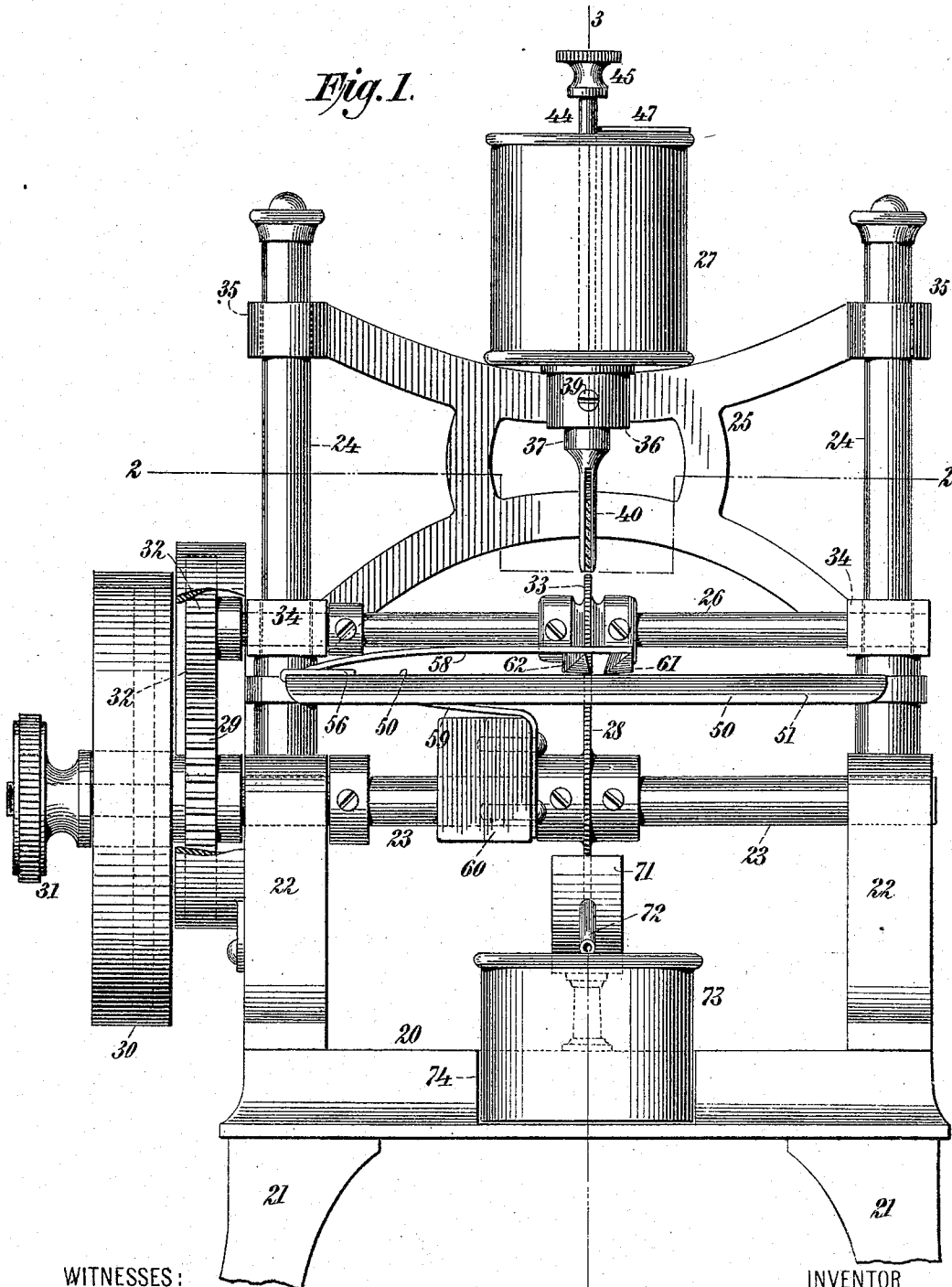


W. A. ZEIDLER.
TURN DOWN COLLAR SEAM DAMPENING MACHINE.
APPLICATION FILED AUG. 9, 1907.

942,233.

