

W. P. DRUMHELLER.
CROCHET OR OVERSEAMING MACHINE.
APPLICATION FILED MAY 21, 1912.

1,057,376.

Patented Mar. 25, 1913.

Fig. 1.

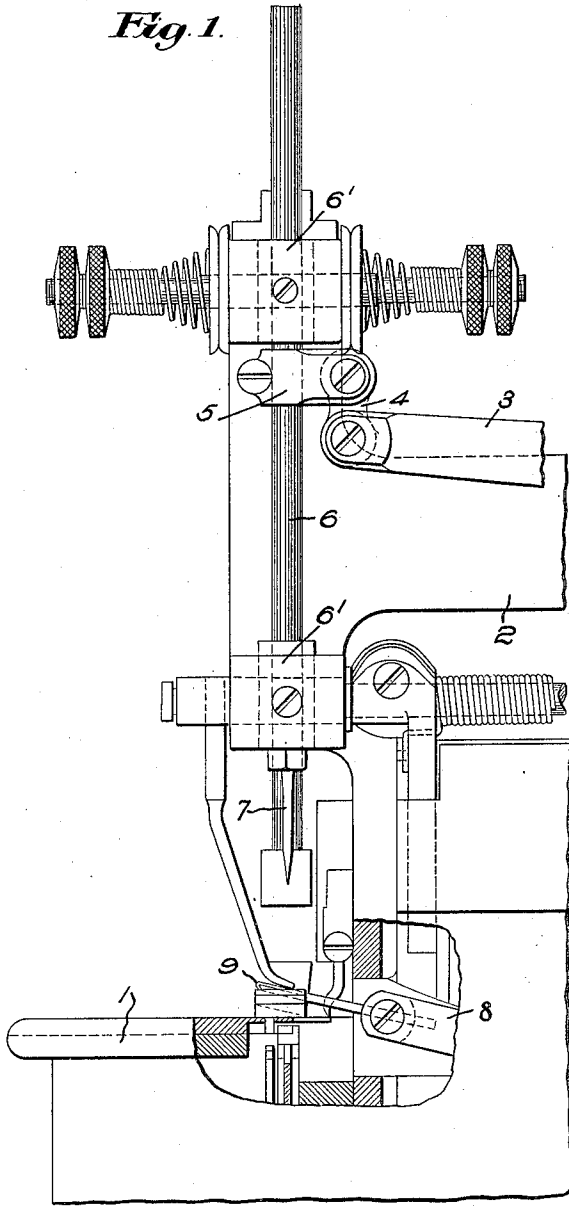


Fig. 2.

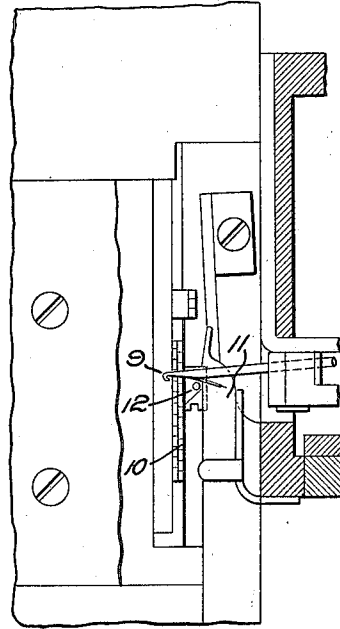


Fig. 3.

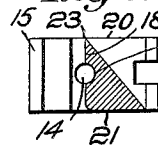


Fig. 4.

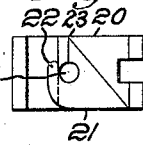


Fig. 5.

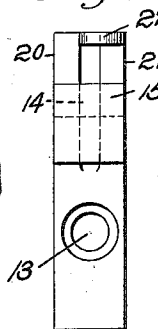


Fig. 6.

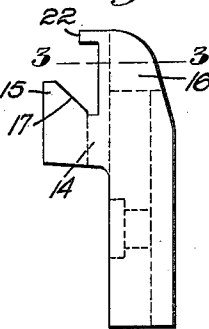
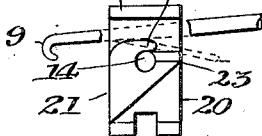


Fig. 7.



Witnesses:
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Inventor:
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by Emerson B. Smith, James W. Varney, Attys

UNITED STATES PATENT OFFICE.

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CROCHET OR OVERSEAMING MACHINE.

1,057,376.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Original application filed December 22, 1911, Serial No. 667,275. Divided and this application filed May 21, 1912. Serial No. 698,793.

To all whom it may concern:

Be it known that I, WILLIAM P. DRUMHELLER, a citizen of the United States, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented an Improvement in Crochet or Overseaming Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to crochet or overseaming machines and is a division of my co-pending application No. 667,275, filed December 22, 1911.

