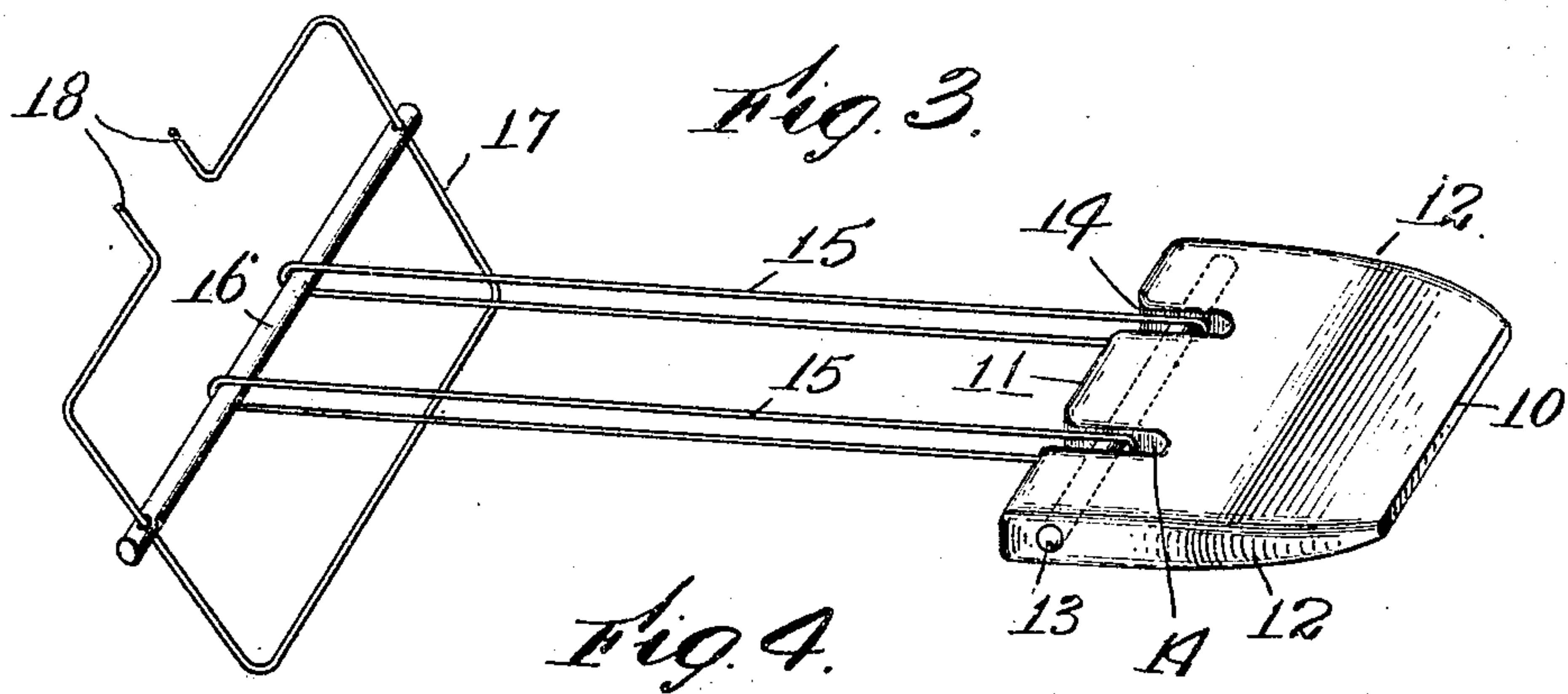
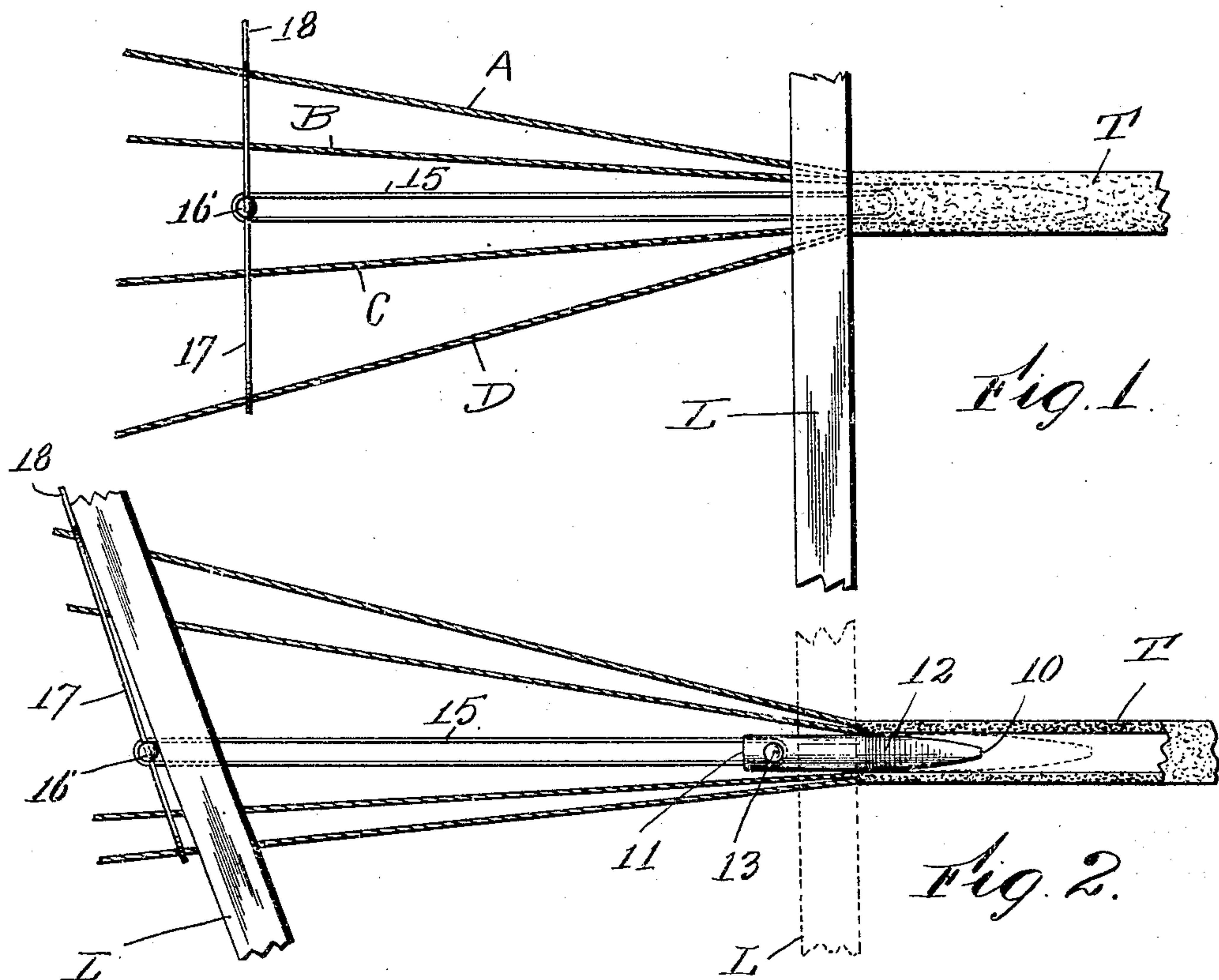


