W. P. ANTHONY.

SEWING MACHINE.

APPLICATION FILED JUNE 16, 1909.

1,001,186.

Patented Aug. 22, 1911.

2 SHEETS—SHEET 1.

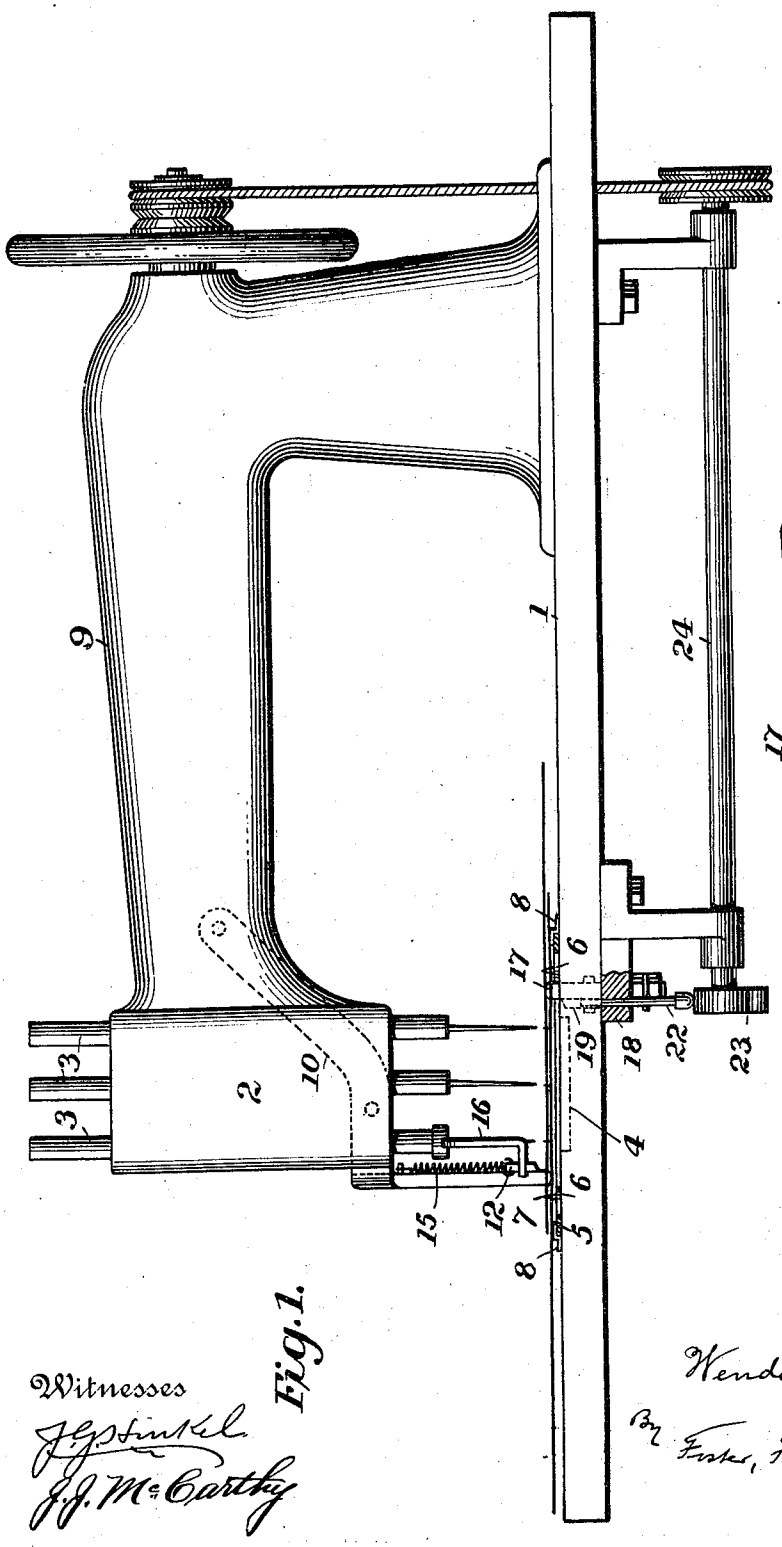


Fig. 1.

