

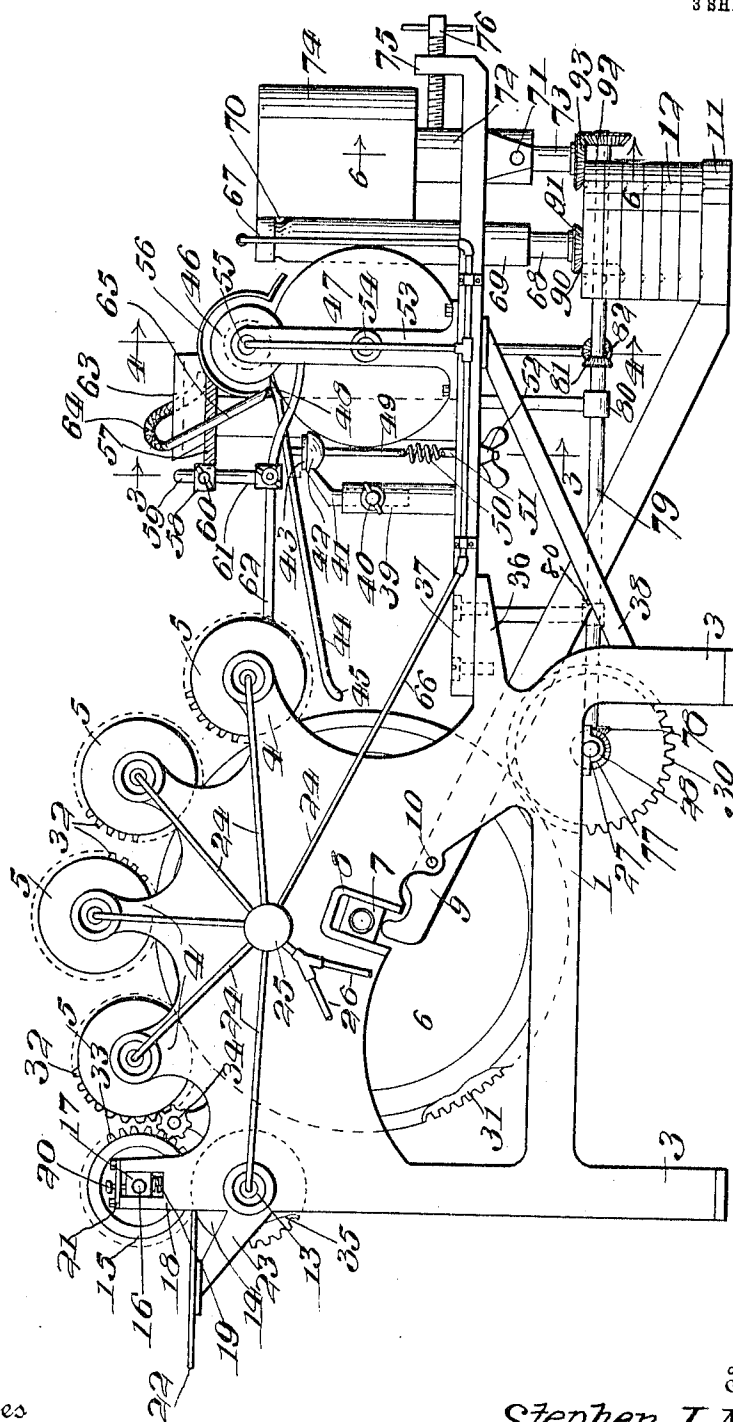
S. J. MILLER.
IRONING MACHINE.
APPLICATION FILED AUG. 17, 1908.

950,399.

Patented Feb. 22, 1910.

3 SHEETS—SHEET 1.

Fig. 1.



