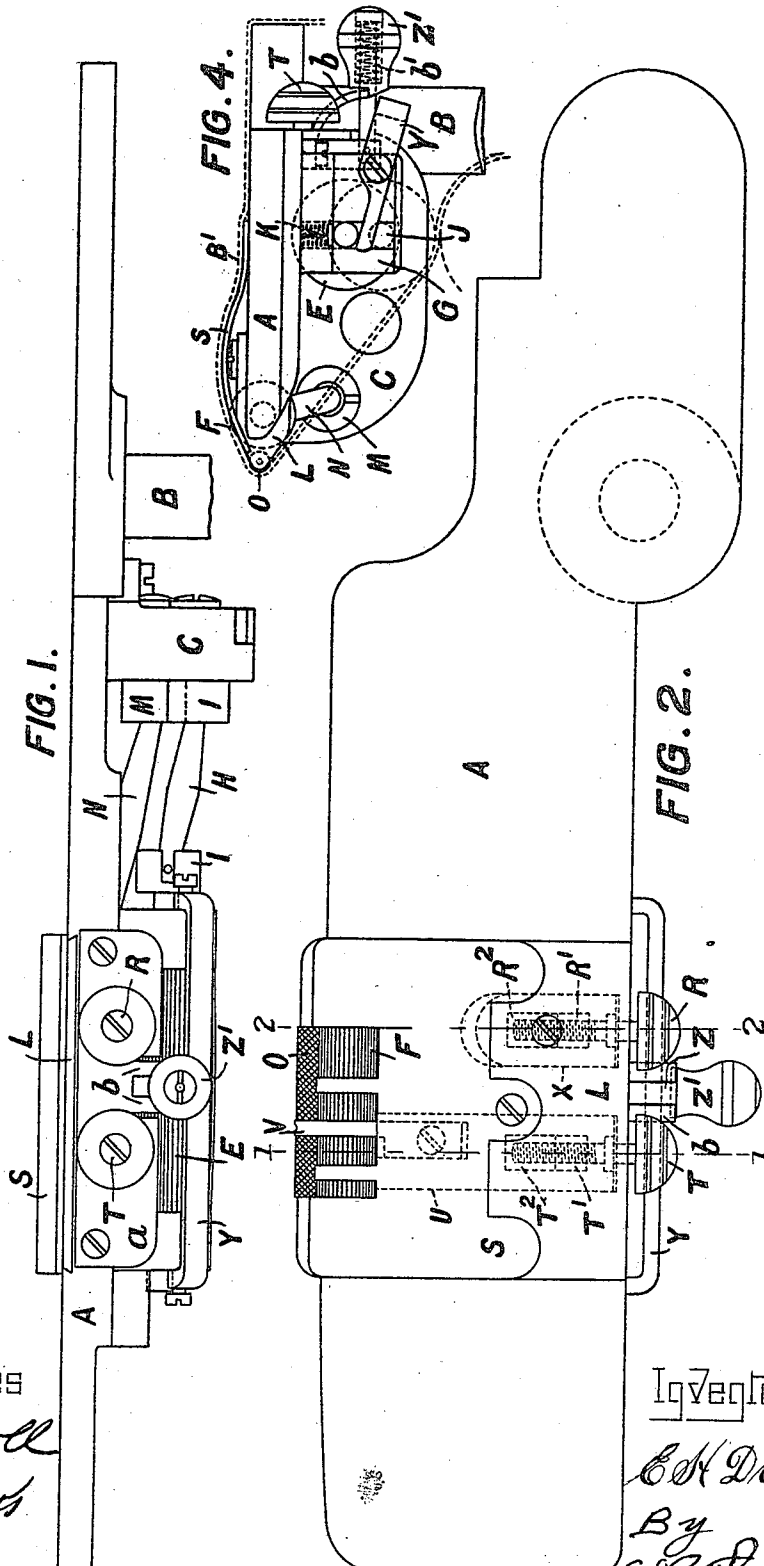


960,285.

