

M. J. HOFFMAN.
GARMENT STAYING DEVICE.
APPLICATION FILED MAR. 16, 1912.

1,071,743.

Patented Sept. 2, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

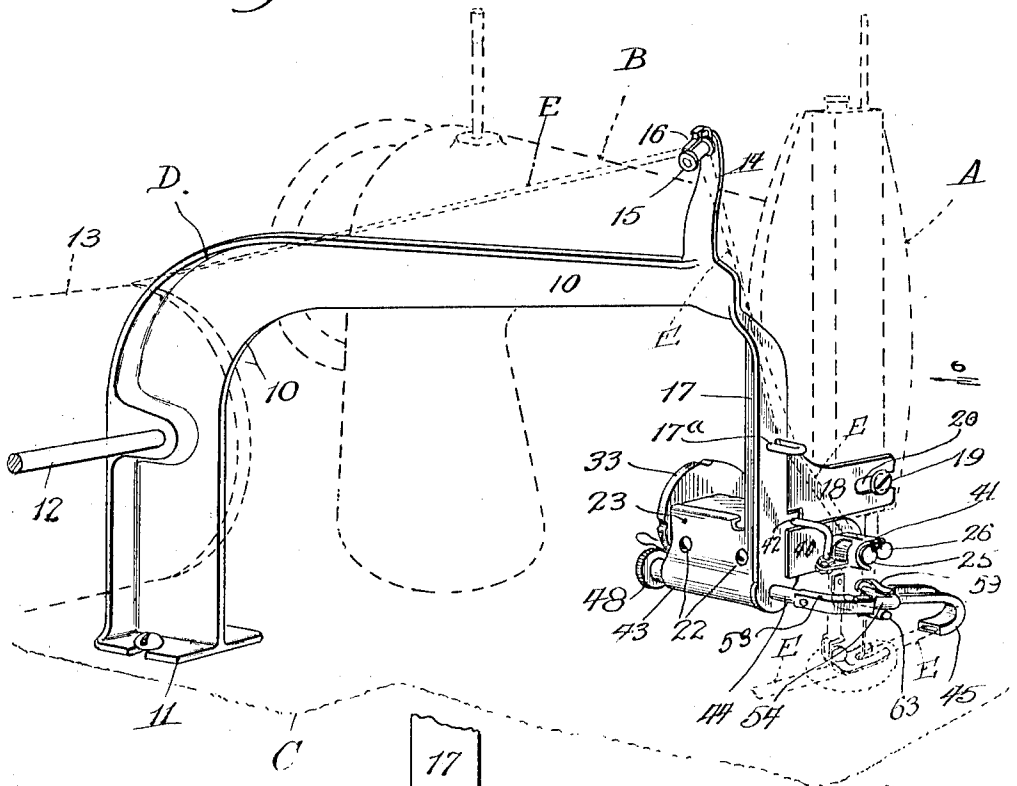


Fig. 3.

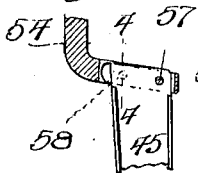


Fig. 4.

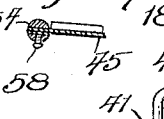


Fig. 2.

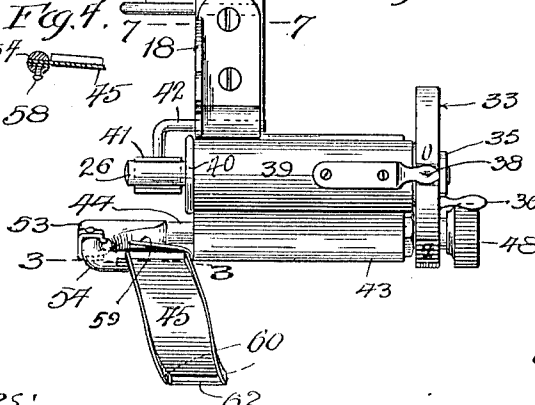
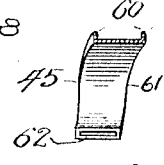


Fig. 5.



