J. L. OHLSON.

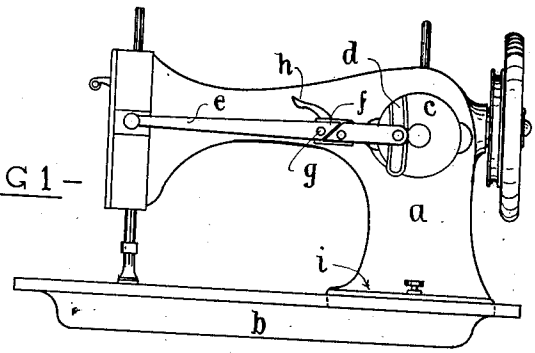
SEWING MACHINE.

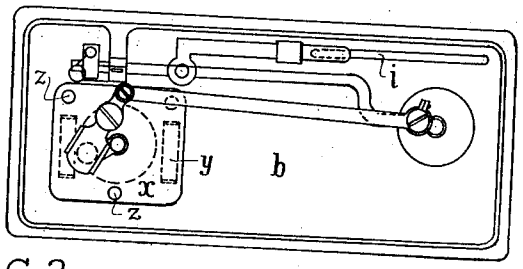
APPLICATION FILED SEPT. 10, 1907.

1,100,441.

Patented June 16, 1914.

-FIG 1-





-FIG 2-

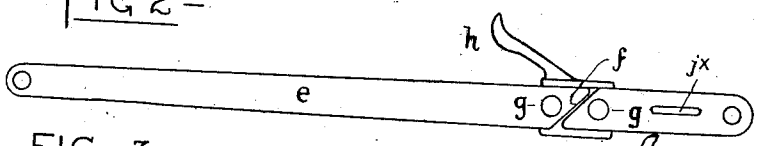
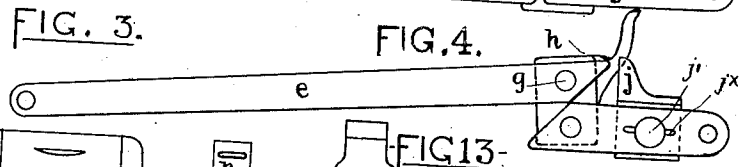


FIG. 3.

FIG. 4.



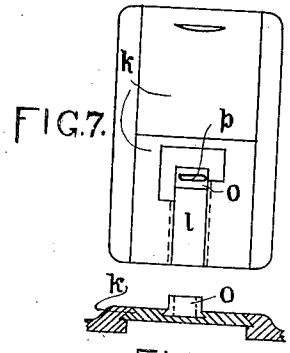
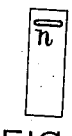


FIG.7.

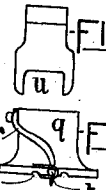
-FIG8.-



-FIG 9-

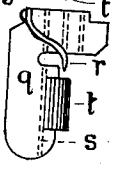


-FIG10-



-FIG13-

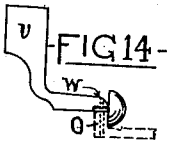
-FIG11-



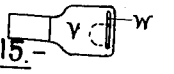
-FIG12-



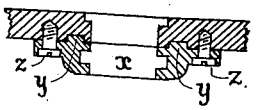
-FIG 5-



-FIG14-



-FIG15-



-FIG 6-

WITNESSES

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SEWING-MACHINE.

1,100,441. Specification of Letters Patent. Patented June 16, 1914.

Application filed September 10, 1907. Serial No. 392,234.

To all whom it may concern:

Be it known that I, JOHN LUDVIG OHLSON, subject of His Majesty the King of Great Britain, residing at Rundle street, Adelaide, in the State of South Australia, Commonwealth of Australia, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification.

My invention relates to improvements in sewing machines, the object of the same being to provide a simplified means whereby ordinary sewing fancy or zig-zag stitching over-seaming buttonhole sewing and button sewing can be done by a single machine, the shuttle race being slightly adjustable to compensate for any wearing which may take place.

I will now proceed to describe my invention by aid of the accompanying illustrative drawings, wherein—

Figure 1. is a side elevation of the machine. Fig. 2. is a plan of underside of same. Figs. 3. and 4 side views of connecting rod respectively in extended and contracted position. Fig. 5. sectional end view of same showing connecting plate. Fig. 6. section of shuttle race. Fig. 7. plan of throat plate with interchangeable slide. Fig. 8. sectional end view of same. Fig. 9. slide plate for button hole sewing. Fig. 10. slide plate for plain sewing. Fig. 11. front view of portion of foot for button hole sewing. Fig. 12. plan of same. Fig. 13. plan of foot for ordinary button sewing. Fig. 14. side view of foot for shank button sewing showing shank button. Fig. 15. plan of same.

Throughout the drawings similar letters of reference are used to denote similar or corresponding parts wherever they occur.

