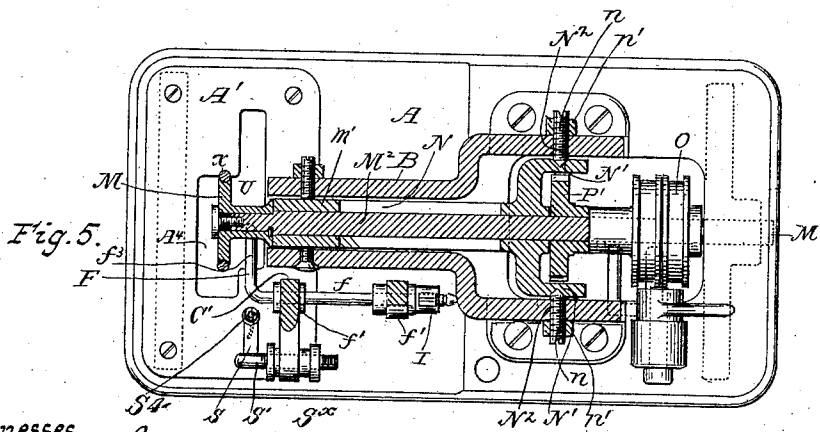
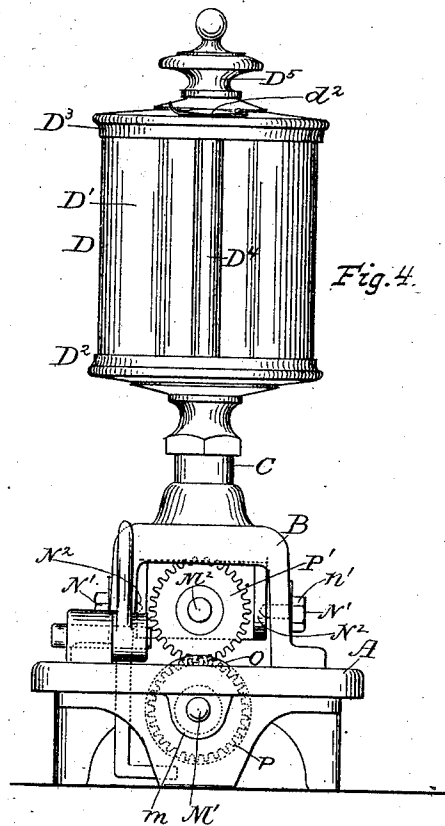
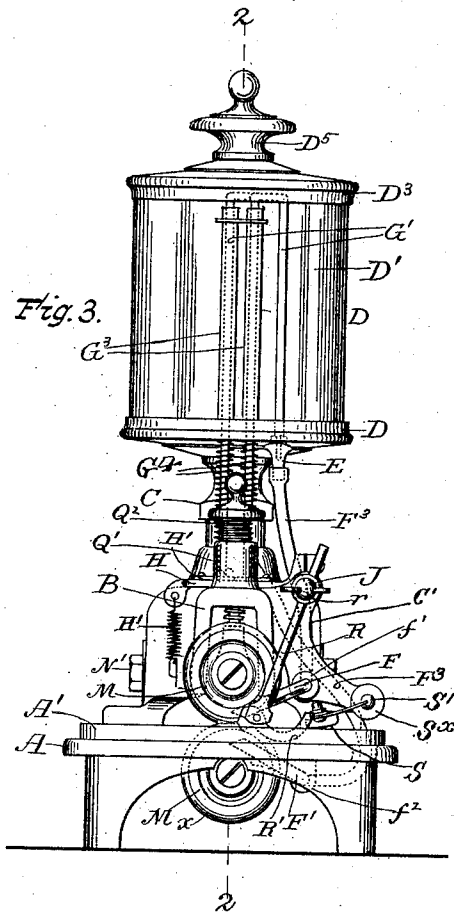


H. C. MILLER.
MACHINE FOR DAMPENING COLLARS.
APPLICATION FILED NOV. 24, 1903.

972,124.

Patented Oct. 4, 1910.

4 SHEETS-SHEET 2.



Witnesses.

