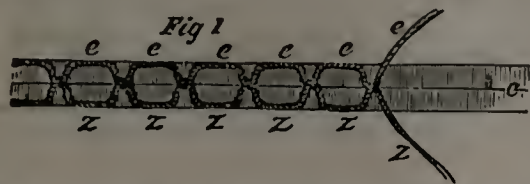


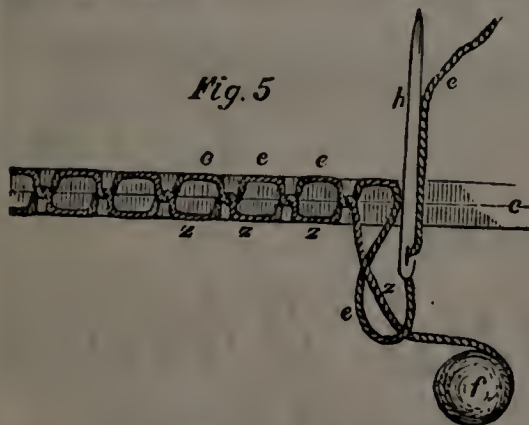
HOW SEWING IS DONE BY MACHINERY.

We are happy to be able to present our readers with some illustrations which, with the accompanying descriptions, will answer the question. "How can a machine make stitches?" We are aware that it is not a little difficult to describe the inside works of a sewing machine, without having the machine itself and the reader directly before us, but we will do the best we can with the aid of some engravings, for which we think our friends will give us a little credit, when we tell them that the drawings below are principally of our own designing. We preferred doing the work ourselves, to letting the manufacturers do it, for we feared the whole matter would be so familiar to them that they would not appreciate the minute details necessary to make the subject plain to the unskillful reader.



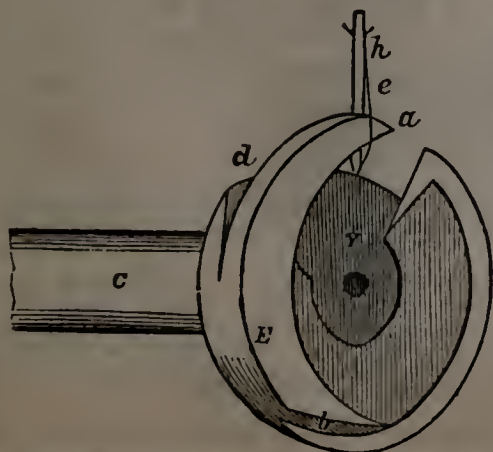
We commence with the stitch made by the Wheeler & Wilson machine, as that appears to be the simplest, and most easily illustrated. Fig. 1 exhibits two pieces of cloth, c, placed together and partly sewed. A little examination will show that the upper thread e e e is crossed in the center of the cloth by the lower thread z z z—in other words, the two threads cross each other, and are thus locked together. This is essentially the "lock-stitch" invented, and patented in 1846.

By examining Fig. 5, it will be seen that the same ef-



fect would have been produced, had the bobbin or spool, f, remained stationary, and the loop been carried around it—down the right side and up the left, around the lower

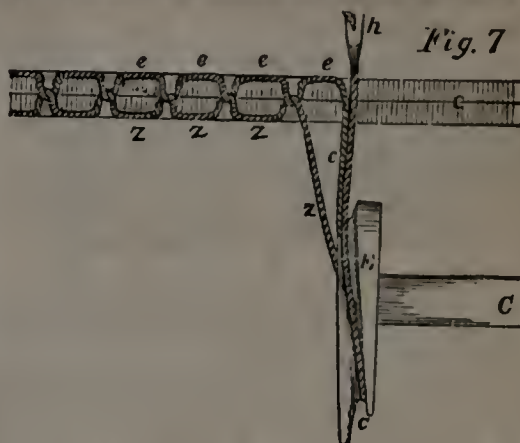
Fig. 6



thread, z. This end is, in effect, accomplished in the machine.

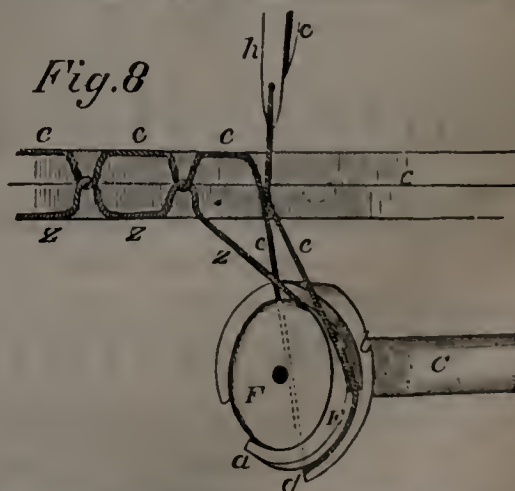
In Fig. 6 we have a rotary hook, E, upon the end of the shaft C. Inside of this hook, in the concavity F, is placed the bobbin F, (as seen in Fig. 8.) The needle h coming down through the cloth, and being partly withdrawn, leaves a loop at e. The point of the revolving hook passes into the loop at a, opens it and carries it around, spreading it as it moves forward, so as to throw it around the bobbin or spool within the hollow hook. The bobbin F, (Fig. 8,) has no axis passing through it, but is held by the concavity F, by a ring (not represented) placed before it, so that it plays freely and allows a loop of thread to pass around on both sides, as around the small ball of thread in Figs. 4 and 5.

Fig. 7 gives a side view of the thread carried part way



around. It will be noted that this wheel upon which the hook a (Fig. 6) is placed, is beveled at E, in Fig. 7, so as to throw the thread off from its edge after it has been partly wound around it. The object of this is to throw one part of the loop around the bobbin in order to embrace the lower thread.

The operation can be better understood in Fig. 8, by



tracing the position of the upper thread, e e, and of the lower thread, z z. We observe that the loop having been first formed on the right side of the lower thread z, one part of it falls behind the bobbin F, (back of the dotted line,) while the other branch of it is caught by the hook, carried around, to be thrown off on the other side of the bobbin, by means of the bevel or half screw at b.

Fig. 9 gives a front view of the same. We here see the upper thread, e e, bent, or looped, completely around the lower thread z. A little further turning of the circular hook will throw the thread off from it, when, by the simultaneous tightening of the thread above, the lower thread embraced by it will be drawn into the cloth and form a lock in the center.