SHAW & CLARK.

Sewing Machine.

No. 38,246. Patented April 21, 1863.

Fig. 1,

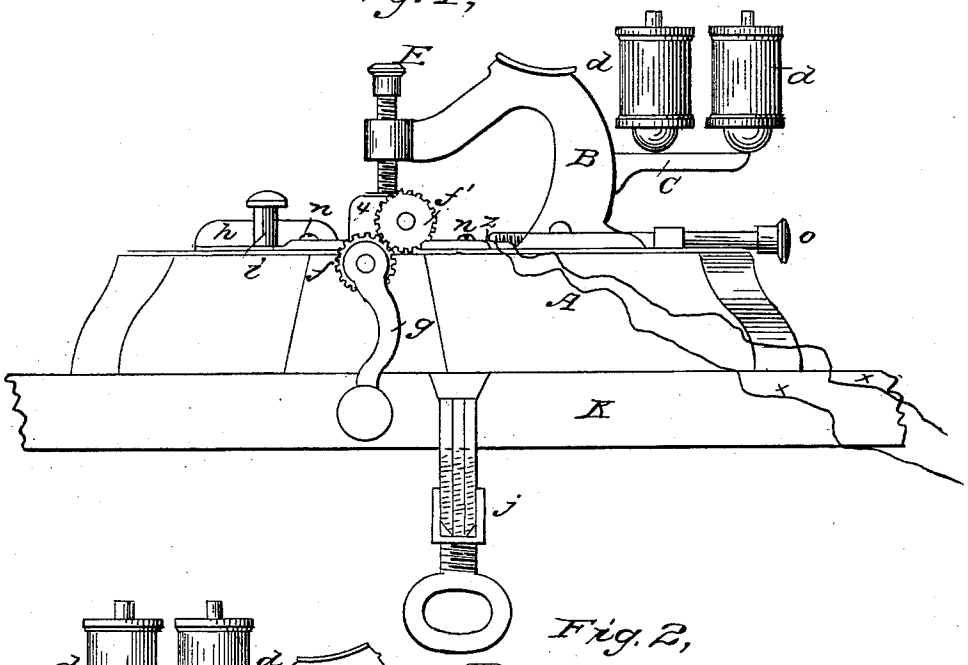

Fig. 2,

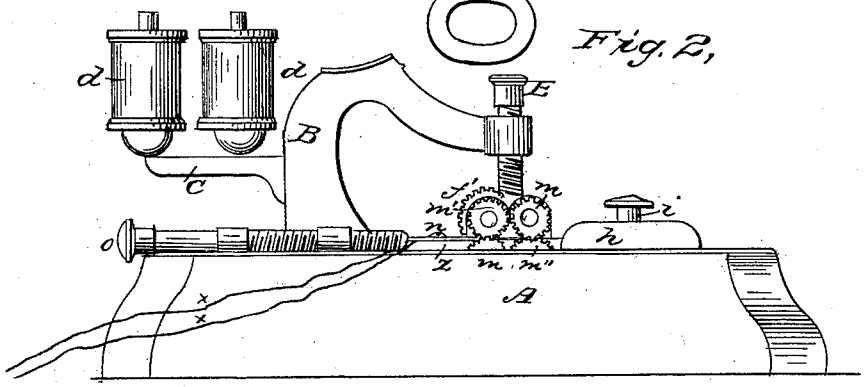

Fig. 4,

Fig. 3,

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UNITED STATES PATENT OFFICE.

CHAS. A. SHAW AND JAMES R. CLARK, OF BIDDEFORD, MAINE.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **38,246**, dated April 21, 1863.

To all whom it may concern:

Be it known that we, CHARLES A. SHAW and JAMES R. CLARK, of Biddeford, in the county of York and State of Maine, have invented a new and useful Improvement in Sewing-Machines; and we hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, of which drawings—

Figure 1 is a side elevation of our improved machine, showing the method of attaching the machine to a table, and representing it in a proper position for working. Fig. 2 is a side elevation, showing the opposite side from that shown in Fig. 1. Fig. 3 is a transverse longitudinal section. Fig. 4 is a sectional view, showing the groove in the wheels in which the needle rests.

Corresponding letters of reference indicate corresponding parts in the different figures or drawings.

Our improvement is in that class of machines which use a common sewing-needle and make a hand-stitch or running-stitch—such as is made by hand—and relates to an improved method of combining and arranging the motive and crimping wheels in plates or bearings having a spring between them, and jointed near one end, which plates can be readily detached from the main body of the machine.

In Fig. 1, A is the bed-piece or body of the machine, which we make about seven inches long, two inches high, and four inches wide, of iron cast about one-quarter of an inch thick. B is an arm attached to the bed-piece, and having a spool-stand, C, for the spools *d d* on one side and the thumb-screw E disposed in one end. O is an adjustable screw having a socket in its end in which the eye end of the needle *z* is held.

