

SEWING-MACHINE.

SEWING-MACHINE, one of the most important inventions of this century. Like the stocking-frame, which in principle it closely resembles, we owe it to the ingenuity of a poor mechanic, striving to lessen the labour which he saw was a real hardship upon his wife and other poor women. Elias Howe, a native of Massachusetts, surrounded by a young family, for whom he was obliged to labour during the day, devoted his after-hours to the construction of a sewing-machine. This was about the year 1841, and his career since that period up to the present time forms a striking chapter in the annals of intelligent labour, and furnishes another proof of the saying that 'fact is stranger than fiction.' After incessant labour, during the latter part of which he and his family were indebted to a friend for the means of subsistence, he completed the first working sewing-machine, the patent for which was granted to him in May 1841. He did not succeed in inducing the people of his own country to see the value of his patent, and came to England, where, after patenting it here also, he met with so much discouragement that he sold the patent for £250 and a royalty of £3 per machine to a staymaker, Mr Thomas of Cheapside, London, who used it successfully in his own business, but did so little towards making it public that for several years its existence was only known to a very few individual manufacturers. When Howe reached his own country again, he found his American patent pirated by a wealthy company; but with admirable spirit he asserted his rights, and succeeded in establishing them; and it is gratifying to know that his talent, industry, and perseverance were rewarded, for he became a wealthy man. Howe's machine worked what is called the lock-stitch, but since his invention became known, numerous improvements and modifications have been introduced by

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other inventors. The principal of these are as follows: 1. *Machines which sew with one thread*; of which one kind makes the *through-and-through*

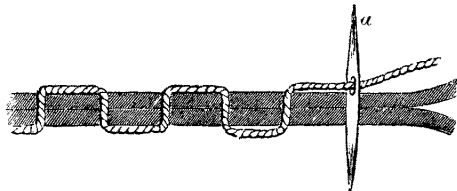


Fig. 1.

or *shoemaker's stitch* (fig. 1), the thread being held and pushed through with pincers, one pair on each side of the material to be sewn. The needle, *a*, is pointed at each end, and being pushed through by the pincers on one side, is taken hold of by the corresponding pair on the other, and the thread is thus pulled through backwards and forwards. Only a small length of thread can be used by this machine, hence it is of but limited application. 2. Another single-thread machine makes the *running-stitch* (fig. 2). In this, the needle, *a*, is stationary,



Fig. 2.

and receives a continuous supply of thread from a reel, *b*; the two small-toothed wheels are so arranged that their teeth, pressing into one another, crimp the two pieces of cloth, and push them



Fig. 3.

forward against the point of the needle, which, as it gets filled, is relieved by the operator, who keeps drawing the sewn cloth off at the eye-end

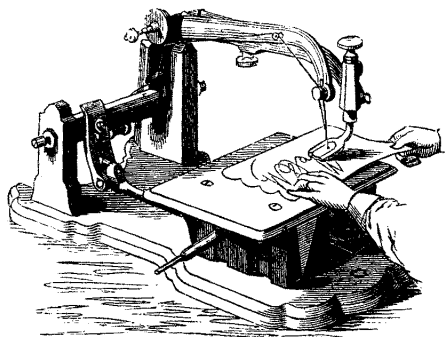


Fig. 4.

of the needle. This machine answers admirably in cases where loose tacking is required. It is the invention of an American of the name of Bostwick,

who introduced it into England in 1844. 3. The *chain* or *tambour stitch* is also a single-thread stitch (fig. 3), the machine for which was invented by M. Thimmonier, a Frenchman, in 1848. In this, the thread is looped upon itself by means of a

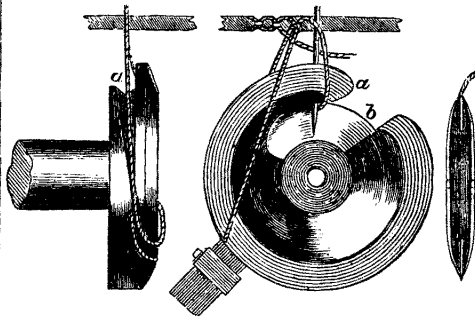
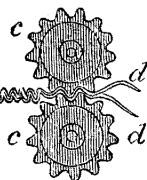


Fig. 7.

Fig. 5.

Fig. 6.

curved shuttle after it has passed through the cloth. This kind of stitch, though very useful for some kinds of work, is easily pulled out. 4. Fig. 4 represents Wheeler and Wilson's sewing-machine, another American invention, which has acquired the greatest reputation in Great Britain. It is a double-thread machine, and besides the vertical eye-pointed needle, has a curved shuttle or hook (fig. 5, *a*) working below, with a revolving reel, *b*, inside its curve. The reel



is of metal, each side being convex externally; and so adjusted on the axle, that the edges are so near together as to admit only one thickness of the thread to pass through (fig. 6). The side view of the whole arrangement is seen in fig. 7. It fits easily within the nearly circular hook, and gives off its thread as required. The thread passes partly round the outer edge of the hook upon a slightly-grooved bevel (*a*, fig. 7), which forms a loop, and passes it between the needle and the thread which it carries with it in descending; the loop is held in position as the needle ascends, and the cloth being moved on, the next descent of the needle takes it through the loop and receives another below it, which renders the first one tightly locked, as in fig. 8. For such work as male and female dressmaking generally, this kind of machine is at present unrivalled, both for the efficiency of its work, and also for the neatness and



Fig. 8.

finish of the machines made for private use. Sewing-machines have been patented in America and England by another American named Blake for sewing the soles on boots and shoes; and so rapid are they in their work, that it is said during the war in the United States as many as 150 pairs of soles have been sewed on army boots in one day by a single machine. Special sewing-machines are also in use for sewing the upper leathers of boots and shoes, for gloves, for embroidery, and various other purposes.