E. L. WALES.

EDGE FORMING MACHINE.

APPLICATION FILED NOV. 7, 1911.

1,047,345. Patented Dec. 17, 1912.

3 SHEETS—SHEET 1.

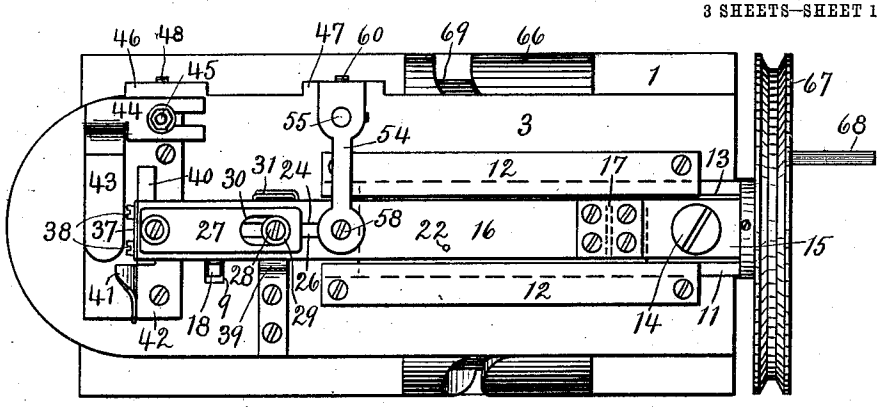

FIG. 1.

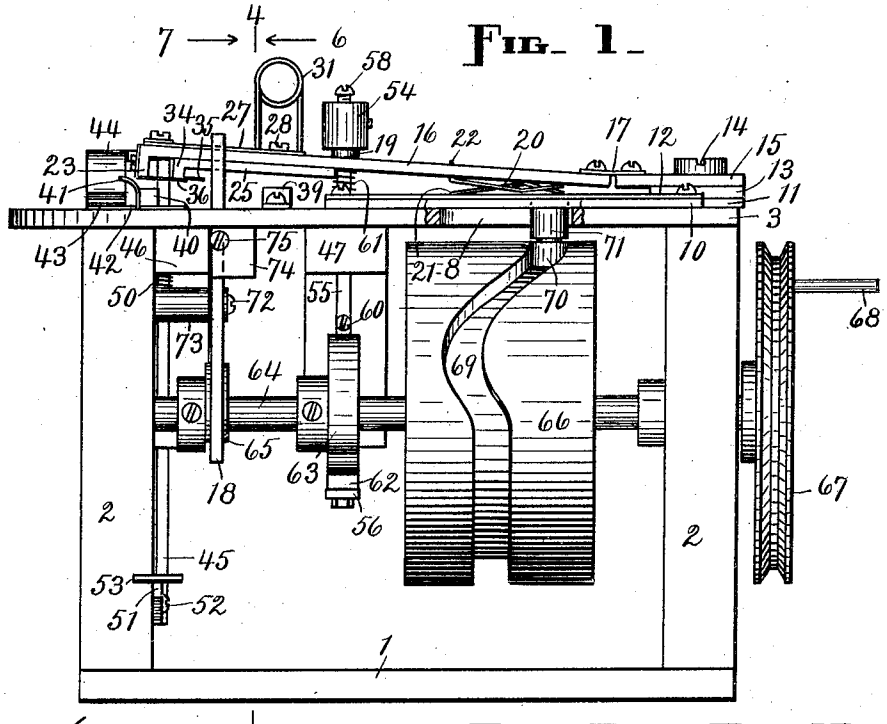

FIG. 2.

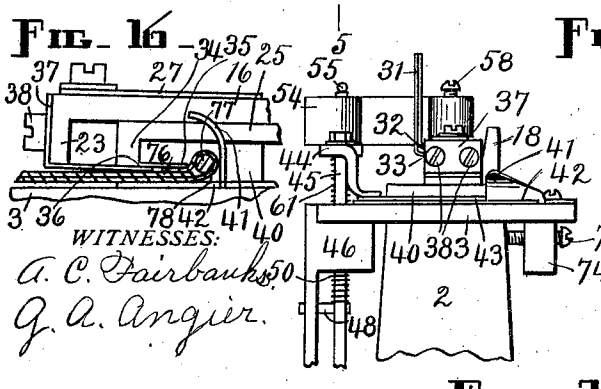

FIG. 3.

FIG. 16.

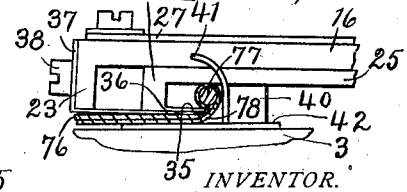

FIG. 17.

