

(No Model.)

J. H. WILDAY.
DARNING APPARATUS.

No. 572,921.

Patented Dec. 8, 1896.

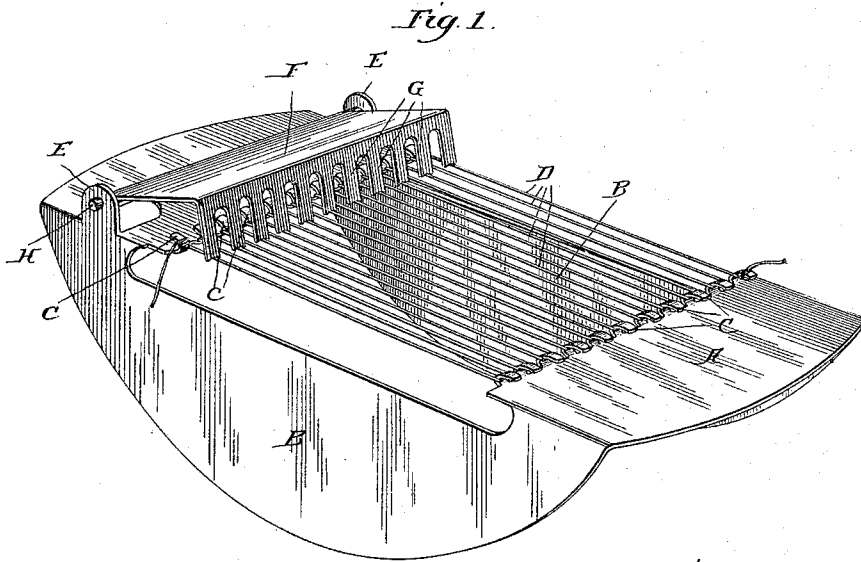
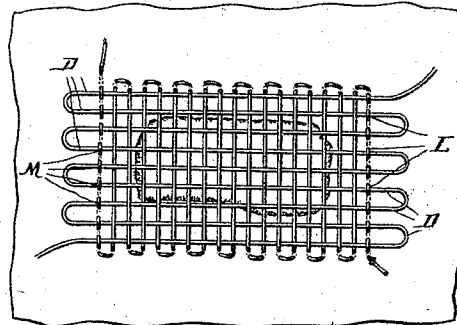
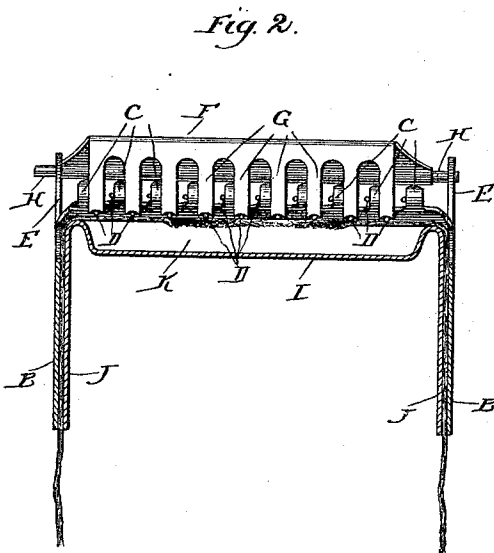


Fig. 3.



Witnesses:

H. D. Hallock.
J. H. Williams.

Inventor:

John H. Wilday
By Geo. H. Holgate

Attorney.

UNITED STATES PATENT OFFICE.

JOHN H. WILDAY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO ROBERT W. HUTTON AND ZACHARIAH K. LOUCKS, OF SAME PLACE.

DARNING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 572,921, dated December 8, 1896.

Application filed May 26, 1896. Serial No. 593,108. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. WILDAY, a subject of the Queen of Great Britain, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Darning Apparatus, of which the following is a specification.

My invention relates to a new and useful improvement in darning apparatus, and has for its object to provide a device of this description by means of which hose or other articles may be so darned as to close the rent or opening therein, and also to so construct such a device as to greatly facilitate the operation of darning.

With these ends in view my invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction and operation in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective of my improvement, showing yarn strung thereon prior to its application to the fabric to be darned; Fig. 2, a central cross-section illustrating the method of holding the fabric to be operated upon and of depressing alternate lengths of the warp, and Fig. 3 a diagram illustrating the application of the darning-yarn in closing a rent.