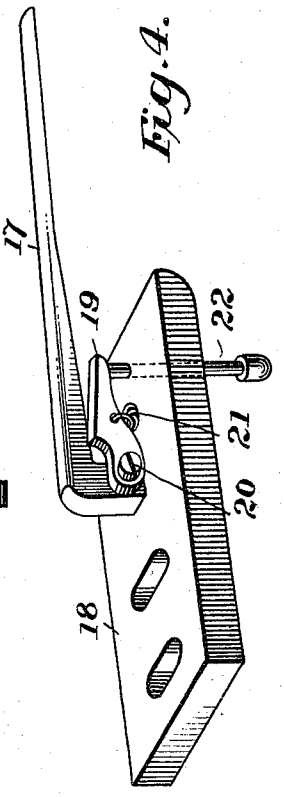


Fig. 4.

Witnesses

J. G. Stinkel

J. J. McCarthy

Inventor

Wendell P. Anthony,

By Foster, Freeman, Watson & Coit.

Attorneys

W. P. ANTHONY.

SEWING MACHINE.

APPLICATION FILED JUNE 16, 1909.

1,001,186. Patented Aug. 22, 1911.

2 SHEETS—SHEET 2.

Fig. 2.

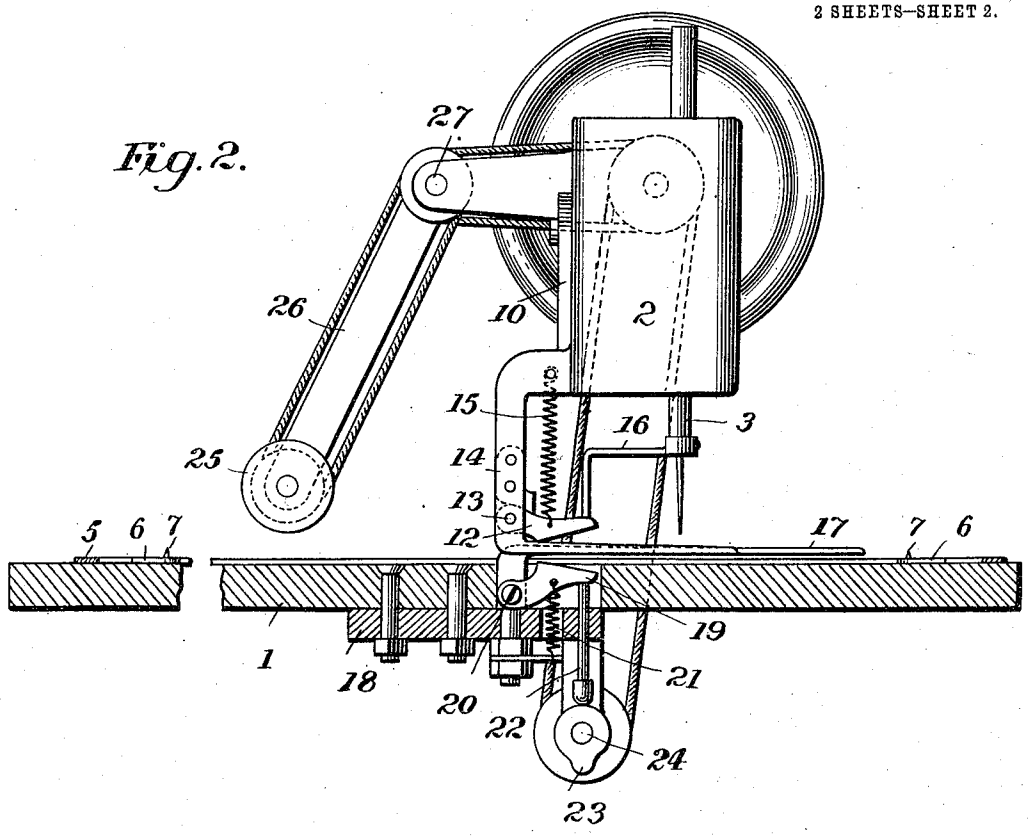
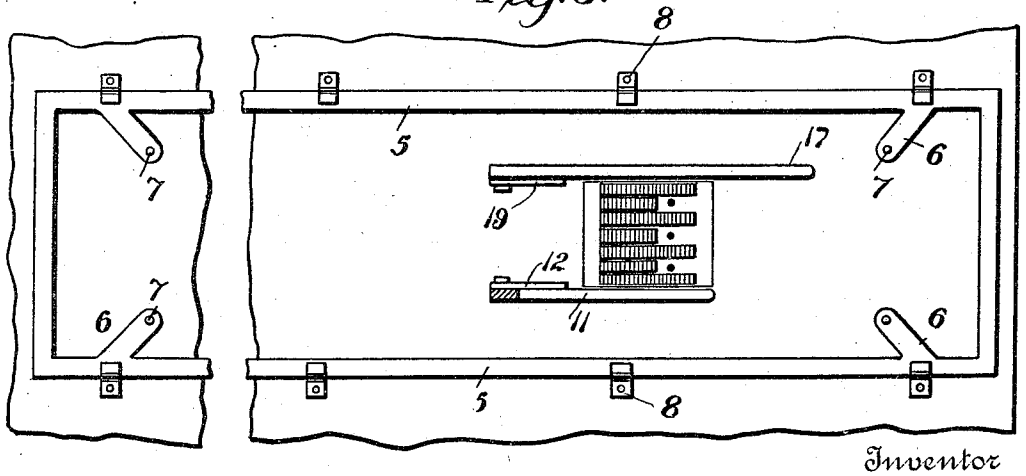


