

H. TYLER & W. H. SEVERSON.

TUBE EXPANDERS.

No. 182,724.

Patented Sept. 26, 1876.

Fig. 1.

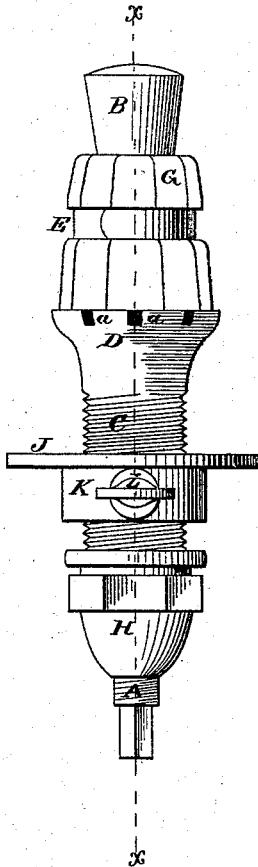


Fig. 2.

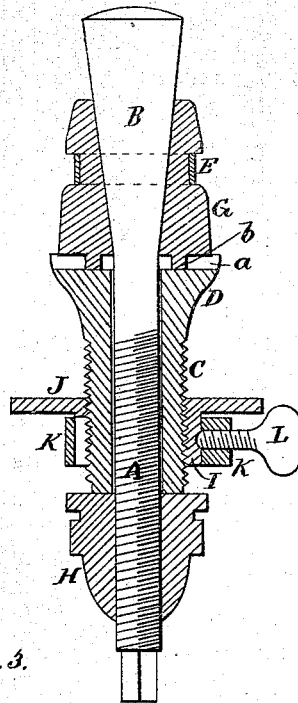
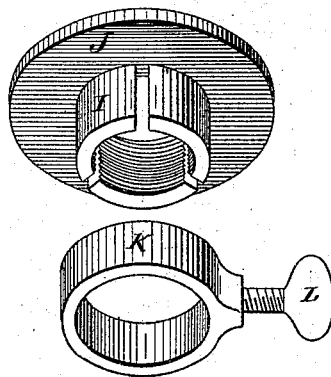


Fig. 3.



WITNESSES

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HIRAM TYLER AND WILLIAM H. SEVERSON, OF GENESEO, ASSIGNORS TO
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IMPROVEMENT IN TUBE-EXPANDERS.

Specification forming part of Letters Patent No. **182,724**, dated September 26, 1876; application filed
July 27, 1876.

To all whom it may concern:

Be it known that we, HIRAM TYLER and WM. H. SEVERSON, of Geneseo, in the county of Livingston, and in the State of New York, have invented certain new and useful Improvements in Tube-Expanders; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of our invention consists in the construction and arrangement of a tube-expander, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side view of our improved tube-expander. Fig. 2 is a longitudinal section of the same. Fig. 3 is a detached view, showing the construction of the gage used thereon.

A represents the central screw-stem, provided at one end with a cone, B. This stem passes loosely through a sleeve, C, formed at one end with a head, D, and having exterior screw-threads, as shown, to receive the adjustable gage hereinafter described.

In the face of the head D is made a series of radial grooves, *a a*, in which are placed pins *b b* projecting from the ends of the expanding-jaws G G, said jaws being constructed substantially in the form shown, and provided with a circumferential groove to receive an open spring-ring or band, E, which holds the jaws pressed together against the cone B, and also allows them to expand equally when the cone is forced down between them.

On the end of the screw-stem A is placed a nut, H, which is to be turned by a wrench or other suitable means. By screwing up this nut the stem A, with its cone B, is drawn in-

ward so that the cone will gradually expand the jaws G.

This device is principally intended for use in expanding the interior expansible bands of hose-couplings, and to insure the proper position of the expanding-jaws with relation to such band we use an adjustable-gage constructed in the following manner.

J represents a disk or wheel of any suitable dimensions, provided with a hub, I, projecting from the same. This hub is split longitudinally in two, three, or more pieces, and provided with interior screw-threads, so as to form a flexible nut. Around this nut-hub is then placed a collar, K, having a set-screw, L, passing through it to bear against one of the sections of the nut.

The gage thus constructed is screwed on the sleeve C up to such point that when the instrument is inserted in the hose-coupling up to the disk J the expanding-jaws will be entirely within the band to be expanded. By now tightening the set-screw L, the collar K will compress the sections of the flexible nut sufficiently to prevent the same turning on the sleeve. The band is then expanded by screwing up the nut H, and drawing the cone B in between the jaws G, as above described, the pins *b* of the jaws working in the grooves *a* of the head D, acting as guides for the proper movement of the jaws. When the band is expanded the nut H is unscrewed and the stem knocked inward, allowing the jaws to contract.

This device may be used for expanding other tubes, and if it is desired to form grooves on the inside of the tube, the jaws will be provided with suitable ribs for that purpose.

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

1. In a tube-expander, the combination of the screw-stem A with cone B, the sleeve C with head D, having radial grooves *a*, the expanding-jaws G with pins *b* and open en-

circling-spring E, and the nut H, all substantially as and for the purposes herein set forth.

2. In combination with a tube-expander, the adjustable gage composed of the disk J, with slotted hub or nut I, the collar K, and set-screw L, substantially as and for the purposes herein set forth.

In testimony that we claim the foregoing

we have hereunto set our hands this 18th day of July, 1876.

HIRAM TYLER.
WILLIAM H. SEVERSON.

Witnesses:

H. C. SILSBY,
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CHAS. W. REIGEL.