In carrying out my invention I provide a warp-holder A, which is preferably formed of thin sheet metal so bent as to produce the clamp sides B and having a central opening, upon the end edges of which are formed a series of hooks C. The object of these hooks is to support and hold the warp-yarn D in its proper relative position to the article to be operated upon, as clearly illustrated in Figs. 1 and 2, and this yarn is so spaced when stretched upon the holder as to lie in parallel lengths at equal distances apart. Two ears E are formed upon the holder by being

cut from the latter and being bent upward, and between these ears is pivoted the warp-opener F, which consists of a piece of sheet metal bent in angular form, one section of which is provided with the tongues G, the latter having their lower edges concaved, as clearly shown. In pivoting the warp-opener between the ears the pintles H are passed through said ears and are of such length as to permit the sidewise movement of the opener equal to the distance between each of the warp-lengths, the object being to permit the sliding of the opener first to one side and then the other for the purpose of bringing the concaved edges of the tongues G over alternate lengths of the warp and then over the remaining lengths. By this arrangement the opener may be so operated as to first depress half of the warp-lengths and then the other half after the manner of a loom-harness.

In order that the fabric to be operated upon may be held taut and in its proper position relative to the warps, I provide a clamp-saddle I, which is so bent as to produce the sides J, and the depression K, and in applying my device to the fabric to be operated upon the saddle is placed beneath said fabric and the holder forced thereover, as clearly shown in Fig. 2, so as to draw the fabric tightly over the depression K and clamp it between the sides B and J. When this has been accomplished, a darning-needle carrying a length of yarn which answers to the weft in weaving is by the operator inserted in the fabric at some little distance from the edge of the rent to be closed and preferably opposite the opener, and this first insertion of the weft-yarn is made by an over and under stitch, so that the under stitch passes into the fabric and the upper stitch over one of the warps until all of the warps have been secured to the surface of the fabric at that end of the rent, as shown at L in Fig. 3. The opener is then depressed, so as to depress each alternate warp-yarn, thereby forming a space between the depressed and unaffected warps to permit the ready passage of the needle therebetween, and when the weft has been drawn through the warps a stitch is taken in

the fabric, so as to secure the weft and permit its return, which is accomplished by elevating the opener, sliding it sidewise until the tongues lie over the warps not before depressed, when by forcing the opener downward these warps will be depressed, thus permitting the passage of the weft in such manner as to cause it to interlace with the warps, as is well understood in weaving.

By a continuance of this process it will be seen that a superimposed fabric will be laid upon the hose or other article being operated upon, so as to completely and neatly cover the rent therein. After the interlacing has been completed the weft is again stitched to the opposite end of the fabric, as shown at M, by the over and under stitching in the same manner as before described in connection with the starting operation, when said warp is disengaged from the several hooks and so drawn under the stitches L and M as to bring the looped end thereof tightly against said stitches, thus forming a selvage edge and giving the work a neat appearance. The holder is then drawn off the saddle, which completes the operations.

One of the advantages of my improvement is that the darning may be accomplished by a person of little or no skill and in less time than would otherwise be the case by the old method, even though the operator is skilled in the art.

It will of course be understood that after the completion of the interlacing and the drawing in of the loops of the weft the weft-yarn

will be secured by several whip-stitches, so as to prevent the slipping loose of the same.

Having thus fully described my invention, what I claim as new and useful is—

1. An apparatus for darning consisting of a warp-holder, formed of sheet metal bent to form clamp sides and having a central opening, hooks formed on the edge of the ends of the central opening, ears formed upon the holder, a warp-opener pivoted to said ears by a pintle, said pintle being of a length to allow the opener to slide sidewise, said opener being of angular form, tongues formed on one section of the opener, said tongues being concaved on their lower edges, as and for the purpose described.

2. An apparatus for darning consisting of a warp-holder formed of sheet metal bent to form clamp sides and having a central opening, hooks formed on the ends of the opening, ears formed upon the holder, a pintle slidable in said ears, an angular opener secured on the pintle and adapted to slide between and strike against the ears and thereby limit the movement of the pintle and tongues formed on the opener, as and for the purpose described.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

JOHN H. WILDAY.

Witnesses:

S. S. WILLIAMSON,
MARK BUFORD.