

(No Model.)

D. HOWELL.
SEWING MACHINE.

No. 508,715.

Patented Nov. 14, 1893.

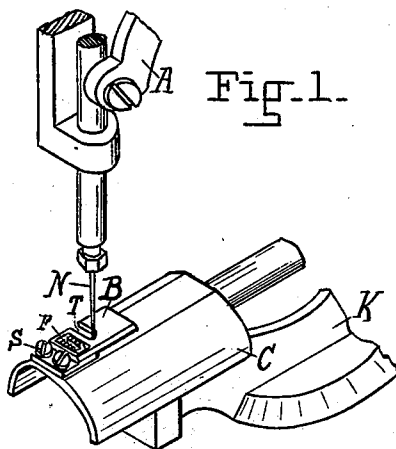


Fig. 1.

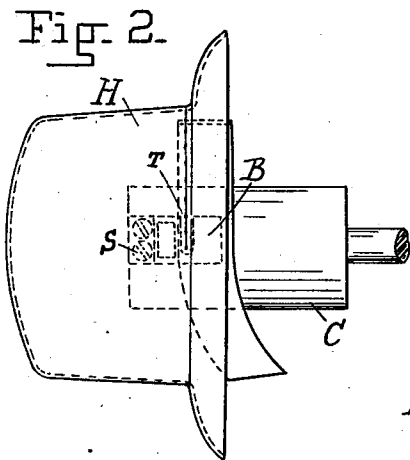


Fig. 2.

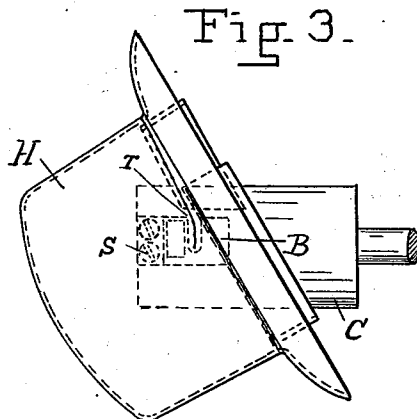


Fig. 3.

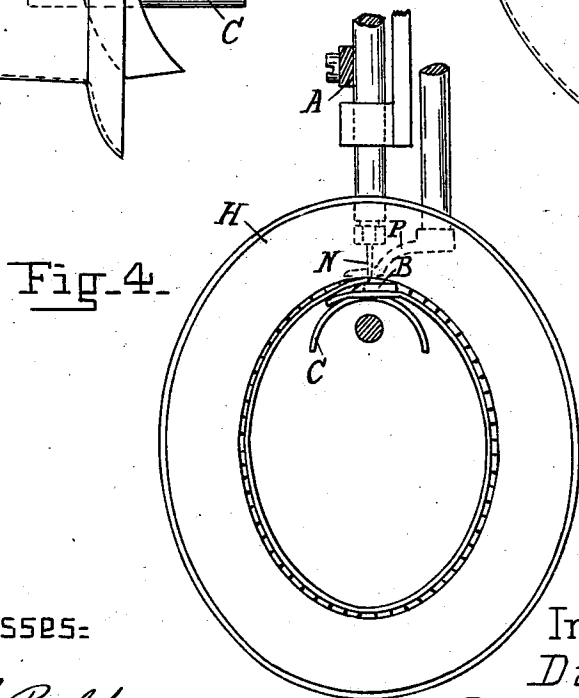


Fig. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

DAVID HOWELL, OF YONKERS, NEW YORK.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 508,715, dated November 14, 1893.

Original application filed November 28, 1892, Serial No. 453,414. Divided and this application filed April 18, 1893. Serial No. 470,838. (No model.)

To all whom it may concern:

Be it known that I, DAVID HOWELL, a citizen of the United States of America, residing at Yonkers, county of Westchester, State of New York, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification.

The object of my invention is to produce a sewing machine to be used in practicing an improved method of attaching sweat-leathers to hat-bodies with a loose or slack stitch which, in the finished article, has the appearance of hand whip-stitching. This method is fully described and claimed in my application for an improved method of stitching sweat-leathers to hats, filed November 28, 1892, Serial No. 453,414, of which the present application is a division. The hat is claimed in my application for an improvement in hats filed October 17, 1891, Serial No. 408,973.

I do not limit myself to applying my invention to any particular style of sewing machines, or to machines to be used for any particular purpose; but the Willcox & Gibbs single-thread chain-stitch machine is best adapted to carrying out the method above referred to, and I therefore show that form of machine.

In the accompanying drawings which form a part of this specification, Figure 1 is a detail in perspective showing my improvements. Figs. 2, 3 and 4 are details showing how the machine is used for the purpose which I have indicated.

I replace the usual flat cloth-plate of the Willcox & Gibbs machine by a rounded cloth-plate C, having its convex side upward, and I attach on top of the cloth-plate a thin separating-plate B under the needle, held in place by screws S which pass through the outer or front ends of the two plates. The thickness of this plate B determines the amount of slack of the stitch. The feed-dog F plays through an orifice cut through both of the plates. The needle N plays through an orifice T in the cloth-plate and a correspondingly positioned slot in the separating-plate.

The needle N, needle arm A, feed-dog F, presser foot P, frame K, and the remaining parts of the machine, not shown, are constructed, combined and operated exactly as in the familiar Willcox & Gibbs single-thread

chain stitch machine. The separating plate furnishes a solid rest for the presser-foot.

