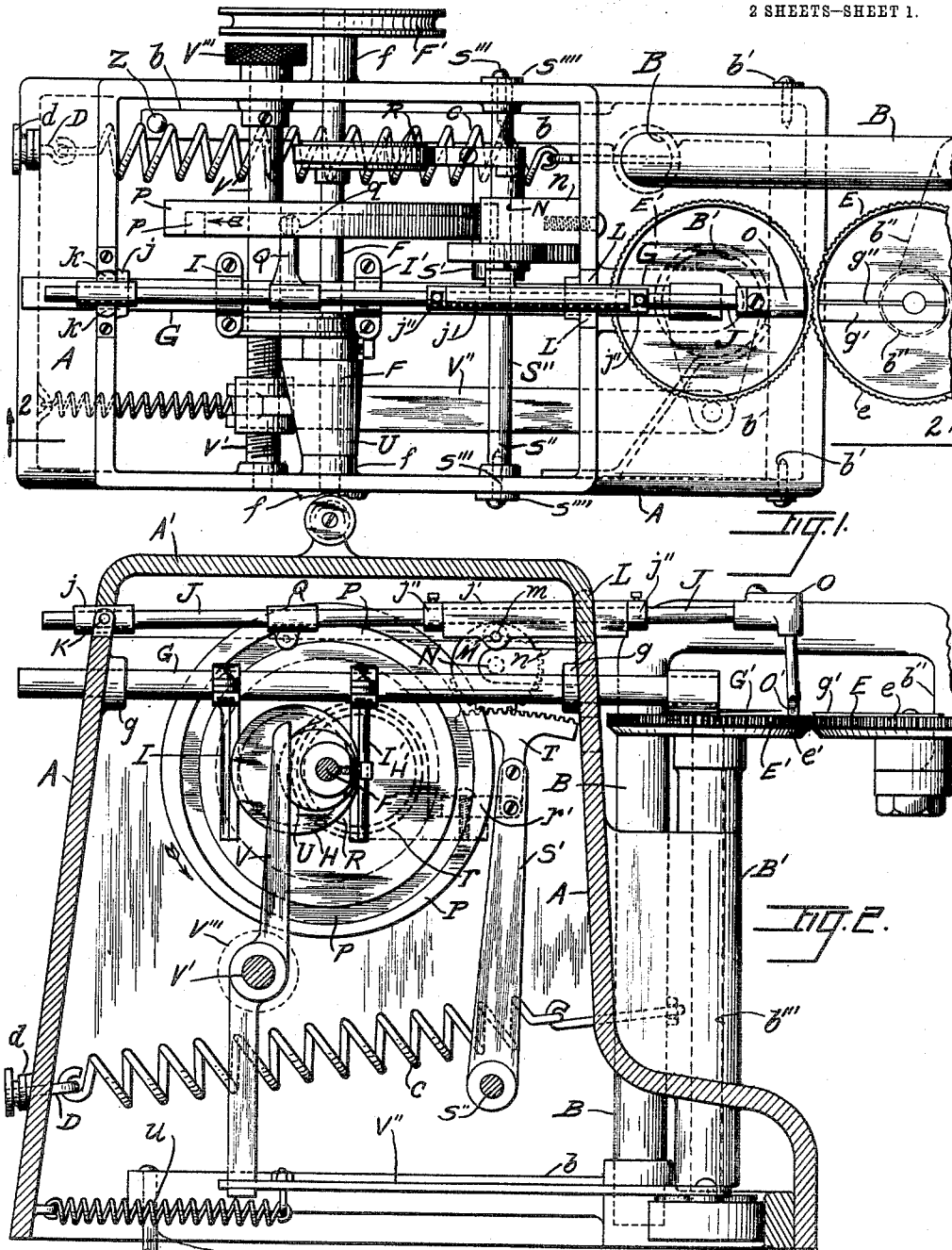


C. H. DANN & L. DURIS.
SEWING MACHINE.
APPLICATION FILED MAY 6, 1912.

1,051,313.

Patented Jan. 21, 1913.

2 SHEETS—SHEET 1.



WITNESSES:
J. C. Adams.
L. C. Adams.

