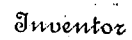


1,047,218.

2 SHEETS--SHEET 1.

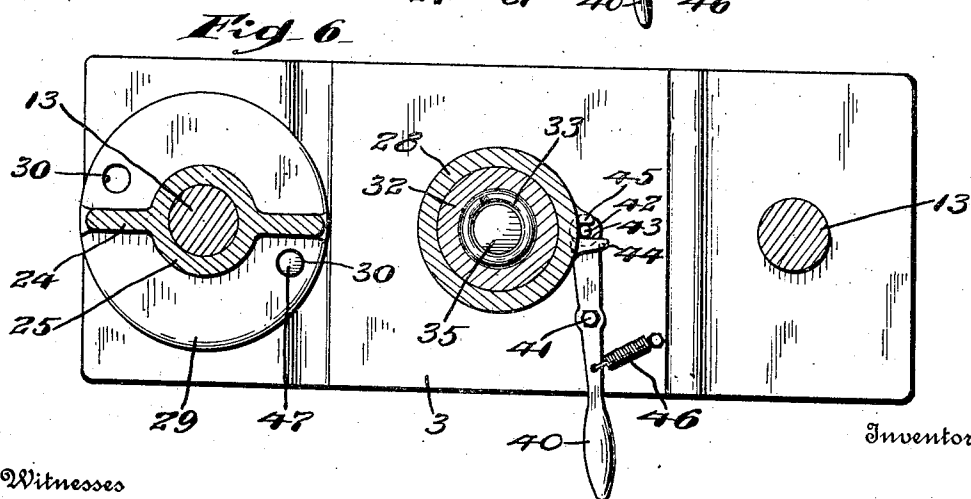
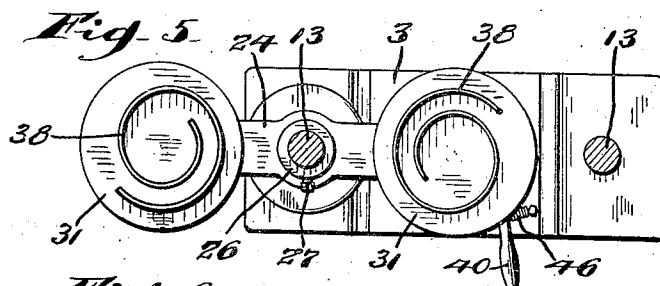
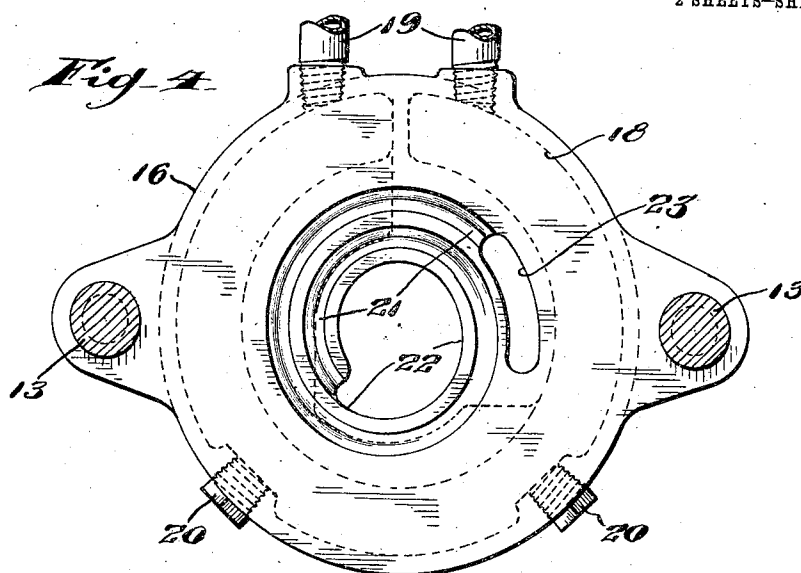


William K. Hatler,

By Joshua R. Potts
Attorney

1,047,218.

2 SHEETS—SHEET 2.



Witnesses

Thos. Rosenau.
R. H. Krenkel.

Inventor

William K. Hatler,

304
Joshua R. H. Potts
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM K. HATLER, OF PHILADELPHIA, PENNSYLVANIA.

COLLAR-SHAPING MACHINE.

1,047,218.

Specification of Letters Patent.

Patented Dec. 17, 1912.

Application filed March 5, 1912. Serial No. 681,800.

To all whom it may concern:

Be it known that I, WILLIAM K. HATLER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Collar-Shaping Machines, of which the following is a specification.