E. H. DODD.
SEWING MACHINE.
APPLICATION FILED DEC. 26, 1906.

Patented June 7, 1910.

3 SHEETS—SHEET 1.



Witnesses
M. A. Carroll
L. H. Hiers

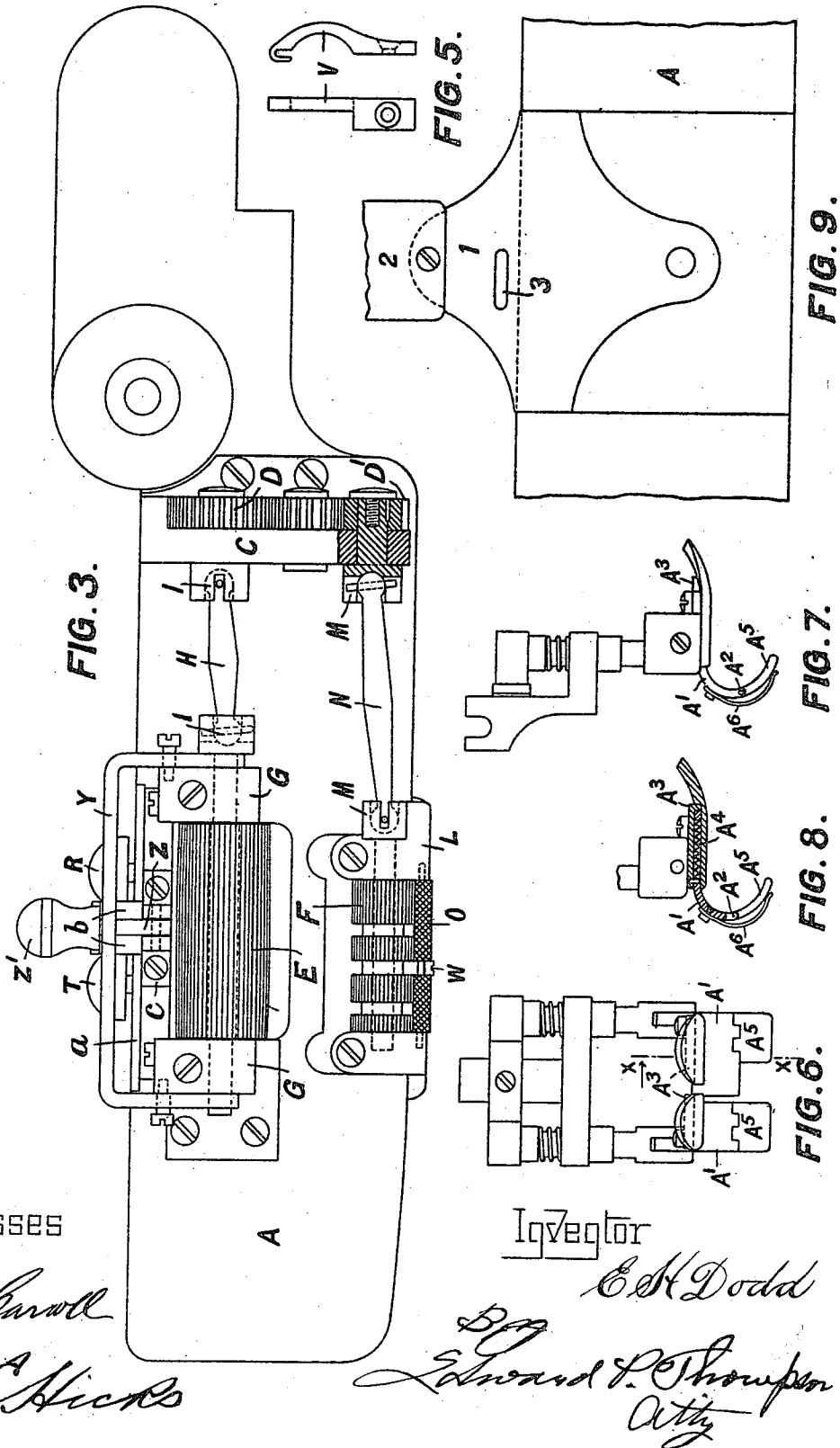
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SEWING MACHINE.
APPLICATION FILED DEC. 28, 1906.