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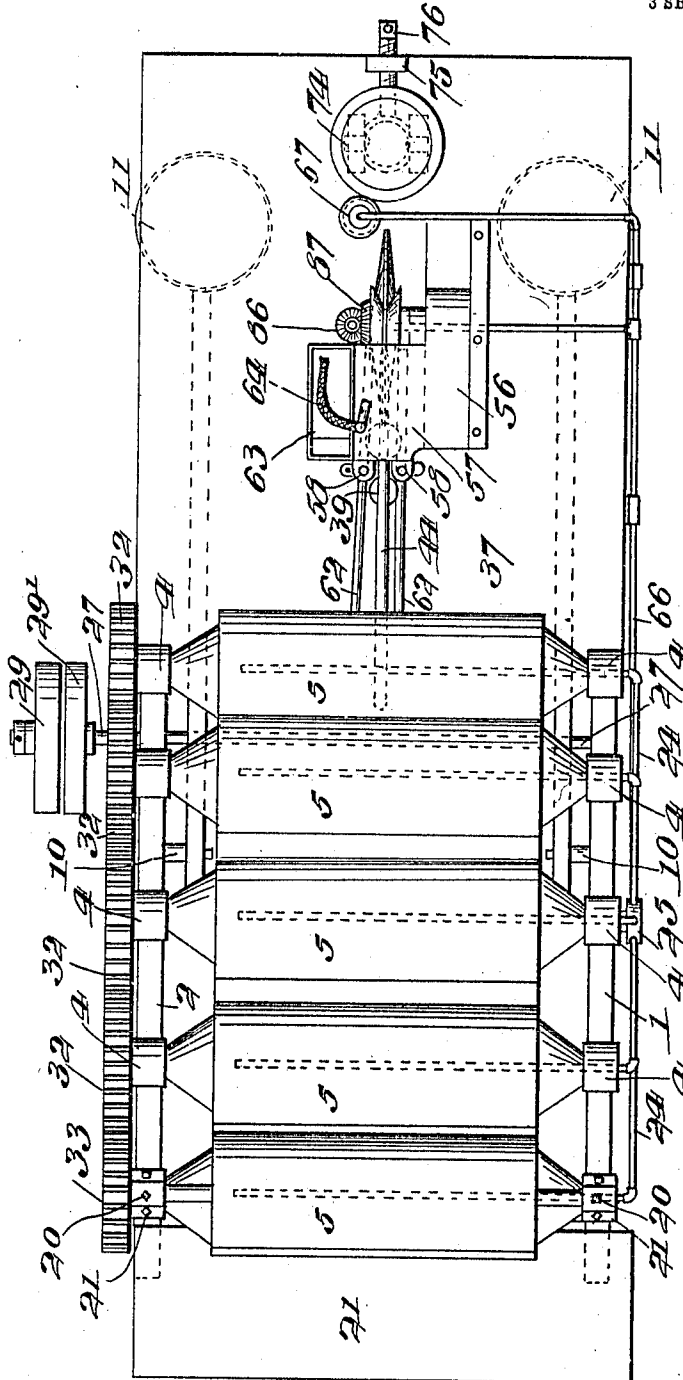
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3 SHEETS—SHEET 2.

Fig. 2.



