No. 81,821. PATENTED SEPT. 1, 1868.

A. S. ROWLEY.

SEWING MACHINE.

Fig. 1.

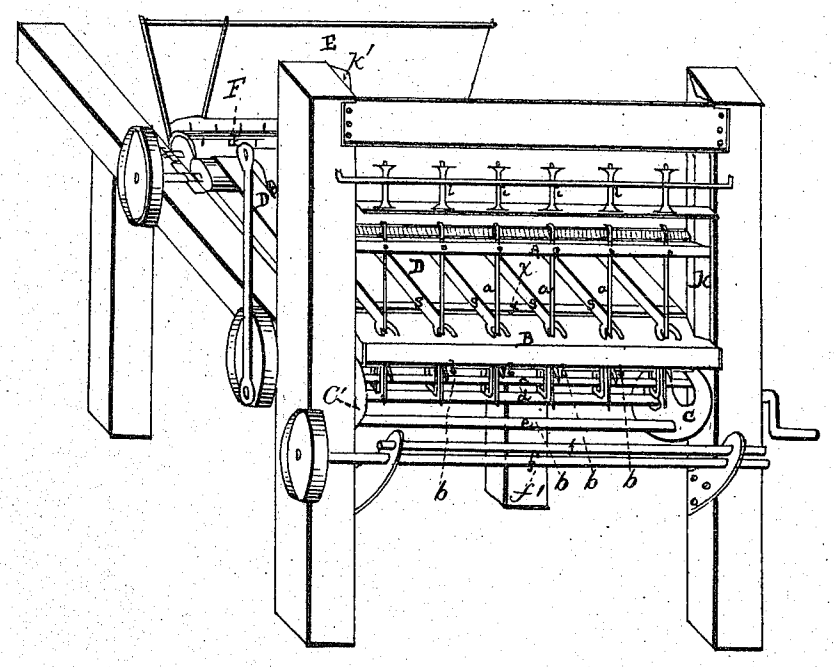
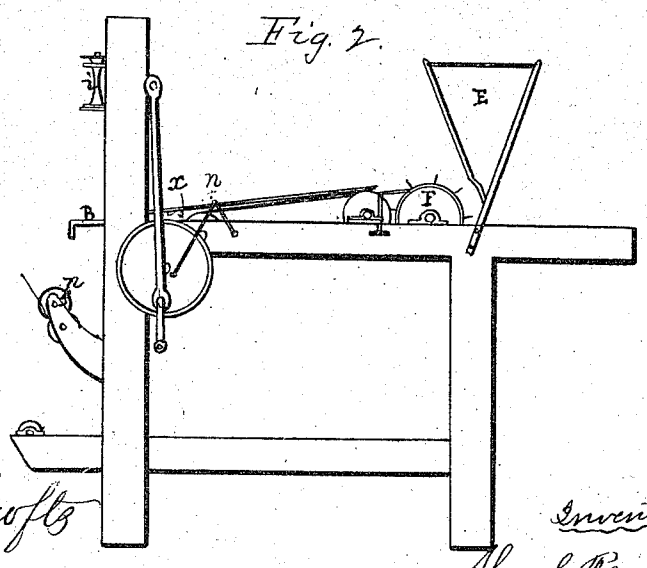


Fig. 2.



Witnesses.

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ALEXANDER S. ROWLEY, OF HUDSON, NEW YORK.

Letters Patent No. 81,821, *dated September* 1, 1868.

IMPROVEMENT IN SEWING-MACHINE.

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

Be it known that I, ALEXANDER S. ROWLEY, of the city of Hudson, in the county of Columbia, and State of New York, have invented a new and useful Machine for Sewing straw, rush, flag, reed, or any other fibrous or textile substances into matting, carpeting, &c., the seams or sewing forming the warp thereof, and also for sewing and quilting cloth; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view,

Figure 2 a longitudinal elevation.

The nature of my invention consists in the combination of a number of needles, arranged on a horizontal reciprocating bar, operating in combination with mechanism for forming either a lock or chain-stitch with a peculiar feeding-device, as described, so that matting for floors or lining for carpets, of straw, rush, grasses, or other vegetable growths, or of any loose textile or fibrous material, may be sewn.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I construct a frame of wood or metal, or partly of both, similar to that represented in fig. 1 of the drawings annexed, not intending to confine myself, however, to any particular form, for I contemplate operating this bar, carrying one, two, or more needles, over a table having the loopers or stitch-formers beneath or combined with it, and each (the needle-bar and the table) so separated from the other as to pass between them a vessel's sail, or any other fabric, no matter what its breadth or expansion.