My invention relates to improvements in collar shaping machines, the object of the invention being to provide a machine of this character which will shape a turned over collar in such a way that it will lie smooth on the shirt with the outside fold in close relationship to the inside fold at the tie opening.

Heretofore, a great variety of machines have been employed for shaping turned over collars, and while they have been more or less efficient, they do not properly shape the collar. For example, the machines now in use shape the collar so that it curves in a relatively large arc of a circle when it leaves the machine. In order to bring the outside fold of the collar closer to the inside fold, these collars after they leave the machines are coiled by hand and forced through a tube or restricted opening which is intended to leave the collar round, but as a matter of fact, these collars do not assume the desired shape, and even though this extra operation is employed do not obtain the results desired. The purpose of my invention is to dispense altogether with this last-named operation, and to deliver the collar ready for use with the inside and the outside of the collar smooth to allow the tie to be freely adjusted and to also shape the folds of the collar, so that they will lie close together at the tie opening.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings: Figure 1, is a view partly in elevation and partly in vertical section illustrating my improvements. Fig. 2, is a longitudinal sectional view through the lower portion of the standard. Fig. 3, is a view in horizontal section on the line 3—3 of Fig. 1. Fig. 4, is a view on an enlarged scale in horizontal section on the line 4—4 of Fig. 1 looking upwardly. Fig. 5, is a similar view on a reduced scale

looking downwardly, and Fig. 6, is a view in section on an enlarged scale on the line 6—6 of Fig. 1.

1, represents a hollow standard provided with a base 2 at its lower end, and with an integral table 3 at its upper end having strengthening webs 4. The standard 1 is hollow, and is provided with suitable bearings allowing vertical movement of a plunger 5 which latter extends through the table 3 at its upper end, and at its lower end is connected by a link 6 with a crank arm 7 on a foot treadle 8. This treadle 8 is pivotally supported on a transverse shaft 9, secured in the standard, and is adapted when depressed to move the plunger 5 vertically, and hold it in this vertical position by reason of the arrangement of crank arm 7 and link 6.

A releasing treadle 10 is pivotally supported on a shaft 11 in standard 1, and is provided with a laterally projecting arm 12 extending under the treadle 8, so that when this treadle 10 is depressed, it will elevate treadle 8 and draw down plunger 5. Parallel vertically positioned posts 13 are supported on table 3, and are provided with reduced ends which are screw-threaded. The lower reduced ends are projected through bearings 14 in table 3, and are secured by nuts 15, while on the upper reduced ends of these posts 13, my improved collar shaper 16 is located, and is secured by nuts 17 screwed onto the ends of the posts. This collar shaper 16 is cored forming a steam chamber 18 communicating with steam pipes 19, so as to allow circulation of steam through the chamber and heat the shaper. Suitable plugs 20 close openings in the casting which are necessary in the formation of the hollow casting. In the lower face of the shaper 16, a spiral groove 21 is formed. One end of this groove communicates with a central opening 22 in the shaper, while the other end of this groove communicates with an elongated opening 23, and this groove is somewhat V-shape in cross section, and is of a length equal to or greater than the length of any turned over collar in use, so that it is adapted to shape any turned over collar.

24, represents a swinging frame which is provided centrally with a bearing sleeve 25 mounted to turn on the left hand post 13, and held against vertical movement by means of a collar 26 secured by a set screw

27. This frame 24 at both ends is made with integral sleeves 28, while at the lower end of the frame, a circular base 29 is formed having two openings 30 therein for a purpose which will hereinafter appear.

Each sleeve 28 supports a vertically movable head 31 having a tubular guide stem 32 fitting the sleeve 28. In each of these guide stems 32, a coiled spring 33 is located, and bears at its upper end against a screw plug 34 screwed into the head 31, and at its lower end against a block 35 which projects through the lower end of the tubular stem, and is made with an annular flange 36 which bears against an internal shoulder 37 in the tubular stem, limiting the downward movement of said block. This block 35 projects below the stem 32, and is adapted to be engaged by the plunger 5 as will be hereinafter explained. On the top of each head 31, a collar holding form 38 is located, and this form is preferably brazed or otherwise secured in a groove 39 in the head. These collar forms 38 are in the form of a spiral, so as to conform to the shape of the groove 21 when in line therewith, and it is to be understood that the frame 24 is to be swung on post 13, so as to bring either of the forms 38 into position below the shaper 16.