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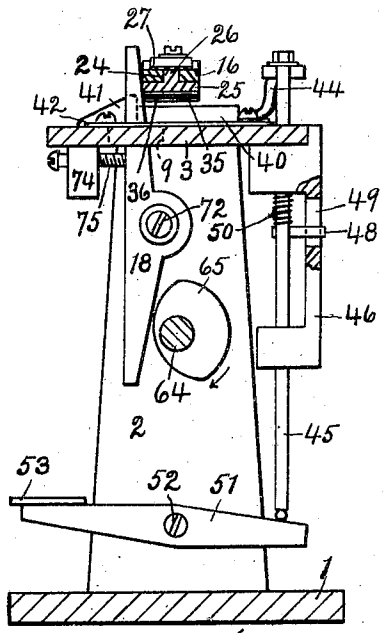

FIG. 4.

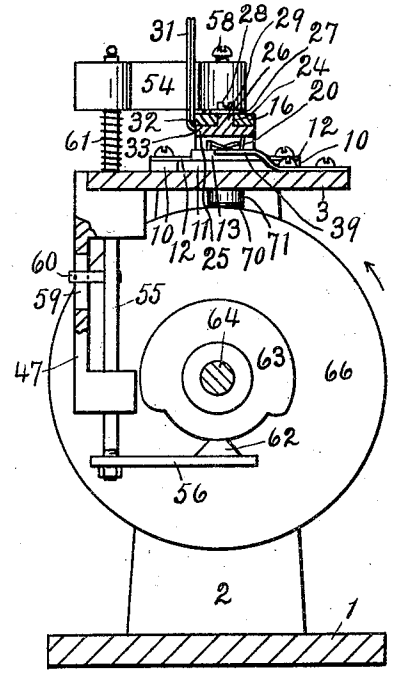

FIG. 5.

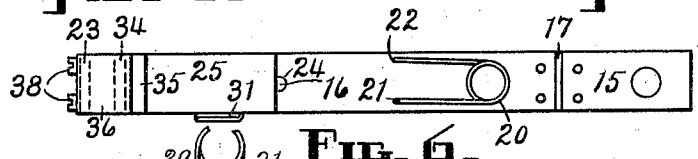

FIG. 6.

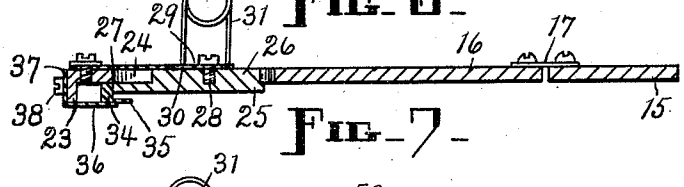

FIG. 7.

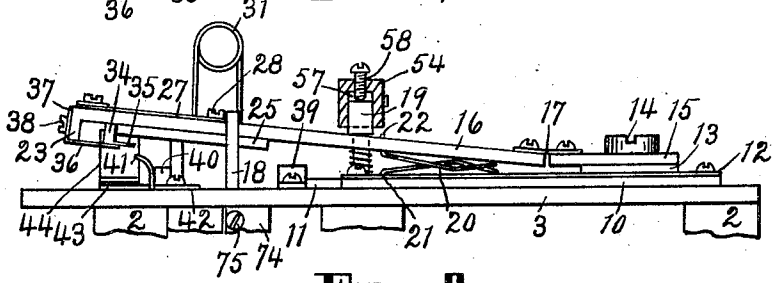

FIG. 8.

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3 SHEETS—SHEET 3.

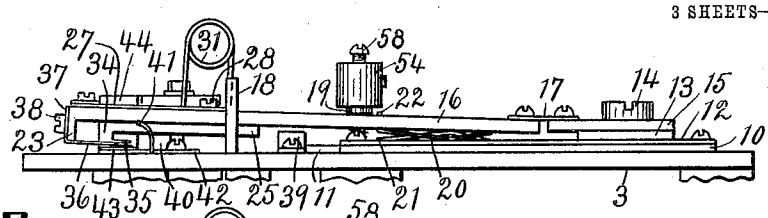

FIG. 9.

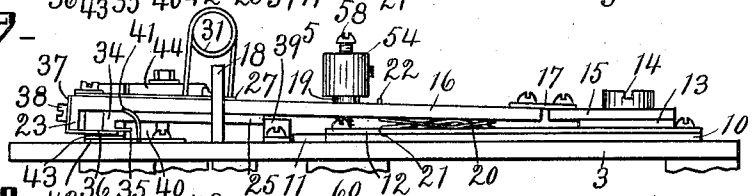

FIG. 10.

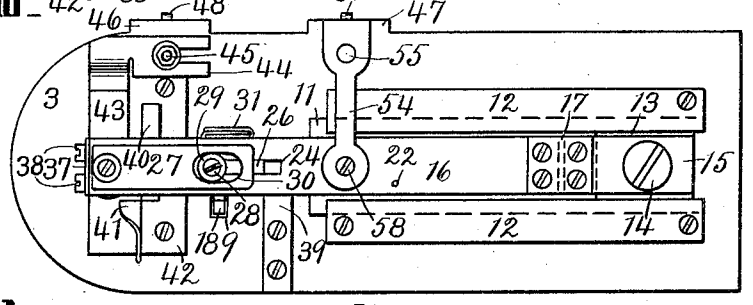

FIG. 11.