Witnesses:

Fannie F. Richards
Hubert H. Reed

Inventor:

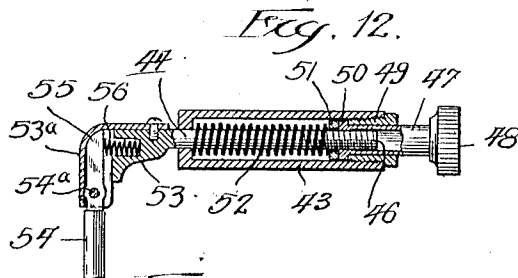
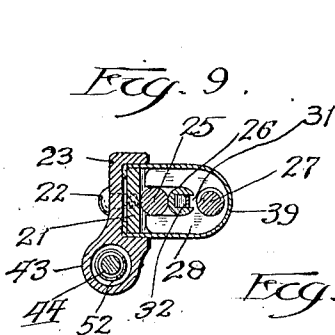
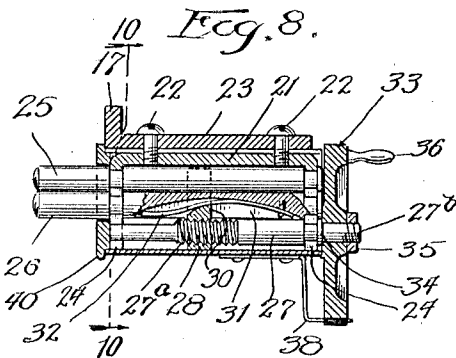
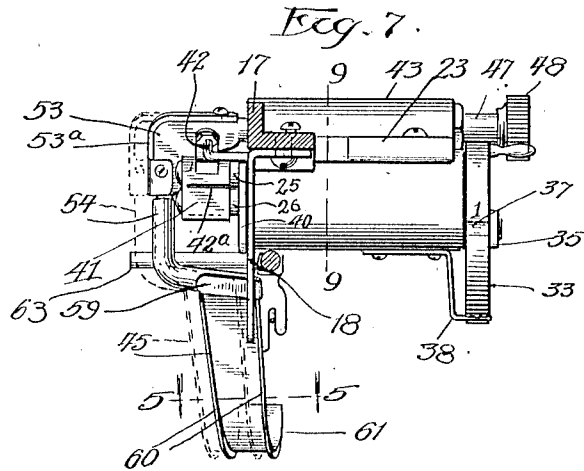
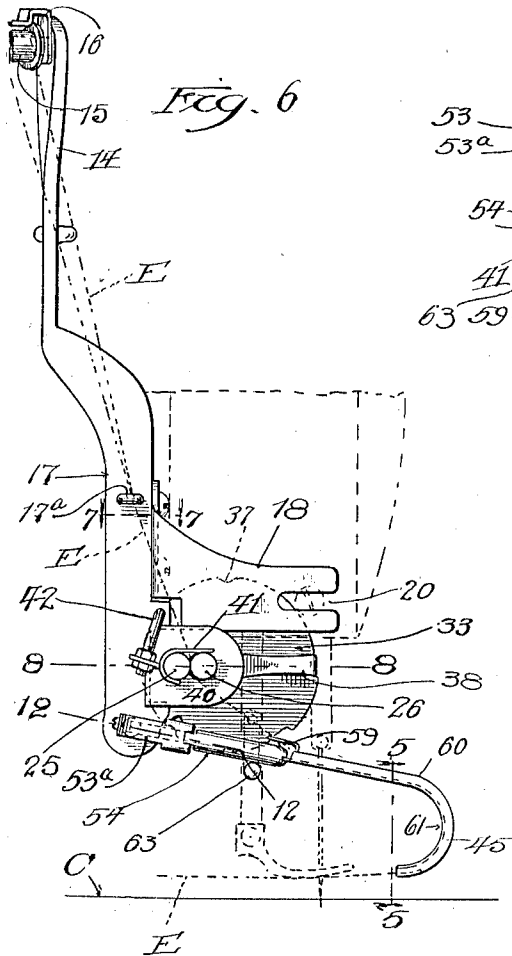
Morris J. Hoffman,
Charles O. Shurway
his Atty.

