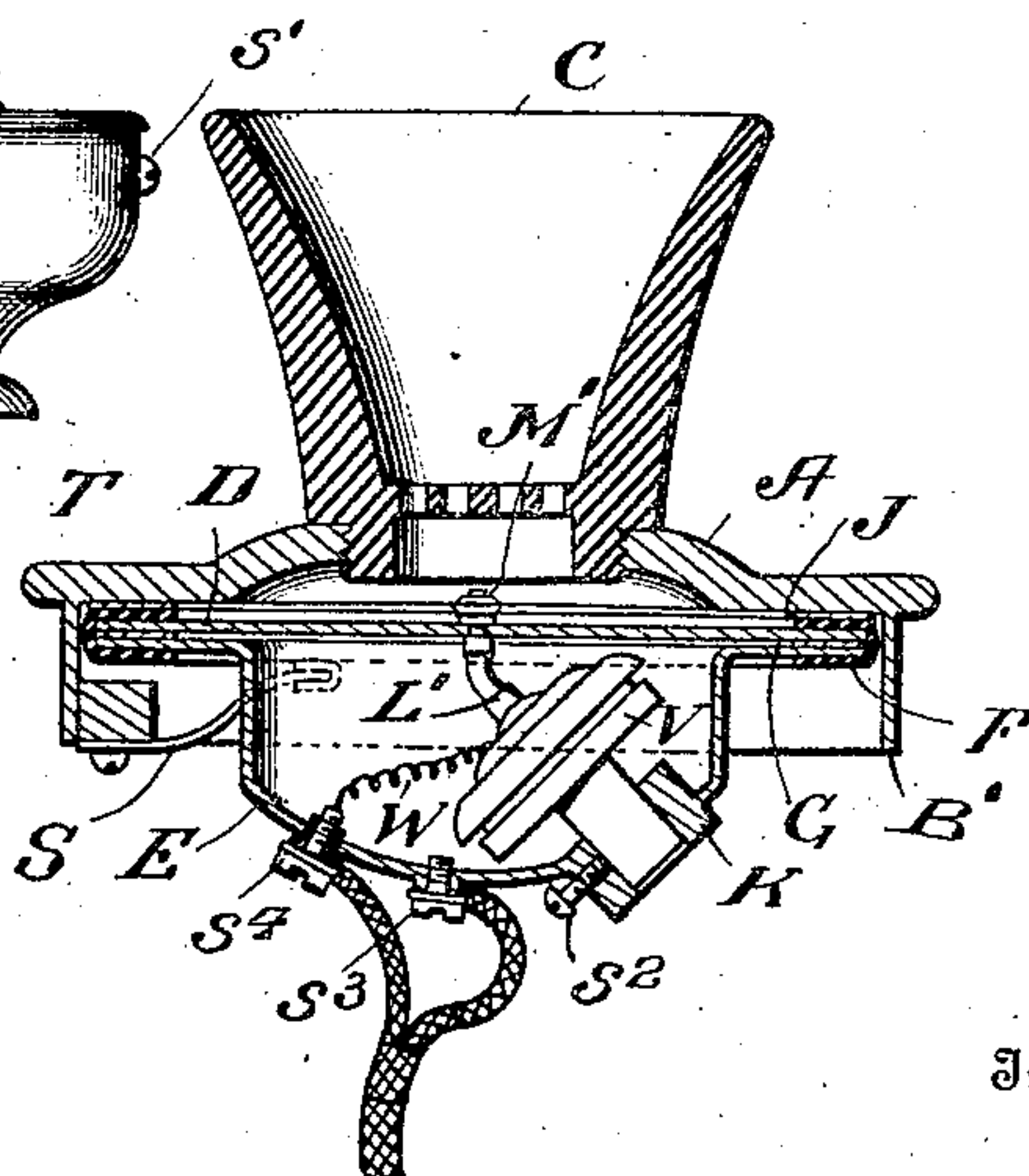


Fig. 3.



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Witnesses

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# UNITED STATES PATENT OFFICE.

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## TELEPHONE-TRANSMITTER.

No. 855,395.

Specification of Letters Patent.

Patented May 28, 1907.

Original application filed July 1, 1905, Serial No. 267,962. Divided and this application filed July 2, 1906. Serial No. 324,525.

