

(No Model.)

A. STROMBERG & A. CARLSON.
TELEPHONE.

No. 549,860.

Patented Nov. 12, 1895.

Fig. 1

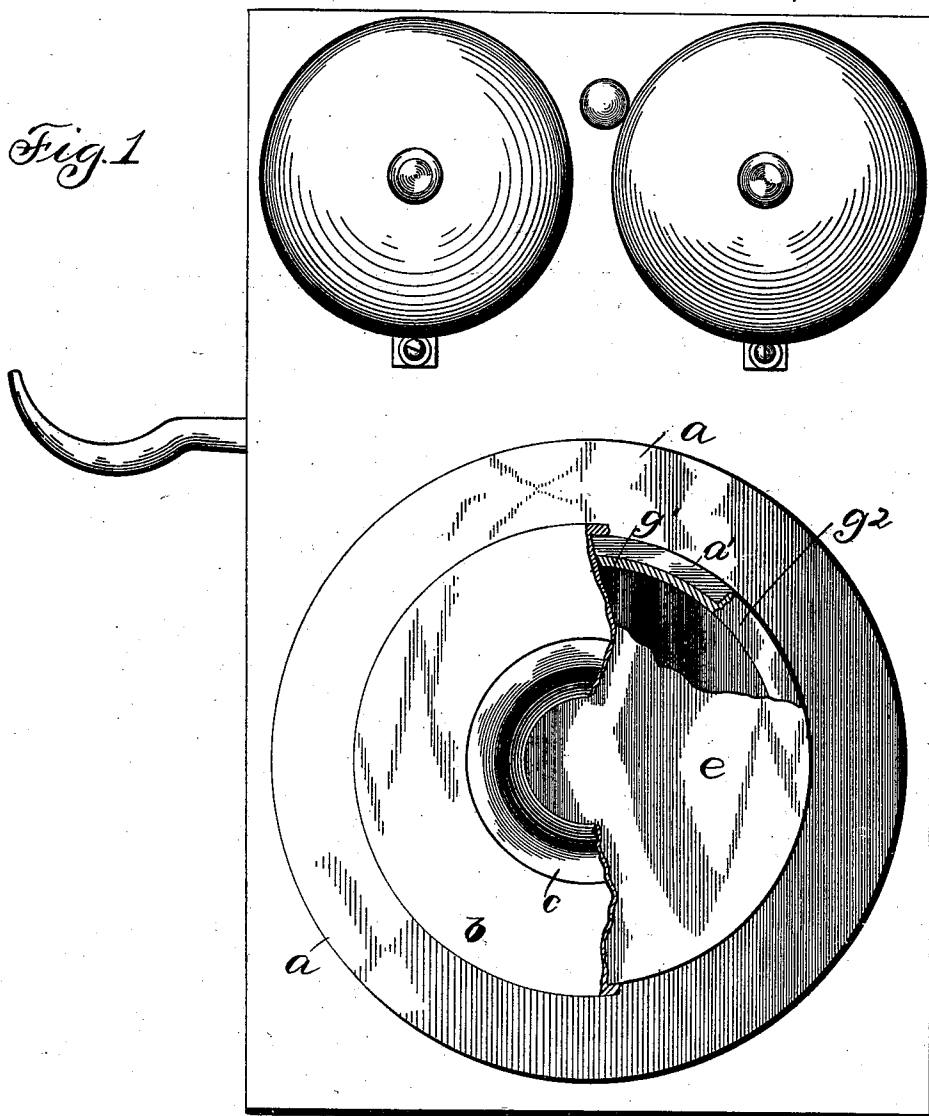
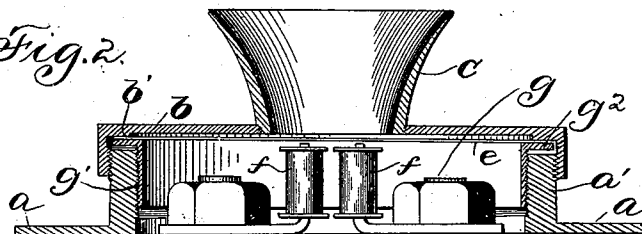


Fig. 2



Witnesses:

George L. Cragg
George S. Bull

Inventors

Alfred Stromberg

Antony Carlson

By Bastard

Brown
Attorneys

UNITED STATES PATENT OFFICE.