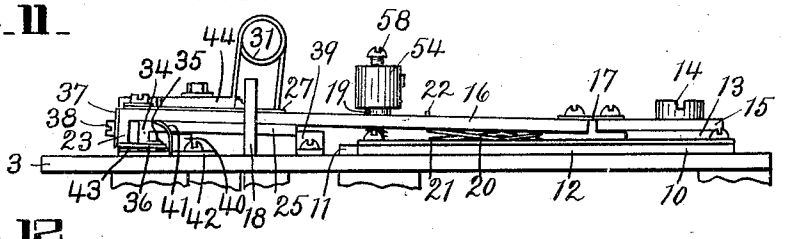

FIG. 12.

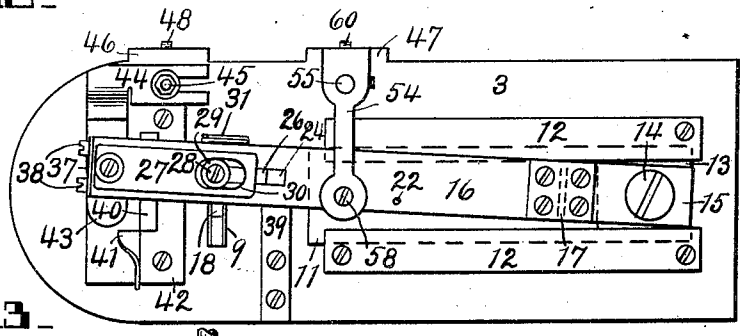

FIG. 13.

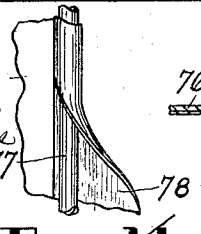

FIG. 14.

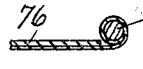

FIG. 15.

WITNESSES:

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UNITED STATES PATENT OFFICE.

ELISHA L. WALES, OF MONSON, MASSACHUSETTS.

EDGE-FORMING MACHINE.

1,047,345. Specification of Letters Patent. Patented Dec. 17, 1912.

Application filed November 7, 1911. Serial No. 658,937.

To all whom it may concern:

Be it known that I, ELISHA L. WALES, a citizen of the United States of America, residing at Monson, in the county of Hampden and State of Massachusetts, have invented a new and useful Edge-Forming Machine, of which the following is a specification.

My invention relates to improvements in the art of reinforcing textile or other flexible fabric at the border by tucking the edge of the same around a stiffener which is usually in the form of a round wire, that is, round in cross-section, and consists of a machine of certain peculiar construction that is adapted to do this work automatically, as hereinafter set forth.

My edge-forming, binding or tucking machine is especially useful in producing what is known as a "cable-edge" on women's hats, although it is not limited to this particular class of work and may be employed with or on other kinds of goods if found adaptable to such employment.

The cable-edge is made around the rim of a hat by laying a covered wire close to the edge of such rim, turning such edge over such wire, and tucking such edge under such wire, an adhesive coating having been applied first to the surface of the rim that receives and comes in contact with the wire or with the textile or other covering thereof. The work of binding hat rims in this manner has heretofore been done by hand with the aid of a knife or similar implement, and the primary object of my invention is to provide a machine for doing the same work, whether it be on hat rims or on other articles, automatically, and more expeditiously, economically, and better than it can be done in the old way.

A further object is to produce a strong and durable machine, of the class designated above, which is simple in construction and operation, comparatively inexpensive, and highly efficient and serviceable.

Other objects will appear in the course of the following description.

A preferred form of embodiment of the invention, whereby I attain the objects and secure the advantages of the same, is illustrated in the accompanying drawings, and I will proceed to describe the invention with reference to said drawings, although it is to be understood that the form, construction, arrangement, etc., of the parts in various aspects are not material and may be modified without departure from the spirit of the invention.

In the drawings, in which similar figures refer to similar parts throughout the several views, Figure 1 is a top plan of the machine, the movable parts being initially disposed; Fig. 2, a front elevation of the same, portions of the table and side guide being broken out to show in full the connection between the cam below and the slide which operates on said table; Fig. 3, a left-hand end elevation of the upper part of said machine; Fig. 4, a transverse vertical section through the machine, taken on lines 4 and 5, looking in the direction of the arrow 6, in Fig. 2; Fig. 5, a transverse vertical section through the machine, taken on said lines 4 and 5, but looking in the direction of the arrow 7; Fig. 6, a bottom plan of the combined tucker and feed arm; Fig. 7, a central longitudinal vertical section through such arm; Fig. 8, a front elevation of the tucking mechanism, showing the arm advanced to first operative position; Fig. 9, a similar view except that here said arm is shown depressed into engaging position; Fig. 10, still another view similar to the two preceding views, but showing the parts in first tucking position; Fig. 11, a top plan of said tucking mechanism, the arm here being represented in second tucking position; Fig. 12, a front elevation of said mechanism with the parts disposed as in the preceding view; Fig. 13, another top plan of said mechanism, showing the arm as it appears at the end of the feeding stroke; Fig. 14, an enlarged fragment in plan of a piece of fabric, such as a hat rim, showing the outer edge in process of being reinforced; Fig. 15, an enlarged fragment in section of the same piece, taken through the finished reinforced edge; Fig. 16, an enlarged detail showing one of the steps in the operation of the tuckers on the work, and, Fig. 17, a similar view showing another of such steps.

