G. H. SPANSAIL.

COLLAR SHAPER.

APPLICATION FILED DEC. 10, 1908.

1,006,308.

Patented Oct. 17, 1911.

4 SHEETS—SHEET 1.

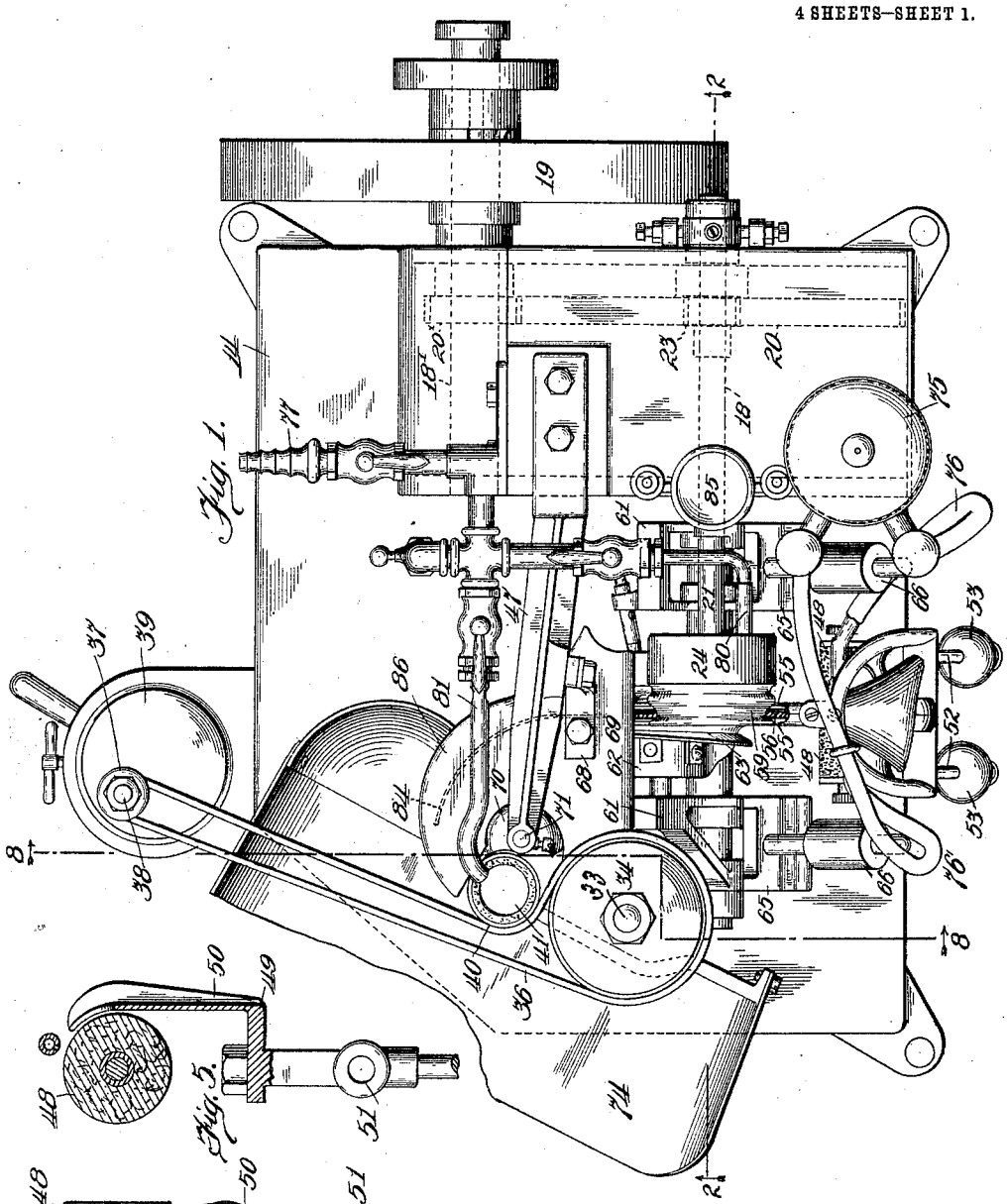

Fig. 1.

Fig. 3.

