

(No Model.)

W. J. LIEB.

PNEUMATIC ATTACHMENT FOR TELEGRAPH KEYS.

No. 604,770.

Patented May 31, 1898.

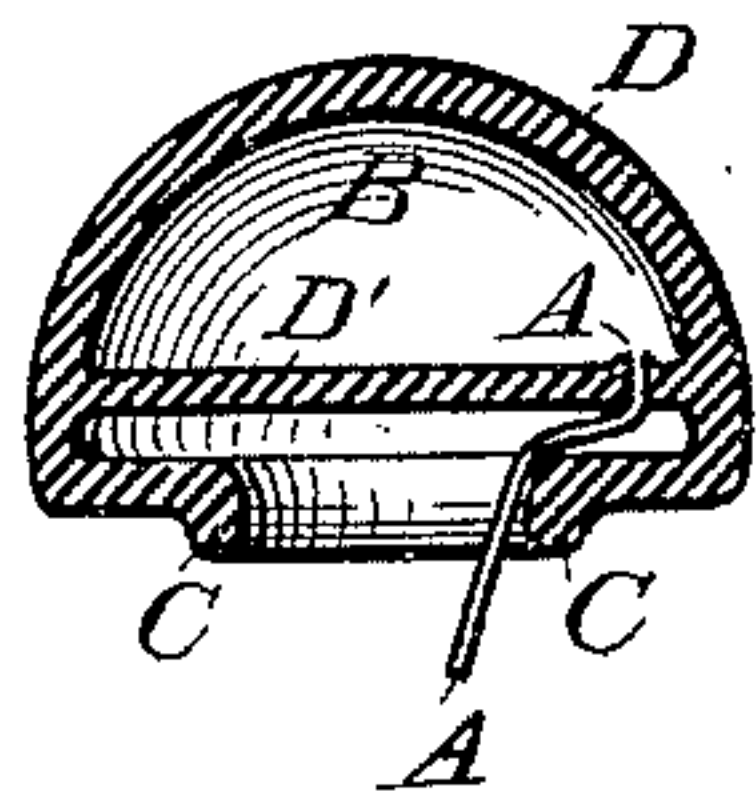


Fig. 1.