Fig. 3.



Witnesses

J. G. Stinkel

J. J. McCarthy

Inventor

Wendell P. Anthony,

By Foster, Freeman, Watson & Coit.

Attorneys

UNITED STATES PATENT OFFICE.

WENDELL P. ANTHONY, OF RIDLEY PARK, PENNSYLVANIA, ASSIGNOR TO THE EDDYSTONE MANUFACTURING COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

SEWING-MACHINE.

1,001,186. Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed June 16, 1909. Serial No. 502,569.

To all whom it may concern:

Be it known that I, WENDELL P. ANTHONY, a citizen of the United States, and resident of Ridley Park, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification.

This invention relates to machines for sewing together the ends of pieces of cloth preparatory to passing them as one continuous strip of cloth through the various operations of dyeing, singeing and bleaching. Its objects are to easily and quickly secure the ends of the pieces together without waste and to make the connection in such form that the continuous piece of cloth thus produced is adapted to pass through all of the machines used in the dyeing, singeing and bleaching operations. It is known in the art that for most of the operations the ends may be secured together by an ordinary seam with the loose ends together on one side of the strip, and this common in the art. This form of seam however makes a lump due to the three thicknesses of cloth at the point where the loose ends lie against the main body. The loose ends furthermore do not always lie smooth, and thus the lumpy effect is increased. This form of seam heretofore in common use will not pass through some of the machines, such as the calender rolls without injury to the rolls, and it has therefore been customary at that stage of the operation to cut out the seam and to secure the ends together by paste, overlapping them to a considerable extent end to end, and thus having a smooth connection embodying only two thicknesses of cloth. This however results in waste of material and requires a considerable amount of work. By my invention the smooth connection of two thicknesses is secured in the first instance. In connecting the pieces furthermore they are stretched smooth and the loose edges are trimmed off. Therefore no lumpy effect is produced.

The novel features of the invention will be apparent from the following description taken in connection with the accompanying drawings.