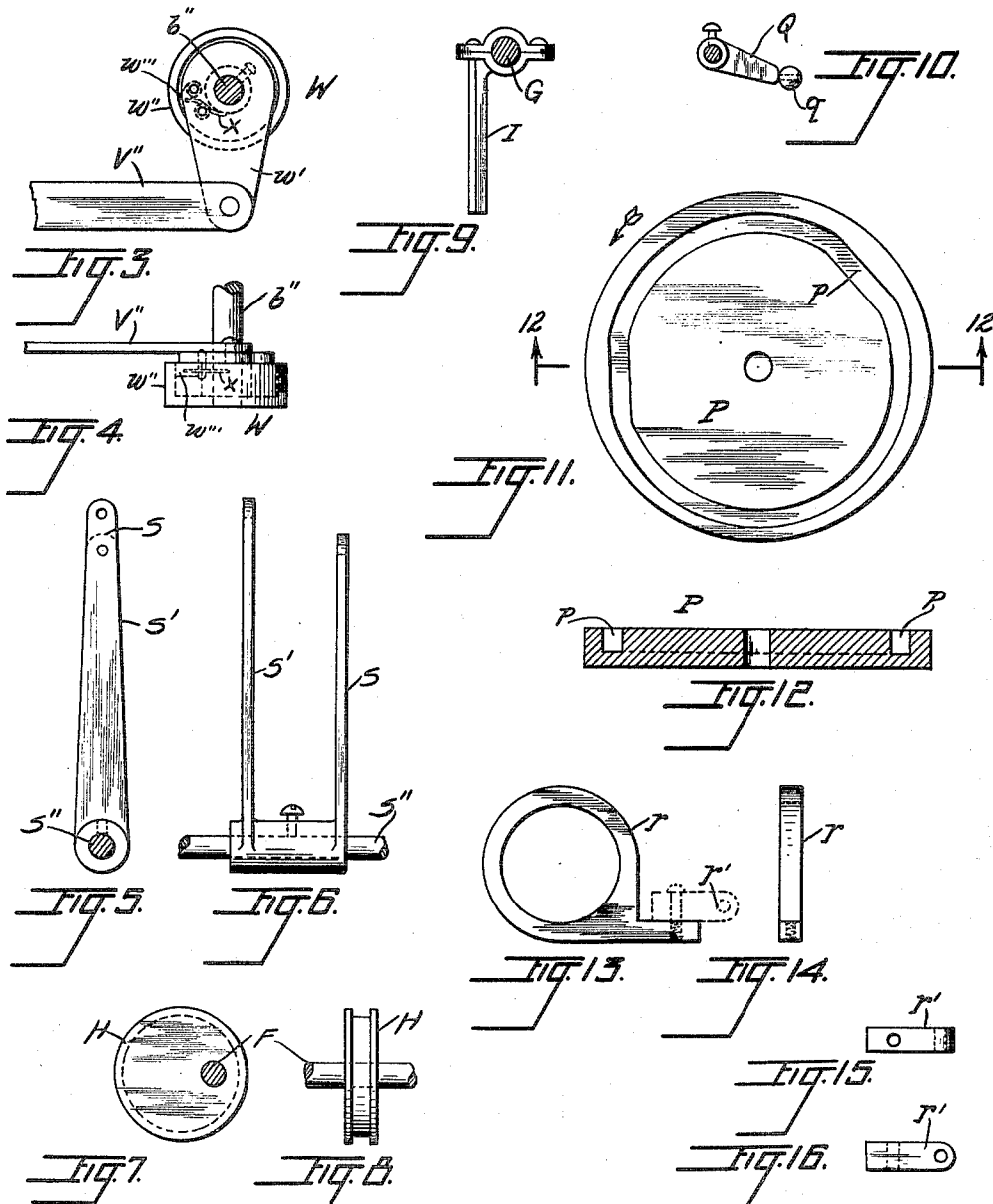
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WITNESSES:
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UNITED STATES PATENT OFFICE.

CHARLES H. DANN, OF BROOKFIELD, AND LOUIS DURIS, OF CHICAGO, ILLINOIS.

SEWING-MACHINE.

1,051,313.

Specification of Letters Patent.

Patented Jan. 21, 1913.

Application filed May 6, 1912. Serial No. 695,384.

To all whom it may concern:

Be it known that we, CHARLES H. DANN and LOUIS DURIS, the said DANN a citizen of the United States, and a resident of Brookfield, in the county of Cook and State of Illinois, and the said DURIS a citizen of the United States, and a resident of Chicago, in said county and State, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification.

This invention relates to sewing machines which are known in the art as over-stitch machines, and are used for sewing fur, in making fur garments.

The objects of the invention are, to obtain a sewing machine which is specially adapted for use in sewing the edges of pieces of fur together, with an over-stitch single thread, which will be simple in construction, having few parts which are not liable to get out of order or break; and a machine which will permit great speed in the operation thereof and will be easy to run, that is, will not require great power.

Additional objects are disclosed by the specification and claims.