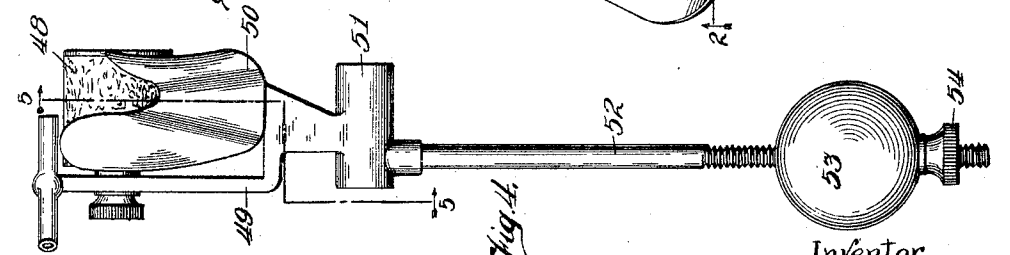

Fig. 4.

Witnesses
Milton Lenoir
S. E. Kellogg

Inventor
George H. Spansail.
By Clarence W. Taylor.
Attorney.

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4 SHEETS—SHEET 2.

Fig. 3.

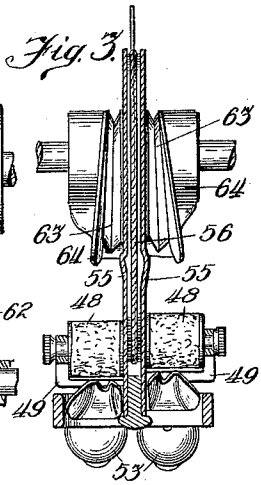


Fig. 10.

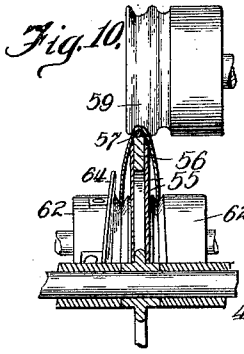


Fig. 11.

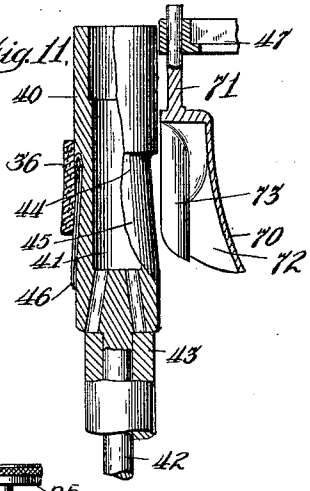


Fig. 2.

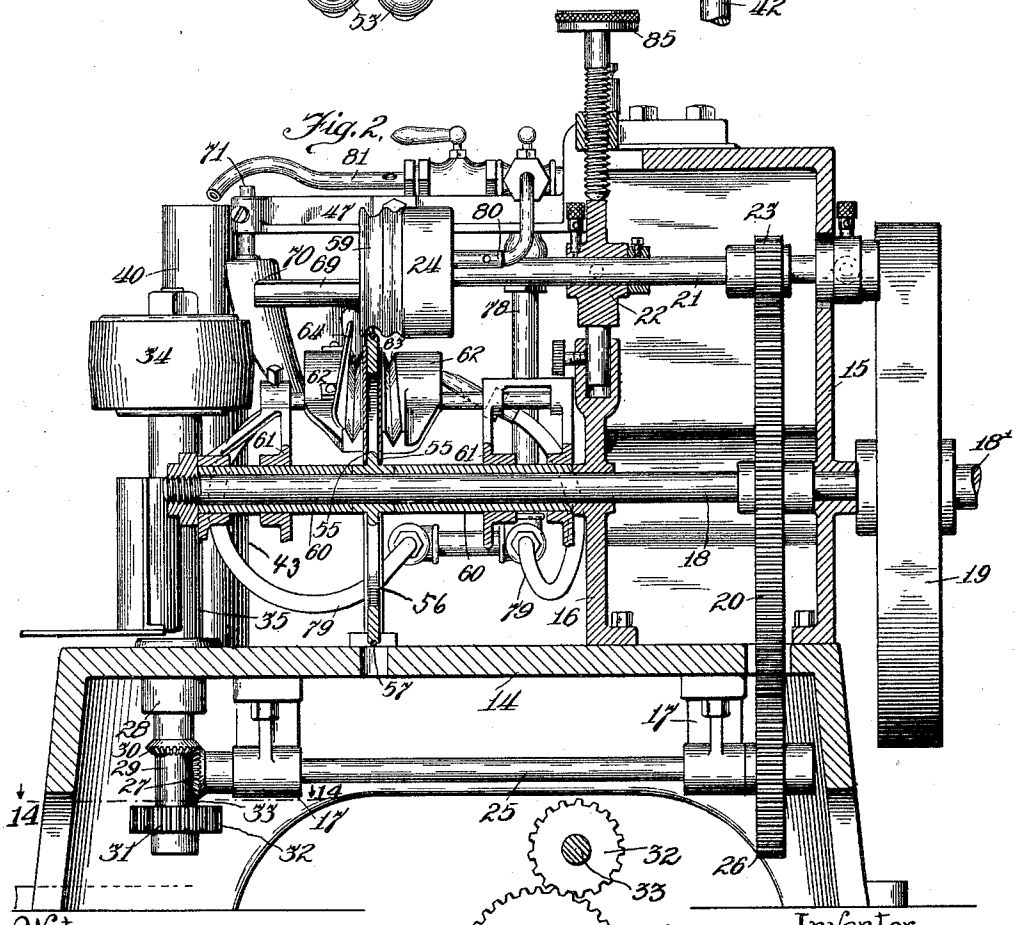
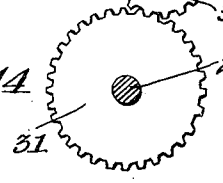


