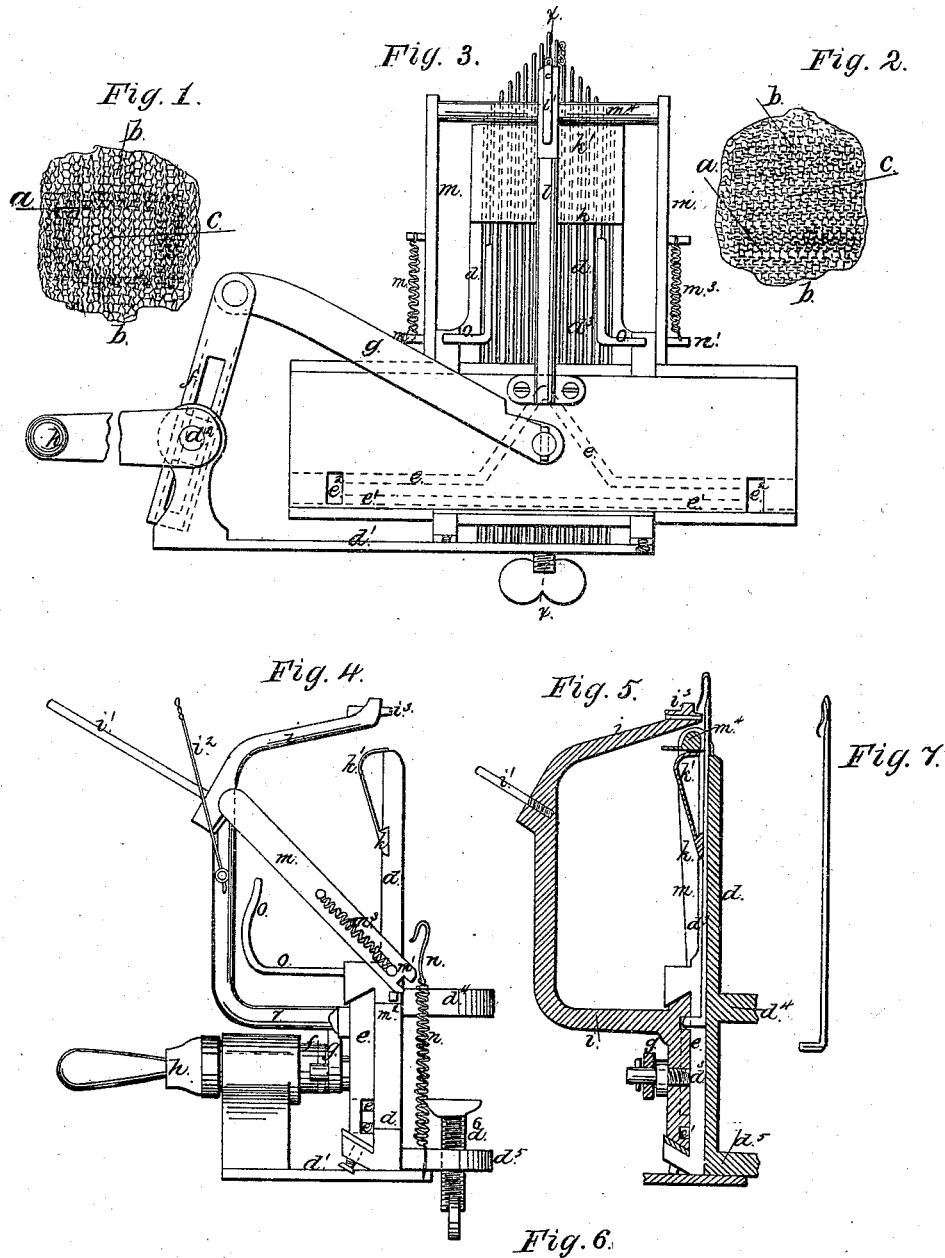


A. Shedlock. Darning Mach.

N^o 113,213.

Patented Mar. 28, 1871.



Witnesses.

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Letters Patent No. 113,213, dated March 28, 1871; antedated March 22, 1871.

IMPROVEMENT IN MACHINES FOR REPAIRING HOSE, &c.

The Schedule referred to in these Letters Patent and making part of the same.

I, ALFRED SHEDLOCK, of New York, in the county and State of New York, have invented a certain Improved Mode of Repairing Hose and other Knitted Goods, and Machine therefor, of which the following is a specification.

My invention consists in forming a knitted web over parts worn in hose and other knitted goods for the purpose of repairing the same, and also of an improved knitting-machine therefor, giving to such repairs a much better appearance than when done by darning, and rendering them less liable to wear out again in the same place, as the parts knitted over are of the same elasticity as the other parts of the hose, &c., which quality the ordinary mode of mending such goods by darning does not possess.

It also enables persons purchasing a cheap class of goods to knit, in a short time, and with little labor, an extra thickness over the parts most liable to wear, thus making such goods wear considerably longer.