Patented June 7, 1910.

3 SHEETS—SHEET 2.



Witnesses

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3 SHEETS—SHEET 3.

FIG. 10.

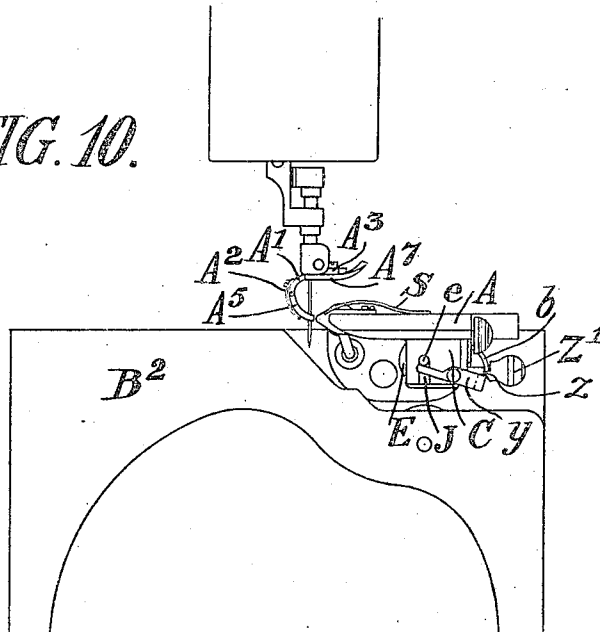


FIG. 13.

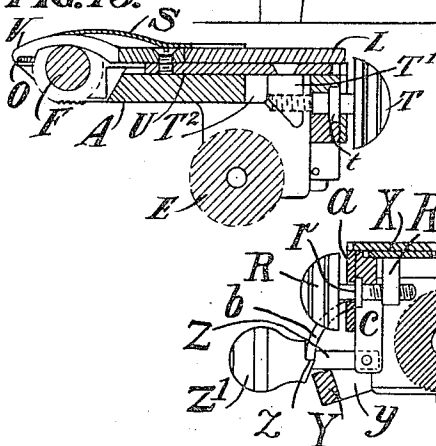


FIG. 14.

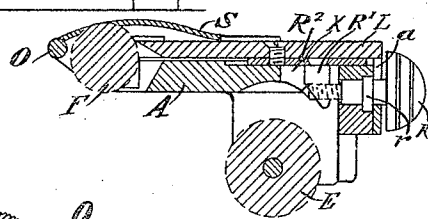


FIG. 11.

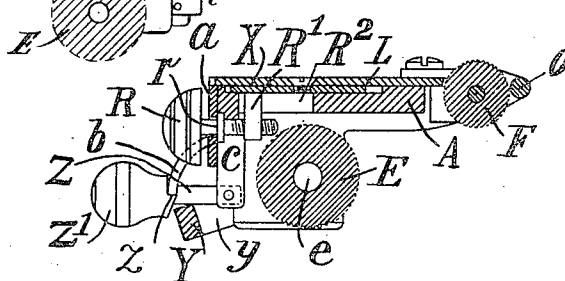
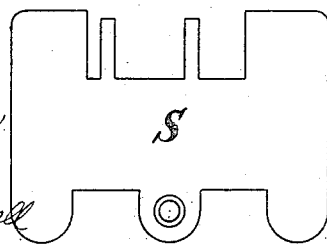


FIG. 12.



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UNITED STATES PATENT OFFICE.

EDWARD HENRY DODD, OF HOYLAKE, ENGLAND.

SEWING-MACHINE.

960,285.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed December 26, 1906. Serial No. 349,533.