M. J. HOFFMAN.
GARMENT STAYING DEVICE.
APPLICATION FILED MAR. 16, 1912.

1,071,743.

Patented Sept. 2, 1913.

2 SHEETS—SHEET 2.



Witnesses: 21 29
25 24 26 27 28 30

Fannie F. Richards
Albert H. Reed

Inventor:
Morris J. Hoffman,
Charles O. Shervey
his Atty.

UNITED STATES PATENT OFFICE.

MORRIS J. HOFFMAN, OF CHICAGO, ILLINOIS.

GARMENT-STAYING DEVICE.

1,071,743.

Specification of Letters Patent.

Patented Sept. 2, 1913.

Application filed March 16, 1912. Serial No. 684,324.

To all whom it may concern:

Be it known that I, MORRIS J. HOFFMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Garment-Staying Devices, of which the following is a specification.

This invention relates to garment staying devices for use in sewing stays (tape) on the edges of garments.

It is well known to those skilled in the art that garments such as coats, overcoats, vests and the like, are provided with stays along certain portions of the edges thereof, said stays preferably comprising strips of tape sewed in between the facing and the goods for the purpose of giving proper shape to the garment along those edges where they are used and thereafter for maintaining said edges in proper shape. As set forth in a prior application for patent on garment edge-stay positioning device, filed by me on November 20, 1911, Serial No. 661292, the front edges of such garments are "worked in"; that is, fulled in or gathered in more or less, whereas certain other portions are left in normal condition. In working in the garment, the feed of the edge-stay (the tape) must be retarded somewhat as compared with the feed of the cloth itself, and the degree of retardation must be carefully regulated by the operator to properly work in the garment and thereby give the desired effect, and the same degree of retardation must be used to work in both sides alike, in order that the garment may balance.

The main object of this invention is to provide a device of this character, capable of use in connection with an ordinary sewing machine and adapted to control the feed of the edge staying means (such as a strip of tape) independent of the feed of the garment itself, and having regulating means whereby the feed of the stay may be controlled and regulated at the will of the operator.

Another object is to provide improved means, in connection with edge stay retarding means, for guiding the stay to the presser foot and needle of the sewing machine, whereby the stay may be fed in a uniform, uninterrupted manner, and without danger of interference with the proper working of the sewing machine.

Another object is to provide simple and improved means to facilitate the sewing on

of the edge-stay around corners or curves of the garment, and wherein the operator may readily adjust the mechanism to conform to the curved edges around which the operator is sewing.

Another object is to provide a form of garment staying device adaptable to different forms of sewing machines.

Other objects and advantages will be found in the course of this specification and with all of said objects and advantages in view, this invention consists in the several novel features hereinafter described and claimed.

The invention is clearly illustrated in the drawings furnished herewith, in which:

Figure 1 is a perspective view of the preferred embodiment of my invention, looking from the rear and showing the same applied to a simple form of sewing machine head, the latter being illustrated in dotted lines, Fig. 2 in a front elevation of the garment staying device with its supporting arm partly broken away, Fig. 3 is a detail horizontal section taken on the line 3—3 of Fig. 2, Fig. 4 is a detail vertical section taken on the line 4—4 of Fig. 3, Fig. 5 is a detail vertical cross section taken through a guide, the line of section being indicated at 5—5 of Figs. 6 and 7, Fig. 6 is an end view of the machine looking in the direction of the arrow 6, at Fig. 1, Fig. 7 is a view partly in plan and partly in horizontal section, the line of section being indicated at 7—7 in Figs. 2 and 6, Fig. 8 is a horizontal section taken on the line 8—8 of Fig. 6, Fig. 9 is a detail vertical cross section taken on the line 9—9 of Fig. 7, Fig. 10 is a detail end view of a certain stay tension finger supporting frame with the fingers shown in cross section, the line of section being indicated at 10—10 of Fig. 8, Fig. 11 is a face view of a compression block employed for creating compression between the tension fingers and Fig. 12 is a horizontal section taken on the lines 12—12 of Fig. 6.