Charles L. Kirk
A. L. Kirk

Henry C. Miller,
Inventor.

by Alex. Bellink

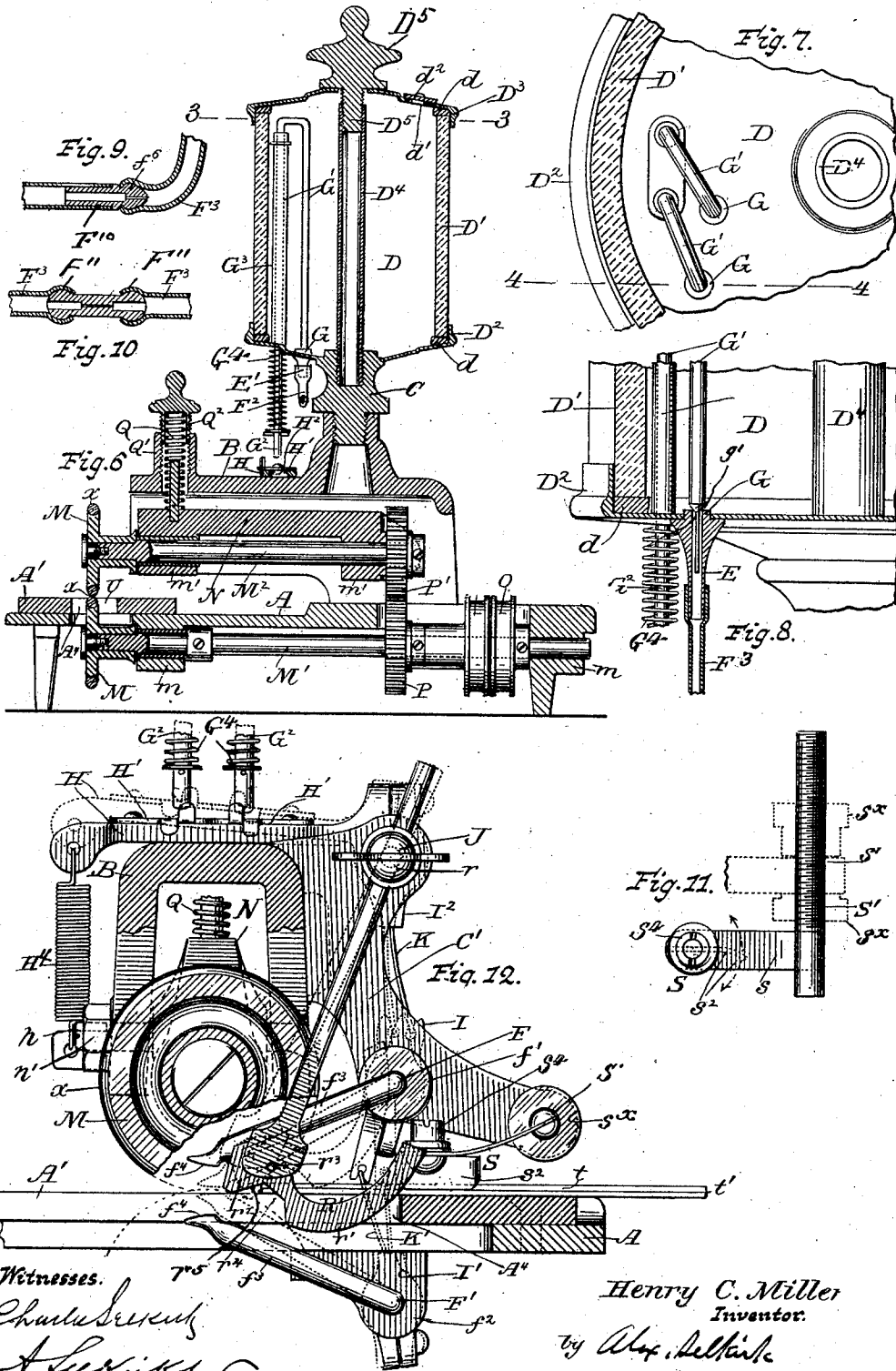
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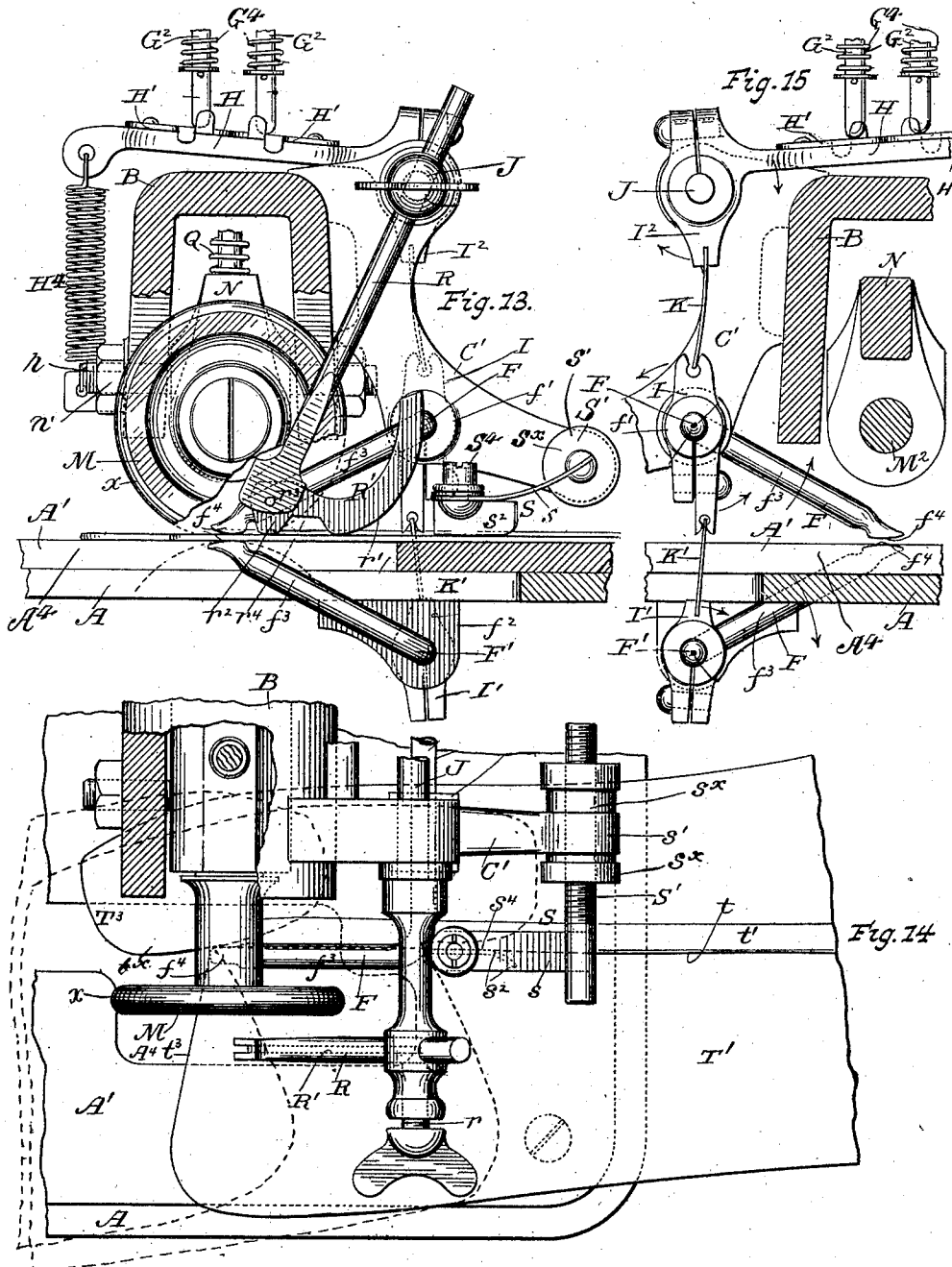
Henry C. Miller
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Witnesses.
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UNITED STATES PATENT OFFICE.