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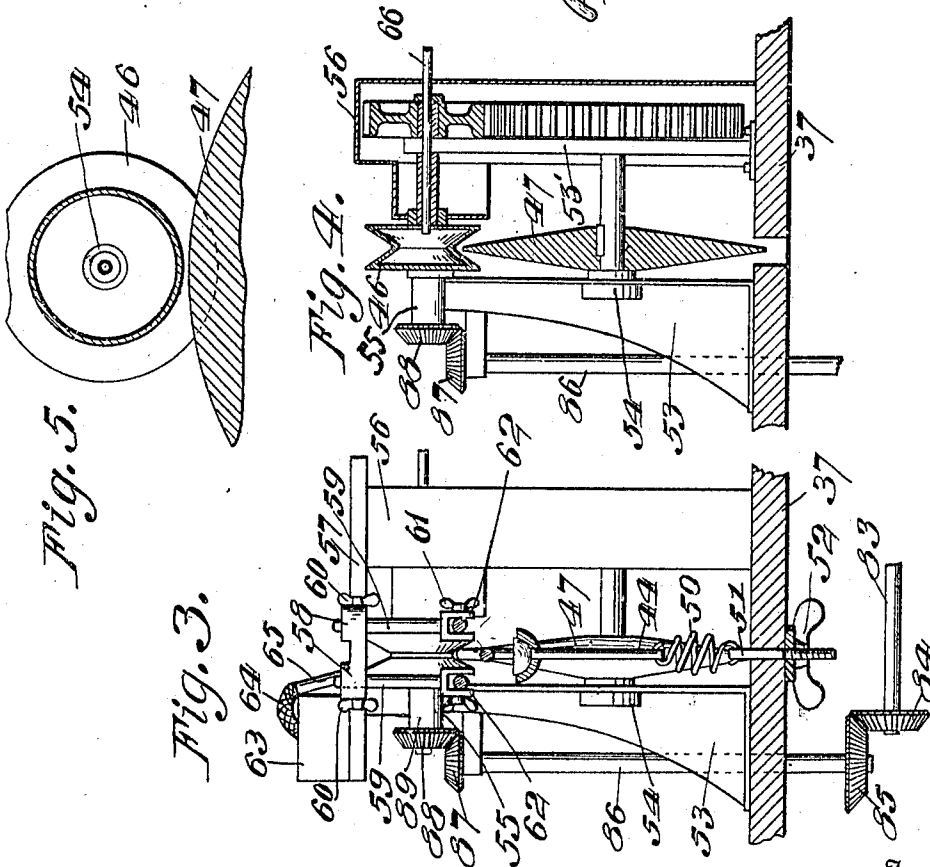
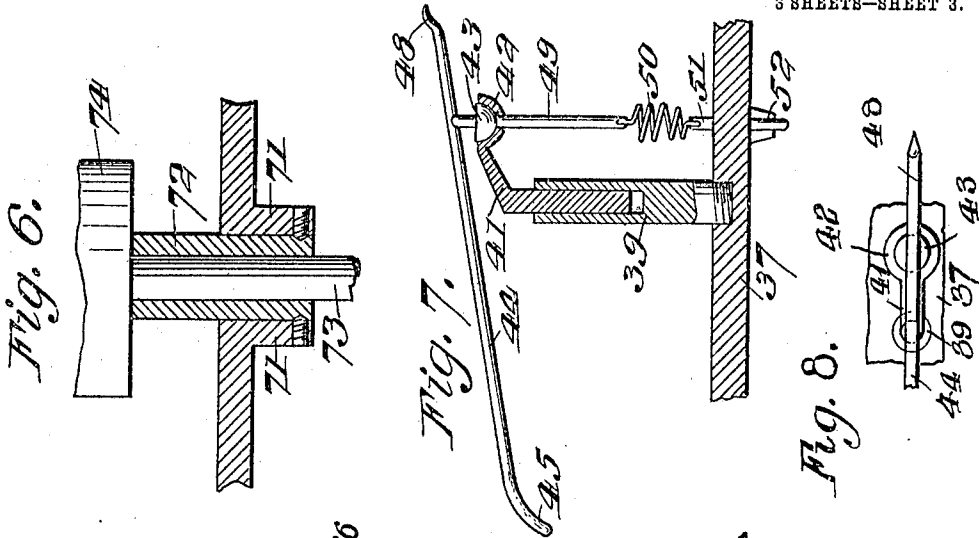
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

STEPHEN J. MILLER, OF DANBURY, CONNECTICUT.

IRONING-MACHINE.

950,399.

Specification of Letters Patent.

Patented Feb. 22, 1910.

Application filed August 17, 1908. Serial No. 448,902.

To all whom it may concern:

Be it known that I, STEPHEN J. MILLER, a citizen of the United States, residing at Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Ironing-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to collar ironing and folding machines, and particularly to that type which are especially adapted for turn-down or folded collars.

The object of the invention is to provide a machine of this character which will rapidly and efficiently iron, fold, dampen and shape the collar, and which will compensate for any inaccuracy in the folded seam so that irregular folding is impossible.

A still further object of the invention is to provide novel means for holding the padded pressure roller in constant engagement with the ironing rollers and for regulating the tension of the same.

Another object is the provision of novel means for adjusting the shaping rolls.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation; Fig. 2 is a top plan view; Fig. 3 is a vertical section on line 3—3 of Fig. 1; Fig. 4 is a vertical section on the line 4—4 of Fig. 1; Fig. 5 is a fragmentary longitudinal section through the shaping rolls; Fig. 6 is a transverse section on line 6—6 of Fig. 1; and Fig. 7 is a fragmentary section through the center guide fingers and its pedestal support.

Referring more especially to the drawings, 1 and 2 represent the side members of the frame, which are each provided with suitable supporting legs 3. These side members are held separated in any suitable manner and are provided with spaced bearing arms 4, in which are journaled the ironing rolls 5 preferably four in number and arranged in the arc of a circle, as shown in Fig. 1, to conform to the periphery of the padded pressure roller 6. This pressure

roller is journaled in bearings 7 which slide in the slots 8 formed upon the side pieces 1 and 2 of the frame.