Referring to said drawings, which show the preferred embodiment of my invention, A represents a sewing machine head as the "Singer" or of any other ordinary and well known form of sewing machine head having the usual arm B, supported upon a table C, behind which sewing machine head is the garment staying device, represented generally, at D. In its present form, the device has a horizontal supporting arm 10, extend-

ing behind the arm B, of the sewing machine head, and said arm is provided with a foot 11, arranged to rest upon and be secured to the sewing machine table. Projecting out from said arm 10, is a spindle 12, for receiving a spool of tape, shown in dotted lines at 13. Tape is usually employed as an edge stay medium. The forward end of the arm 10, is shown as formed with an upwardly projecting post 14, upon which is revolubly mounted a flanged sheave 15, over which the tape E, is trained to run, from said spool to the operative mechanism of the device. A clip 16, secured upon the spindle of the sheave 15, extends over the latter and acts to prevent the tape from slipping off the same. Projecting downward from the front end of the horizontal supporting arm 10, is a vertical arm 17, which is arranged to extend immediately behind the head A, of the sewing machine, and as more clearly shown in Fig. 6, the post 14, and arm 17, are offset with respect to each other, to permit use of the device in connection with certain forms of sewing machine heads which have parts that project into the space afforded by the offset portion of the arm and post. On the arm 17, is a loop 17^a, that acts to guide the tape from the sheave 15, to the tension or retarding mechanism.

Secured to the arm 17, is a plate 18, that extends forward across the end face of the sewing machine head A, and is arranged to be secured thereto, as for instance by a screw 19, extending through a slot 20, formed in the plate 18, and screwed into the sewing machine head A. This construction affords simple means for rigidly securing the device in fixed position upon the sewing machine head.

Near the bottom of the arm 17, is located tension or retarding mechanism for controlling the feed of the edge stay (the tape) and said mechanism is best seen in Figs. 8, 9, 10 and 11, inclusive. As shown in said figures, a frame 21, is employed as a support for said mechanism, said frame being secured, by means of screws 22, to a flange 23, formed upon the arm 17, and extending longitudinally of the machine and behind the lower edge of the sewing machine head. Said frame 21, has two parallel end members 24, that are slotted horizontally as seen in Fig. 10, to receive the tension fingers 25, 26, and in this instance they are shown as formed of round rods having reduced portions seated in the slots of the end pieces 24, and arranged to be movably held therein. A rotatable spindle 27, is carried by said frame 21, and like the fingers 25, 26, has reduced portions lying in the slots of the end members 24. Said spindle is formed with a screw threaded portion 27^a, threaded in a block 28, having two legs 29, straddling the

fingers 25, 26, and said block is arranged to be moved backward or forward whenever the spindle 27, is rotated therein. Said block is formed with a centrally located lug 30, which projects into a groove 31, formed in the adjacent portion of the finger 26, and said lug bears against a compression spring 32, that presses against the bottom of said groove. The spring 32, is formed with a reverse curve as best seen in Fig. 8, whereby when the block 28, is moved toward the left, as viewed in said figure, greater compression is imparted to the spring. One end 27^b, of the spindle 27, projects beyond one end member 24, of the frame 21, and as shown is formed with a screw thread upon said end portion, said spindle being adapted to receive and have secured thereto a handwheel 33, which is clamped in position upon said end portion of the spindle between a flanged portion 34, thereof and a nut 35, threaded upon the screw threaded end portion. If desired the handwheel may be provided with a handle 36. Upon the periphery of said handwheel are formed notches 37, that cooperate with a spring pointer or index arm 38, to hold the handwheel stationary whenever any of such notches is brought into register with the pointer. The notches are numbered consecutively, or otherwise identified by arbitrary characters whereby the operator may determine how far the handwheel must be turned to produce the degree of compression of the spring 32, required to effect the desired retardation of the tape passing between the gripping fingers. In testing the device, if it is found that the action of the spring is either too weak or too strong when a given point on the handwheel is brought into register with the pointer, the nut 35, may be partly unscrewed and the handwheel turned upon its spindle, either backward or forward (depending upon whether the spring is too tight or too loose) and thereafter the nut 35, is screwed up, thus setting the handwheel in position where the several indicating characters correspond with the degrees of compression. Turning the handwheel to bring the higher indicating members into register with the pointer increases the compression; at zero there is no compression.