The main frame of the machine is shown at *a* and rests upon the bed plate *b*. The needle bar rocking frame cam *c* is of ordinary design and is provided with an adjustment slide *d*. To the above parts which operate in the manner already well known a jointed connecting rod *e* is attached, one end of which is mounted on the adjustment slide while the opposite end is connected with the rocking frame for the needle bar. This connecting rod is characterized by being formed in two parts and cut preferably diagonally at *f* the two parts being pivotally joined together by the pins or rivets *g* which pass through the connecting plate *h* on which a handle is arranged. This plate is capable of pivotal or rotary movement as will be readily understood from reference to Fig. 4 of the drawing the arrangement being such as to cause the relative lengthening and shortening of the connecting rod, the traverse of the same being limited by an adjustable stop plate *j* which is mounted on the short end of the connecting rod and provided and retained in position by an ordinary binding screw *j'* as shown which engages with the slot *j*× in the rod *e*. This connecting rod on the rotation of the cam *c* operates an oscillating needle bar in the manner already well known, and is capable of regulating its movement from a stationary vertical position to a throw of about one quarter of an inch. To permit the rocking of the connecting plate *h* the stop plate is moved back to the position shown in Fig. 4 and after the plate has been so rocked the stop plate is moved up until its vertical edge bears against the side or end of the plate *h* (according to the position of the latter) and thus holds the plate against rotation. In Fig. 4 the stop plate is shown retracted and in position to allow the rotary movement. To lock the plate *h* the stop plate is moved up until its vertical edge clamps against the vertical side of the plate *h* locking the latter against vertical movement. To lock the plate in the position shown in Fig. 3 the stop plate (which is omitted from Fig. 3 for convenience) would be moved up to abut against the end of the plate *h*. A throat plate is shown at *k* within which a recess or opening having beveled edges is formed at *l* into which the various slides required for the several classes of work may be inserted, thus for instance the slide for plain sewing illustrated in Fig. 10 may be fitted into the recess and is characterized by having a round needle hole *m*, or alternatively the slide illustrated in Fig. 9 may be substituted for button hole sewing having an elongated hole as shown at *n* or the slide represented in Figs. 7 and 8 formed with a bridge piece *o* through which an elongated hole *p* is drilled for use in sewing on shank buttons such as are used for boots and shoes may be employed.

To enable the work to be carried on with completeness, correspondingly interchangeable feet are provided, thus for button hole sewing the foot illustrated in Figs. 11 and 12 is applicable. In these devices *q* is the body of the foot and is provided with a

hinged guide spur *r* and recesses on the under side *s* for the accommodation of the seam portion or purl and a hole or tube *t* is also arranged in the middle of the foot for the reception and insertion of a piping cord. For sewing ordinary buttons the foot such as shown in Fig. 13 is used, and is characterized by having a relatively wide opening *u* in its projecting end, but for sewing shank buttons such as used in boots and shoes the foot *v* illustrated in Figs. 14 and 15 is used, and is characterized by the formation of an elongated and slotted needle hole *w* near the outer edge of the foot, and a recess suitably formed on the underside for the reception of the shank of the button. To compensate for any slight wear or straining of the shuttle the shuttle race *x* is rendered slightly adjustable as illustrated in Figs. 2 and 6 by forming the same horizontal and separable from the bed of the machine instead of being a fixture thereto as has hitherto been the custom of construction in horizontal races, and by constructing thereon guide slides such as *y* which fit into corresponding recesses in the bed plate of the machine. The holes through which the securing screws *z* pass are slightly elongated or oval.

The slot *i* in the bed plate (Figs. 1 and 2) which carries the regulating screw for operating the feed regulator is designedly made long enough to enable the stitch regulator to traverse a sufficient distance to throw the feed dogs entirely out of service.

The method of using my invention is as follows:—For ordinary plain sewing, the connecting rod is set in the adjustment slide in such a position that it does not vibrate the needle bar frame and the feed dogs are brought into play by means of the regulating screw which is slid along the slot *i* in the bed plate to the necessary position near the driving wheel end so that the dogs become operative. If a zig-zag or overseaming or buttonhole stitch is required the same can be obtained by the operator acting upon the needle bar by means of the adjustment slide and connecting rod *h* whereby a movement of the oscillating needle bar can be obtained. If it is desired to work a bar at the ends of button holes the necessary increased oscillation is obtained by the adjustment of the connecting rod upon the connecting plate whereby the bar or longer stitch is effected, the stop plate *j* being set in a convenient position to secure uniformity of work. In forming button holes the grooves *s* on the under side of the foot shown in Figs. 11 and 12 will accommodate the purl, while the hole or tube *t* enables a piping cord to be inserted thereby enabling strength to be added to the edges of the button hole. If the hole is cut before the stitching is effected the spur T is inserted in the cut to guide the work, but otherwise is raised clear of same. In sewing buttons of a flat nature the foot shown in Fig. 13 is used so that when a button is placed beneath the same the ordinary spring mechanism which is common to sewing machines is sufficient to grip the button and retain it in position the throw of the needle being adjusted by the connecting rod and adjustment slide to suit the pitch of the holes, but it is necessary to insert one of the interchangeable feet with an elongated slot such as shown in Fig. 9 in the throat plate and to slide the regulating screw along the elongated slot in the bed plate toward the foot end so that the feed dogs may be thrown out of lateral movement otherwise they would tend to move the button out of place. If it is desired to sew metal shank buttons such as used in boots and shoes the slide having a bridge piece thereon as illustrated in Figs. 7 and 8 is used and the shank rests upon the bridge piece and over the elongated slot, the foot illustrated in Figs. 14 and 15 being employed for holding the button in place the slot *w* in such foot being so disposed as to enable the needle to have a clear passage.

To compensate for any slight wear which may occur to the shuttle or race through the various classes of work being carried on upon one machine the slackening and tightening of the securing screws *z* in Fig. 6 will enable a slight lateral movement of the separable shuttle race to be obtained thereby reducing the liability of breakage to the needle.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is:—

In a sewing machine, the combination with a rocking frame for the needle, and a rotating cam, of a connecting rod between the rocking frame and the cam, said rod comprising two parts, the outer end of one connected with the rocking frame, the outer end of the other connected with the cam, the two inner ends of said parts being inclined to correspond one with the other, and each pivotally secured to a movable plate, means for oscillating said plate to control the length of the rod, and adjustable means for stopping the movement of said plate, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN LUDVIG OHLSON.

Witnesses:

JOHN HERBERT COOKE,

JOHN MITCHELL SINCLAIR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."