Patented Dec. 7, 1909.
5 SHEETS—SHEET 1.

Fig. 1.



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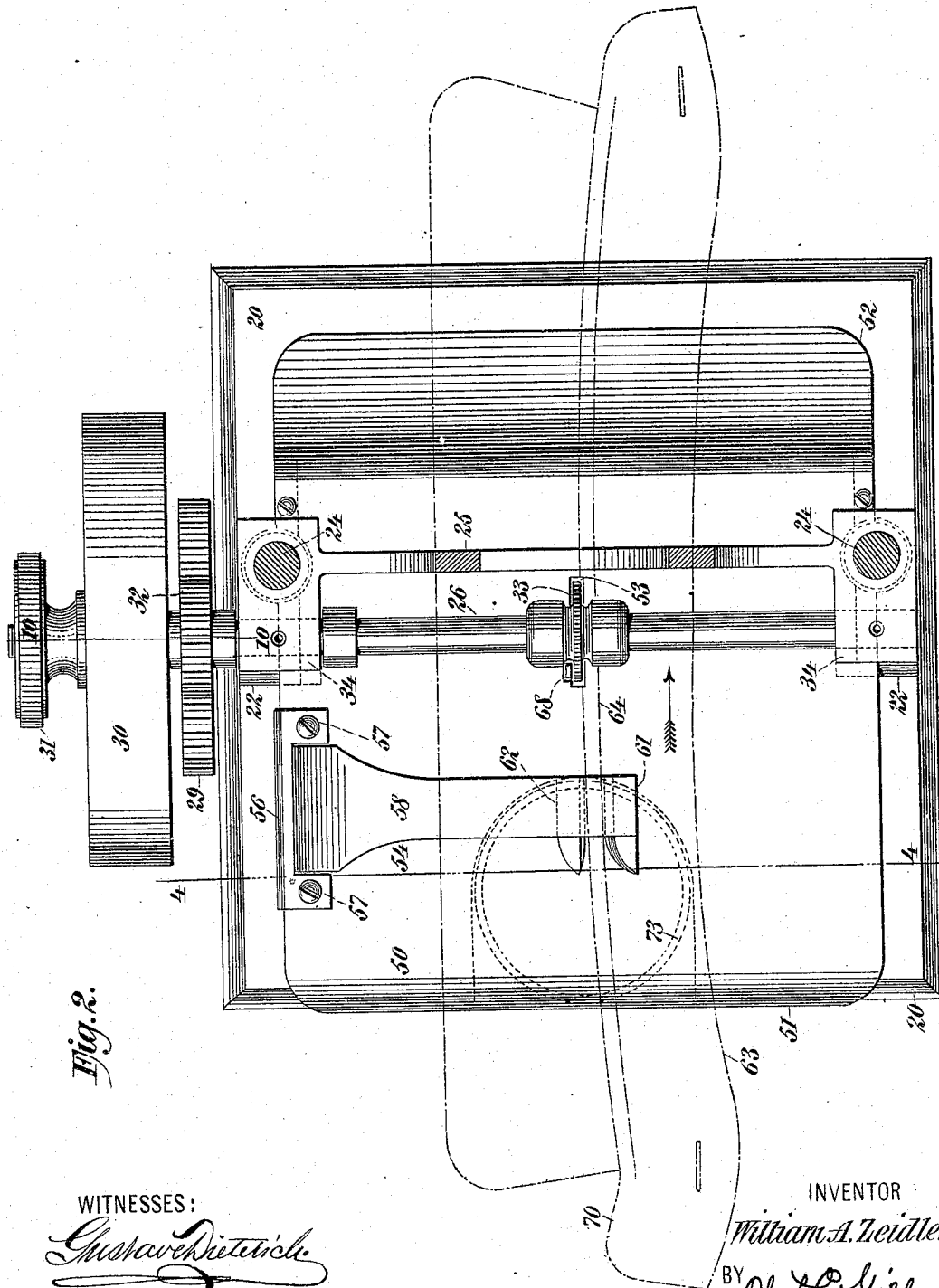


Fig. 2.

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Fig. 3.