Generally speaking, my machine in a broad sense may be said to consist of an abutment or fixed guide for the fabric, a recirocatory and two-way oscillatory arm provided with first and second tuckers, and suitable supporting and holding means for the work and suitable supporting and actuating means for the arm, together with

whatever auxiliary and subsidiary parts and members may be needed to give full effect to the other elements.

In the present case, for the frame of the machine, I provide a base 1, two end uprights 2, and a table 3. There is a longitudinal slot 8 and a transverse slot 9, the former at the right of the latter, in the table 3. Said table is provided on top with parallel guides 10, the slot 8 being between such guides. A slide 11 is arranged to reciprocate between the guides 10, overhanging guide-plates 12—12 being fastened to said guides to engage said slide from above and assist in holding the same in its course.

The slide 11 is provided at its right-hand or outer terminal with a raised part 13 which travels between the guide-plates 12 and to which on top is pivoted at 14 a member 15 that constitutes the right-hand or outer terminal section of a two-piece combined tucker and feed arm. Such arm is made up of the section 15, which is short, and of a long section 16, the two sections being connected by means of a short flexible strip 17. The axis of the pivot 14 stands vertically or at right-angles to the path of the slide 11, and the arm section 15 has only a horizontal movement on said pivot. The strip or hinge 17 permits the arm section 16 to swing up and down, but does not permit it to move on a horizontal plane independently of the section 15. Thus it will be seen that the combined tucker and feed arm can have imparted to it a longitudinally reciprocating motion, a laterally swinging or oscillatory motion, and a vertically swinging or oscillatory motion, the first and second motions being of the arm as a whole and the third motion being of the long section of the arm only.

The arm section 16 extends over the slide 11 and beyond the inner end thereof, and is yieldingly held, with its front edge against an oscillatory feed lever 18 and with its upper surface against a bearing member 19 of a vertically reciprocatory depressor, by means of a grasshopper spring 20 located between the top of said slide and the bottom of said section. The spring 20 has one end, 21, bent downwardly into engagement with the slide 11, and the other end, 22, bent upwardly into engagement with the arm section 16, and on this account and because bent in vertical planes intermediate of said ends and the coil said spring is able to impart directly to said section both a forward and a vertical movement.

The arm section 16 has a downwardly-extending lip 23 at the left-hand or free end, and a central longitudinal slot 24 therein at the right of such end. A slide 25, of the same width at the bottom as the section 16 and having a central rib 26 on top to operate in the slot 24, is attached to said section and arranged for independent reciprocal motion under the same by means of a cover plate 27, a screw 28 and a washer 29. The plate 27 is securely fastened to the top of the section 16, and has a slot 30 therein to accommodate the washer 29. The screw 28 passes through the washer 29 into threaded engagement with the rib 26, and said washer is large enough to bear on the edges of the slot 24 and so prevent the slide 25 from dropping away from the arm section. The parts must be sufficiently loose to enable the slide 25 to reciprocate. A spring 31 normally retains the slide 25 in its inward or retracted position, relative to the section 16, and with the washer 29 against the right-hand end of the slot 30, the inward movement of said slide under uninterrupted pressure from said spring being thus limited. The spring 31 thus positions the slide 25 by reason of the fact that the left-hand leg of said spring is bent forward into engagement with the section 16 at the back edge thereof, as shown at 32, while the right-hand leg of said spring is bent forward into engagement with said slide at the back edge of the same, as shown at 33. At the right-hand end of the slide 25 is a depending lip 34, and extending to the right from the bottom of this lip is a thin blade 35 which is the first tucker. A thin horizontal blade 36, which has an upstanding part 37 rigidly attached by screws 38 to the outer face of the lip 23, constitutes the second tucker. The blade or second tucker 36 extends in the same direction as the blade or first tucker 35, and is long enough to extend under the first, even when the latter is in its most retracted position. The two tuckers are so arranged relatively that, not only does the second tucker extend under the first, as just noted, but the upper surface of the second contacts with the under surface of the first at all times.

Fastened to the top of the table 3 between the front guide 10 and the lever 18 is a stop 39 for the first or upper tucker 35, such stop extending upwardly from said table and then rearwardly into the path of the right-hand end of the slide 25 when the arm section 16 is depressed and the arm as a whole is retracted.

Transversely situated on the table 3 adjacent to the left-hand end thereof is an abutment or work-guide 40, and in front of said abutment or at the front end thereof is a work-holding and guide finger 41 that extends upward in line with the work-engaging face of said abutment and then over to the left above the horizontal plane of the top of the abutment. In this case both the work-guide 40 and the finger 41 are rigidly attached to a plate 42 which in turn is securely fastened to the top of the table 3.