A cover 39, is provided to inclose the greater part of the tension mechanism and as shown in Fig. 10, is secured in place by bringing its side edges between the flange 23, and frame 21. An end piece 40, is secured to said cover 39, and covers one end of the box formed by the cover 39, and frame 21, said end piece being formed with openings to receive the protruding ends of the fingers 25, 26.

A guide clip 41, (see Figs. 1, 6 and 7) shown as supported by an L shaped rod 42, secured to the arm 17, is arranged for use

in connection with the tension fingers 25, 26, said guide clip being formed with a slot 42^a, through which the tape passes from the guide loop 17^a, to the tension fingers.

5 Below the tension or stay retarding mechanism, the arm 17, is formed with a barrel 43, extending parallel with the fingers 25, 26, and arranged to receive the supporting spindle 44, of a tape guide 45; said spindle 10 44, is shown as formed with a screw threaded end portion 46, threaded in an internally screw threaded hollow adjusting stem 47, formed with a knurled head 48, upon its 15 threaded thimble 49, secured upon an internally threaded portion of the barrel 43. The inner end of the hollow stem is shown as formed with a flange 50, against which rests a washer 51, and between said washer 20 and the end wall at the other end of the barrel is a coiled spring 52, that surrounds the spindle 44, and acts to yieldingly press the movable parts in a direction toward the right as viewed in Fig. 8; the flange 50, 25 strikes against the end of the thimble 49, and limits the movement of the parts in that direction. It is obvious that by pressing upon the head 48, the spindle 44, and its connected guide 45, may be moved toward 30 the left, and that by turning the hollow stem 47, in the proper direction, the spindle 44, and parts connected therewith may be moved in either a right or left hand direction, depending upon the direction in which 35 the hollow stem is turned. The object of this adjustment is to enable the operator to bodily move the guide 45, toward the right or left so as to bring its terminal end into proper alinement with the needle of the 40 sewing machine.

The spindle 44, is shown as formed with a forked head 53, upon its outer end, upon which is fulcrumed an arm 54, as by a pin 54^a, and having a tail piece 55, lying within 45 the head 53, and yieldingly pressed in one direction, by a spring 56, confined in a socket formed in the head 53, and bearing against the tail piece 55. A strip 53^a, secured to the head 53, on its sides acts as a 50 stop for the tail piece 55. The arm 54, extends forward from the head 53, and its forward end is bent laterally, as seen in Fig. 7, and secured to said lateral portion is the guide plate 45, which, as shown, is rigidly 55 secured to the arm 54, but capable of a limited amount of angular adjustment with respect thereto. As shown, said arm 54, is slotted to receive the upper end of the guide plate 45, and the latter is secured to the arm 60 by a pin 57, upon which it turns. A second pin 58, threaded in the arm and bearing against the under side of the guide, acts to hold it in any desired position. Secured to and projecting over the bent portion of the 65 arm 54, is a clip 59, under which the tape

may be trained. The guide 45, projects forward beyond the needle of the sewing machine and in the form shown, it is provided with tape retaining side flanges 60, and its terminal end 61, curves downward and 70 back; in addition thereto it is twisted side-wise somewhat (see Figs. 2, 5, 7) to change the angle at which the tape enters the guide to a different one where the tape leaves the 75 guide and passes under the presser foot of the sewing machine. This curved and twisted feature of the guide is quite important, inasmuch as it permits the tape to be brought down upon one side of the head of 80 the machine and its needle, and thereafter guided to move in a straight line, from front to back, toward the needle and presser foot, making it possible for the operator to continuously watch the needle during his 85 work. Preferably the extreme end of the guide 45, is provided with an eye 62, through which the tape passes on its way to the presser foot. A finger 63, secured to the 90 presser foot and extending underneath the arm 54, acts to limit the downward movement of the guide 45, and said finger is so positioned that the terminal end of said guide 95 is raised slightly above the table of the machine whereby the garment will be free to move thereunder.

