

Tai'lor-ing-ma-chine'. A large sewing-machine adapted to a heavy class of goods. Several kinds of machines are made of such proportions as to adapt them to this work, and are illustrated under SEWING-MACHINE (which see).

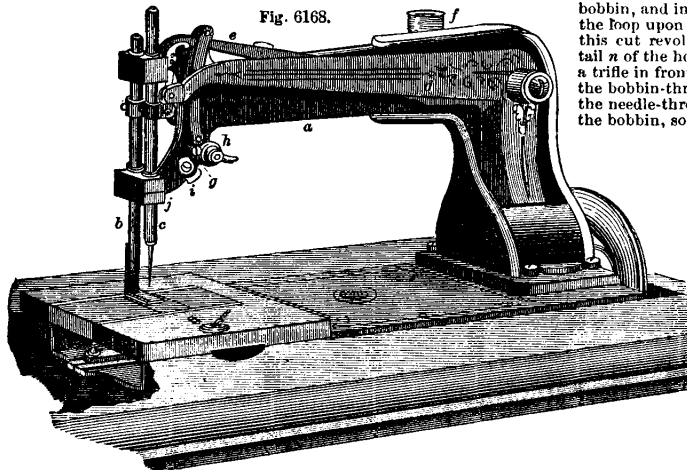
The Wheeler and Wilson straight-needle machine is the "House" modification of the Wheeler and Wilson; preserving the Wilson feed, and the rotary hook in a modified form, in combination with a straight and vertically moving needle.

It differs from the ordinary Wheeler and Wilson, in having no *loop-check*, or other device for detaining the loop of the needle thread after it has been cast off the hook; it has an independent *take-up*, so that each stitch is completed before another is begun; its hook moves with a varying velocity, differing during each revolution from that of the main shaft, although it makes the same number of revolutions per minute. The needle is straight, and is driven by devices which cause it to pause entirely and move up and down with varying velocity at each stitch; the hook carries the upper thread around the bobbin, which contains the lower thread, interlocking the threads.

On the iron case is mounted the arm *a*, which holds the presser-bar *b* and the needle-bar *c*. The needle-arm *d* and take-up lever *e* are pivoted to the arm *a*, and actuated by cams on the main shaft beneath the iron plate forming the top of the case.

The upper or needle thread passes from the spool *f* along the bracket arm and by the thread-guide *g*, the tension-pulley *h*, the controller *i*, the jack *j*, over the front end of the take-up lever *e*, and through the eye of the needle. The lower thread is wound on the bobbin *B* (Fig. 6170), which is placed within the bobbin-case, and they are held in the cavity of the hook *k* by the ring-slide, the thread being drawn out in front.

In operating, the needle descends and thrusts a bight of the upper thread through the material, and then, rising to clear the hook-disk, it stands while the hook-point, having entered this loop, enlarges it by a quick motion, and carries it forward, at the same time the take-up descends and gives out the upper thread, which is drawn through the eye of the needle below the fabric. A half-revolution of the hook having now been quickly made, and the loop cast off over the bobbin (see *A*, Fig. 6170), and the needle, being entirely out of the material, the take-up rises quickly and draws up the loop. At the moment of draw-



Wheeler and Wilson's Tailoring-Machine.

ing up the stitch, the apparatus for securing and regulating the under tension comes into play. A part of the hook-washer projects over the hook, and at each revolution presses upward against a bar attached to the frame of the machine. Through a hole in this bar (called the tension-finger) the lower thread passes.

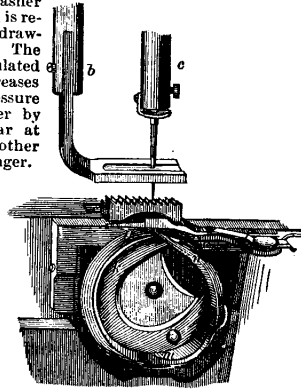
While the stitch is drawing up, as soon as the loop has passed through the tension-finger, the under thread is clamped between the hook-washer and tension-finger, and is released as soon as the drawing up is completed. The under tension is regulated by a lever, which increases or diminishes the pressure upon the hook-washer by being brought to bear at will upon one or another point of the tension-finger.

The thread is drawn through the needle while it is out of the material, giving it an advantage in sewing leather and starched fabrics with a small needle.

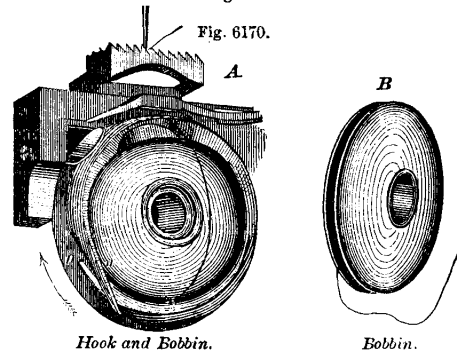
The presser-foot may be flat or a wheel, and is hinged or attached by a set-screw to the presser-bar.

In the Wheeler and Wilson family machine, the loop of one stitch is drawn up through the agency of the rotary hook in expanding the loop for the next stitch. In the House machine, each stitch is completed separately, the drawing up being done while the needle is out of the goods.

Fig. 6169.



Hook and Feed, without Bobbin.



Hook and Bobbin.

Bobbin.

The rotating-hook differs from the ordinary Wheeler and Wilson hook in having a deeper cavity for the thicker bobbin, and in the cut *m*, which gives free course to the loop upon its being cast off and drawn up just as this cut revolves to the needle (*A*, Fig. 6170). The tail *n* of the hook overlapping the point *p* of the hook a trifle in front of it, acts as a guard in keeping off the bobbin-thread while the hook enters the loop of the needle-thread. It also draws a little thread from the bobbin, so as to leave it slack for free play.