HENRY C. MILLER, OF WATERFORD, NEW YORK.

MACHINE FOR DAMPENING COLLARS.

972,124.

Specification of Letters Patent.

Patented Oct. 4, 1910.

Application filed November 24, 1903. Serial No. 182,561.

To all whom it may concern:

Be it known that I, HENRY C. MILLER, a citizen of the United States, residing at Waterford, in the county of Saratoga and State of New York, have invented new and useful Improvements in Machines for Dampening Collars at the Line They are to be Folded.

This invention relates to improvements in machines for dampening collars etc.

In laundrying collars of the turned down type, considerable difficulty is experienced in preventing the tabs contacting with the moistening devices, due to the fact that with present machines no provision is made for throwing the tabs out of the path of the moistening liquid. A tab once soiled by the moistening liquid is thrown out as second class work, and must be done over again which is expensive.

According to my invention I provide a tab end guide which effectually guides the collar to the moistening means to be dampened, and also acts to throw the collar tabs out of the path of the moistening liquid.

A further object of the invention is to provide dampening means to dampen both sides of a collar, and valve actuating mechanism, operable by the passage of the article being treated to control the flow of liquid.

The invention also comprehends improvements in the specific details of construction, to be hereinafter referred to and particularly pointed out in the claims.

In the drawings—Figure 1 is a side elevation of my improved machine. Fig. 2 is a plan view of the same. Fig. 3 is an end elevation. Fig. 4 is a view looking from the end opposite to that shown in Fig. 3. Fig. 5 is a horizontal section on the line 1—1, Fig. 1. Fig. 6 is a section of the line 2—2, Fig. 3. Fig. 7 is a section on the line 3—3, Fig. 6. Fig. 8 is a section on the line 4—4, Fig. 7. Fig. 9 is a detail section of a coupling and flexible conduit. Fig. 10 is a detail horizontal section of a modified form of coupling. Fig. 11 is a detail plan view of my improved guide. Fig. 12 is an enlarged elevation of a portion of the machine, illustrating particularly the dampening means. Fig. 13 is a view similar to Fig. 12, but illustrating the dampening means in operative position on a collar. Fig. 14 is an enlarged plan view of the dampening means,

parts being positioned as shown in Fig. 13. Fig. 15 is an enlarged detail section on the line 5—5, Fig. 1.

In the drawings, A, represents the bed of the machine, on which is mounted a work supporting plate A', formed with an opening A⁴. A housing B, on the bed A, serves to cover the main driving mechanism, and on an extension C, thereof is a reservoir D. The reservoir is located above the bed A, to cause the liquid to flow downwardly by gravity to the dampening devices, and may be of any approved construction, but as shown consists of a cylinder D', lower cap D², and upper cap D³, packed to prevent leakage by gaskets *d*. A post D⁴, on extension C, is threaded at its upper end to receive a binding nut D⁵, whereby to bind the parts of the reservoir together. An opening *d'*, is formed in the cap D³, through which liquid may be introduced to the reservoir, and a cover *d*², closes said opening.

Extending from the lower cap D², are two nozzles E, E', and connected thereto are flexible connections F³, F³. Formed in one end of each nozzle is a valve seat G, and co-operating therewith are valves G', G', the beveled portions *g'*, *g'*, normally resting in the seats G, G. Each valve G', extends upwardly in the reservoir and its end is bent downwardly to a point below the lower cap D², to form stems G², G². The stems G² extend through sleeves G³, mounted in the reservoir, and interposed between the bottom of the latter and a flange on the stems, are springs G⁴, which tend to hold the beveled portion *g'*, *g'*, of the valves to their seats. The ends of the stems G², terminate at a point in the path of movement of two plates H', H', on an arm H, secured on a shaft J. This shaft has a bearing in extensions C', C', of the housing B. The arm H is normally drawn away from the stems G², by a spring H⁴, to permit the springs G⁴, to close the valves G', and to spread apart the dampening devices, soon to be described. The plates H', may be turned out of the path of the valve stems G², to permit the latter to pass through an opening H², in arm H, to prevent operation of the valves notwithstanding the movement of said arm.

The dampening means consists of two angularly disposed members F, F', the points of which form pens and operate upon

each side of the article being dampened. The horizontal portions f , of members F , F' , are mounted in bearings f' , in the flanges C' , and bearings f'' , on the underside of the bed.

5 The ends of the members F , F' , are connected to the nozzles E , E' , by the flexible connections F^3 , F^3 , to supply liquid for dampening purposes. The opposite ends or pens f^3 , f^3 , of members F , F' , incline toward each other and are beveled at f^4 , f^4 , to be substantially in a plane with the top of bed A , as shown in dotted lines in Fig. 12.

10 Secured on the horizontal portion f , of the upper member F , is a lug I , formed with notches at opposite points, while on the horizontal portion f , of the lower member F' , is a lug I' , having attached thereto a yielding connection K' , the upper end of which fits in the lower notch of the lug I . The normal tendency of the yielding connection K' , serves to cause the point of the upper pen f^3 , to be separated from the point of the lower pen f^3 . The arm H , is provided with a depending lug I^2 , having attached to it a yielding connection K , the lower end of the latter fitting in the notch in the upper end of the lug I , as shown clearly in Fig. 15. The normal tendency of the connection K , is such that it will cause the end of the lower pen f^3 , to be separated from the upper pen. The yielding connections K K' are preferably in the form of flat metal springs.

15 Fastened to the shaft J , by a set screw r , is an arm R , pivoted at r^2 , to a presser foot R' . Presser foot R' , is provided with a heel r^2 , located somewhat in advance of the beveled ends f^4 , of the pens f^3 , f^3 , and immediately in front of the heel, is a notch r^4 . Adjacent the notch r^4 , the presser foot is curved forwardly and upwardly as at r' , to provide with the bed, a convenient means for the introduction of a collar, as will be hereinafter explained. The end of the lower pen f^3 , and the presser foot are located so as to operate in the opening A^4 , of the collar supporting plate A' , as shown particularly in Fig. 12.