In the operation of the device, the tape 100 is threaded over the sheave 15, through the loop 17^a, through the slot in the guide clip 41, between the fingers 25, 26, under the clip 59, and around the guide 45. The garment to be worked in is then placed on the machine table with its edge underneath the 105 presser foot and the end of the tape laid on said garment, after which the presser foot is lowered and the machine started, the handwheel having been set to the proper point to give the desired tension to the tape. If it becomes necessary thereafter, in sewing 110 on the tape, to change the degree of retardation or tension on the tape, the handwheel is turned (when necessary) in the proper direction. When the operator sews around curves on the garment, the operator 115 handles the garment with one hand and swings the guide upon its fulcrum 54^a with a finger of the other hand. When the garment is finished, the operator cuts the tape and raises the guide up out of the way by swinging it upon its horizontal pivot. In 120 adjusting the guide with respect to the sewing machine needle, the guide is lowered to place and the stem 47, turned forward or backward thereby bodily shifting the guide to the right or to the left, and bringing its 125 terminal end at the proper location in front of the needle to direct the tape toward it.

I am aware that various alterations and modifications of this device are possible without departing from the spirit of my invention as defined in the claims, and I do 130

not therefore desire to limit myself to the exact construction shown and described.

I claim as new and desire to secure by Letters Patent:

5 1. In a device of the class described, the combination of tape-spool supporting means, located in the rear of a sewing machine arm and above a work support, a tension device, a tape guiding scroll, means for
10 supporting the upper end of said scroll at a predetermined height above the bed plate of a sewing machine, said scroll being bent in spiral form to extend forwardly, downwardly, laterally and thence rearwardly
15 with its lower end substantially in the vertical plane of a sewing machine presser foot while extending toward said foot, means for pivotally supporting said scroll upon an axis at right angles to the direction
20 of movement of the sewing machine feed and means for laterally adjusting said scroll.

2. In a device of the class described, the combination of tape-spool supporting means, a tape-guiding scroll for guiding the
25 tape downwardly, laterally and rearwardly to a presser-foot, said scroll being attached to an arm extending forwardly from a rock-bar arranged substantially at right angles to the path of the work and means
30 for moving said rock-bar longitudinally.

3. In a device of the class described, the combination of tape-spool supporting means, tension controlling means, a tape
35 guide-scroll for guiding the tape downwardly, laterally and rearwardly to a presser-foot, a rock-bar arranged substantially at right angles to the path of the tape after leaving said guide-scroll, an arm
40 jointly connected to said rock-bar and having its forward end rigidly attached to said guide-scroll and means for yieldingly holding said arm in a normal position with respect to said rock-bar.

4. In a device of the class described,
45 the combination of tape-spool supporting means, a tape guiding scroll for guiding the tape downwardly, laterally and rearwardly to a presser-foot, said scroll being attached to an arm extending forwardly from a pre-
50 determined point at the rear of the sewing-machine head, the rear end of said arm being supported upon a horizontal axis.

5. In a device of the class described,
55 the combination of tape-spool supporting means, a tape-guiding scroll for guiding the tape downwardly, laterally and rearwardly to a presser-foot, said scroll being supported upon an arm extending forwardly from a predetermined point at the
60 rear of the sewing-machine head, the rear end of said arm being supported upon a horizontally disposed rock-bar to which it is jointly connected and yielding means for holding it at a predetermined angle to
65 the axis of the bar.

6. A device of the character described, in which is combined a supporting arm, edge-stay retarding mechanism carried thereby, and a guide associated with said
70 retarding mechanism, said guide having a fixed support and having its terminal end located forward of the needle of a sewing machine head and curved down and back upon itself from a position at one side of
75 the needle to one directly in front thereof and arranged to guide an edge-stay, coming from said retarding mechanism, toward and under the presser foot of a sewing machine head.

7. A device of the character described, in
80 which is combined a supporting arm having a raised horizontal portion arranged to lie immediately back of the arm of a sewing machine head, edge-stay retarding mechanism, carried by said arm and located back
85 of the needle of said sewing machine head, and an edge-stay guide carried by said arm and having its terminal end located in front of said needle and curved down and back upon itself from a position at one side
90 of the needle to one directly in front thereof and arranged to guide an edge-stay, coming from said retarding mechanism, in a direction to and under the presser foot of said sewing machine head in an approxi-
95 mately horizontal plane.