In order that the principle of the invention may be readily understood, I have disclosed a single embodiment thereof in the accompanying drawing, wherein—

Figure 1 is an end elevation partially in section of a crochet or overseaming machine to which my invention may be applied; Fig. 2 is a view mainly in plan and partially in transverse section of a portion of the stitch forming and work feeding mechanism thereof; Fig. 3 is a transverse sectional view of a needle guard to which my invention is more particularly related, said section being taken upon the line 3—3 of Fig. 6; Fig. 4 is a plan view of the needle guard shown in Fig. 3; Fig. 5 is an elevation of said needle guard; and Fig. 6 is an elevation thereof taken at right angles to Fig. 5. Fig. 7 is a view similar to Fig. 4, but showing the crochet or knitting needle in its position relative to the needle guard.

The crochet or overseaming machine to which I have herein represented my invention as applied is preferably of that general type disclosed in the patents to J. M. Merrow, No. 414,233, November 5, 1889, and No. 428,508, May 20, 1890, to which reference may be had for a fuller disclosure of certain of the parts and of the means for operating them. I have also represented my invention as applied to that type of such machine shown in the patent to William H. Carter, No. 1,020,944, March 19, 1912, although obviously it may be embodied in other types of such machines.

The machine herein disclosed comprises stitch forming instrumentalities including a

sewing needle and a movable stitch manipulating hook device, preferably in the form of a crochet hook or knitting needle with suitable means for operating said parts in coördination together with a presser foot normally positioned upon the work and preferably so constructed as to be lifted from the work by the operative.

In accordance with my invention, I provide the machine with a needle guard preferably positioned below and close to the work and having a passage therethrough for the sewing needle. Needle guards have heretofore been provided, but I have ascertained that the sewing needle is very frequently struck by the crochet hook or other thread manipulating hook device, and is so deflected thereby that it does not pass through the needle passage of the guard. In order to prevent the needle deflection by the said crochet hook or like device, I have provided the needle guard with an abutment extending substantially upon that side of the needle that is the more remote from the hook when the latter is in retracted position and have provided the said needle guard with a needle guiding face leading to the needle passage of the guard and preferably inclined with respect thereto.

Referring more particularly to the drawing, the bed of the machine is indicated at 1, and the frame or head at 2. Mounted in any suitable manner upon the head 2 is a needle operating lever 3 to which motion is imparted from the main drive shaft in a manner not herein necessary to disclose. As herein shown, the said lever is connected by a link 4 to a bracket 5 carrying the needle bar 6 mounted in suitable guide ways 6', 6' in the head or frame 2 and to which the sewing needle 7 is secured in any suitable manner so as to be vertically reciprocated. Also suitably operated from the main drive shaft and in coördination with the sewing needle 7 is a hook bar 8 carrying a crochet hook or knitting needle 9 of usual type. In the usual manner, the said hook 9 is moved to and fro first above and then below the work to engage one of the threads, as more fully set forth in said patents.

Any suitable work feed may be employed. In Fig. 2, I have indicated at 10 a work

feeding device substantially similar to that shown in said Carter patent. Adjacent thereto, I have provided a forming finger 11 above and then below which the hook 9 passes in the loop and stitch forming operation.

Any suitable presser foot may be provided, that shown in the above entitled application being preferred.

10 The needle guarding device is indicated generally at 12 in Fig. 2 and is shown upon a larger scale in Figs. 3 to 7 inclusive. The said needle guard is preferably removably attached in position in any suitable manner, 15 as by means of a bolt entering the bolt hole 13 and preferably the said needle guarding device serves also as a crochet hook or knitting needle latch opener. The said guarding device is preferably formed of steel or 20 other suitable metal and is provided with a lengthwise needle passage 14, which when the device is in position as here represented extends vertically therethrough. At the entrance of said needle passage, the device is 25 of a forked formation, the two members or prolongations of which are indicated at 15 and 16 in Fig. 6. The portion 15 of said device is provided with an inner needle guiding face or surface 17 preferably downwardly and inwardly inclined to substantially the needle passage 14 as most clearly indicated in Figs. 3, 4 and 6. With the parts positioned as herein represented, the said inclined needle guiding face or surface is 30 upon that side of the needle guard the more remote from the operative. The opposite formation or prolongation 16 extends beyond the formation 17 and to a greater elevation when the device is in the position 40 shown. The said formation is preferably provided upon its inner wall or face 18 with a groove 19 forming a continuation of the wall of the needle passage 14. The main portion of the inner face of said formation or prolongation 16 preferably extends substantially 180° circumferentially of the needle passage 14.

The purpose of the recess 19 is to guide or direct the sewing needle toward the inclined 50 guiding face or surface 17, the latter being for the purpose of directing the needle toward the needle passage 14, which is here represented as about mid-way between the lateral faces 20, 21 of the device.

55 I have provided means to prevent the hook 9 from striking the sewing needle 7 in the descent of the latter and deflecting it toward the face 21 of the needle guarding device so far out of its true path that it 60 will not enter the needle passage 14. To this end, I have provided the needle guarding device with an abutment or hook like formation 22 extending, in the position of the parts shown, to that side of the needle 65 passage 14 and of the needle 7 that is the more

remote from the hook 9 when the latter is in its retracted position. This abutment or hook-like formation 22 forms in effect a prolongation of the needle guiding surface of the extension or member 16 of the needle guarding surface. Preferably, it extends substantially as indicated, so that with the groove 19 it extends materially more than 180° about the needle passage 14. It extends sufficiently far to prevent the sewing 70 needle 7 if deflected by the hook 9 or otherwise from striking the extreme end of the said hook. Preferably the said hook or formation 22 does not extend wholly about the needle so as completely to encircle the same, as this would prevent the proper feeding of the thread with the needle 7.