No. 824,212.

PATENTED JUNE 26, 1906.

C. C. SHEPARD.
FORMER FOR TUBULAR FABRICS.
APPLICATION FILED AUG. 19, 1904.



Witnesses:
C. F. Meeson.
M. E. Regan

INVENTOR:
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BY HIS ATTORNEYS
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UNITED STATES PATENT OFFICE.

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FORMER FOR TUBULAR FABRICS.

No. 824,212.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed August 19, 1904. Serial No. 221,331.

To all whom it may concern:

Be it known that I, CHARLES C. SHEPARD, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Former for Tubular Fabrics, of which the following is a specification.

This invention relates to a former or temple for shaping a tubular fabric as it is woven in a loom.

The especial object of this invention is to provide a simple, efficient, and inexpensive loom-temple which is designed for stretching out and ironing flat-woven hose-covering fabrics.

To this end this invention consists of the former for tubular fabrics and of the connections for operating the same from the lathe of a loom, as hereinafter described, and more particularly pointed out in the claims at the end of this specification.

In the accompanying drawings, Figure 1 is a side view of sufficient parts of a loom and the product being produced thereon to illustrate the application of my invention thereto. Fig. 2 is a similar view, showing the parts in a different relative position. Fig. 3 is a perspective view of the former and the connections for operating the same, and Fig. 4 is a perspective view of a small piece of tubular fabric.