The dimensions of the frame referred to are proportionate to the width of the fabric it is designed to make. If it is intended to sew any material, fabric, or cloth, a yard in width, the frame should be at least three and a half feet in the clear; and if it is to be six feet in width, the frame should be not less than six and a half feet in the clear.

On the cross-bar A, fig. 1, arrange any desired number of needles, (sewing-machine needles,) *a a a*, &c., at such distances apart as may be required. One needle alone may be used for ornamental or plain sewing on quilts, table and piano-covers, counterpanes, leather, &c., where much room or space is required for the article or fabric to be sewed. The needles are secured in their respective places by means of thumb-screws or their equivalents, so that they may be easily adjusted or replaced. B is a table or platform, for the support of the material or fabric being sewed. It is provided with slots or perforations for the needles to pass through. Beneath this table I arrange a series of loopers or slotted hooks, *b b b*, &c., corresponding with the number of needles. These loopers are all operated together by means of the cams C C′, at each end of the parallel bars or rods *c d e*.

The needle-bar A is operated by means of cranks, pulleys, or eccentrics, connected with each of its ends. It is provided at each end with grooves, and slides up and down on guides or ways *k k′* on the frame, similar to the cross-head of steam-engines. The spools *i i i*, &c., for the thread or twine, are arranged, one for each, directly over the needles, with suitable devices for regulating the tension. I contemplate driving the cams C C′ by gearing-pulleys and belts or cranks.

The operation of the above-described arrangement is to cause the loopers or hooks *b b b*, &c., to catch the slack of the thread at the eye, just as the needles begin to ascend, disengaging the loop at the next descent, and then again catching another slack at the next ascent, and so on, alternately dropping and catching the loops, forming thus, by the regular and uniform feed of the fabric or material being sewed, what is known as the loop or chain-stitch.

To make the lock-stitch, I contemplate adapting the Wheeler and Wilson, the Singer, or any other of the known devices (with the patentees' consent) employed on single-needle sewing-machines. Either of them can easily be adapted to my machine. If the shuttle is employed, one for each needle will be required, which can be operated by gearing and cams arranged under the endless apron and table B. So also the hook-and-bobbin

device of the Wheeler and Wilson machine can be operated by placing them on the ends of spindles or short shafts, one for each needle, and driving all of them together by means of belts from each of the spindles to a drum or cylinder, or by gearing, arranged also under the table B and endless apron D.

For sewing straw, rush, flag, &c., I employ the endless apron D to receive the loose material from the hopper E and spike-cylinder F, and carry it on to the table B, whenever it is necessary to use them, which will, in general, only be in sewing straw. The V-shape of the hopper E is important, as the most simple and effective device for straightening the straw. I contemplate using a ridged or corrugated cylinder in place of the spiked cylinder F in some cases, and for some materials. The spikes or teeth on cylinder F, as they revolve, pass between fingers or slats, which take off the straw or other loose material, and deliver it on the endless apron D.

The two rollers *f f'* act as a take-up of the fabric as fast as made or sewed. One at least should be coated with emery, or fluted. At each end of these, or in combination with them, are circular knives *p p*, which trim off the edges of the matting or other fabric as it passes through; and below these I employ another roller, on which the finished article of manufacture is rolled, ready to be removed.

Fingers or slats extend lengthwise over the endless apron D, resting lightly on the straw, to keep it in place. (These, however, are not very necessary, and may be dispensed with.) Those extending to and between the needles, where they are made to press sufficiently hard to hold the straw firmly on the table, alternately with each rise and fall of the needles, are indispensable. These fingers, *s s s*, &c., are employed both as pressers or holders, and as feeders, by giving them the requisite motions, that is, a rising and falling by connecting them with the needle-bar A, and a feeding or reciprocating by connecting them with one of the pulleys, as shown in fig. 2, having a bevelled piece, *x*, extending across on their under sides, which pushes forward, under the needles, increments of straw or other material or fabric as fast as required. The length of the stitch is also regulated by this feed. These slats or fingers may be either jointed at *n* or not, according to kind of work to be done or the material to be used.

Claims.

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

1. The combination and arrangement of the two cams C C', the rods *c d e*, and series of hooks *b b b*, &c., substantially as and for the purpose set forth.

2. The combination and arrangement of the angular box or hopper E, the spiked, toothed, or corrugated cylinder F, endless apron D, and holding and feeding-fingers *s s s*, &c., substantially as and for the purpose herein set forth.

3. In combination with the above, a sewing-mechanism substantially as and for the purpose described.

ALEX. S. ROWLEY.

Witnesses:

JOHN M. CROFTS,

HIRAM W. DIXON.