In the drawings,—Figure 1 is a side elevation of a sewing machine having my invention applied thereto; Fig. 2 is an end elevation showing the platform of the machine in section; Fig. 3 is a plan view of the cloth holding, feeding and trimming means; and Fig. 4 is a detail perspective view of one of the trimmers.

In carrying out my invention I may make use of an old form of sewing machine adapted to sew several parallel rows of stitches, preferably as many as three, and therefore in the present case it is unnecessary to describe in detail the mechanism of the sewing machine proper, and it is sufficient to describe my additions and improvements.

In the drawing, 1 represents the platform or table of a sewing machine, and 2 represents the head of the sewing machine which carries three or more needle bars 3 adapted to operate together and produce three parallel rows of stitches. It will be understood that the cloth operated on by the machine is moved beneath the needles by an ordinary feed dog 4 which is operated in the usual manner. In order to make the cloth operated on lie smooth so as to prevent creases and a lumpy effect it is necessary that the cloth be stretched and held firmly during the time that the rows of stitches are being applied to it. In Fig. 3 I have shown means for thus holding the cloth and for passing it beneath the needles. This means consists of a rectangular frame 5 preferably formed of thin metal such as steel or brass and having the inwardly projecting lugs or ears 6 near its ends. Each of these ears has an upwardly extending pointed pin 7 which is adapted to receive and hold the cloth. The ends of the cloth which may be a yard wide are brought over the frame 5 from opposite sides, and are secured to the pins 7 at one end of the frame and are then stretched and secured to the pins 7 at the other end. This results in having the cloth overlap end to end and holds the portion in which the rows of stitches are to be formed in a perfectly flat condition. The frame 5 will of course move with the cloth beneath the needle bars, and it is preferably guided in this movement by lugs 8 formed on the platform or table, and if desired rollers or other antifriction means may be used beneath the frame to make it move evenly. Since the frame is necessarily quite long it is desirable to have the platform of the machine considerably wider than is usual for sewing machines so

as to furnish a proper support for the frame. Furthermore, since the cloth operated on is quite wide and must be brought in from both sides it is desirable to have the arm 9 of the sewing machine longer than usual so as to permit bringing the cloth easily into position, although I have found that a machine having an arm of the ordinary length can be used satisfactorily.

The edges of the pieces of cloth which are to be sewed together are not always straight, and unless trimmed off parallel to and near the outer row of stitches the loose ends would be likely to become folded or creased, thus creating a lumpy effect, and therefore I have devised means for trimming the loose ends immediately adjacent the outer row of stitches. This trimming operation is performed at the same time and by the same machine that sews the ends together. It will be observed that when the two ends are overlapped, one loose end is above the body of the cloth and the other loose end is below that body, and it is necessary to trim both loose ends. My trimming means for the upper loose end consists of a bracket 10 secured to the head of the machine and extending down to a point just above the table where it is formed into a finger 11 which extends in the direction of the line of feed, and which tapers to a point. This finger is immediately outside of the outer row of stitches and it carries a cutting blade 12 pivoted at 13 to the upright portion of the bracket 10 and having a sharp edge which coöperates with the sharp edge of the finger to form shears for cutting the cloth. A stop block 14 on the bracket 10 limits the upward movement of the blade 12 and a spring 15 tends to raise that blade. The blade is depressed to perform its cutting operation by a bent finger 16 carried by the needle bar 3 and extending to a position where it will strike the top of the blade and depress it every time the needle descends. It will be understood that when the ends of the cloth carried by the frame 5 are fed forward toward the sewing mechanism the finger 11 will be made to enter between the upper loose end of the cloth and the main body, so that it will trim the upper loose end. Similar trimming mechanism is used for cutting the lower loose end, this mechanism being shown in detail in Fig. 4. It embodies a finger 17 adapted to extend above the surface of the table in the line of feed on the side opposite the finger 11. This finger has a shank which extends down through the platform or table and which is secured in place in any suitable manner, but which I preferably secure to a block 18 which is fastened to the under surface of the platform so as to hold the finger in place. A blade 19 is pivoted at 20 to the upright portion of the finger and below the horizontal portion thereof. This cutting blade coöperates with the finger to form shears for trimming the cloth as in the case of the upper trimmer, and it is normally held in its lower position by spring 21. This blade 19 is moved upward to cut the cloth by a sliding pin 22 mounted in an opening in the block 18 and bearing at its lower end upon an operating cam 23, which elevates the pin and the blade at each revolution. This cam is carried by a shaft 24 operated in any suitable manner from the main operating shaft of the machine.