Fig. 14.



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4 SHEETS—SHEET 3.

Fig. 6.

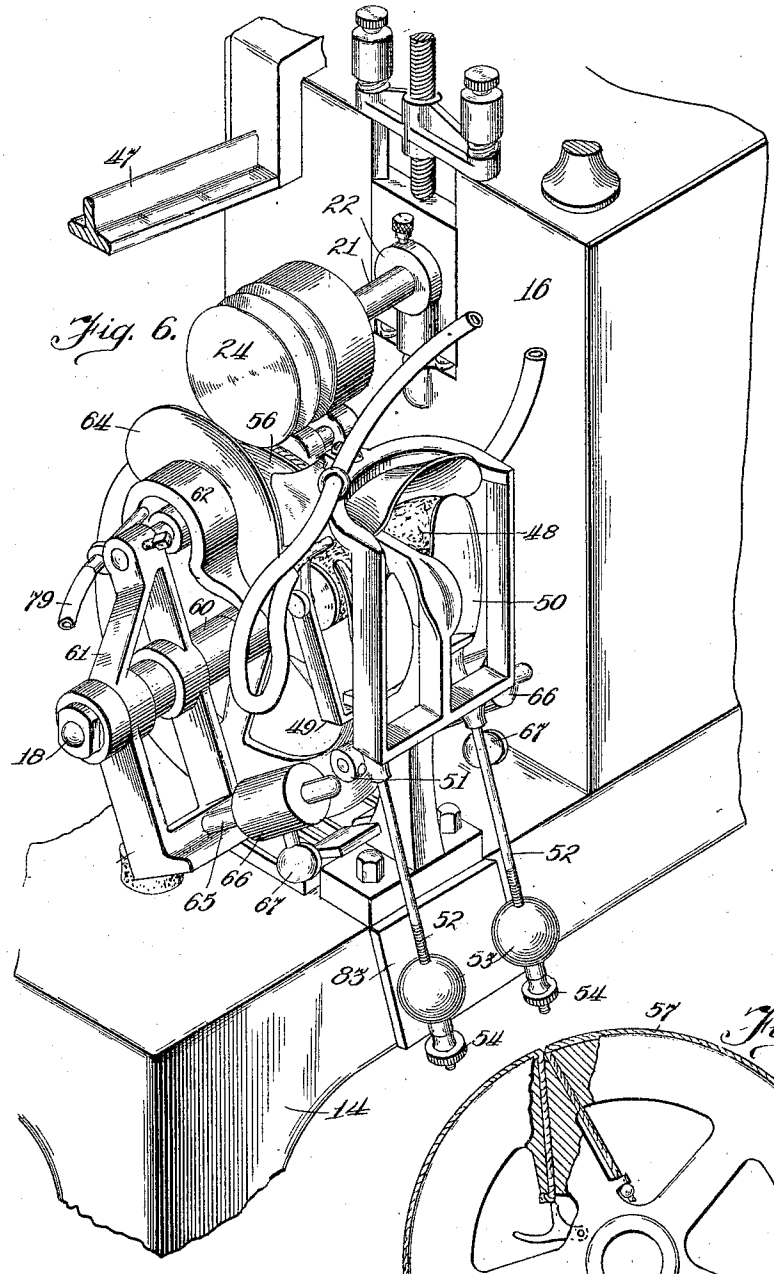

Fig. 7.

Witnesses

Milton Lenoir

S. E. Kellogg.

Inventor

George H. Spansail

By Clarence W. Taylor

Attorney.