8. A device of the character described, in which is combined a supporting arm, arranged to extend behind the arm of a sewing
100 machine head, edge-stay retarding mechanism carried by said arm, and an edge-stay guide pivotally supported upon said arm and having its terminal end located in front of the presser foot and needle
105 of said sewing machine head, and curved down and back upon itself from a position at one side of the needle to one directly in front thereof and arranged to guide an edge-stay, coming from said retarding
110 mechanism, toward and under the said foot, in an approximately horizontal plane.

9. A device of the character described, in which is combined a supporting arm, arranged to be located behind the arm of a
115 sewing machine head, edge-stay retarding mechanism, carried thereby, an edge-stay guide having its terminal end located in front of the presser foot and needle of said sewing machine head and curved down and
120 back upon itself from a position at one side of the needle to one directly in front thereof and arranged to guide an edge-stay, coming from said retarding mechanism, toward and under said foot in an approxi-
125 mately horizontal plane, a horizontal pivot connection between said supporting arm and guide, whereby said guide may be swung up and down, and a vertical pivot connection for said guide whereby it may be
130 swung in a horizontal plane.

10. A device of the character described, in which is combined an edge-stay retarding device arranged to be located behind the presser foot and needle of a sewing machine head, and an edge-stay guide having a terminal end located in front of said presser foot and needle, and curved down and back upon itself from a position at one side of the needle to one directly in front thereof and arranged to direct and edge-stay coming from said retarding mechanism, toward and under said foot in an approximately horizontal line extending from front to back of the machine.

11. A device of the character described, in which is combined a stationary support, edge-stay retarding mechanism having tension fingers between which an edge-stay is run, and an edge-stay guide associated therewith and having a spindle, spring pressed in one direction, and slidably mounted in said support, and capable of being shifted bodily with respect to said fingers and in a lateral direction; substantially as and for the purpose set forth.

12. A device of the character set forth, in which is combined a support, edge-stay retarding mechanism carried thereby, an edge-stay guide having a supporting spindle slidably mounted in said support, and means for bodily moving said spindle on its support and therewith said guide; substantially as and for the purpose set forth.

13. A device of the character described, in which is combined a support, an edge-stay guide having a supporting spindle threaded upon its end and slidably and rotatively mounted in said support, a thimble secured in said support, a hollow stem having a head upon one end and mounted upon the screw threaded end of said spindle, said stem being rotatively and slidably mounted in said thimble, and a compression spring arranged to yieldingly hold said stem against said thimble.

14. A device of the character described, in

which is combined a horizontal, rotatable, supporting spindle, an arm pivoted thereon on a vertical line, a spring for yieldingly holding said arm in one position, but capable of yielding to permit said arm to be swung upon its pivot, and an edge-stay guide carried by said arm; substantially as and for the purpose set forth.

15. In a device of the class described, edge-stay retarding mechanism located behind the head of a sewing machine, and a tape guide pivoted upon a horizontal pivot and capable of being swung upward into an in-operative position, a portion of said tape guide being located forward of the sewing machine needle and having a guiding channel curved down and back upon itself from a position at one side of the needle to one directly in front thereof; substantially as and for the purpose set forth.

16. In a device of the class described, a pivotally supported tape guide, capable of being swung into in-operative position, said guide having a downwardly and backwardly curved channel, terminating in a horizontal straight eye, said channel extending from a position at one side of the needle to one directly in front thereof and arranged to reverse the movement of an edge-stay, and direct the same under the needle of a sewing machine in a horizontal line, running from front to back thereof.

17. In a device of the class described, an edge-stay guide having a stay receiving portion lying in one plane and curved down and back at its terminal end, said terminal end being twisted laterally to direct the outgoing stay to a line of movement angularly disposed with respect to the incoming stay.

In witness whereof, I have hereunto set my hand this 13th day of March 1912, at Chicago, Cook county, Illinois.

MORRIS J. HOFFMAN.

Witnesses:

CHARLES O. SHERVEY,
FANNIE F. RICHARDS.