It will be understood that any suitable means may be used for operating the blade 19. It will further be understood that the finger 17 is placed between the lower loose end of cloth and the main body as it is fed forward to form the stitches, and that consequently the loose end is trimmed immediately behind the stitching mechanism.

While the ordinary feed used on sewing machines of the type illustrated would generally be sufficient to feed the cloth carried by the frame 5, I find that it is desirable to provide additional feeding means, and particularly to provide means for moving the cloth and frame beyond the point where the stitching is completed, so that the trimming operation may also be completed. Any suitable means may be used for this purpose and in the drawings I have illustrated a roller 25 operated by the machine and adapted to bear on the cloth at the point where it has been sewed, and which is geared to turn at the same peripheral speed as the cloth which is being operated upon. This roller is mounted on an arm 26, and may be turned on the pivot 27 up out of the way without stopping its motion, and it may thus be brought down onto the cloth when desired. It will be understood that the roller is driven in the usual way by belts or chains passing over gears.

Having thus described the invention, what is claimed is:

1. In a device of the class described, the combination with a sewing machine table, of a plurality of needle bars for sewing a plurality of parallel rows of stitches, cloth feeding means, an open feeding frame on said table freely movable in the line of feed and provided with means to receive and hold in stretched condition the overlapped ends of cloth in such position that the overlapped portion will receive said rows of stitches and will be acted upon by said feeding means, and supplemental feeding means for assisting in moving said cloth and frame and for carrying the cloth from beneath the needle bars.

2. In a device of the class described, the combination with means for sewing a plurality of rows of stitches, of means for holding and feeding pieces of cloth overlapped

end to end, and shears on both sides of the seams behind the sewing means automatically operated to trim the edges of said cloth as it is fed adjacent the stitches, the shears on one side being below the upper layer of cloth and on the other side above the lower layer of cloth.

3. In a device of the class described, the combination with a sewing machine table, of means for sewing a row of stitches, means for holding in stretched condition and for feeding the overlapped ends of pieces of cloth, guide fingers immediately above the table top on opposite sides of the sewing means extending in the line of feed and each adapted to lie between the body of one piece of cloth and the free end of the other piece, and means connected with each finger for trimming the free end of cloth.

4. In a device of the class described, the combination with a sewing machine table, of means for sewing a row of stitches, means for holding in stretched condition and for feeding the overlapped ends of pieces of cloth, a guide finger secured to said table and extending immediately above the same in the line of feed and adapted to lie above the free end of the bottom piece of cloth, means for trimming said free end as it passes beneath said finger, and a second similar guide finger supported above the table upon the opposite side of the sewing means and adapted to lie beneath the free end of the upper piece of cloth, and means for trimming said free end as it passes above said finger.

5. In a device of the class described, the combination with a sewing machine table, of means for sewing a row of stitches, cloth feeding means, an open frame on said table, guides for said frame whereby it may move freely in the line of feed, means on said frame for receiving and holding in stretched condition the overlapped ends of pieces of cloth in position to receive said stitches, a roller adapted to engage said cloth in the rear of the sewing means, and means for driving said roller to feed the cloth and frame.

In testimony whereof I affix my signature in presence of two witnesses.

WENDELL P. ANTHONY.

Witnesses:
CHAS. W. CONKLIN,
GRAHAM LODGE.