G. H. SPANSAIL.

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4 SHEETS—SHEET 4.

Fig. 9.

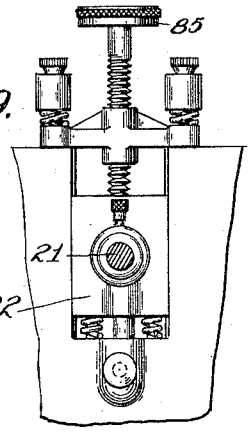


Fig. 12.

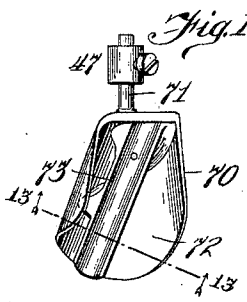
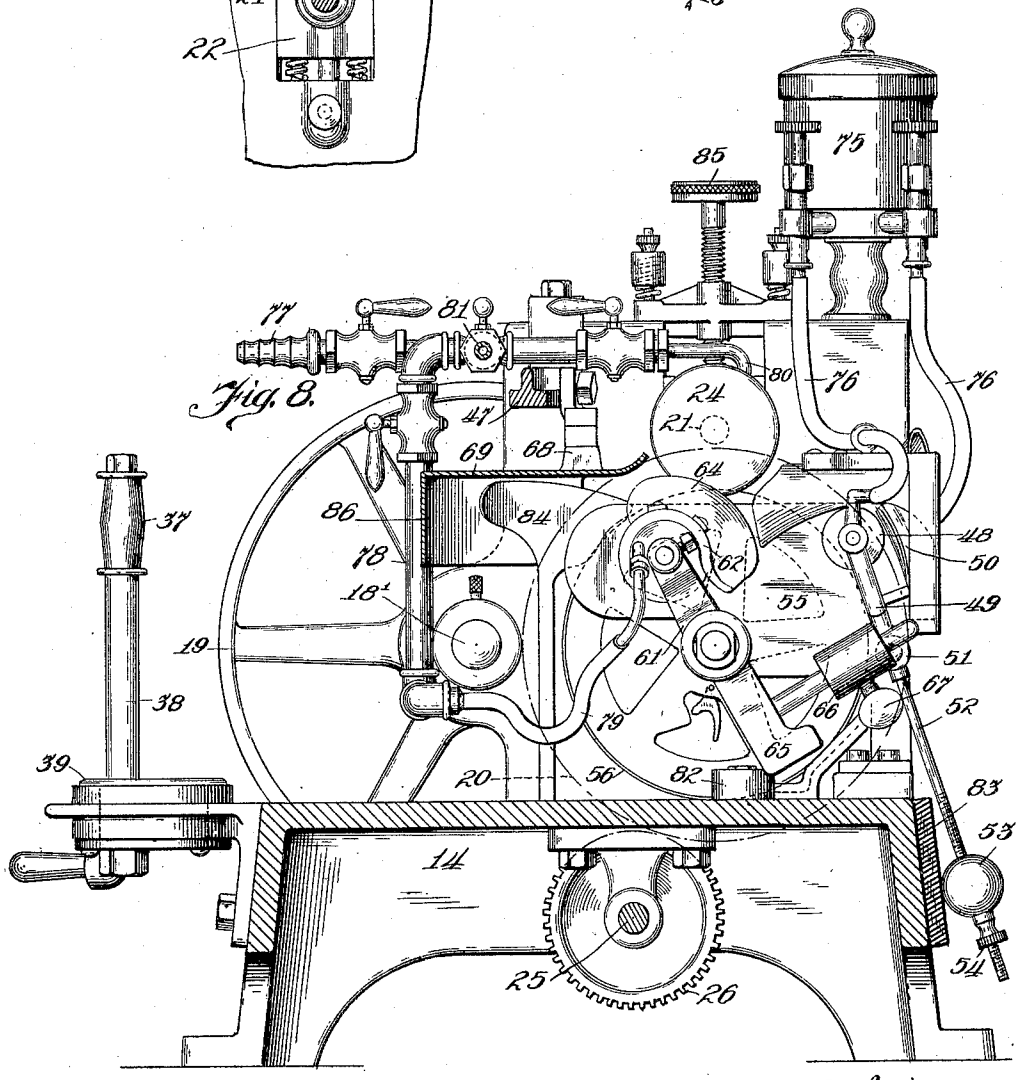


Fig. 13.

Fig. 8.



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S. E. Kellogg.