20 M , M , indicate feed wheels having resilient circumferences x , x , such as rubber or the like material which meet about on a plane with the top of the collar supporting plate. The plate A' , is provided with an opening to permit the operation of the feed wheels. The wheels M , M , are carried by shaft M' , M^2 , one of which M' , is mounted in bearings m , and the other shaft M^2 , is mounted in bearings m' . Bearings m' , are formed in a frame N , pivoted at N' , on set screws N^2 , locked in adjusted position by nuts n' . The frame N , is normally pressed down, to cause the two feed wheels to contact, by a spring Q , confined between said frame and an adjustable cap Q^2 , screwed into an extension Q' , whereby the desired pressure between the wheels may be main-

25 tained to draw a collar between the dampening means. The shafts M' , M^2 , are provided with gears P , P' , to impart a uniform motion to the feed wheels, power being imparted by passing a belt around a pulley O , on shaft M' .

30 One of the flanges C' , is formed at its outer end with a bearing s' , in which operates a threaded stem S' , locked in position against the bearing by set nuts s^x s^x . On the outer end of the stem is secured a spring arm s , which carries what I shall term a combined guide and tab throw-out device S . This element comprises a blade s^2 , curved upwardly and outwardly at one end, as seen in Figs. 13 and 14, and is held in position on the spring arm by a threaded stem engaged by a nut s^4 . The blade s^2 , is located relative to the dampening means, to engage the edge t , of a seam t' , of a collar T' , to insure the dampening liquid being placed along the edge of said seam, and prevent the tab T^3 , of the collar being soiled. The blade s^2 , is designed to be adapted to the desired position to accommodate collars of different styles and shapes. For a plain outline collar having plain tabs, for instance as shown in Fig. 14, the blade may be positioned as shown in Figs. 13 and 14, but when a collar having tabs which have peculiar shape is to be operated upon, it is important that the tip end of the blade may be made operative. To do this, the nuts s^x , s^x , on the stem S' , are released, and the stem is turned slightly, or in other words the spring s , turns the shank, which lifts the front end of blade s^2 , leaving the point yieldingly in contact with the supporting plate A' , as shown in Fig. 3.

35 Assuming the parts are in the position as shown in Fig. 12, a collar which has previously been laundered, and is to be folded along the seam line, is forced under the blade s^2 , with the edge of its seam t' , against said blade. In so positioning a collar, the edge t^x , of the tab T^3 , is turned out of the path of the moistening means, and by the time the front end of the collar reaches the dampening points the seam line to be dampened is properly positioned as shown in Fig. 14. The blade from this time on guides the collar throughout its length to the pens, no matter what the shape or style may be. The fact that the feed wheels are located on the same side of the seam as the blade, the collar is drawn laterally somewhat, necessitating the seam hugging closely the blade. When the end of the collar is reached the blade immediately drops down in the crotch formed between the end and the rear tab, and the edge of the latter contacting with said blade turns the collar, and said rear tab is thrown out of the path of the dampening liquid as shown in dotted lines in Fig. 14. When the collar is inserted, its front end contacts with the front of the presser foot

R', and raises it to the position shown in dotted lines in Fig. 12, and upon further movement, the end of said collar contacts with the beveled edge r^5 , of the heel r^2 , and the front end r' , acts as a fulcrum on the top of the collar, and causes the rear end of said presser foot to be elevated. When the presser foot is raised, the shaft J, is rocked, and the arm H, is elevated, whereupon the valves G', G', are opened and the liquid is permitted to flow to the pens. The heel is slightly in advance of the dampening point, which gives the liquid ample time to reach the surfaces of the collar before the end of the latter strikes the points of the pens f^3 , f^3 . When the front edge of the collar contacts with the heel, the connection K, rocks element F, and the upper pen is brought into contact with the collar, and simultaneously the connection K', rocks the lower element F', and the lower pen is likewise brought into contact with the underside of the collar. Immediately the opposite rear edge of the collar is reached the springs G⁴, acting through arm H, causes the ends of the pens to be separated.

By the construction described, the collar in passing through the machine controls the flow of liquid in such manner as to admit of just enough to dampen the various thickness of fabric. For instance, if a thick collar is being acted upon, the valves will be opened wide, and a considerable amount of liquid will flow through the conduits to the pens, while if the collar should be thin, the required amount of liquid will flow just the same.