*To all whom it may concern:*

Be it known that I, OSCAR F. FALK, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Telephone-Transmitters, of which the following is a specification.

The present invention relates to improvements in telephone transmitters, this application being a division of my prior application filed July 1, 1905, Serial No. 267,962.

My principal object is to provide a transmitter in the form of an inexpensive unitary portable device or article, comprising all essential parts of such a device held compactly together and readily separable for repairs or adjustments, the device as a whole or unit being readily attachable to or detachable from standard telephonic instruments or apparatus.

In the accompanying drawing I have illustrated the improved transmitter, in which is now believed to be its preferred form, and as forming part of a hand-set, the transmitter having been especially designed for such use.

Figure 1 shows in elevation a hand-set of which the improved transmitter forms a part. Fig. 2 is a vertical sectional view through the transmitter end of the hand-set; and Fig. 3 is a similar sectional view showing a modified form of transmitter.

H is the hollow handle-bar of the hand-set containing in the usual manner wires and connections, which it is not necessary to show.

R is a receiver of the watch-case pattern, secured at one end to the handle-bar by pivot *a*, which allows to the receiver a slight movement to accommodate it to the ear of the user. T is the transmitter, also substantially of the watch-case pattern, rigidly secured to the other end of the handle-bar.

A is the outer case or shell of the transmitter, secured to the hollow handle-bar H by screws *s*, *s*, as shown. B is a cover for said case A secured thereto by screws *s'*, *s'*.

C is the mouth-piece of the transmitter, screwed into the cover and furnished with a perforated protector, as shown.

D is the transmitter diaphragm secured to an inner case or metallic shell E by a dampening fastener, such as an elastic rubber dampening band F, the said diaphragm and inner case being separated by a paper ring G,

while J is a ring of mica, separating the assembled diaphragm, inner case and rubber band from the cover B. This combination of inner case, diaphragm, rubber band, etc., together with the granular button, next to be described, within the inner case, is held in position by a spring S secured to a block or projection on the inside of the flange B of the cover by a screw, as shown, and forms a unitary device or portable article comprising all of the essential parts of the transmitter held compactly together, which device as a whole is readily attachable to or detachable from any standard instrument. The bearing end of the spring has a rubber hood, as shown, and presses against the rubber band F outside of the inner case. V is a variable resistance granular carbon button, consisting of a shell or casing in two parts, containing the customary front and back electrodes and granulated carbon, which in the state of the art it is unnecessary to show in detail. A projection or shank from the rear part of the shell of said button, in conductive connection with the back electrode, is set in a strengthened section K of said metallic case E, and there held by a screw *s*<sup>2</sup>, as shown. The case E, thus in conductive connection to the back electrode, is in conductive connection at screw *s*<sup>3</sup> with one wire of the transmitting circuit, while the front electrode is in conductive connection with the other wire of the transmitting circuit at screw *s*<sup>4</sup>, by means of a wire W conductively connected with the front electrode and passing through an insulated bushing in the front part of shell V and in said inner case.

L is a rigid shank projecting from the front electrode of the button V. Its outer end, in one form of the hand-set, Fig. 2, projects through a slightly up-set portion of the diaphragm at the center of the diaphragm and is secured by a thumb-screw M. In the modification shown in Fig. 3, the shank L' is bent so that its end passes readily through the center of the diaphragm and is secured by a thumb-screw M' in the ordinary manner. The straight-tubed mouth-piece used in either construction allows sounds to fall upon the diaphragm substantially free from reflection.

In both embodiments of the invention Figs. 2 and 3, the carbon-button is supported at an angle or in an oblique position with re-



lation to the diaphragm. This is of particular importance when the transmitter is used in a hand-set, such as explained in my original application above mentioned.

5 I claim:

In a telephone transmitter, the combination of a case or shell; a diaphragm secured to and closing said shell; a variable resistance button inclosed within and supported by said  
10 shell in a position oblique to the diaphragm, said button having electrodes and containing granular carbon between the same, one of the

electrodes being secured to the diaphragm and the other to the wall of the shell, the whole constituting a unitary device comprising the several parts of the transmitter. 15

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this twenty third day of June 1906.

OSCAR F. FALK.

Witnesses:

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JOSEPH A. GATELY.