It will be observed that when the device is in the position shown the extension or hook-like formation 22 overhangs the inclined needle guiding face 17. The said hook-like formation 22 so guides and directs the sewing needle that even though it be struck by the hook 9, it cannot be thereby deflected so as not to enter the space between the surfaces 17 and 18, but will be directed 90 thereinto.

Viewing the needle guarding device as represented in Fig. 6, it will be apparent that the said device is composed of a body 95 portion having a lengthwise extending needle passage and that the body portion is transversely and downwardly grooved substantially axially of the needle passage, one face of said groove being preferably inclined to provide a needle guiding surface 100 leading in the said needle passage and the other face being preferably grooved as indicated at 19 and having preferably at its top a hook like needle guiding extension 22. 10

The inner face or wall 18 terminates at the inner edge of the needle guarding device in a latch opener formation 23 directed toward the crochet hook or knitting needle and serving to open the latch thereof, as indicated in Fig. 2. Thus, the said wall or face 18 is provided at the inner edge with a latch opener formation 23 and at the opposite edge with a hook formation 22. The vertical extent of the hook formation 22 and the position thereof may be varied within the scope of my invention, but preferably such hook formation is provided at the upper face of the thread guiding device, and it is unnecessary to prolong the same more 12 than slightly below said upper face. The hook 22 formed as shown so guides and directs the needle 7 that with the coöperation of the inclined needle guiding face 17, the said needle is directed safely to the needle 12 passage 14.

Having thus described one illustrative embodiment of my invention, I desire it to be understood that although specific terms are employed, they are used in a generic and 13

descriptive sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

Claims—

1. A needle guarding device for overseaming and like machines having a body provided with a needle passage substantially vertical when in position, a needle guiding face inclined downwardly and leading thereto, and a needle guarding portion extending from that side of the needle passage opposite said guiding face and overhanging said inclined face when the device is in position.

2. A combined needle guard and latch opener for overseaming and like machines having a body provided with a needle passage, a needle guiding face at one side of said needle passage, and inclined downwardly and leading thereto, and a needle guarding portion at the other side of said needle passage, having a latch opener formation at one edge and a needle guarding hook at the opposite edge.

3. A needle guarding device for overseaming and like machines having a body provided with a needle passage and two opposite, upward prolongations, one having an inner guiding face downwardly inclined to said needle passage and the other having a groove forming a continuation of a wall of said needle passage, and a needle guiding hook at the entrance of said passage.

4. A needle guarding device for overseaming and like machines having a body provided with a needle passage and two opposite, upward prolongations, one having an inner guiding face downwardly inclined to said needle passage and the other extending to a greater height than the first and having a needle guiding groove in alinement with said needle passage and also having a hook forming a portion of the wall of said groove and overlying said guiding face when the device is in position.

5. A combined needle guard and latch opener for overseaming and like machines having a body provided with a needle passage and two opposite, upward prolongations, one having an inner guiding face downwardly inclined to said needle passage and the other extending to a greater height than the first and having a needle guiding groove forming a continuation of a wall of said needle passage and having its upper face terminating at one edge in a latch

opener and at the opposite edge in a hook overhanging said inner guiding face when the device is in position.

6. A combined needle guard and latch opener for overseaming and like machines having a body provided with a needle passage substantially vertical when the device is in position, and two opposite, upward prolongations, one having an inner guiding face inclined downwardly to said needle passage and extending laterally therebeyond in opposite directions, and the other prolongation extending above the first and having its upper face terminating at its inner edge in a latch opener and at its outer edge in a hook, the end whereof is at the opposite side of said needle passage from said latch opener.

7. A combined needle guard and latch opener for overseaming and like machines having a body provided with a needle passage, said body being transversely and downwardly grooved substantially axially of said needle passage, one wall of said groove being provided at one edge with a latch opener and at the opposite edge with a needle guarding hook forming a prolongation of said wall, the said hook and wall extending more than 180° about said needle passage.

8. A needle guarding device for overseaming and like machines having a lengthwise needle passage and a forked formation at the entrance thereof, one wall of said formation having a needle guiding face leading to the entrance to said passage, and the other wall having a needle guarding hook, said latter wall and hook extending more than 180° circumferentially of said passage.

9. A crochet or overseaming machine comprising in combination stitch forming mechanism including a movable thread manipulating hook device and a sewing needle, and a needle guard body on the opposite side of the needle from said hook device and having a passage for the said needle, said guard having an overhanging part extending close to and past that side of the said needle that is the more remote from the retracted position of said hook device.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

WILLIAM P. DRUMHELLER.

Witnesses:

MARY A. POWELL,
W. M. WHARFIELD.