In the flat weaving of tubular fabrics great difficulty is encountered in stretching the tubing as it is woven so as to form a uniform edge or selvage and in preventing the tension of the weft-threads from drawing in and narrowing the fabric. These difficulties are especially hard to overcome in the flat weaving of either single-ply or double-ply hose-coverings. In applying my invention to the weaving of fabrics of this kind I employ a block which is preferably made of wood and is located inside of the tube being woven, and extending back from this block is a connection through which the lathe pulls back the block when the lathe moves on its idle or non-beating stroke, while when a weft-thread is beaten up by the lathe the lathe also carries the block forward into the tube being woven. By means of this construction the block or former is given a short reciprocating motion and serves not only to stretch and properly shape the tube as it is formed, but

it also has an ironing or thread-laying action which insures the production of a high grade of tubing.

Referring to the accompanying drawings and in detail, A, B, C, and D designate warp-threads which are mounted in a loom to weave a tubular fabric T. These warp-threads are controlled in the ordinary manner by suitable harness-frames, which need not be herein shown or described, which harness-frames open the sheds through which the shuttle is passed to insert the weft-threads, the weft-threads being beaten up by the lathe L in the ordinary manner to form the tubing or tubular fabric T.

The loom-temple which I employ for shaping the tubing or tubular fabric T as it is formed comprises a wooden block having a chiseled or narrow forward edge 10. The rear edge 11 of the block is both wider and thicker than the forward edge, and the side edges 12 of the block are preferably slightly rounded. At its rear edge the block is provided with slots 14, and extending into the slots 14 are the operating-wires 15, which are held in place by a cross-pin 13. The wires 15 are preferably in the form of loops, and at their opposite ends the loops of wire 15 pass around a cross-pin 16. The cross-pin 16 is mounted to slide up and down upon a wire guide-frame 17. The wire guide-frame 17 is preferably formed of a single piece of wire, the ends 18 of which are not completely closed. This gap or opening is left in the guide-frame 17 in order to permit the piecing up of the various warp-threads, and as the guide-frame 17 is made of comparatively light wire it permits the frame to be sufficiently bent to allow the removal of the cross-pin 16. The guide-frame 17 rests upon and is supported by the warps.

In the operation of a loom-temple or inside former as thus constructed the connecting-wires 15 run with the warp-threads. When the warp-threads A or B are lifted, the connecting-wires will remain down; but when the warp-threads C or D are lifted the cross-pin will raise the wires 15 therewith. By means of this arrangement the connecting-wires 15 are shifted, so as not to be in the way of the shuttle. With the shuttle which lays a filling-thread in place the block is in its retracted position, (shown in Fig. 2,) and

when the lathe beats up the block will be driven by the lathe forward into the fabric, as shown in Fig. 1. On the return motion of the lathe the reed of the lathe will engage the cross-pin and will again draw back the block or former. This produces a strong shaping or ironing action, which in practice has enabled me to weave exceedingly durable hose-covering fabrics.

I am aware that changes may be made in practicing my invention by those who are skilled in the art without departing from the scope thereof as expressed in the claims. I do not wish, therefore, to be limited to the construction I have herein shown and described; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

1. In a loom, the combination of the lathe, warps arranged to weave a tubular fabric, a block inside the tube being woven, and a lost-motion connection between the lathe and block, whereby the block will remain stationary during the greater part of the swinging movement of the lathe and will be forced forward a short distance into the fabric during the last part of the forward movement of the lathe, and will be drawn back a short distance out of the fabric during the last part of the return movement of the lathe.

2. In a loom, the combination of the lathe, the warps arranged to weave a tubular fabric, a block inside the tube being woven having a chiseled front edge and inwardly-tapering sides, rods extending back from the block through the reed of the lathe, means for swinging said rod up and down to avoid the

shuttle, said parts cooperating to form a lost-motion connection with the lathe, whereby the block remains stationary during the greater part of the swinging motion of the lathe, and is driven into the tube during the last part of the beating-up motion of the lathe and is drawn back by the engagement of the lathe with stops on the wires during the last part of the return motion of the lathe.

3. In a loom, the combination of the lathe, the warps arranged to weave a tubular fabric, a block inside of the tube being woven, wire loops fitting into slots in the block and pivoted to a cross-pin therein, and a cross-pin connecting the other ends of the wire loops, said cross-pin having its ends engaging a guide-frame which incloses the warps.

4. In a loom, the combination of the lathe, the warps arranged to weave a tubular fabric, a wooden block located in the tube being woven, said block having a substantially chiseled-shaped forward edge, the wire loops fitting into slots in the rear edge of the block and mounted on a cross-pin, the cross-pin connecting the other end of said wire loops, and a guide-frame for the last-named cross-pin, said guide-frame being formed by a single piece of wire and having an opening or gap permitting piecing of the warp-threads.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHARLES C. SHEPARD.

Witnesses:

PHILIP W. SOUTHGATE,
JOHN F. CROWELL.