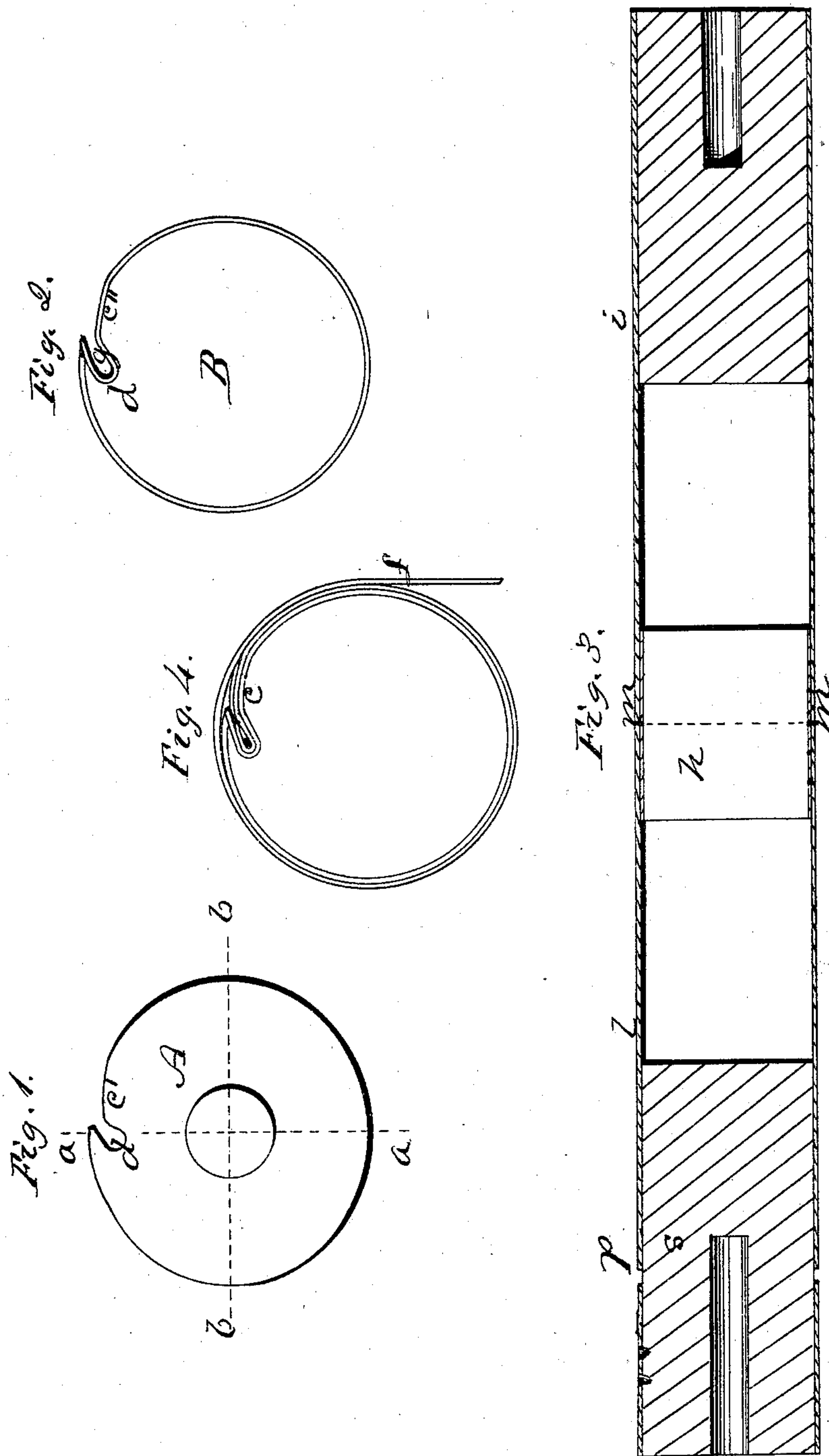


A. H. KNAPP.
Mode of Forming Sheet-Metal Rollers.

No. 165,934.

Patented July 27, 1875.



WITNESSES
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A. HAYDN KNAPP, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MODES OF FORMING SHEET-METAL ROLLERS.

Specification forming part of Letters Patent No. 165,934, dated July 27, 1875; application filed June 12, 1874.

To all whom it may concern:

Be it known that I, A. HAYDN KNAPP, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Method or Process of Forming Sheet-Metal Rollers for Window-Shades; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making part of this specification—

Figure 1 being an end view of the mandrel or former around which the sheet-metal is first bent or shaped; Fig. 2, an end view of the mandrel or former upon which the edges of the roller-sheet are soldered together; Fig. 3, a central longitudinal section of the complete sheet-metal roller, as constructed by me; Fig. 4, an end view of the finished roller with a shade attached thereto.

Like letters designate corresponding parts in all of the figures.

In the process heretofore in use of manufacturing sheet-tin rollers for window-shades, the piece of sheet-tin, after forming the shade-attaching groove in the edge thereof, is first bent around a mandrel or former of cylindrical shape, and somewhat smaller than the interior size of the finished roller, and then it is put upon a cylindrical former of the exact size required to form the roller, for the purpose of soldering the edges of the sheet-tin together. By first bending on a smaller mandrel the metal springs together, and requires to be sprung open somewhat to put it upon the soldering-mandrel, so that it holds thereon with sufficient firmness to obviate the use of clamps for the purpose. This first bending of the sheet-tin around a mandrel smaller than the ultimate roller necessitates the lapping of one edge of the sheet-tin over the other, and the raising of the same into a portion of a somewhat larger cylinder, producing thereby a projecting ridge, which has to be removed by repeated hammering with a mallet till the ridge nearly or entirely disappears, thus requiring much additional labor and expense in the manufacture, and producing at best imperfect results. The bending of the sheet metal around a cylindrical mandrel, also, from the elasticity of the metal, produces a somewhat oval or elliptic form of

roller, because the metal does not bend evenly throughout its width, the bend being less near the edges and greater near the middle, so that the shade does not balance perfectly thereon, and vibrates laterally in an unsightly manner when it runs up and down.

In order to remedy these objections, my invention consists in an improved method or process of forming the cylindrical sheet-metal rollers, first, by the employment of a mandrel or former, around which the sheet-metal strip is first bent, of a somewhat elliptic form, or flattened in the direction of the diameter *a*, Fig. 1, terminating where the edges of the sheet-metal meet, the mandrel being also of the full size required for the finished roller to possess. The difference between the smallest diameter *a* and the largest diameter *b*, for making perfectly cylindrical sheet-tin rollers of two inches diameter, I find is required to be about three-sixteenths of an inch, for an inch-and-a-quarter roller nearly three thirty-seconds of an inch, and other sizes in nearly like proportions.

Then, in order to bring the edges of the roller together for soldering, they are clamped together on the soldering-former B, Fig. 2, since the edges spring apart a little after the bending. Thus I produce a perfectly cylindrical roller by the previous proper shaping or counter-flattening of the mandrel A, and avoid the bent ridge, and consequent hammering of the roller, by not being obliged to lap one edge over the other, thereby making a more perfect roller with much less labor and expense.

What I claim as my invention, and desire to secure by Letters Patent, is—

The method or process of forming cylindrical sheet-metal rollers by first bending the metallic sheet upon an elliptical mandrel, and afterward placing and clamping it around a cylindrical mandrel, whereon the edges are soldered together, substantially as and for the purposes herein specified.

Specification signed by me this 29th day of April, 1874.

A. H. KNAPP.

Witnesses:

H. W. KETTREDGE,
D. A. MARRETT, Jr.