To hold the frame against rotary movement, a hand lever 40 is fulcrumed between its ends on table 3 by means of a bolt 41, and at its inner free end is provided with an upwardly projecting pin 42. This pin is adapted to be positioned in a notch 43 on sleeve 28. Both of the sleeves 28 have these notches 43, which are formed by two outwardly projecting lugs having curved outer faces, and one lug 44 being longer than the other lug 45, so that while the lug 45 may serve to press the pin 42 outwardly, the inner straight face of lug 43 will strike this pin and prevent the frame from being swung too far, and when in this position, a coiled spring 46 which connects the lever 40 with the table 3 serves to force the pin 42 into a notch, and securely holds the frame against rotary movement.

To prevent any upward movement of the plunger 5 in the event the frame is not properly held by the lever 40, an L-shaped arm 47 is provided. The horizontal member of this arm extends through a slot 48 in standard 1, and has a collar 49 on its end secured by a set screw 50 to the plunger 5, so that the arm is compelled to move vertically with the plunger. The vertical member of this arm 47 extends through an opening 51 in the table 3, and when the frame is properly positioned, so that its block 35 is directly above the plunger 5, the opening 51 and one of the openings 30 will be in alignment. The upward movement of the plunger 5 will serve to force the arm 47 through the opening 30. If, however, the

parts are not in position, this arm will engage the under face of the flange 29, and prevent any upward movement of the plunger.

In operation, it is customary for turned over collars to be ironed flat and then moistened along the line on which they are to be folded, and then put through some sort of machine which folds and shapes the collars. Such machines as now in use leave the collar curved in an extremely large arc, so that the ends are far apart. It would not do to turn out such collars to the trade, because they would not properly shape themselves around the neck, especially at the front. Hence, many expedients have been tried to overcome this, a simple one being to roll the collars in a relatively small spiral and force them through a tube which keeps them in this shape long enough to prevent them from flaring far apart when released. While this is a great improvement in the laundrying of the collar, it does not produce the desired results because the collar is not perfect, particularly at the front.

By providing my improved shaper with a groove 21, the walls of which are heated by the steam, and said groove of a spiral shape which corresponds in shape to the forms 38, when a collar is placed on one of the forms and forced up into the groove, it will be in a general spiral form, so that when removed from the form, even though its tendency is to open slightly, it will be in general circular shape to conform to the shape it will assume on the neck of the user.

In operation, the collars will be ironed flat as before, and moistened along the fold line. The operator will then place a collar in position on the form 38 which is to the left of Fig. 1. She will place the collar on the form so that the long outside button hole flap on the collar will move into the opening 23 when elevated. The rest of the collar she will shape around the form, and by reason of the spiral shape, any size collar will be accommodated on the same form.

When the collar is in position on the form, the operator swings lever 40 to one side and then moves the frame 24 around to bring the collar in position under the shaper 16. The lever 40 serves to lock the parts in this position as above explained, and treadle 8 is then depressed. This causes plunger 5 to move upwardly and contact with block 35, forcing the head 31 upwardly and the collar into the groove 21. The upward movement of the plunger 5 is greater than the movement of the head, so that block 35 is forced into the hollow stem 32 and spring 33 exerts a constant pressure on the head to force and hold the collar in the groove 21.

While one collar is in the shaper, another collar will be placed on the left hand form so that when a collar has been in the shaper

a sufficient length of time, another collar will be ready for the shaper. When a sufficient length of time has elapsed, treadle 10 is depressed causing treadle 8 to move upwardly and draw down plunger 5, allowing the head 31 to move downwardly to its normal position. Lever 40 is then operated, and the frame turned as before, the collar being removed from the form 38, and is ready for the user without any further operation. The collar therefore is shaped ready for use, and is smooth inside and outside, having a uniform spacing throughout, between the inner and outer folds, so that they do not grip the tie, but allow it to slide freely between the folds. Furthermore, the outer fold of the collar is spaced properly from the inner fold, and held relatively close to the inner fold, preventing it from flaring outwardly as collars ordinarily do after being laundried.

While I believe the spiral shape of the groove and the form, to be superior to any other shape, and certainly superior to a complete circle, I would have it understood that I may make various changes in the exact shape of this groove without departing from the invention.

Various other slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A collar shaper having a spiral collar receiving groove therein, a collar holding form of spiral shape conforming in shape to the shape of the groove, and means for moving one of said parts relative to the other, substantially as described.