To all whom it may concern:

Be it known that I, EDWARD HENRY DODD, a subject of the King of Great Britain, residing at Hoylake, in the county of Chester, in the Kingdom of England, manager, have invented certain new and useful Improvements in or Relating to Sewing-Machines, Specially Applicable to Blindstitch Sewing-Machines, for which application has been made in Great Britain No. 287, dated January 4, 1906.

This invention relates to sewing machines generally, but is more applicable to that class of machines known as the "blind stitch" sewing machine. Machines of this class have hitherto been very cumbersome and consisted of a very large number of parts which required a considerable amount of adjustment before the machine could be operated.

Now my invention has been designed to reduce the number of parts to a minimum and also to enable the machine to be more readily operated and also for the fabric to be sewed together without the necessity of first having to tack the parts together.

The invention consists in adapting the machine to either straightforward, zigzag, or plain sewing, as will now be more clearly described by aid of the accompanying drawings, in which:—

Figure 1 is a front elevation; Fig. 2 is a plan; Fig. 3 is an underneath plan; Fig. 4, a side elevation; Fig. 5, a detail view of the pointer; Fig. 6, a front view of the presser feet showing the attachment of the hinged guide plate; Fig. 7, a side view of Fig. 6; Fig. 8, a section on the line $x-x$ of Fig. 6; and Fig. 9, a plan showing the adaptation of the machine for plain sewing; Fig. 10, an end elevation; Fig. 11, a section through the cloth plate on the line 1—1 of Fig. 2; Fig. 12, a plan of the cover plate; Fig. 13, a section on the line 1—1 of Fig. 2 looking in the opposite direction from that shown in Fig. 11; Fig. 14, a section on the line 2—2 of Fig. 2.

A is the cloth plate or arm capable of being fixed, or turned to or from the needle by means of a pin B attached thereto and inserted in the bed plate B² of the machine. An arm or bracket C is fixed on the cloth plate A in which bracket gearing D, D¹, is suspended and engages with the ordinary driving mechanism of the machine. A roller E constituting the feed roller is provided on

the cloth plate A, which roller E is supported in suitable brackets G. Link H and universal ball joints I connect said feed roller E to the gearing D. The supports G of the roller E are provided with elongated slots J having springs K therein, in which slots J the said roller E is capable of sliding up and down according to the thickness of the material giving it the required grip. At the side nearest to the needle, cloth tension producing roller F is supported on the transverse plate L and connected with the aforesaid gearing D¹ by universal ball joints M, and a link H. This cloth tension producing roller F is driven at a slower speed than that of the roller E and by this means the material is kept in a correct and taut position against the edge of the plate L and roller O. Further the needle is prevented from penetrating right through the fabric and the stitch showing through at the other side as no creeping or buckling can take place at the stitching point; any dragging down of the material into the shuttle race is avoided, and a greater pull or grip on the fabric is obtainable and the work enabled to be evenly fed from the commencement without a part of the fabric being left unstitched as is usual in sewing machines. A roller O is arranged immediately in front of the cloth tension producing roller F about the center of which a division or groove is provided, the object of this being to allow of a pointer or guide V being inserted whereby that part of the fabric to be sewn is brought to the exact place opposite the needle to insure its penetrating therethrough and also for preventing any incorrect stitching of the fabric in cases where it is not desirable to move the transverse plate L. The construction of the guide V is shown in Fig. 5. It consists of a flat piece of material having a raised surface and bent over portion or point acting as a means for engaging in the groove and over the bearing on which the roller O revolves. The pointer V also serves for insuring a grip on the single thickness of material, and, being slightly in advance of the cloth tension producing roller F prevents any liability of the catching or sewing through of the two thicknesses on the lap-over or fell side. The roller O when in position forms part of the plate L over which the fabric travels. The roller O is revolvably mounted in a bearing on the plate L. A plate A¹ slides horizontally and works in a slotted plate A³

connected to the presser foot A⁷ arranged on the needle bar and is provided with a part A⁵ hinged or pivoted as at A². The part A⁵ being interposed between the fabric and shuttle race prevents the material coming in contact with the shuttle. The parts A¹ and A⁵ are made of sufficient depth to allow for the rise and fall of the presser foot, so that on the rising of the presser foot, the parts A¹ and A⁵ will rise a corresponding distance, and when the presser foot is in its uppermost position, the part A⁵ will lie in the same horizontal plane as the cloth plate.