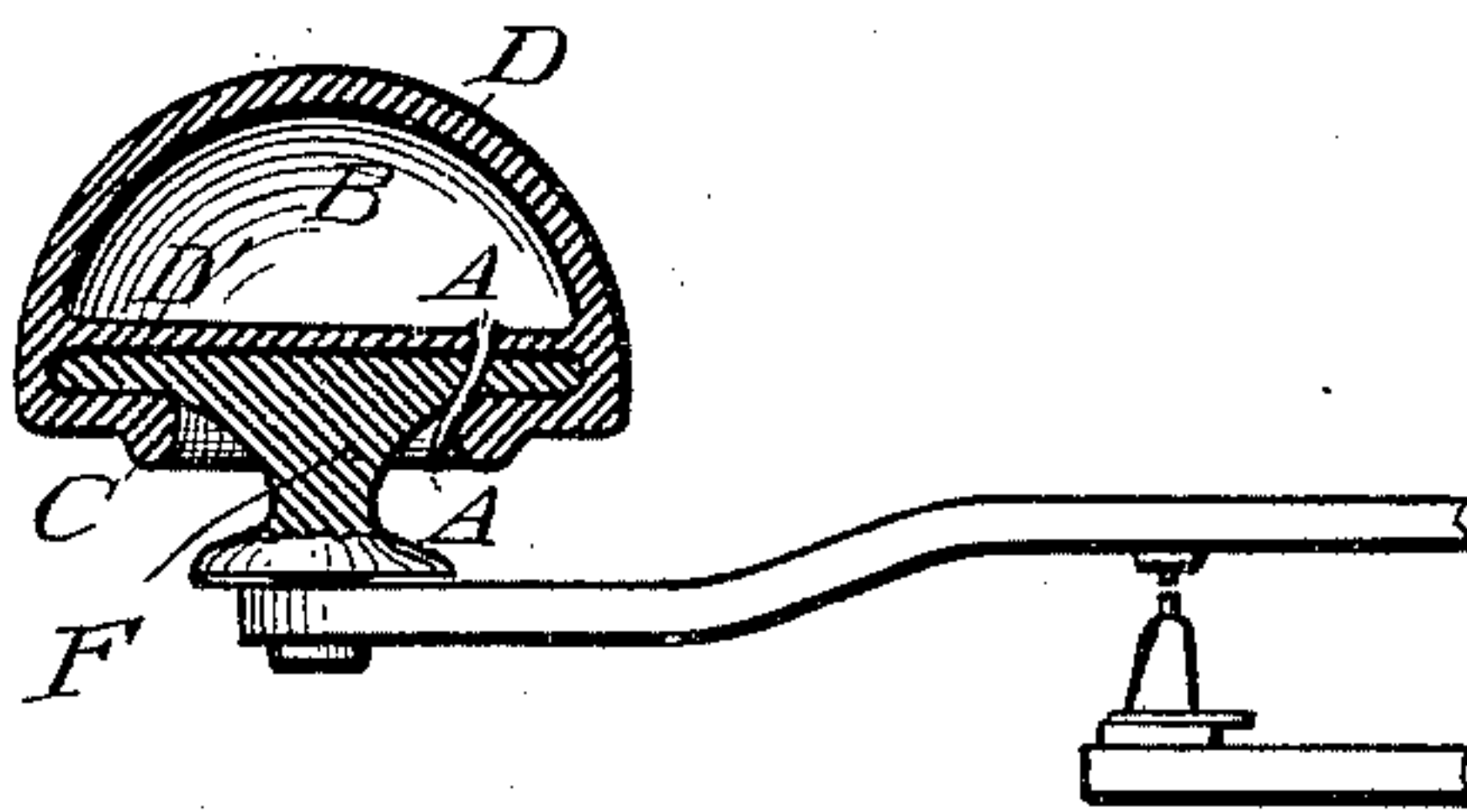


Fig. 2.

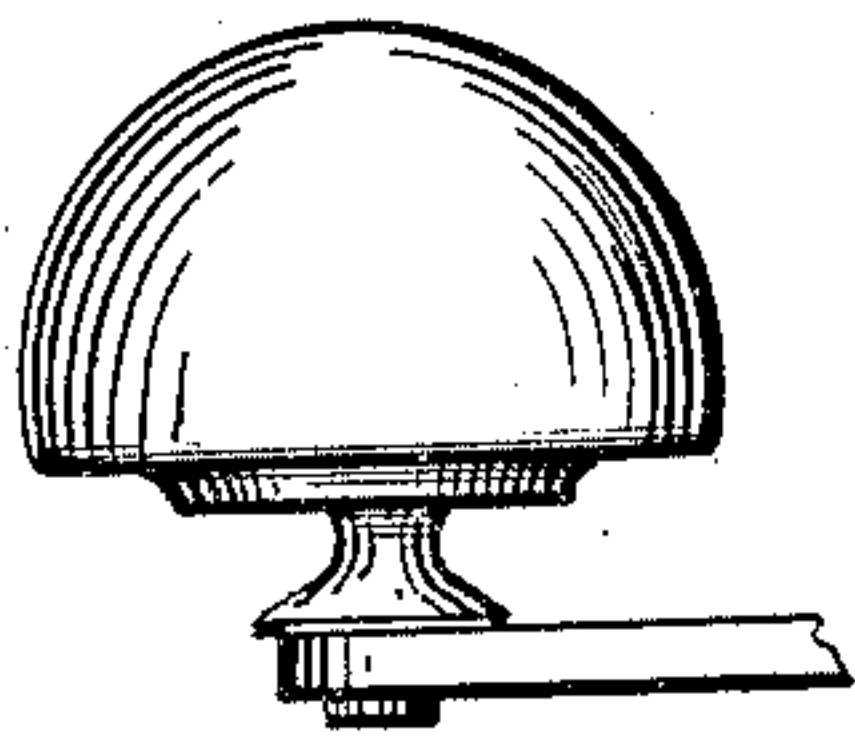


Fig. 3.