The padded roller 6 is held normally in engagement with the ironing rollers 5 by the levers 9 which are pivoted to the frame pieces 1 and 2, as at 10, and have their forward ends engaged with the bearings 7. At their rear ends they are provided with suitable weight supporting tables 11, upon which a plurality of weights 12 are carried. These weights may be multiplied as many times as is necessary to increase the pressure of the lever upon the bearings and thereby the pressure of the roller 6 upon the ironing rolls 5, or the pressure may be reduced by removing a given number of the weights as may be desired. At the feeding end of the machine there is journaled in bearings 13, rigidly secured in the frame pieces 1 and 2, an ironing roll 14, which is arranged below the padded pressure roll 15, the latter having a shaft 16 mounted in bearings 17, slidably held within standards 18 carried upon the opposite members of the frame. The bearing boxes 17 rest upon compression springs 19 and are adjusted by means of set screws 20, threaded into bridging plates 21, which are secured to the standards. A suitable feeding table 22 is carried upon brackets 23 formed upon the frame members 1 and 2 and extends closely adjacent the meeting ends of the rolls 14 and 15. Each roll 5 and the bearings which support the same together with the roll 14 and its bearings 13 are hollow so as to receive the fuel pipes 24, which in this instance are connected to a supply head 25, which receives fuel from the main supply pipes 26.

In order to properly drive the pressure and ironing rolls simultaneously so there is no slipping of the collar as it passes therebetween, I provide a driving shaft 27 journaled in bearings 28 upon the under side of the frame pieces 1 and 2 and driven from any suitable source of power by the pulleys 29 and 29', the former of which is the idler. Upon the shaft I secure a small pinion 30 which meshes with a large gear 31 upon the pressure roll 6, which gear 31 in turn meshes with a plurality of gears 32 carried upon the shafts of the ironing rolls 5. The gear 32 of the foremost ironing roll 5 is adapted to drive a gear 33 carried by the padded roll 15, through an intermediate gear 34 and the

gear 33 upon the shaft of the roll 15 engages or meshes with a gear 35 upon the ironing roll 14.

Extending rearwardly from the side members 1 and 2 are angular supporting arms 36 upon which the table 37 rests. The table is also supported by braces 38 which extend from the legs 3 to a point underneath the table intermediate its length. Extending upwardly from the table 37 is a tubular standard 39 having adjustably secured therein, by means of the set screw 40, the angular socket arm 41, upon the outer end of which is provided a spherical socket 42 adapted to receive a hemispherical bearing head 43 of the folding finger 44. This folding finger extends from a point adjacent the discharge end of the ironing rolls, where it is adapted to receive a collar on its curved end 45 to a point adjacent the folding rolls 46 and 47 to be hereinafter described. The end of the finger adjacent the folding rolls is sharpened as at 48 to engage the under seam of the collar in its fold, so as to properly guide the collar to said folding rolls. Extending downwardly from the body of the finger 44 is a vertical rod 49 upon which the hemispherical head 43 is secured. This rod extends through an aperture in the bottom of the socket 42 and has connected to its lower end a spiral spring 50. The opposite end of the spring 50 is connected to a squared rod, 51, which is threaded at its end to receive a thumb nut 52, by which the tension of the spring may be adjusted. The squared portion of the rod 51 prevents it from turning in the table 37 and thereby, when the finger 44 is turned by reason of any inaccuracy in the collar seam, the spring 50 acts as a torsion spring to return the finger to normal.

The standard 53 supports the bearings 54 and 55 and the gear casing 56 is supported upon the base and upon the shaft of the wheel 46 and has secured to it a table 57, with forwardly projecting apertured ears 58 into which are adjustably secured folding-finger supporting rods 59 by means of the set screws 60. The lower end of these rods is apertured to receive the attaching bolt 61 of the folding fingers 62. These folding fingers extend from a point adjacent the middle of the last ironing roll to a point closely adjacent the sides of the folding roll 47. They cross the finger 44 at a point slightly forward of the support of said finger and diverge with respect thereto from that point so that the two halves of the collar are folded upon opposite sides of the roll 47. The platform or table 57 which supports the arms 62 also carries a suitable liquid tank 63 in which is dipped the wick end 64 extending from a moistening tube 65. The opposite end of this tube 65 is arranged with its projecting wick immediately above the end 48 of the finger

44 so that the seam of the collar or folding point is moistened to prevent cracking before passing through the folding rolls 46 and 47. The roll 47 is V-shape in cross section and the roll 46 is in the shape of a double cone 70 pulley to overlap the sides of the roll 47. This roll 46 is preferably heated as is customary with the ironing rolls 5 by supplying fuel through the pipe 66 thereto. The lower roll 47 may also be heated in a similar manner. Opposite the standard 53, the shaft of the wheel 47 is mounted in a standard 53' which also supports the outer end of the shaft of the wheel 46. A suitable gear is carried upon the shaft of the wheel 46 which meshes with a similar gear of larger diameter carried upon the shaft of the wheel 47. This insures the proper operation of the wheels 46 and 47.