Inventor
George H. Spansail.
By Clarence W. Taylor.
Attorney.

UNITED STATES PATENT OFFICE.

GEORGE H. SPANSAIL, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHICAGO LAUNDRY MACHINERY CO., A CORPORATION OF ILLINOIS.

COLLAR-SHAPER.

1,006,308. Specification of Letters Patent. Patented Oct. 17, 1911.

Application filed December 10, 1908. Serial No. 466,891.

To all whom it may concern:

Be it known that I, GEORGE H. SPANSAIL, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Collar-Shapers, of which the following is a specification.

My invention relates to improvements in a collar ironer and shaper, and the objects of my improvement are, first, to afford means for dampening the edges of collars; second, the provision of folding devices; third, to produce a non-rotatable edging shoe capable of movement through an arc of a circle; and, fourth, to provide mechanism for shaping and delivering the collar.

With the above and other objects in view, my invention consists in the novel features and in the novel arrangement and combination of parts hereinafter more specifically described, illustrated in the accompanying drawings, and particularly pointed out in the claim hereunto appended.

In describing the invention in detail, reference is had to the accompanying drawings forming a part of this specification, wherein like reference numerals indicate corresponding parts throughout the several views, and in which—

Figure 1 is a top plan view of the assembled machine. Fig. 2 is a sectional view on line 2—2 of Fig. 1. Fig. 3 is a sectional detail of the forward collar guide. Fig. 4 is an elevational view of a dampening roll and its mounting. Fig. 5 is a sectional view on line 5—5 of Fig. 4. Fig. 6 is a perspective view of a dampening roll and an ironing shoe in position. Fig. 7 is an elevation of the circumferentially padded disk with parts broken away. Fig. 8 is a sectional view on line 8—8 of Fig. 1. Fig. 9 is an elevational detail of a yieldable bearing. Fig. 10 is a detail view showing a collar between the ironing roll and the edging shoes. Fig. 11 is a vertical section through parts of the shaper and the adjacent collar deflector. Fig. 12 is an elevation of the inner surface of the deflector. Fig. 13 is a section on line 13—13 of Fig. 12. Fig. 14 is a view on line 14—14 of Fig. 2.

Referring to the drawings by reference numerals, 14 denotes the base, 15 the outside wall of the superstructure, 16 the inner wall of the same, and 17 the depending hangers for the lower shaft. The intermediate shaft 18 has its bearings in parts 15 and 16. The short shaft 18′ also has its bearings in said parts and carries pulley 19. The large gear, 20, meshes with the pinion, 20′, and also with pinion 23 on the upper shaft, 21, which is journaled in yieldable bearing, 22, and in the part 15 and give rotary motion to the grooved ironing roll 24. The lower shaft, 25, carries gear wheel 26, which meshes with gear wheel, 20, and carries bevel pinion 27 which meshes with bevel pinion, 30, on the short shaft, 29, journaled in the base and the boss, 28. The shaft, 29, carries gear wheel, 31, which meshes with gear pinion 32, on shaft 33. The drive pulley 34, is mounted upon and rotated by shaft 33 in the sleeve 35 which is integral with the base, 14.

The numeral 36 represents an endless belt, preferably of canvas, on the drive-pulley 34, and the driven pulley 37 loosely mounted on shaft 38 with its lower end secured to slack-tightening means, 39, which is of common form to make the belt taut.

The numeral 40 indicates a tubular shaper with an interior flame chamber 41, and a reduced or spindle portion 42 which is disposed for rotation in the upper end of integral sleeve 43. The external annular groove 44 receives the fold of a collar without crushing. The shaper 40 has a frusto-conical portion 45. In the Fig. 11 is shown a collar 46 between the shaper 40 and the belt 36.

The reference numeral 47 designates a supporting arm with one end fixed to the superstructure and its free end adjacent to the tubular shaper provided with an aperture and a binding screw for purposes hereinafter described.

For the purpose of automatically dampening the edges of the collar there is provided what is termed twin dampening rolls 48, 48, each one positioned in a path of an edge of a collar, and each capable of an independent movement through an arc of a

circle in said path. To this end each roll, preferably made of felt, is rotatably mounted in a frame, 49, which is provided with a shield 50 to protect the body of the collar from contact with the roll, and is carried by the hub 51, which has a rearward screw threaded projection 52, with weight, 53, and thumb nut 54, in the hub being pivotally mounted in the machine.

A lateral shield or guide plate, 55, is upon each side of the circumferentially grooved wheel 56, which carries cord 57 in the groove. The ironing roll, 24, has a circumferential groove, 59, to receive the fold of a collar.