In the accompanying drawing—

Figure 1 represents a piece of knitted goods so repaired;

Figure 2 is a back view of same;

Figure 3 is a front view of my improved knitting-machine;

Figure 4 is a side view of the same;

Figure 5 is a sectional view through the line $x x$;

Figure 6 is a view of the top of the frame and guide; and

Figure 7 is a view of a pointed spring-beard knitting-needle.

In figs. 1 and 2 the square dark portion a represents the web knitted over a piece of knitted goods, b , in which the hole is shown, by the light part c , in the center of the dark portion a .

The frame d , in which the needles work, stands vertically, and extending from the lower end of it is the arm d^1 , provided with a bearing, in which the crank-shaft d^2 works.

In dovetails on the frame d is fitted the cam e , working at a right angle to the grooves $d^3 d^3$, in which the needles work, and it is operated by the adjustable crank f , and connected thereto by the pitman g .

The crank f is slotted and fastened to one end of the short shaft d^2 by a screw and nut, and on the other end of the shaft is fixed the crank-handle h .

On the back of the cam e is the bracket i for carrying the thread or yarn, which, if on a spool, may be placed on the wire i^1 , the thread or yarn being then passed through the friction-holes of the take-up i^2 and the delivery i^3 . If the thread is loose or in lengths it is passed through the hole in the end of wire i^1 , the take-up i^2 , and delivery i^3 .

Near the upper end of the frame d is fitted, in a dovetail, the piece k for holding the needles in their

grooves $d^3 d^3$. It is also extended to the top of the frame d to form a guide, k^1 , over which the goods being repaired are pulled, the said guide having grooves $k^2 k^2$, as shown at fig. 6, converging from the center line, the object of which is to spread or stretch the goods as they are being pulled over.

The presser-frame m is attached to the frame d by the round pins $m^1 m^1$ fixed in the sides of d and passing through slots in the frame m . At the lower ends of the frame m are square slots, which fit over the square pins $m^2 m^2$, fixed in d , and just below the round pins $m^1 m^1$, the object of which is to hold the presser-frame m in the position shown at figs. 3 and 5, and it is held down by the springs $m^3 m^3$, which are connected to the round pins $m^1 m^1$ and pins in the sides of the presser-frame m .

The upper part m^4 of the presser-frame m lies over the top of the frame d , and is formed so as to close the spring-beards of the needles as they descend. It is also provided with a series of projections, which lie between and prevent the needles from raising the goods as they pierce it. The goods are also held between the guide k^1 and presser m^4 by the springs $m^3 m^3$. The presser m^4 is provided with grooves corresponding to the grooves $k^2 k^2$ on the guide k^1 .

On the back of d are cast the lugs $d^4 d^4$; through the lower one is the screw d^5 , for clamping the machine to the table.

For repairing different-sized holes a certain number of the needles on each side may be dropped from the cam e into the straight slot e^1 by loosening the nut which holds the adjustable crank f to the shaft d^2 and setting the cam e over so as to bring the openings $e^2 e^2$ opposite the lower ends of the needles to be dropped, then set the adjustable crank so as to just work down the outside needles. The presser-frame m is raised sufficiently to release the square pins $m^2 m^2$ from the square slots at the lower ends of the frame m , and moved as shown at fig. 4; the hose, &c., to be repaired is then placed over the frame d with the hole lying over the guide k^1 ; the frame m is moved back and the springs $m^3 m^3$ cause it to press on the goods; the cam e is then moved by turning the handle h so as to raise the needles through the goods. The hooks on the ends of the springs $n n$, of which there are two or more, are hooked in the goods, and then, by turning the handle h , the thread-delivery lays the thread under the beards of the needles, and they draw it down through the goods by the cam e acting on their lower ends, which are bent, as shown at fig. 7, so as to enter the cam-groove, the presser m^4 closing the spring-beards of the needles as they pass it.

When the needles commence to rise again the loops they each form are slackened, so that the springs $n n$ draw the hose, &c., over to the extent of the loops,

the needles again piercing the goods a little in front of the first row of stitches, and, again taking the thread and moving down with it through the goods and loops already formed, discharge the first loops over the tops of the needles, the springs *n n* again drawing the goods over to the extent of the loop, and so on until the hole is knitted over or the extra thickness worked on the parts, as desired.

To finish off the patch all that is necessary is to draw the end of the thread or yarn through the last row of loops with a common needle or hook provided therefor similar to a crochet-hook.

The object of the take-up *i*² is to keep the thread or yarn always taut between the delivery and the needles.

The wires *o o* are for keeping the hose, &c., off from the working parts of the machine.

Fig. 7 represents a pointed spring-beard needle, which may be used, if found necessary, on close-knitted goods.

I claim—

1. The combination of the row of needles, presser *m*¹, and guide *k*¹, operating so as to knit patches on knitted goods, for the purposes of repairing and strengthening the same, substantially as described.

2. The springs *n n*, in combination with the presser *m*¹ and guide *k*¹, substantially as described.

3. The presser *m*¹, provided with a series of projections, which lie between and prevent the needles from raising the goods as they pierce it, substantially as described.

4. The guide *k*¹, in combination with the presser *m*¹, substantially as described.

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Witnesses:

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