We have illustrated the machine embodying our invention by the drawings accompanying and forming a part hereof, in which—

Figure 1 is a top plan view of the working parts and the bottom part of the shell or casing of the device. Fig. 2 is a vertical section, on line 2—2 of Fig. 1, viewed in the direction indicated by the arrows. Fig. 3 is a horizontal section of a vertical shaft, showing the ratchet transmission of the machine. Fig. 4 is a side elevation of said ratchet transmission. Fig. 5 is a side elevation of a double lever of the machine. Fig. 6 is a front elevation of said double lever. Fig. 7 is a side elevation of an eccentric forming an element of the device and Fig. 8 is an edge elevation of said eccentric. Fig. 9 is a section of the needle shaft of the machine, showing one of the bars forming the yoke of the eccentric of said needle bar. Fig. 10 is a section of the shaft of the looper bar of the machine, showing the rocking bar on said shaft. Fig. 11 is an elevation of a grooved cam wheel or disk, and Fig. 12 is a horizontal section of said cam wheel. Fig. 13 is a side elevation of an eccentric strap which fits over an eccentric the duplicate of the eccentric illustrated in Fig. 7, and an elevation of the connection by means of which said

strap is attached to one of the double levers which are illustrated in Figs. 5 and 6. Fig. 14 is an end elevation of said eccentric strap. Fig. 15 is a top plan view and Fig. 16 is a side elevation of the connection which is illustrated in Figs. 1, 2 and 13.

In this machine there is a needle bar or shaft, which is driven longitudinally to force the needle into and withdraw it from the articles which are joined together by the sewing done by the machine; a looper shaft which is provided with a looper bar having a foot thereto forming a looper, which looper shaft is driven longitudinally to carry the thread over and from one side to the other of the articles which are joined or sewed together by the machine; which is rocked to engage the looper with and disengage it from said thread; and which is raised and lowered to carry said looper above the plane of the upper edges of the articles sewed on the machine and to return said looper into substantially the plane of the seam which is made by said sewing; and there is a feeding mechanism consisting of wheels or disks which are rotatably mounted and provided with knurled edges.

A reference letter applied to designate a given part is used to indicate said part throughout the several figures of the drawings, wherever the same appears.

A, A' is a two part shell or casing. Part A is the lower part of said shell or casing, and is the supporting member of the several movable parts of the machine.

B is the standard of one of the wheels or disks of the feeding mechanism of the machine. Standard B is rigidly mounted on the lever *b*, and said lever forms the base of said standard.

C is a spring which is secured at one end to standard B and at the other end is adjustably attached to part A of the shell by means of the eye-bolt D and thumb nut *d*.

Lever *b* is mounted in part A of the shell between the set screws *b'*. Standard B is of an inverted U-shape, and the feed wheel E is rotatably mounted on a shaft which is secured on the shorter arm *b''* of said standard.

E' is a feed wheel (or disk) which is rigidly secured on the vertical shaft *b'''*. Shaft *b'''* is rotatably mounted in bearing B' of part A of the shell. The tension of feed wheel E against feed wheel E' is increased or diminished by turning the thumb nut *d*

on eye-bolt D. The wheels or disks E, E' are respectively provided with the edges e, which are knurled, or grooved by recesses which are parallel to the shafts of said wheels.

F is the main shaft of the machine and is rotatably mounted in the bearings f on part A of the shell.

G is the needle shaft of the machine, and G' is the needle which is secured in one end of said shaft. Shaft G is movably mounted in bearings g.

g' is a bar which is provided with groove g'', in which the needle G' moves. Bar g' is rigidly secured on the upper end of arm b'' of said standard B.

The longitudinal movement of the bar G is obtained by means of the eccentric H which is rigidly mounted on the shaft F, and the yoke which is constructed by rigidly attaching the duplicate bars I, I', to said shaft.

J is the loop bar shaft, and one end thereof is longitudinally movable in bearing j. Bearing j is pivotally mounted on part A of the shell of the machine by pivots K in bearings k. Bearing j' is mounted on shaft J, between collars j'', j'''. Shaft J turns or rocks in bearings j, j', but does not move longitudinally in said bearing j'. Bearing j' is positioned between abutments L, L, on part A of the shell. Said bearing j' is also pivotally attached to the disk M by means of pivot m. Disk M is rigidly secured to rocking shaft N, and said rocking shaft is journaled in bearing n. Bearing n is attached to part A of the shell.

As shaft N is rocked by means about to be described, the pivot m is moved in the arc of a circle around the axial line of shaft N, (see Fig. 2), and the bar or head O, (which is rigidly attached to the end of looper shaft J) and the looper O' of bar or head O are moved in corresponding arcs. This movement of said bar or head O and looper O' is in addition to the longitudinal movement thereof.