The combined tucker and feed arm is initially disposed when fully retracted and swung forward as far as it can go and when the section 16 is in the most elevated position at its free end, and said arm thus initially disposed has its extreme forward end over the part of the work-guide 40 that is adjacent to the front end thereof, and out of contact with said guide.

A presser-foot 43 is provided for the work. This presser-foot is located at the left of and parallel with the work-guide 40, and normally rests, in the absence of any work, on the plate 42. The presser-foot 43 has an angular extension 44 at the back end, which extension is securely fastened to the upper terminal of a vertical rod 45. The extension 44 is constructed so as to clear the work, and the rod 45 is situated out of the way of the work.

Two brackets 46 and 47 depend from the back edge and underside of the table 3, and the rod 45 is arranged to slide in the first of these brackets after passing downward through said table. A pin 48 projects rearwardly from the rod 45 into a vertical slot 49 in the bracket 46, and prevents said rod from turning by reason of the engagement which exists between said pin and the slotted part of said bracket. The slot 49 is of a shape and size to permit the pin 48 to move up and down with the rod 45 to the required extent, and to limit the upward movement of said pin so as to prevent undue compression of a spring 50 that encircles said rod between the pin and that part of the bracket 46 which is above the pin. The spring 50, acting on the pin 48 and through the rod 45 and the extension 44, tends constantly to force the presser-foot 43 onto or toward the plate 42. As a medium for elevating the presser-foot 43, against the resiliency of the spring 50, a lever 51 is provided and pivoted intermediate of its ends, at 52, to the left-hand upright 2, such lever being inside of such upright. The rear end of the lever 52 bears against the bottom end of the rod 45, said rod projecting some distance below the bracket 46, so that by pressing down on the front end of said lever said rear end of the same is elevated and carries with it said rod and the parts attached thereto, including the presser-foot 43. The lever 51 is so hung on the pivot 52 that it is retained by gravity in contact with the rod 45. Said lever is provided at the front end with a thumb-piece 53.

The depressor hereinbefore referred to comprises a horizontal arm or head 54, which carries the bearing member 19 directly over and in contact with the arm section 16, a vertical rod 55 arranged to reciprocate in the bracket 47 and to the upper terminal of which rod the rear end of said head is rigidly secured, and a horizontal arm 56 fixedly attached at the back end to the lower terminal of said rod. The front end of the head 54 has a recess 57 therein to receive the bearing member 19 and permit said member to be adjusted vertically, and an adjusting screw 58 is tapped into the top of said head and adapted to bear on top of said bearing member, as best shown in Fig. 8 wherein the head is sectioned. The bearing member extends below the bottom of the head 54 and the amount of such extension is determined by the screw 58. By turning the screw 58 farther into the head, the member 19 is caused to protrude more and so to decrease the maximum angle of the arm section 16 and force said section lower when said head descends; and by turning said screw out farther, said member 19 can be and is located higher in the recess 57 and so increases the aforesaid angle and does not force said section so far down at the time the member descends. This adjustment is needed in order that the machine may operate to the best advantage on stock that varies considerably in thickness, otherwise the free end of the combined tucker and feed arm would exert too much force on very thick goods and not enough on very thin goods.

There is a vertical slot 59 in the bracket 47 to receive a pin 60 which extends rearwardly from the rod 55. The pin 60 holds the rod 55 and attached parts against rotation about the axis of said rod, without interfering with the up and down motion of the rod and parts, in the same manner as the pin 48 holds the rod 45 and attached parts. The rod 55 extends above the table 3 and below the bracket 47, and, with the members operated thereby, is pressed upwardly by a spring 61 which is coiled around said rod between the top of said table and the bottom of the back terminal of the head 54. The arm 56, like the head 54, extends forwardly from the rod 55, and said arm has a cam projection 62 thereon. Since the spring 61 presses the depressor upward at all times, the cam projection 62 is retained constantly in contact with a cam 63 which is mounted fast directly over said projection on a shaft 64. The cam 63 causes the depressor to be reciprocated vertically, but at each revolution retains said depressor in the low position much longer than in the high position. Initially the depressor is held by the spring 61 and the cam 63 in its high position, as will be inferred from what has already been said.

In Figs. 4 and 5 portions of the brackets 46 and 47 are broken away to show the slots 49 and 59.

The shaft 64 extends longitudinally of the machine and is journaled in the uprights 2. Besides the cam 63 the shaft 64 has mounted fast thereon a cam 65 and a cam 66, respectively at the left and right of said first-mentioned cam, and a driving pulley 67

outside of the right-hand upright 2. The pulley 67 has a handle 68 for the convenience of the operator while placing and adjusting the work in the machine and removing it therefrom, the power being disconnected at such times.

The cam 66 has a cam groove 69 in the periphery thereof to receive an anti-friction roller 70 mounted at the base of a post 71 that depends from the underside of the slide 11 and extends into and through and operates in the slot 8. The slide 11 and the combined tucker and feed arm receive their reciprocating motion from the cam 66 through the medium of the post 71 and roller 70, the exact nature of which motion will be more fully explained hereinafter.

