

No. 715,429.

Patented Dec. 9, 1902.

G. J. SEABURY.  
TUBE COMPRESSOR.

(Application filed Apr. 9, 1902.)

(No Model.)

*Fig. 1.*

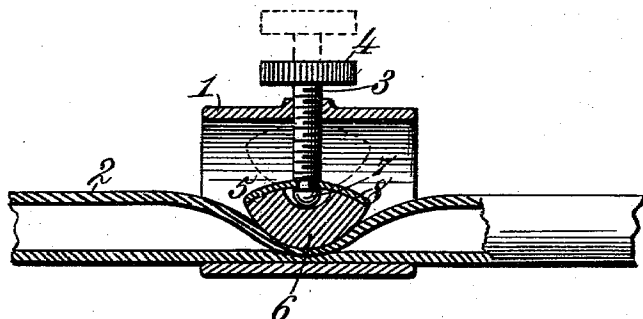


*Fig. 2.*

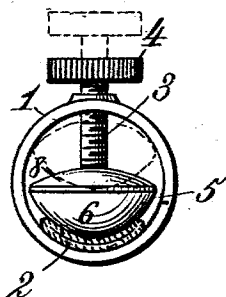
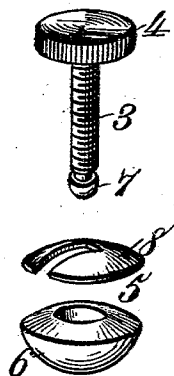


*Fig. 3.*



Witnesses.

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# UNITED STATES PATENT OFFICE.

GEORGE J. SEABURY, OF NEW YORK, N. Y.

## TUBE-COMPRESSOR.

SPECIFICATION forming part of Letters Patent No. 715,429, dated December 9, 1902.

Application filed April 9, 1902. Serial No. 102,055. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE J. SEABURY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Tube-Compressors, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The present invention relates to "tube-compressors" as they are known in the art, such devices being used for compressing or pinching flexible hose or tubing to control the flow therethrough.

15 The object of the invention is to provide a simple, cheap, effective, and small compressor particularly adapted and intended for use with fountain-syringes, although it will be apparent that it may be used with compressible tubing other than syringe-tubing, if desired. It is essential that compressors of this character be simple in construction, so as to be easily manipulated and not likely to get out of order; that they be cheap, so as not to add materially to the cost of the outfit; that they be sure and effective in operation to the end that the flow through the tubing may be properly controlled, and, furthermore, that the construction and operation be such as to minimize the wear and abrasion on the tubing, and, finally, that they be of as small and compact a construction as is compatible with efficiency to permit of their ready packing with the rest of the outfit.

35 In the drawings which form a part of this specification I have illustrated one embodiment of my invention, showing the same in connection with a section of syringe-tubing.

40 In said drawings, Figure 1 is a central longitudinal sectional view of the compressor in clamping position, the compression member of the device being shown in its two extreme positions in full and in dotted lines. Fig. 2 is an end view of the compressor, showing a compressed tube in section. Fig. 3 is a detail perspective view showing the separated parts of the compression member of the device and the operating-screw.

50 Referring to the drawings by numerals, like parts being designated by like numerals in the several views, 1 indicates a short section of metallic pipe or cylinder which forms the en-

circling member of the compressor through which the flexible tubing 2 passes. Such encircling member 1 will be of somewhat larger diameter than that of the tubing 2, so that it may be moved freely thereon. Threaded in the wall of said member 1 is a screw 3, having a milled head 4 at its outer end to permit its ready manipulation. At its inner end the said screw 3 carries the compression member 5 of the device, said compression member being a section of a sphere which has a universal rocking and swiveling connection with the screw 3, the rocking connection permitting it to seat itself accurately when forced down against the tube 2, while the swiveling connection allows rotation of the member 5 and screw 3 relative to each other. The said compression member 5 is cast on the same arc as the cylindrical section 1, so that it fits closely the interior of said section 1 and clamps the tubing 2 equally at all points when in its lower clamping position, as shown in Fig. 2, thus insuring an absolutely fluid-tight compression, the free rocking movement of this compression member 5 on the screw 3 permitting its close and accurate seating against the tubing 2.

It will be observed that the spherical section which forms the compression member 5 admits of the use of a comparatively small encircling member 1, for the reason that the said member 5 when raised to its upper position (see dotted lines, Figs. 1 and 2) may be drawn closely up and abut against the curved inner surface of the member 1 and permit full expansion of the tubing 2, the upper surface of the member 5 being preferably slightly curved to allow it to fit snugly against the interior of the pipe-section 1. It is obvious also that the compression member 5 moves upon the tubing 2 with a direct thrust and does not drag or roll thereon, so that abrasion or breaking of thin tubing from continued use is obviated, this result being further promoted by reason of the swiveled connection between the screw 3 and the compression member 5, which permits the free rotation of the screw 3 relative to the member 5 so soon as said member 5 takes hold of the tubing 2, thereby relieving the tubing of the rubbing which would occur if the member 5 rotated with the screw.

It will be seen that by using a compression member 5 which is a section of a true sphere any swiveling rotation of said member 5 upon the screw 3 relative to the tubing 2 will not affect its clamping action on the said tubing 2, so that it cannot become displaced and fail in its clamping action, as would be the case if it were elliptical or had unequal axes.

While the swiveling and rocking connection between the member 5 and the screw 3 may be made in various ways, the construction shown in the drawings by which such connection is made is found to be a very satisfactory one. In this construction (see Fig. 3) a section 6 of a spherical shell receives the head 7 at the inner end of the screw 3, and a slotted cap plate or disk 8, the upper surface of which is curved, is then slipped over the head 7, so as to inclose and lock it within the cavity of the section 6. Said disk 8 is then secured by soldering, brazing, or in any suitable manner to the section 6, and a swiveling rocking connection between the parts is made.

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

1. A tube-compressor comprising a tube-encircling member, having a cylindrical bore, and a tube-compression member formed of a section of a sphere, means for adjusting said compression member and a rocking connection between the latter and its adjusting device.

2. A tube-compressor comprising a tube-encircling member formed of a section of a cylinder, a tube-compression member formed of a section of a sphere, an actuating-screw for said compression member, and a rocking connection between said screw and compression member.

3. A tube-compressor comprising a tube-

encircling member formed of a section of a cylinder, a tube-compression member formed of a section of a sphere, an actuating-screw for said compression member, and a rocking and swiveling connection between said screw and compression member.

4. A tube-compressor comprising a cylindrical tube-encircling member, an actuating-screw mounted therein and having a head at its inner end, a compression member formed of a section of a spherical shell to receive the inner head of said actuating-screw, and which latter has a rocking connection with said compression member, and means for locking said screw-head within said shell-section.

5. A tube-compressor comprising a cylindrical tube-encircling member, a compression member formed of a section of a spherical shell to receive the inner headed end of an actuating-screw, and which inner headed end affords a rocking connection between said screw and said compression members, and a slotted cap-plate secured to said section to lock said screw and spherical shell-section together.

6. A tube-compressor comprising a cylindrical tube-encircling member, a compression member formed of a section of a spherical shell to receive the inner headed end of an actuating-screw, and a slotted cap-plate secured to said section to lock said screw and spherical shell-section together, said cap-plate having a curved upper surface to abut against the curved inner surface of said cylindrical tube-encircling member.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE J. SEABURY.

Witnesses:

HENRY CALVER,  
GEO. W. REA.