In the slot of the sliding plate A¹, a spring A⁴ is arranged by means of which different thicknesses or unevenness of fabric is provided for as seen more clearly in Fig. 8.

The transverse plate L is moved by means of a slide X operated by the adjusting screw R connected to said slide by means of a nut or shank R¹ working through a slot or hole R² in the cloth plate A. By means of this slide X the plate L is capable of adjustment in opposite directions according to the different thicknesses of material to be operated upon. This is shown in Figs. 11 and 14.

S is a cambered cover plate for insuring a more perfect and smooth traveling of the cloth being operated upon, which plate S forms part of the cloth plate proper when fabrics are being sewn. The pointer V is moved backward or forward by means of a slide U operated by an adjusting screw T, in suitable bearings t. The screw T enters a nut T¹ which hangs down from the slide U into the slot T². This is shown in Figs. 10 and 13.

Extending across the roller E is a yoke Y, the two side arms y of which rest underneath the shaft e of said roller E. Attached to the bed plate A, preferably about the center of said roller E is a lever or rod Z, seen more clearly in Fig. 11, hinged or pivoted to the bracket c. This rod Z is provided with a sliding head Z¹, and rests against the yoke Y. This head Z¹ is hollowed out and provided with a spring b¹, and also with one side longer than the other as shown at z in Figs. 4, 10, and 11. A curved arm b is arranged on the plate a over which arm b the said head Z¹ slides and the roller E is simultaneously raised or lowered by means of the side arms y of the yoke Y: the object of this being to allow for different thicknesses of material and obtaining a greater tension of the fabric thereon, and also for holding the roller E out of the gripping position. In Fig. 4 of the drawings the roller E is shown in such position in dotted lines.

In Fig. 9 is shown an arrangement for ordinary through sewing, either at zigzag or straight. This consists in dispensing with the arrangement shown in Figs. 6, 7 and 8 and substituting therefor an ordinary

presser foot. The cover S, shown in Fig. 12 is also dispensed with, a rigid throat plate 1 secured to a slide 2, being substituted therefor which plate 1 fills up the space existing between the cloth plate A and said slide 2, by means of which latter a clear space is provided for the material to be sewn as in ordinary machines. 3 is the hole through which the needle is guided in the throat plate 1.

The operation of the machine is as follows:—The fabric to be sewn is first folded and then inserted over the cloth plate A between the latter and the presser foot A⁷ until the part required to be sewn comes opposite the pointer V on the roller O the roller E in the meantime having been raised by the pressing down of the head Z¹ over the arm b. The transverse plate L is, and also if necessary the pointer V, adjusted by means of the respective studs R T, aforesaid. The operator then releases the head Z¹ from engagement with the arm b, thereby allowing the feed roller E to fall and grip the fabric. When the sewing has been completed, the head Z¹ is pressed down again over said arm b thus raising the roller E and allowing the fabric to be removed.

As all the operating parts are arranged at that side of the machine nearest to the operator, the latter is enabled to immediately and readily adjust or correct any parts as required, without the necessity of taking the work out or even stopping the machine, as any adjustment required can if necessary be effected even while the fabric is being sewn.

I declare that what I claim is:—

1. In a sewing machine, the combination of a cloth plate, a cloth tension producing roller in said cloth plate, and rotatable therein, a feed roller arranged underneath said cloth plate, means for positively actuating said feed roller, means for throwing said feed roller out of action and means whereby the cloth tension producing roller produces a tension on the fabric.

2. In a sewing machine, the combination of a cloth plate, a cloth tension producing roller in said cloth plate, and rotatable therein, a feed roller arranged underneath said cloth plate, means for positively actuating said feed roller and at a higher peripheral speed than said cloth tension producing roller, and means for pressing said feed roller upon the cloth, which has passed the cloth tension producing roller.