The shaft 18 carries sleeves 60, 60, through the hubs of the two frames 61, 61, having fixed to their forward inner ends edging shoes 62, 62, which are provided with V-shaped grooves 63, 63, in their upper surfaces near one end thereof. The outer shoe carries a shield 64. The rearward extensions 65, 65, each have a slidable weight 66, with thumb screw 67 to fix it at any desired point on the extension.

The supporting arm 47 has depending therefrom the hanger 68 attached to the top of the semicircular housing 69.

For the purpose, among other things, of giving a somewhat spiral movement to and forming the collar, a deflector 70, having a rounded portion 71 for adjustable engagement with the arm 47, is provided. The half bell-shaped skirt 72, carries the spiral portion 73, which deflects the collar downwardly and below the plane of the belt, when the collar is free to drop into the work receptacle 74.

The water tank, 75, with its flexible tubes 76, 76, is adapted to supply water to the dampening rolls.

For the purpose of heating the ironing surfaces, there is provided a system of gas burners and gas supply pipes. The main gas connection 77 and the vertical pipe 78, distribute to the various burners. The flexible tubes, 79, 79, supply gas to the shoes, the tube 80 to the ironing roll, 24, and the tube, 81, to the tube shaper.

82 denotes a shoe frame stop, and 83 a felt stop for the weights 53, 53.

To insure a yielding contact of the ironing roll, 24, with the padded disk, the bearing 22 is cushioned with springs, and the tension of the springs is controlled by screw 85 (shown in Fig. 9).

The laterally curved collar guide 84 serves to give direction to the collar, and the inner surface, 86, of the housing directs the collar between the belt, 36, and the tube, 40.

The use and operation of my invention may be apparent from the foregoing drawings and description.

The machine as organized is intended to rapidly fold, edge, and form any style of turn-down collar, leaving all surfaces and edges, including the inner band, smooth, and the fabric uninjured by the operation.

For the purpose of automatically dampening the edges of the collar, the twin dampening rolls are yieldably disposed in the paths of such edges, and gravity means, 53, 53, is provided to change the degree of pressure of each roll against the edge of the collar.

For the purpose of automatically adapting the machine to the variant widths of collars, there is provided what I term edging shoes, 62, 62, capable of swinging through an arc of a circle, the pivoted frame of which having adjustable gravity means to change the degree of pressure of each shoe against the edge of a collar.

In operation, after being seam or fold-line dampened, the collar is taken by the operator and bent or formed upon the outer end of the shields or guides, 55, and fed into the machine over the padded disk, 56, and under the grooved roll, 24, which carry the collar forward. The lower two edges of the collar come in contact with the rotatable dampening felts or rolls, 48, 48, and thence to and in sliding contact with the heated edging or ironing shoes, 62, 62, which, like the dampening felts, are automatic, following any width or style of collar and smoothing both edges of the same. The upper or folded portion passes under the heated grooved ironing roll at a sufficient speed to insure perfect top edging. The top ironing roll, 24, is adjustable and yieldable in its bearing and irons the fold of the collar over a padded surface, and will not further damage a broken collar. As soon as the forward end of the collar leaves the ironing rolls, 24, and 56, it straddles the laterally curved guide, 84, and passes between the top of the guide and lower surface of the housing, 69, is deflected by the curved surface, 86, and when the collar leaves the ironing rolls it passes between the belt, 36, and the heated tube, 40, and is carried around outside the tube by the endless belt or apron, which exerts no direct pressure on the fold of the collar, but leaves the tie slip open. In passing around the heated tube and the deflector the inner band is made smooth without any tendency to wrinkle and the collar is given a normal rounded form when it emerges from the machine. It will be noted that the forward end of the collar contacts with the surface, 72, and the spiral portion 73, and that in making one turn about the spiral part the collar is pushed or deflected to a point below the lower line of the belt and when the other end of the collar leaves the belt it will be free to drop into the receptacle, 74.

Having thus fully described my inven-

tion, what I claim as new, and desire to secure by Letters-Patent, is,

In a collar shaper, the combination of a rotatable shaper having a frusto-conical portion terminating in an external annular groove to receive a portion of the collar, a belt adapted to travel in contact with the shaper, means to heat the shaper, a fixed deflector to urge the collar downward as it leaves the belt, and means to drive the belt.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE H. SPANSAIL.

Witnesses:

S. ELRA KELLOGG,

WALTER WAGNER.