Beyond the folding rolls 47 and 46 and situated to one side of the former is the ironing roll 67 of the shaping set. This ironing roll is heated by a branch from the pipe 66, and has its shaft 68 journaled in a sleeve 69 formed integral with the table 37. Its upper end is provided with a seam receiving annular notch 70 formed to receive the upper folded edge of the collar. Depending from the table 37 are a pair of laterally spaced ears 71 in which is pivoted a sleeve bearing adapted to receive the shaft 73 of the padded pressure roll 74 which is off-set with respect to the roll 67 and is arranged preferably in alinement with the folding roll 47. At the outer end of the table an upstanding lug 75 has threaded in it the horizontal pressure screw 76 whose inner end bears against the sleeve 72 above the table 37.

Keyed to the driving shaft 27 is a beveled pinion 77 which meshes with a similar pinion 78 carried upon a longitudinal shaft 79 which is supported in bearings 80 depending from the frame 37. The rear end of the shaft 79 is provided with a beveled pinion 81 meshing with a similar pinion 82 on a transverse shaft 83 which has at its opposite end a beveled pinion 84 meshing with a pinion 85 on the vertical shaft 86. This vertical shaft has at its upper end a pinion 87 meshing with a pinion 88 carried upon the shaft 89 which drives the folding roll 46, the roller 47 may be an idler or it may be driven by a pinion connected to the shaft 86. The shaft 79 extends beyond the pinion 81 and is provided with a pinion 90 adapted to engage a similar pinion 91 carried upon the lower end of the shaft 68 to drive the roll 67. A pinion 92 is carried upon the outer end of the shaft and engages a similar pinion 93 upon the shaft 73 so as to drive the padded roller 74. This driving mechanism which has been described for the operation of the rolls 46 and 47, and 67 and 74 is merely by way of illustration and I wish it understood that changes in this mechanism may be made

without in any way departing from the spirit and scope of the invention.

In operation the collar is passed between the rolls 14 and 15 with its under side adjacent the ironing roll 14 so as to iron the underneath side of the collar. After passing through the rolls 14 and 15 the collar is received between the large padded pressure roll 6 and the first ironing roll 5, it is then successively treated by the remaining three ironing rolls, from whence it passes to the guiding finger 44. In its dampened condition the collar falls over on the finger and has its sides engaged by the fingers 62 so as to properly shape the collar for its engagement by the folding rolls 46 and 47. When engaged by these rolls the sharpened end 48 of the finger follows the seam of the collar and is adapted to move back and forth as inaccuracies are met with, so that the collar is properly presented to the rolls 46 and 47. Before being ironed by these rolls the collar is moistened upon its seam by the wick 64 so as to avoid cracking or splitting of the fabric and to permit proper bending thereof. After passing from the folding rolls 46 and 47 the collar is grasped by the forming or shaping rolls 67 and 74 with its seam or folded edge in the notch 70. After passing through these rolls the collar is completely laundried.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

Having thus described and ascertained the nature of my invention, what I claim as new and desire to secure by Letters-Patent, is:—

1. In a machine of the class described, a plurality of ironing rolls, a universally adjustable guiding finger to receive the material, a pair of folding fingers located on either side of the guiding finger, and a pair of folding rollers adapted to receive the material from said guiding and folding fingers. 50

2. In a machine of the character described, a series of ironing rolls, an automatic adjustable guiding finger adapted to receive the material therefrom, a pair of folding fingers on either side of said guiding finger, and a pair of folding rolls adapted to receive the material from said guiding and folding fingers. 60

3. In a machine of the character described, a series of ironing rolls, a guiding finger adapted to receive the material from said ironing rolls, said finger being automatically and universally adjustable, a pair of folding fingers, one on each side of said guiding finger, means for adjusting said folding fingers, and a pair of folding rolls adapted to receive the material from said guiding and folding fingers. 70

4. In a machine of the character described, a series of ironing rolls, a universally and automatically adjustable guiding finger adapted to receive the material from said ironing rolls, a pair of universally adjustable folding fingers, one on either side of said guiding finger, a pair of folding rolls adapted to receive the material from the guiding and folding fingers, said guiding fingers adapted to straddle one of said folding rolls, a driving mechanism for said folding rolls, and a shield therefor. 80

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

STEPHEN J. MILLER.

Witnesses:

HORACE PURDY,
HATTIE L. HANLEY.