A gage or guide, *h*, is attached to the top of the machine by the thumb-screw *i*. The cogs *f f'* are driven by means of the crank *g*, and are fastened to ends of the shafts or journals about three inches long, to the opposite ends of which shafts the small cogs *m' m''* are attached, as shown in Fig. 2, the whole being disposed in a frame-work or support, or arranged in the plates 4 5 5', which frame-work is attached to the top of the main body of the machine A by means of the screws *n n*. This frame-work is composed of two parts or plates which are joined by a hinge or joint near the end next the crank *g* and main wheels *f f'*. Besides the wheels *m' m''*, there are also two other wheels, *m m*, which work in connection with them, and are attached to journals or shafts arranged in the plates 4 and 5 5', Fig. 3, but which shafts do not at their other ends pass out through said plates, like the shafts on which the wheels *f f'* are arranged. Between the plates, and nearest the end where they are connected by the joint, is a coiled spring, 3°, Fig. 3, which, when the screw E is turned up, operates to throw up or elevate the plate 4, and consequently the upper wheels, thus allowing the work or needle to be put in or taken out of the machine more readily. The crank *g*, Fig. 1, and wheel *f* are on the opposite end of the same shaft to which the wheel *m''*, Fig. 2, is attached, and the wheel *f'*, Fig. 1, is on the opposite end of the same shaft to which the wheel *m'* is attached, Fig. 2. The wheels *m m m' m''* have each a small groove, *v v*, Fig. 4, for the needle to work in, and are so arranged with respect to each other that when the screw E is turned down, pressing the plate 4 down toward the plate 5 5', the top wheels, *m m'*, are made to engage with the bottom ones, *m m''*; but all the wheels *m m m' m''* are so disposed that they never engage or come in contact laterally—that is to say, none of said wheels ever come in contact with any excepting the wheel immediately over or under it. The wheel *m''* and the one over it, Fig. 3, are, however, arranged so as to run as near the wheel *m'* and the one under it as possible without touching them. Thus it will be seen that with the machine in the proper position, as in Fig. 1, and the plate 4 turned down, so that the upper and lower wheels engage, by turning the crank *g* motion will be communicated, through the wheels *f f'*, to the wheels *m'' m'*, and through them to the corresponding wheels, *m m*, in such a manner as to cause the two top ones to revolve from right to left and the two bottom ones to revolve from left to right.

The machine is operated as follows: Take a common sewing-needle, *z*, and thread it with a thread, *x x*, the same as for hand-sewing; turn up the screw E, allowing the spring 3° to throw up the plate 4, so that the upper wheels will be disengaged from the lower ones; insert the needle in the groove *v v* between the wheels, in the position shown in Fig. 2, in such a manner that the point of the needle will

come exactly to the center of the right-hand pair of wheels, (or the wheel m'' and the one over it,) and turn the screw O up against the eye end of the needle to keep it in that position. Now turn down the screw E until the upper and lower wheels engage and enter the cloth to be sewed between the left-hand pair of wheels, turning the crank g slowly. The cloth will thus be crimped or corrugated and passed onto the needle. When the needle is filled turn the crank back a little, so as to detach the needle from the screw O, and gently slip the cloth off the needle onto the thread x x, then readjust the needle in the screw O and proceed as before. A little experience will enable this to be done very rapidly. The top wheels should not be pressed down upon the lower ones so as to cut the cloth, or so little as not to crimp it properly.

By arranging the plates 4 5 5′ in the manner described and connecting them by a joint at the end nearest the crank g the capacity of the machine is greatly increased, as it leaves an open space between the plates from the joint to the wheels m m m' m'' for the work to pass through. This arrangement also permits the plates, as well as the shafts to which the wheels are attached, to be made of any length desired, thus increasing the capacity of the machine in a corresponding degree. The use of the spring 3° greatly facilities the putting in and taking out of the needle and work, as the plate 4 is thereby caused to rise as fast as the screw E is turned up. By combining the wheels m m m' m'' and their shafts with the wheels f f', crank g, spring 3°, and plates 4 5 5′ in the manner described, so that the whole can be removed or detached from the main machine A in a body by means of the screws n n, the labor of constructing the machine is greatly lessened, and the machinery is more easily repaired when out of order. A part of the top of the main machine A is cut away, as shown in Fig. 3, to admit the insertion of these parts. The lower wheels, when in position, are mostly below the top of the machine, as shown in the last-named figure.

We are aware that machinery for sewing with a common needle and having crimping-wheels, such as described, has been used heretofore, as in the expired patent of B. W. Bean, of March, 1843, and the alleged inventions of Rogers, Palmer, and others. In some of these screws were used to press the wheels together; but they were arranged in the same cap or plate in which the wheels were, thus limiting the capacity of the machine to very narrow work. We make no claims whatever to anything invented by the said Bean, Rogers, Palmer, or others; but

What we consider as of our invention, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the wheels m m m' m'' and their shafts with the spring 3° and plates 4 5 5′, which plates are connected at one end by a joint or its equivalent, substantially in the manner and for the purposes set forth and specified.

2. Arranging and combining the wheels m m m' m'', wheels f f', crank g, and spring 3° with each other and with the plates 4 5 5′, in such a manner as to be taken out of or put into the body of the machine A, all at one time, by means of the screws n n, or their equivalents, substantially in the manner and for the purpose set forth and specified.

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