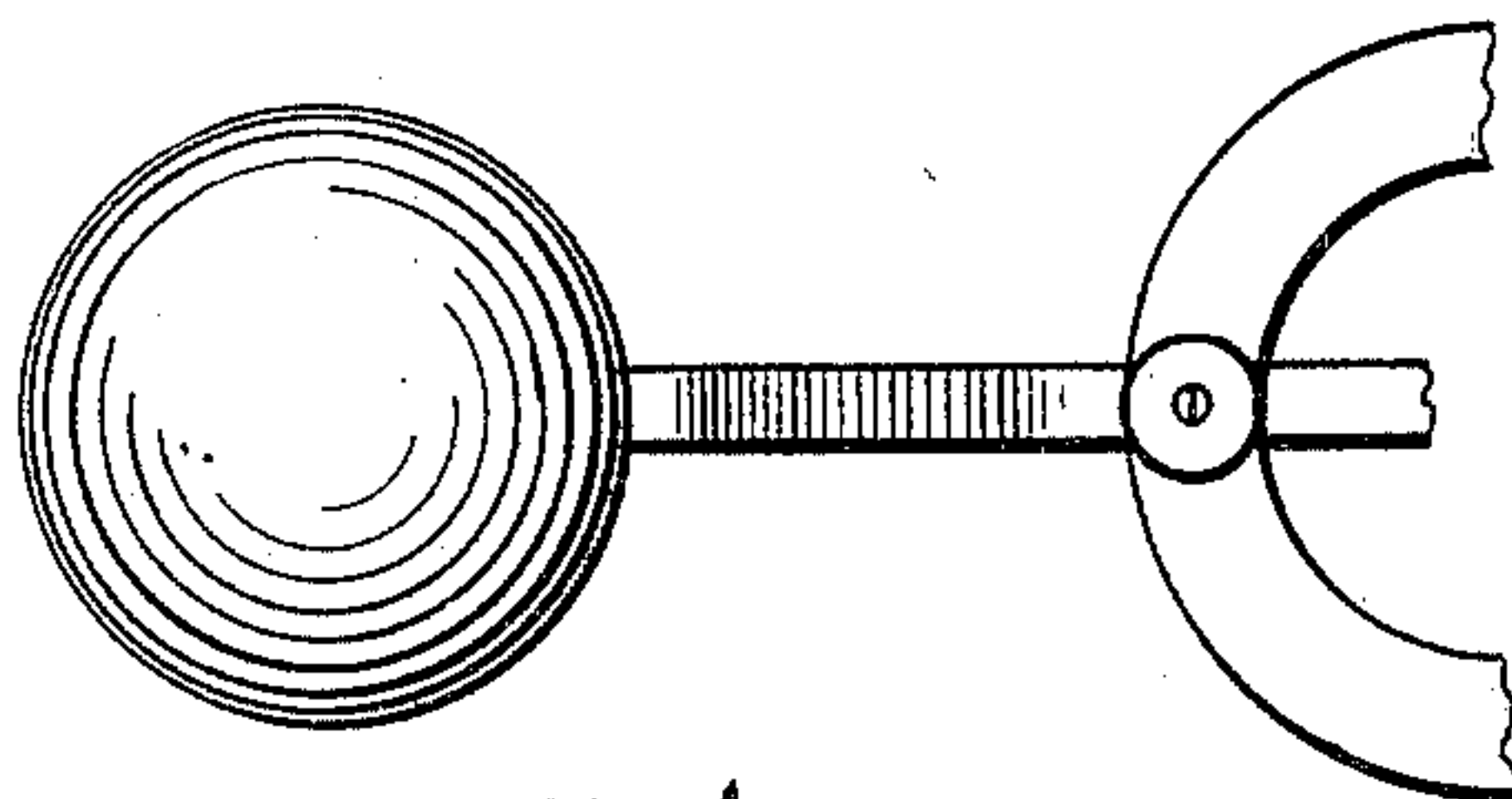


Fig. 4.

Witnesses.

Wm. Chmura
W. J. Lieb

Inventor.

William J. Lieb.

UNITED STATES PATENT OFFICE.

WILLIAM J. LIEB, OF PRATT, MINNESOTA.

PNEUMATIC ATTACHMENT FOR TELEGRAPH-KEYS.

SPECIFICATION forming part of Letters Patent No. 604,770, dated May 31, 1898.

Application filed April 15, 1897. Serial No. 632,337. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. LIEB, a citizen of the United States, residing at Pratt, in the county of Steele, State of Minnesota, have invented certain new and useful Improvements in Pneumatic Attachments for Telegraph-Keys, of which the following is a specification.

My invention relates to attachments for telegraph-keys; and the object of the invention is to provide a yielding device to be secured to the key of the telegraph instrument to enable the operator to obtain and maintain a firm grasp upon the key while sending a message; and a further object is to provide a device which when placed over the key will form a soft yielding upper surface for the same, and thereby prevent the disease known as "operator's paralysis."