To permit the above described movement of bearing j' it is movably mounted between abutments L.

The forward and backward movement which is required in looper O' is obtained by rocking the bar of shaft J in its bearings, and this rocking is effected by means of the cam groove p on the face of disk P and the lever Q which is rigidly attached to said shaft J, so that the end q thereof, (which is provided with a ball to prevent friction) is in the cam groove p. Disk P is rigidly secured to shaft F.

The rocking of the shaft N and disk M is effected by means of the eccentric H', which is rigidly secured on the shaft F, eccentric strap r, connection r', two-armed lever S, S', and rack T. Two-armed lever S, S' is mounted on the fulcrum which is formed by

shaft S''. Shaft S'' is held in place by set screws S''', which are, respectively provided with lock nuts S'''. Connection r' is attached to part S of two-armed lever S, S' and to the eccentric strap r on eccentric H'. The rack T is attached to part S' of two-armed lever S, S', and the teeth of said rack intermesh with the teeth of disk M.

The adjustable step by step feed movement of the disks E, E', is obtained by means of the cone shaped cam U, which is rigidly secured on shaft F, the lever V, which is provided with an internal screw threaded hub and which is mounted on the screw threaded shaft V', the connection V'' at the lower end of lever V, the spring u and the internal ratchet mechanism W. The screw threaded shaft V' is turned by means of the thumb nut V''' which is rigidly secured thereon, and the screw threaded hub and lever V is thereby moved along the shaft so as to bring the upper end of lever V against the cam U at a point where the proper movement of the lever will be obtained to get the length of stitch desired. The internal ratchet mechanism W is secured on the lower end of shaft b'''. One end of connection V'' is attached to the lower end of lever V and the other end of said connection is attached to the arm or plate w' of ratchet mechanism W. Ratchet mechanism W consists of the arm or plate w' which is loosely mounted on shaft b''', the cup w'' which is rigidly mounted on said shaft b''' and the pawl w''' which is mounted on the plate w' and yieldingly held against the inner side of the circular walls of cup w'' by means of spring X.

F' is a driving wheel which is rigidly secured on shaft F.

Z is a rod attached at its upper end to lever or base b. By moving rod Z longitudinally up the base is turned on screws and the feed disks E, E', separated.

By rocking the looping shaft J through the medium of lever Q and cam groove p we are able to hold said looping shaft and looper O' stationary during any part of a cycle of the operating of the machine for a considerable time and thus insure non-dropping of stitches.

The operation of the machine is as follows: When the needle is threaded and goods are inserted between feed disks E, E', turning of shaft F forces the needle and thread through said goods, the looper O' moves forward as the needle is withdrawn from said goods and passes into the loop of the thread which is formed by the receding movement of said needle and carries said loop over the upper edges of the goods to the other side thereof, where said looper descends and recedes from said loop of the thread in proper time and place to permit the needle to pass through said loop. The

looper then returns to its initial position and a cycle of movement of the machine is completed. Continuous rotation of shaft F causes additional cycles of movements to be continuously made.

We claim:—

1. In a sewing machine which is provided with a longitudinally movable needle shaft and means to move it, said means comprising a rotatable shaft, the combination of a looper shaft mounted to rock in pivotally mounted bearings, to move longitudinally in one of said bearings, and to be moved longitudinally by the movement of the other of said bearings, with a disk, the pivot of said last named bearing mounted on said disk, gear teeth on said disk, an eccentric on said rotatable shaft, a two armed lever mounted on a fulcrum, an eccentric strap connected to one arm of said lever and a rack attached to the other arm, said strap mounted on said eccentric, and said rack intermeshing with the teeth on said disk to rock said disk on the rotation of said rotatable shaft.

2. In a sewing machine which is provided with a longitudinally movable needle shaft,

and means to move it, said means comprising a rotatable shaft, the combination of a looper shaft mounted to rock in pivotally mounted bearings, to move longitudinally in one of said bearings, and to be moved longitudinally by the movement of the other of said bearings, with a disk, the pivot of said last named bearing mounted on said disk, gear teeth on said disk, an eccentric on said shaft, a movable two armed lever, an eccentric strap on said eccentric, said strap connected to one arm of said lever and a rack on the other arm of said lever, said rack intermeshing with the teeth on said disk, an additional disk rigidly attached to said shaft, said last named disk provided with a cam groove, and an arm rigidly mounted on said looper shaft to engage with said cam groove, all arranged to rock said first named disk and to rock the looper shaft in its bearings on the rotation of the rotatable shaft.

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Witnesses:

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