Inasmuch as the conduits, including the pens are relatively small, immediately the valves are closed, vacuums are formed and the flow of liquid ceases. Therefore, when the rear end of a collar passes the heel of the presser foot, and by the time the pen points reach their normal position, no liquid will drop, as it is supported in the conduits by the vacuums. This is important, as the liquid is ready to flow from the pens just as soon as the front end of the next collar reaches them. It is therefore obvious that owing to the speed of the collars in transit were this condition not present, and the liquid had to flow from the reservoir to the points of the pens, between the time of opening of the valve, and the time the points of said pens contact with the collar, a portion of the collar would not be dampened, and yet it is essential that no liquid be permitted to drip when the machine is inoperative.

Another important function is accomplished with the mechanism I have described, and is important in the operation of the machine. By employing a single guide, with means located to one side thereof for drawing a collar, the seam is drawn against the guide. This arrangement will effectually do

away with the necessity of employing a guide for the opposite side of the seam, and therefore, does away with the time required for adjusting the parts for different widths of seams and different styles of collars.

The flexible connections F³, may be made in sections and connected by a short tubular section F¹⁰, having an enlarged end to be forced into the end of the tube, the other end being secured to the other tube section as shown in Fig. 9. The tubular section may be formed with a bead F¹¹, at each end, as shown in Fig. 10.

What I claim is—

1. In a collar dampening machine, the combination with a collar supporting plate having in it an opening, two coacting revolving feed wheels, the lower wheel being adapted to be revolved in contact with the lower side of a collar and the upper wheel adapted to be revolved in contact with the upper side of the same, a seam guide located forward of the point of contact said two wheels have with a collar, pens contacting with opposite sides of the collar, a reservoir, and means between the pens and the reservoir to control the flow of liquid, said latter means being operable by the passage of a collar.

2. In a collar dampening machine, the combination with a collar supporting plate formed with an opening, two coacting feed wheels which contact with both sides of a collar, mechanism for simultaneously revolving said feed wheels, an elastically supported blade located above said plate and forward of the axles of the feed wheels for bearing against the edge of a seam which unites the top of a collar with the band of the same, and two pens which are arranged to have their discharge openings at opposite sides of a collar for delivering liquid parallel with the edge of the seam with which the guide blade operates.

3. In a collar dampening machine, the combination with a collar supporting plate; two revoluble feed wheels for moving a collar over said plate, a blade which operates with the edge of a collar seam, an elastic arm supporting said blade over said plate forward of said rollers, a pen for delivering dampening liquid against the lower side of a collar, a second pen for delivering liquid against the upper side of a collar, means for supplying liquid to the pens, and mechanism between the respective discharge ends of the pens and the supplying means for controlling the discharge of dampening liquid from both pens.

4. In a collar dampening machine, the combination with a collar supporting plate, two revoluble feed wheels for moving the collar over said plate, a guide which bears against the edge of the seam which unites the top of a collar with its band, an elastic

arm holding said guide over said plate and forward of the axles of the feed wheels, two pens for conveying dampening liquid to opposite sides of a collar, means for supplying liquid to the pens, valves for controlling the discharge of liquid, and mechanism operated by the movement of a collar for operating said valves.

5. In a collar dampening machine, the combination with a collar supporting plate formed with an opening over which a collar may be moved, a pair of revoluble feed wheels for moving the collar over said plate, mechanism for actuating said wheels, a guide located above the collar supporting plate and forward of the wheels, said guide bearing against the edge of the seam which unites the top and the band of the collar, a reservoir, valves at the bottom of said reservoir for controlling the discharge of liquid therefrom, a pen connected to the reservoir for discharging liquid against the lower side of a collar while being moved, a second pen connected to the reservoir for discharging the liquid on the upper side of the same collar, and mechanism between the valves and the respective discharge ends of the pens for operating said valves by the passage of the collar.

6. In a collar dampening machine, a collar supporting plate, a rock shaft, a downwardly inclined arm connected with the same, a presser foot pivoted on the lower end of the inclined arm, a second arm connected to the rock shaft, a reservoir, and valve mechanism between the reservoir and the second arm for controlling the discharge of liquid, two pens for delivering liquid from the reservoir to opposite sides of a collar, conduits for conducting liquid from the reservoir to the pens, and mechanism for moving the discharge ends of the pens toward each other and against the opposite sides of a collar while the latter is moving over the collar supporting plate.