2. A collar shaper comprising a hollow casting having a spiral collar receiving groove therein, means for directing a heating agent through said hollow casting, a collar holding form of spiral shape conforming in shape to the shape of the groove, and means for moving one of said parts relative to the other, substantially as described.

3. A machine of the character described, comprising a standard, a table on the standard, posts secured to the table, a shaper secured on the upper ends of the posts and having a spiral collar receiving groove in its lower face, means for heating the shaper, a collar receiving form adapted to be positioned below the shaper, and means for moving said form vertically to project the collar into the groove in the shaper and withdraw it therefrom, substantially as described.

4. A machine of the character described, comprising a standard, a table on the standard, posts secured to the table, a shaper secured on the upper ends of the posts and having a spiral collar receiving groove in its lower face, means for heating the shaper, a collar receiving form adapted to be positioned below the shaper, means for moving said form vertically to project the collar into the groove in the shaper and withdraw it therefrom, and means for exerting spring pressure on the collar while in the groove, substantially as described.

5. A machine of the character described, comprising a standard, a table on the standard, posts secured to the table, a shaper secured on the upper ends of the posts and having a spiral collar receiving groove in its lower face, means for heating the shaper, a frame mounted to turn on one of said posts, sleeves at the ends of said frame, hollow stems vertically movable in said sleeves, heads on the upper ends of said stems, spiral collar receiving forms on the said heads adapted to be positioned in alignment with the grooves in the shaper, and means for moving said heads vertically when in position below the shaper, substantially as described.

6. A machine of the character described, comprising a standard, a table on the standard, posts secured to the table, a shaper secured on the upper ends of the posts and having a spiral collar receiving groove in its lower face, means for heating the shaper, a frame mounted to turn on one of said posts, sleeves at the ends of said frame, hollow stems vertically movable in said sleeves, heads on the upper ends of said stems, spiral collar receiving forms on the said heads adapted to be positioned in alignment with the grooves in the shaper, a vertically movable plunger in said standard, means for moving the plunger vertically, said plunger constructed to elevate the table when moved vertically, an arm secured to said plunger and projecting through an opening in the table, and openings in the frame adapted to register with said arm when said heads are properly positioned below the shaper, substantially as described.

7. A machine of the character described, comprising a standard, a table on the standard, posts secured to the table, a shaper secured on the upper ends of the posts and having a spiral collar receiving groove in its lower face, means for heating the shaper, a frame mounted to turn on one of said posts, sleeves at the ends of said frame, hollow stems vertically movable in said sleeves, heads on the upper ends of said stems, spiral collar receiving forms on the said heads adapted to be positioned in alignment with the grooves in the shaper, a vertically movable plunger in said standard, means for

moving the plunger vertically, said plunger constructed to elevate the table when moved vertically, lugs on the sleeves forming a notch between them, a spring-pressed lever 5 on the table, and a pin on said lever adapted to move between the lugs and hold the frame in position to register the form with the groove, substantially as described.

8. A machine of the character described, 10 comprising a standard, a table on the standard, posts secured to the table, a shaper secured on the upper ends of the posts and having a spiral collar receiving groove in its lower face, means for heating the shaper, a 15 frame mounted to turn on one of said posts, sleeves at the ends of said frame, hollow stems vertically movable in said sleeves, heads on the upper ends of said stems, spiral collar receiving forms on the said heads 20 adapted to be positioned in alinement with the grooves in the shaper, a vertically movable plunger in said standard, means for moving the plunger vertically, said plunger constructed to elevate the table when moved 25 vertically, a plug in the lower end of said stem, a spring in said stem exerting upward pressure on the table, a downward pressure on the block, and said block adapted to be engaged by the plunger, whereby the spring 30 will be compressed when said head is forced

upwardly to exert pressure on the collar while in the groove, substantially as described.

9. A machine of the character described, comprising a standard, a table on the stand- 35 ard, posts on the table, a shaper secured on the posts and having a spiral groove in its lower face, a frame mounted to turn on one of the posts, heads mounted at the ends of the frame, collar receiving forms on said 40 heads adapted to move the collars up into the grooves in the shaper, a vertically movable plunger in said standard adapted to move the heads vertically, a foot treadle supported in the lower end of the standard 45 and having a crank arm thereon, a link connecting said crank arm with the plunger, a second foot treadle pivotally supported in the standard, and an arm on said last-mentioned treadle projecting below the first- 50 mentioned treadle, whereby the depression of the latter serves to elevate the former, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of 55 two subscribing witnesses.

WILLIAM K. HATLER.

Witnesses:

CHAS. COHN,

CHAS. E. POTTS.