3. In a sewing machine the combination of a cloth plate, a cloth tension producing roller rotatable in said cloth plate, means for keeping the cloth which has passed said roller under tension, a feed roller in said cloth plate, means for raising and lowering said feed roller and means for positively actuating said rollers.

4. In a sewing machine, the combination of a cloth plate, a feed roller arranged underneath said cloth plate, a cloth tension producing roller in said cloth plate and rotatable therein, a spur wheel connected to said feed roller, and a driven spur wheel connected to said tension producing roller and geared to the spur wheel of said feed roller.

10 5. In a sewing machine, the combination of a cloth plate, a feed roller, a cloth tension producing roller, mounted in said cloth plate, means for raising and lowering said feed roller, a driven spur wheel, and means intermediate of said spur wheel and said feed wheel for rotating said feed roller in its raised, lowered, and intermediate positions.

20 6. In a sewing machine, the combination of a cloth plate, a feed roller arranged underneath said cloth plate, a cloth tension producing roller in said cloth plate and rotatable therein, driving means connected to both of said rollers, means for producing a faster peripheral rotation of said feed roller than said cloth tension producing roller, links between said driving means and each of said rollers, and ball and socket joints between said links and said rollers and between said links and said driving means.

30 7. In a sewing machine, the combination of a cloth plate, a feed roller, a cloth tension producing roller rotatable in said plate, an auxiliary roller provided with a peripheral recess in front of said cloth tension producing roller and rotatable in said cloth plate, and means for positively actuating said feed roller.

40 8. In a cloth feed for sewing machines, the combination of a cloth plate, a cloth tension producing roller rotatable in said cloth plate, a feed roller rotatable in said cloth plate, bearings for said feed roller, springs tending to force said feed roller downward, a pivotal yoke for adjusting said feed roller, and means for locking said pivotal yoke.

50 9. In a cloth feed for sewing machines, the combination of a cloth plate, a cloth tension producing roller rotatable in said cloth plate, a feed roller under said cloth plate, a needle guide secured to said cloth plate, means for adjusting said needle guide, an auxiliary roller, and means for adjusting said auxiliary roller and said cloth tension

producing roller relatively to said cloth plate.

10. In a cloth feed for sewing machines, the combination of a cloth plate, a cloth tension producing roller, rotatable in said cloth plate, a feed roller under said cloth plate, means for rotating said rollers, a presser foot engaging the cloth above said cloth tension producing roller, and a cloth guide on said presser foot.

65 11. In a cloth feed for sewing machines, the combination of a cloth plate, a cloth tension producing roller rotatable in said cloth plate, a feed roller under said cloth plate, means for rotating said rollers, a presser foot engaging the cloth above said cloth tension producing roller, a sliding plate on said presser foot, comprising a curved part, a hinged extension of said curved part, and a spring on the curved part of said sliding plate normally pressing on said hinged part.

70 12. In a cloth feed for sewing machines, the combination of a cloth plate, a cloth tension producing roller rotatable in said cloth plate, a feed roller under said cloth plate, means for rotating both of said rollers, a presser foot, engaging the cloth above said feed roller, a curved plate slidably mounted on said presser foot, and a spring secured to said curved plate.

85 13. In a cloth feed for sewing machines, the combination of a cloth plate, a cloth tension producing roller mounted in said cloth plate, means for adjusting said cloth tension producing roller relatively to said cloth plate, a feed roller underneath said cloth plate, means for raising and lowering said feed roller, a presser foot for engaging the cloth above said cloth tension producing roller, a slotted plate connected to said presser foot, a spring in said slotted plate, a slidable plate working in said slotted plate, a curved plate connected to said sliding plate, a hinged curved element on said curved plate, and a spring acting on said hinged element.

In witness whereof, I have hereunto signed my name this 14th day of December, 1906, in the presence of two subscribing witnesses.

EDWARD HENRY DODD.

Witnesses:

H. R. SHOOBRIDGE,
WM. PIERCE.