7. In a collar dampening machine, the combination with a collar supporting plate formed with an opening, two pens supported in bearings and adapted to have their discharge ends moved toward each other, and against opposite sides of a collar when supported on the supporting plate, means for returning the pens to normal position after the passage of a collar, a rock shaft mounted above the pens, means for returning the rock shaft to normal position after the passage of a collar, an inclined rearwardly extended arm connected with said rock shaft, and a presser foot, comprising a curved forward portion and a downwardly inclined heel portion, pivoted on the lower end of the inclined arm.

8. In a collar dampening machine, the combination with a supporting plate formed with an opening, a rock shaft, an arm con-

nected to the rock shaft, a presser foot having a heel formed at one end, and having its opposite end curved and a notch formed between said heel and curved end, said presser foot being pivoted on the lower end of the arm and in part suspended in the opening in the supporting plate, a pair of pens movable toward and from each other, means connecting the pens with the presser foot, the presser foot being first tilted by the end of a collar contacting with the curved part, and upon further movement of said collar the heel end of the presser foot is lifted, the curved front acting as a fulcrum when the collar contacts with the heel whereby the discharge ends of the pens are brought together to supply liquid to opposite sides of the collar.

9. In a collar dampening machine, the combination with a collar supporting plate formed with an opening, a pair of feed wheels for moving a collar over said plate, an adjustable shaft, a bearing in which said shaft is mounted, means for adjusting the shaft lengthwise in either direction, an elastic arm on the shaft, and a guide carried by the elastic arm.

10. In a collar dampening machine, the combination with a reservoir, valves for controlling the discharge of liquid from the same, pens connecting with the reservoir to supply liquid to opposite sides of a collar, valve rods for opening and closing the valves, an oscillating arm formed with an opening beneath the ends of the valve rods, and covers to be moved for covering or uncovering the opening.

11. In a dampening machine, the combination with a pair of moistening devices, means for supplying the same with liquid, a presser foot located in the path of movement of a collar and adapted to be operated thereby to move the dampening devices into contact with a collar and control the supply of liquid, and a guide located in advance of the dampening devices.

12. In a dampening machine, the combination with a movable dampening device, means located to one side of and in advance of the dampening device to bear upon a collar, and mechanism intermediate the latter means and the dampening device to bring the latter in contact with a collar to dampen it.

13. In a dampening machine, the combination with a movable dampening device, a presser foot located in advance of the dampening device and having a fulcrum point and heel with an intermediate notch formed between said fulcrum point and heel, a reservoir, a connection between the presser foot and the reservoir for controlling the flow of liquid to the dampening device, the fulcrum point and presser foot being in the path of movement of a collar, a collar in its

movement contacting first with the fulcrum to elevate it, and upon further movement of said collar it contacts with the heel and moves the dampening device toward the collar and causes the liquid to flow.

14. In a dampening machine, the combination with dampening means, a reservoir, means controlled by the passage of a collar to operate the dampening means, and a guide which throws the collar tab out of the path of the dampening means.

15. In a dampening machine, the combination with dampening means, means actuated by a collar for moving the dampening means from a normally inoperative position which is out of the plane of movement of the collar to an operative position which is in the path of movement of said collar, and a guide in advance of the dampening means and the actuating means.

16. In a dampening machine, the combination with dampening means comprising two pens adapted to supply liquid to opposite sides of a collar, a reservoir, means for bringing the dampening means into operative position, means for returning the dampening means to normal position, and a guide located in advance of the dampening means.

17. In a seam dampening machine, the combination with dampening means, of a guide comprising a blade, a support, a resilient connection between the blade and support, the resilient member being connected to the blade near the forward end whereby the blade may tilt axially when engaging or being disengaged from the article being operated upon.

18. In a dampening machine, the combination with dampening means normally out of the path of movement of an article to be dampened, and means in the path of movement of said article to bring the dampening device in contact with the article.

19. In a dampening machine, the combination with a dampening means normally out of the path of movement of an article to be dampened, means in the path of movement of the article to bring said dampening means into the path of movement of the article, said means being forced by the article to contact with one surface of the latter, and upon further movement of the article the point of contact acts as a fulcrum whereby to operate the dampening means.

20. In a dampening machine, the combination with a supporting plate, feeding means, a pen located adjacent the feeding means, a reservoir, means connecting the reservoir and the pen, a valve, means cooperating with the pen and operable by the passage of a collar to operate the valve to control the liquid in the pen, and a guide in advance of the pen, said guide acting to throw the tab of a collar out of the path of the pen.

21. In a dampening machine, the combination with a moistening means normally out of the path of movement of an article to be dampened, actuating means connected thereto with which a collar contacts to bring said moistening means in contact with said collar, a reservoir, a valve, and a connection between the actuating means and the valve to control the flow of liquid delivered to the moistening means.