In using this machine to attach sweat-leathers to hat-bodies with a slack stitch as above indicated, the hat-body with its rim turned out, is laid on the top of the separating-plate in the position shown in Fig. 2, with the angle or band of the hat, *i. e.* the line at which the body ends and the rim begins, in the vertical plane through the needle which lies parallel to the line of feed, with the point of the band that lies at the back of the hat immediately under the needle. One end of the leather is slipped under the separating-plate and brought under the needle in place for the first stitch. The cloth-plate is flattened on top (see Figs. 1 and 4) so that the leather shall lie flat under the needle. The edge of the leather should be brought just within the angle or band of the hat-body and to secure this there is provided a shoulder on the separating-plate which runs just along the edge of the slot T, so as to be somewhat outside or in front of the needle, and acts as a guide for the leather. The face of the leather, or that side which is in view when the leather is properly positioned in the hat, is uppermost. A line of stitching is then run through and through the hat-body and the leather. The hat-body is fed forward by the feed-dog and is guided by the operator, who keeps the angle or band of the hat traveling along the inner edge of the presser foot. The presser-foot should be cut away where it comes under the needle. The leather is also guided by the operator who holds its edge against the shoulder of the separating-plate so that the needle holes lie close to and parallel with the edge. If a Willcox & Gibbs single-thread chain-stitch machine is used the needle passes down through the hat-body and leather and the thread is there caught by the hook of the machine and is drawn into a loop. This loop will be drawn tight but the stitch will be slack owing to the separating plate. The thickness of this plate under the needle, which determines the amount of the slack, should be about equal to the distance of the line of needle holes from the edge of the leather. The needle is then drawn back so as to free the hat-body and leather, which are then fed forward to the

next point of insertion of the needle. If the leather and hat-body are positioned as shown in the drawings, the chain of loops which constitute the locking of the thread lies along that side of the sweat-leather, herein called the inner side, which is hid from view when the leather is turned into its proper position in the hat. The stitching is continued with the hat-body and leather in the position of Figs. 2 and 4 until the hat has been turned through the whole of the circumference and even beyond if desired. The leather is thereby attached all round and the parts are brought into the position of Fig. 4.

15 The front edge of the separating-plate, *i. e.*, the edge on the side from which the work is fed and which is in full view in Fig. 1, is beveled, as shown in Figs. 1 and 4. When the hat has been turned through a circumference 20 and the edge of the sweat-leather first attached to the hat-body is thereby brought around again to the separating plate, it will pass up along this bevel and onto the top of the separating-plate and will not butt against it and thus stop the feeding of the work. 25 When the end of the leather first attached comes into the line of the needle the hat may be slightly pushed in thereby carrying this end of the leather in beyond the needle, and 30 one or more additional stitches taken through the hat-body and the other end of the leather, thereby securing some overlap of the attached ends; and when the last stitch that is to be taken through the leather has been taken the 35 hat is turned inward on the side from which it is fed, as shown in Fig. 3, so as to run one or more stitches into the hat-body alone, and these last stitches, since the leather is removed from under the needle, are tight drawn and 40 anchor the chain. To admit of these manipulations of the hat the separating-plate extends backward out of contact with the flattened top of the cloth-plate. It should extend backward far enough to hold the leather well 45 in place during the stitching when the attached edge of the leather along which the stitches are run is pressed against and fed forward along the shoulder of the separating plate, as above described. The threads are 50 then cut and the work removed from the machine. On the leather being then turned into the proper position in the hat the edge takes up the slack of the stitch, and the stitching presents the finished appearance of hand 55 whip-stitching.

There are a few matters of detail in the

construction, which, though not absolutely essential, will aid anyone undertaking to construct the machine for the use specified. As will be seen from the construction the hat alone is carried forward by the feed-dog. The leather is pushed forward by hand until one or two stitches are made and is then carried along with the hat. In order to effect this the guide or shoulder on the under side of the separating plate is placed between the needle and the feed-dog. But the feed-dog must be brought up as close to the needle as the necessary distance from the line of the needle to the shoulder will permit, since otherwise the feed-dog is very apt to twist the hat out of place. In practice I find it convenient to bring the inner edge of the feed-dog as close to the shoulder as one thirty-second of an inch, and as the distance from the needle to the shoulder will be about one-sixteenth of an inch, this brings the dog within three thirty-seconds of an inch from the needle. Another point which I find convenient is to so set the feed-dog that about two-thirds of it shall lie ahead of the needle when the feed-dog is in its uppermost position.

Some means should preferably be provided for supporting the work. This work supporting means may or may not be independent of the feeding mechanism.

What I claim, and desire to secure by Letters Patent, is—

1. As an improvement in sewing machines the combination of a work supporting means, a stitch forming mechanism, a separating plate, a feeding device to control the goods on one side of the plate, and a guide to position the goods on the other side of the plate and lying between the feeding device and the line of the needle, substantially as described.

2. As an improvement in sewing machines the combination of a work supporting means, a stitch forming mechanism, a separating plate having a beveled edge on the side from which the work is fed, a feeding device to control the goods on one side of the plate, and a guide to position the goods on the other side of the plate and lying between the feeding device and the line of the needle, substantially as described.

Signed in Yonkers, New York, this 15th day of April, 1893.

DAVID HOWELL.

In presence of—

HOWARD W. FLAGG,
GEORGE A. FLAGG.