ALFRED STROMBERG AND ANDRÓV CARLSON, OF CHICAGO, ILLINOIS.

TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 549,860, dated November 12, 1895.

Application filed September 21, 1893. Serial No. 486,079. (No model.)

To all whom it may concern:

Be it known that we, ALFRED STROMBERG and ANDRÓV CARLSON, citizens 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 Telephones, (Case No. 11,) 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.

Our invention relates to telephone-transmitters and receivers, and has for its object the provision of means whereby the diaphragm contained in said instruments may be delicately adjusted, and such adjustment made perfectly secure.

Referring to the accompanying drawings, Figure 1 is an elevation of a telephone-box with a transmitter in place, parts of said transmitter being broken away to reveal the means of adjusting the diaphragm. Fig. 2 is a diametrical sectional view of the transmitter.

We have shown in the drawings the adaptability of our invention to telephonic transmitters only, and we shall describe our invention particularly with relation to the adjustment of the diaphragm employed therein.

In the drawings, *a* indicates the transmitter-casing, to the cover *b* of which is secured the mouth-piece *c*. The annular portion *a'* of the casing is threaded upon its exterior to accommodate the threads upon the interior of cap *b*. The diaphragm *e* is supported between the mouth-piece *c* and transmitting-coils *f f*, upon the diaphragm-seat *g*, constructed, preferably, in the form shown, which consists of a cylindrical portion *g'*, finely threaded upon its exterior to fit within corresponding threads provided upon the interior of the cylindrical or annular portion *a'* of the microphone-casing, and an extension or shoulder *g''*, upon which the diaphragm *e* is directly seated.

The method of adjustment consists in elevating or lowering the diaphragm-seat *g* by unscrewing or screwing the same within its annular support *a'* until the proper space exists between the diaphragm and the extending cores of the transmitting-coils *f f*. The threads upon part *g'* and the interior of part *a'* being fine, it is obvious that adjustment of the diaphragm with relation to the poles of

the magnet *f f* may be had to a very small fraction of an inch with a comparatively large turn of the diaphragm-seat. After the diaphragm has been properly adjusted the protecting-cap *b* is screwed firmly down upon the diaphragm and its seat, a shoulder *b'* being provided upon the interior of said cap to allow sufficient space between the diaphragm and the cap for the vibration of the diaphragm.

We preferably arrange the thread upon the diaphragm-seat and the interior of the casing with a pitch considerably less than that upon the exterior of the casing and the interior of the cap. This arrangement results in securing a more delicate adjustment of the diaphragm with relation to the poles of the magnet, and also prevents the diaphragm-seat from turning with the cap when the latter is screwed on or off.

The form of transmitter to which we have shown the applicability of our invention is of the same general style as that shown in Patent No. 504,636, granted to us September 5, 1893, for telephone apparatus. It is obvious that our invention may be applied to other forms of transmitters and to other instruments, and we do not wish to limit ourselves to the application shown.

In applying our invention to telephone-receivers mechanical construction and detail is merely involved, the essential feature being to so mount the diaphragm that it may be gradually moved toward or away from the diaphragm-actuating device in the manner described.

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

1. In an adjustable diaphragm support, the combination with a case having interior and exterior threads of different pitch, a diaphragm seat with thread adapted to fit said interior threads, and an inclosing cap adapted to fit said exterior thread, substantially as described.

2. In an adjustable diaphragm support, the combination with a casing, of a diaphragm support adapted to be screwed upon the interior of said casing, and an inclosing cap adapted to be screwed upon the exterior of said casing; substantially as described.

3. In an adjustable diaphragm support, the

combination with a casing, of a diaphragm support adapted to be screwed upon the interior of said casing, and an inclosing cap adapted to be screwed upon the exterior of
5 said casing and against said diaphragm support to maintain the same in its adjusted position, substantially as described.

In witness whereof we hereunto subscribe

our names this 14th day of September, A. D. 1893.

ALFRED STROMBERG.
ANDRÓV CARLSON.

Witnesses:

GEORGE L. CRAGG,
GEORGE S. BUELL.