22. In a dampening machine, the combination with a pair of moistening devices, means for supplying the same with liquid, a presser foot located in the path of movement of the collar and adapted to be operated thereby to move the dampening devices in contact with a collar and control the supply of liquid.

23. In a dampening machine, the combination with dampening means, a reservoir, a valve, means between the reservoir and the dampening means to control the flow of liquid, said controlling means being formed with an opening and a cover plate adapted to be moved over the opening for operation of the valve, and moved away from the opening to prevent operation of the valve.

24. In a dampening machine, the combination with dampening means, a guide, a support for said guide, means operable by an article to be dampened located in advance of the dampening means for positioning the latter in the path of movement of said article, and means for adjusting the guide laterally with reference to the dampening means and its actuating means.

25. In a dampening machine, the combination with dampening means, a guide located in advance of the dampening means, said guide being carried by a shaft, and means for adjusting the shaft with reference to the dampening means, and means for tilting the guide, said guide also acting to throw the tabs of a collar out of the path of the dampening means.

26. In a dampening machine, the combination with a tubular pen, a reservoir, a valve located between the pen and reservoir to control the liquid, said valve being actuated by the passage of a collar, the interior area of the tubular pen being such as to form a vacuum to support the liquid therein, after the collar has been dampened, and the valve is closed.

27. In a dampening machine, the combination with two pens adapted to supply liquid to opposite sides of a collar, means for supplying the pens with liquid, means actuated by the passage of a collar to control the flow of liquid from the reservoir, a vacuum being formed between the points of each pen and the liquid supplying means after the passage of a collar to support the liquid.

28. In a machine for dampening collars

along a predetermined line, the combination with a support, a fluid pen connected to a source of fluid supply, a valve actuated by the thickness of a collar and controlling the fluid at and from the point of damp, and means for throwing the rear tab of a collar out of alinement with the pen.

29. In combination, means for dampening the folding lines of collars, and means in advance of the dampening means for preventing the collar tabs contacting with such dampening means.

30. In combination, a pen connected to a source of supply of liquid for dampening a predetermined line on a collar, and means for preventing the collar tab contacting with the pen.

31. In combination, means for dampening the folding lines of collars, and means for preventing the collar tabs contacting with such dampening devices.

32. In combination, means for applying moisture to the folding line of collars, and a tab-end guide adapted to prevent the tabs contacting with said moistening devices.

33. In combination with mechanism for applying moisture to the folding line of foldable or turn down collars which engages the seam of a collar, and a tab-end guide adapted to deflect the tab-ends of the collars away from said moistening mechanism.

34. In combination, means for applying moisture to the folding line of collars, and a yielding tab-end guide adapted to prevent the tabs contacting with said moistening means.

35. In combination, means for applying moisture to the folding line of collars, and an adjustable tab-end guide in advance of the moistening means.

36. In a seam dampener, the combination with dampening means for dampening the upper side of a collar, dampening means for dampening the opposite side of a collar, means for supplying the dampening means with fluid, valves, means between the dampening means and the valves for controlling the flow of fluid by the passage of a collar being acted upon, and means independent of the two dampening means for

feeding the collar between said dampening means.

37. In a seam dampening machine, the combination with feeding means, a dampening element separated from the feeding means, and a guide in advance of the feeding means against which the seam of the collar bears.

38. In combination, means for applying moisture to the folding line of collars, and a collar guide adapted to bear against the seam of a collar to guide it to the moistening means, said guide also serving to throw the tab-end of the collar out of line with the moistening means.

39. In a dampening machine, the combination with moistening means, a guide adapted to bear against the seam of a collar, and means for drawing the collar laterally to cause the edge of the seam to bear against the guide.

40. In a seam dampening machine, the combination with a guide, a pen, a reservoir connected to the pen, a valve in said connection, means separate from the pen and in the path of movement of a collar and connected to the valve for controlling the flow of fluid when a collar is passing under said means and means independent of the pen for drawing the collar during the dampening operation.

41. In a dampening machine, the combination with dampening means, feeding means independent of the dampening means, a device in advance of the feeding means against which the seam of a collar being dampened bears, means for adjusting said device laterally, and means for placing said device under tension downwardly.

42. In a seam dampener, the combination with a fluid receptacle, a dampener, a tube connecting the dampener and the fluid receptacle, a valve in the tube, a device in the path of movement of the collar and connected to the valve and the dampener, the collar actuating said device to position the dampener and open the valve.

HENRY C. MILLER.

Witnesses:

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CHAS. R. SELKIRK.