The feed lever 18 is pivotally mounted at 72, intermediate of its ends, against the inner end of a stud 73 that projects to the right from the left-hand upright 2. The lever 18 above the pivot 72 extends through the slot 9 in the table 3 to present its upper terminal or head in front and in the path of the arm section 16 as pressed forward by the spring 20, while said lever below said pivot extends downward to present its lower terminal or tail-piece to the working periphery of the cam 65. A lug 74 depends from the underside of the table 3 in front of the lever 18 and above the horizontal plane of the pivot 72, and a screw 75 is threaded into and through said lug to limit the forward movement of the head of said lever and, consequently, the forward swing of the combined tucker and feed-arm, hence the cam 65 does not need to contact with said lever except at such times as it is necessary to actuate the same out of the position just indicated and to control it while out of such position. The spring 20, acting through the arm section 16, retains the lever 18 either in contact with the inner or back end of the screw 75 or with the periphery of the cam 65. The amount of the forward sweep or swing of the combined tucker and feed arm may be increased or decreased by turning the screw 75 out or in accordingly.

In the last four views a piece of a hat rim appears at 76, with a wire at 77 for the cable-edge. That portion of the rim 76 which is adjacent to the extreme outer edge and designed to be turned over the wire 77 is coated with adhesive material, such portion being represented at 78 in Fig. 14.

In practice, the wire 77 is laid on the coated part 78 of the rim 76 and then said coated part is turned over said wire by hand at some point before the rim is placed in the machine. Next the front end of the lever 51 is pressed down, against the resiliency of the spring 50, to elevate the rod 45 and raise the presser-foot 43, the previously prepared part of the rim 76 is placed on the plate 42 under said presser-foot, with the extreme outer edge or right-hand portion of the rolled part against the guide 40, and said lever is released to permit said presser-foot to descend onto said rim at the left of said rolled part. The spring 50 retains the presser-foot on the rim with sufficient force to hold said rim in proper relation to the guide 42, without preventing the rim from being fed rearwardly as explained below. The turned-over portion of the rim extends under and forward of the finger 41, so that, as the rim is fed, the flat edge portion thereof is turned over the top of the wire by said finger as it approaches and passes beneath the finger. The rim is placed in position while the free end of the combined tucker and feed arm is in some one of its several raised positions, so that the space at the left of the guide 42 is clear, and preferably while such arm is initially disposed, as shown in the general views, and, for the sake of clearness in the following explanation of the automatic action of the machine, it will be assumed that the tucker elements are initially disposed at the time the work is introduced and the machine started.

The action or operation just referred to is as follows, it being understood that the cams are so constructed and timed as to bring about the movements described, after the shaft 64 is started and while revolving in the direction indicated by the arrows in Figs. 4 and 5. The cam 66, acting through the roller 70 and the post 71, advances the slide 11, and the combined tucker and feed arm is carried by said slide to the left until the tuckers 35 and 36 are positioned over the work at a point just behind the vertical plane of the back edge of the finger 41 and far enough to enable said tucker 35 to come down at the left of the wire (77). The tucker arm is now in the position shown in Fig. 8. Further rotation of the shaft 64 brings the high part of the cam 63 into engagement with the projection 62 on the arm 56, and thus causes said arm with the rod 55 and the head 54 to be depressed, against the resiliency of the spring 61, and the arm section 16, upon which the member 19 bears, to be swung downward on the flexible strip connection 17, against the resiliency of the spring 20, into an approximately horizontal position, as represented in Fig. 9. It may be noted in passing that the arm section 16 reciprocates and swings freely under the depressor member 19. The tuckers 35 and 36 are now down on the work and have carried down with them, at the left of the wire, the turned-over edge of the adhesive-treaded portion (78) of the rim (76), and forced such portion against said wire, as shown in Fig. 16. Thus the part 78, for a distance in length equal to the width of the tuckers, is wrapped over the upper half of the wire and caused to adhere thereto.