A still further object is to provide a key-cushion into which air may be forced to render the upper surface of the cushion comparatively hard and non-yielding to the touch.

The invention consists generally in an attachment for telegraph-keys having an inner wall or diaphragm forming a closed air-chamber above the key.

Further, the invention consists in providing an attachment with an inflatable outer wall and means permitting the chamber to be filled with air; and, further, the invention consists in means for securing the device upon a telegraph-key, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of the specification, Figure 1 is a vertical section of the device. Fig. 2 is a similar view showing the device attached to a telegraph-key. Fig. 3 is a side elevation of the device attached to a key. Fig. 4 is a plan view of the same.

In the drawings, F represents the key-button of an ordinary telegraph instrument, and D the outer wall of the device to be placed over the button.

D' is a wall or diaphragm extending across the interior of the device and connecting the opposite walls D at a point near the lower edge of the same. At the lower edge of the walls D, I provide the inwardly-projecting flange or ring C, and, as shown in Fig. 1, I

may provide a tube A, passing through the diaphragm D' and connecting the interior of the device with the outer air.

To use the device, the key-button is forced into the space between the diaphragm D' and the upper surface of the flange or ring A. This is done by stretching the flange A and drawing the same down over the edges of the key-button, so that the flange will bear upon the under surface of the key-button and the diaphragm upon the upper surface of the same, the space between the flange and diaphragm being sufficiently small to cause the key-button to fit snugly within the same and prevent the device from becoming loose or detached while in use.

By means of the diaphragm a closed air-chamber is formed above the key-button, and, if desired, air may be forced into the chamber through the tube A, and the wall D thereby placed under tension and made hard and non-yielding to the touch of the operator, or the device may be used with only the ordinary atmospheric pressure in the chamber, if desired. When the chamber is filled with air under pressure, the end of the tube A is closed by the finger until the device is in position over the key-button, when the edge of the button coming in contact with the tube will force the same over to one side against the wall D, closing the passage through the tube and preventing the escape of the compressed air from the chamber.

I do not confine myself to the exact form of the device herein shown nor to the means shown for attaching the cushion to the key-button, as the device is susceptible of considerable modification in this respect.

I prefer to make the entire device of rubber; but the lower portion that comes in contact with the key-button may be made of a harder, less yielding, and flexible material, if desired.

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

1. A pneumatic attachment for telegraph-keys, comprising an outer wall, a diaphragm, means for securing the device to a key-button, and a tube leading into an air-chamber formed by said outer wall and said diaphragm, for the purpose set forth.

2. As a new article of manufacture, a cushion for telegraph-keys, comprising an inflatable outer wall or shell, a diaphragm forming a closed air-chamber within said shell, means
5 for securing said shell upon a key, and the wall of said chamber being provided with an opening through which air may be forced to inflate said cushion, for the purpose set forth.

3. As a new article of manufacture, a cushion for telegraph-keys comprising a substantially hemispherical shell, having a flexible outer wall, a diaphragm extending across the lower portion of said shell and forming an air-chamber therein, and an inwardly-turned
15 annular flange at the lower edge of said wall, a space being provided between said flange and said diaphragm, for the purpose set forth.

4. In a device of the class described, the combination, with a key, of an elastic shell
20 or cap arranged over the same, means for securing said shell to said key, a diaphragm connecting the inner walls of said shell and forming an air-chamber in the upper portion of the same, said diaphragm being provided
25 with an opening in its wall to permit said chamber to be filled with air, and said opening being covered by said key when the cushion is in position thereon to prevent the es-

cape of air from said chamber, substantially as described.

5. The combination, with the key F, of the shell or cap arranged over the same, and comprising an inflatable outer wall D, an inner wall or diaphragm D', extending across the lower portion of the shell and forming an air-chamber therein, the inwardly-turned flange or ring C, an annular recess being provided between the same and said diaphragm to receive the edge of said key, and said diaphragm having an opening leading to said air-chamber, the entrance to said opening being closed by said key when the device is in position thereon, substantially as described.

6. As a new article of manufacture, a cushion for telegraph-keys, comprising a substantially hemispherical shell, having an inflatable and flexible outer wall, a diaphragm extending across the lower portion of said shell and forming a closed air-chamber therein, and means provided at or near the lower edge
50 of said wall for securing the same to a telegraph-key, substantially as described.

WILLIAM J. LIEB.

Witnesses:

WM. OHRMANN,
W. C. LIEB.