While the arm section 16 is still held down by the depressor and the cam 63, the cam 66 acts to retract the slide 11 and the combined tucker and feed-arm. In moving to the right at this time, the combined tucker and feed arm passes from the position which it occupies in Fig. 9 to that which it occupies in Figs. 11 and 12, and the first and second tuckers are successively brought into operation to supplement and finish the work commenced by them when they were swung down onto the rim with the turned-over edge between them and the wire. The combined tucker and feed arm, in moving to the right, carries both tuckers with it until the slide 25 encounters the stop 39, when the tucker 35 is brought to rest—see Fig. 10. The tucker 36 continues to move toward the guide 40, however, until the Fig. 11 position is reached, when the cam 66 ceases its retracting action on the slide 11 and the combined tucker and feed arm. As the tucker 35 moves toward the guide 40 said tucker passes under the wire and takes with it that portion of the edge 78 that is being tucked, as shown in Fig. 17, forcing the material ahead of it in between said wire and the flat part of the rim below, but said tucker is stopped before it reaches said guide, it is stopped, in fact, far enough away from said guide to allow the tucker 36 to force the peripheral portion of the edge of the material up behind the wire a little, into the space between said wire and the lower outer portion of the roll, as clearly shown in Fig. 15. The tucker 36 is able to do this, because it does not begin to tuck until after the tucker 35 has gone ahead and prepared the way, as it were—then said tucker 36 slides under said tucker 35 beyond the inner or working edge of the latter nearly or quite to the guide 40, the inner or working edge of the second tucker thus completing the operation begun by the first tucker, as such last-mentioned edge on its way toward said guide passes the first-mentioned working edge, by pushing that part of the fabric edge that extends over the working edge of the first tucker back and crowding it upward behind the wire and between the wire and the upper part of the roll. Without the nrst tucker and the action of the same whereby it stops at a point remote from the guide 40, there would be no space left for tucking the peripheral portion of the part 78 up behind the wire, and the smoothness and excellency of the work would be considerably impaired, even if it were possible to produce any practical results at all. As it is, the first tucker performs one part of the operation and the second tucker performs the remaining part. The forcible action of the tuckers on the part 78, while rolling such part around the wire, is sufficient to cause such part to unite securely with said wire, owing to the presence of the adhesive coating; and since in the finished rim the wire encircles said rim, the cable-edge formed by the wire and roll is fixed and permanent. The spring 31 is strong enough to hold the slide 25 in normal position, with the washer 29 in the right-hand end of the slot 30, while the tucker 35 is doing its work and until the slide 25 strikes the stop 39. When the latter act occurs, however, the spring 31 yields as the combined tucker and feed arm is still further retracted. The length of the cable-edge that has just been finished is held between the guide 40 and the presser-foot 43, and is in the grasp of the two tuckers and more particularly of the second tucker, and while thus held and grasped such length is actuated rearwardly, the rim slipping under said presser-foot, by the action of the cam 65, which latter next comes into play and engages and rocks the lever 18 on its pivot 72 in a manner to swing the combined tucker and feed arm backward on the pivot 14 and against the resiliency of the spring 20. The combined tucker and feed arm is thus moved into the position which it occupies in Fig. 13. Meanwhile the cam 66 retains the combined tucker and feed arm in approximately the same position, longitudinally, in which said arm was last left by said cam. The movement thus imparted to the work is about equal to the width of the tuckers, and a fresh or untucked portion of the work is presented at tucking position.

The feeding operation is the last active work done by the tucker elements, but before the first revolution of the shaft 64 is completed the tuckers must be caused to release the work, and they and their more or less closely associated members must be returned to initial positions. At the end of the feeding operation, therefore, the cam 66 acts first to advance the slide 11 and the combined tucker and feed arm, while the cam 65 continues to hold said arm in its rearward position through the medium of the lever 18, the spring 31 causing the slide 25 to move away from the lip 23, or rather permitting said lip to move away from the lip 34, until the washer 29 is once more in the right-hand end of the slot 30. The combined tucker and feed arm is advanced far enough at this time to remove the tuckers entirely from engagement with the reinforced edge of the hat rim. Next the cams 66 and 63 act together respectively to retract the combined tucker and feed arm and to permit it to rise under the influence of the spring 20. And, finally, before the combined tucker and feed arm is fully retracted, the cam 65 rides clear of the lever 18 and so enables the spring 20 to swing said arm into its forward position again. The driving shaft 64 has now made one revolution, the tuckers are relocated in initial position and

the first cycle of the machine has been finished. At each succeeding cycle another length of the roll is formed at the edge of the hat and such length is moved along, until the circuit of the rim is made and the reinforced edge finished.

As the top of the arm section 16 slides freely in contact with the depressor member 19, so does the front edge of said section slide in contact with the lever 18.

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

1. In an edge-forming machine, a horizontally reciprocable and oscillatory and vertically oscillatory combined tucker and feed arm, and actuating means for such arm.

2. In an edge-forming machine, a combined tucker and feed arm, and means to reciprocate said arm longitudinally and to oscillate the same in two directions.

3. In an edge-forming machine, a slide, a combined tucker and feed arm made in two sections, with a flexible connection between them, and pivotaly mounted on said slide, means to reciprocate said slide, means to actuate said arm on its pivot, and means to actuate one of said sections on said flexible connection.

4. In an edge-forming machine, a slide, a bi-section combined tucker and feed arm provided with a flexible connection between the two sections, such arm being pivotally attached to said slide, means to reciprocate said slide and arm horizontally, means to oscillate said arm horizontally, and means to oscillate one of the arm sections vertically.

5. In an edge-forming machine, a longitudinal reciprocable arm provided with a rigidly attached tucker, and further provided with a movable tucker.

6. In an edge-forming machine, a longitudinally reciprocable arm provided with a tucker, and a spring-pressed member carried by said arm and provided with a tucker above said first-mentioned tucker.

7. In an edge-forming machine, an arm provided with a tucker, a spring-pressed member carried by said arm and provided with a tucker above said first-mentioned tucker, means to reciprocate said arm, and a stop arranged in the path of said spring-pressed member to limit the movement of said member with the upper tucker and permit said arm to carry the under tucker beyond the working edge of said upper tucker.

8. The combination, in an edge-forming machine, with an abutment for the work, of an arm provided at its free terminal with tucking means, and means to advance said arm horizontally over and beyond said abutment and to depress the arm and retract it horizontally.

9. The combination, in an edge-forming machine, with an abutment for the work, of an arm provided at its free terminal with tucking and feeding means, and means to advance said arm over and beyond said abutment, to depress and retract the same, and to actuate it lengthwise of said abutment.

10. The combination, in an edge-forming machine, with an abutment for the work, of an arm provided at its free terminal with tucking and feeding means, and means to advance said arm over and beyond said abutment, to depress and partially retract the same, to actuate it along the face of said abutment, to again advance it, and finally to elevate, retract and swing the arm forward.

11. The combination, in an edge-forming machine, with a fixed abutment for the work, and an upwardly and outwardly extending guide finger at one end of said abutment for the work, such finger projecting beyond and clear of the face of the abutment, of means operating behind said finger to feed the work along such face of said abutment and under said finger.

12. The combination, in an edge-forming machine, with a fixed abutment for the work, and an upwardly and outwardly extending guide finger at one end of said abutment for the work, such finger projecting beyond and clear of the face of the abutment, of means operating behind said finger to tuck the material into place against such face of said abutment, and to feed the work along such face and under said finger.

13. The combination, in an edge-forming machine, with a fixed abutment for the work, and a downwardly spring-pressed presser-foot for the work, such presser-foot being arranged parallel with but remote from said abutment, of reciprocable and oscillatory means to tuck the material into place against the face of said abutment, and to feed the work along said face and under said presser-foot, such means operating above said presser-foot.

14. The combination, in an edge-forming machine, with a reciprocable tucker arm consisting in part of an upwardly spring-pressed section, of a vertically movable depressor for such section.

15. The combination, in an edge-forming machine, with a reciprocable tucker arm consisting in part of an upwardly spring-pressed section, of a vertically movable cam-operated depressor for such section, and means to retain said depressor in engagement with said cam.

16. The combination, in an edge-forming machine, with a reciprocable tucker arm consisting in part of an upwardly spring-pressed section, of a depressor for such section, such depressor being provided with an adjustable bearing member for the arm section.

17. The combination, in an edge-forming machine, with a pivotally-mounted reciprocable combined tucker and feed arm spring-actuated in one direction, of a lever in the path of said arm, and actuating means for such lever.

18. The combination, in an edge-forming machine, with a pivotally-mounted reciprocable combined tucker and feed arm spring-pressed in one direction, of a lever in the path of said arm, adjustable means to limit the movement of said lever and arm under the influence of the arm spring, and means to actuate said lever and arm against the resiliency of said spring.

19. The combination, in an edge-forming machine, with an abutment for the work, of a vertically reciprocating depressor, a cam-actuated arm consisting in part of an upwardly spring-pressed movable section, the latter being in contact with said depressor, and tuckers carried by said arm and adapted to operate in connection with said abutment.

20. The combination, in an edge-forming machine, with an abutment for the work, of a cam-actuated arm consisting of two sections with a flexible connection between them, tuckers carried by said arm and adapted to operate in connection with said abutment, a vertically reciprocating depressor for one of said arm sections, a swinging member for said arm as a whole, and means to retain such arm in contact with said depressor and in contact with said swinging member.

21. The combination, in an edge-forming machine, with an abutment for the work, of a cam-actuated slide, an arm pivotally attached to said slide and consisting of two sections with a flexible connection between them, tuckers carried by said arm and adapted to operate in connection with said abutment, a vertically reciprocating depressor for one of said arm sections, a swinging member for said arm as a whole, and a spring arranged between said slide and said last-mentioned arm section to press the arm against said swinging member and said section against said depressor.

22. The combination, in an edge-forming machine, with an abutment for the work, of a vertically reciprocating depressor, a cam-actuated arm consisting in part of an upwardly spring-pressed movable section and provided with a fixed tucker and an inwardly spring-pressed movable tucker both adapted to operate in connection with said abutment, said section being in contact with said depressor, and a stop arranged to limit the movement of said spring-pressed tucker when said section is depressed and said arm is retracted.

23. The combination, in an edge-forming machine, with an abutment for the work, of a vertically reciprocating depressor, a cam-actuated pivotally-mounted and forwardly spring-pressed arm consisting in part of an upwardly spring-pressed movable section, said arm being provided with a fixed tucker and an inwardly spring-pressed movable tucker both adapted to operate in connection with said abutment, a swinging member for said arm, the latter being in contact with said member and having its spring-pressed section in contact with said depressor, and a stop arranged to limit the movement of said spring-pressed tucker when said section is depressed and said arm is retracted and also while said arm is actuated by said swinging member.

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Witnesses:
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