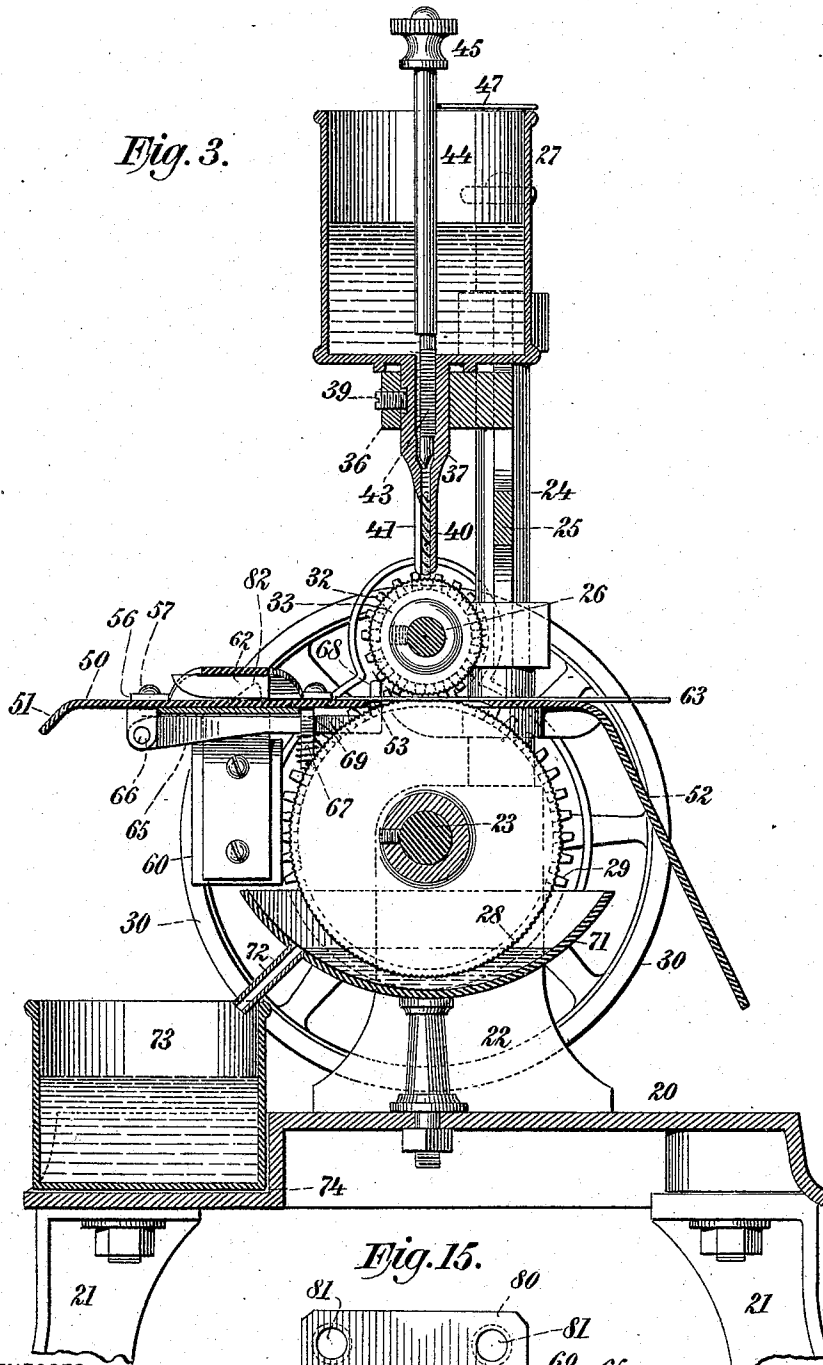
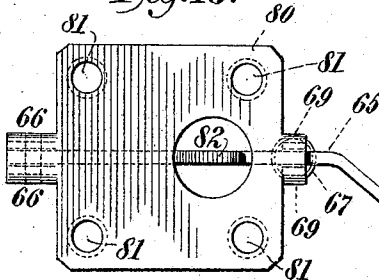


Fig. 15.



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6 SHEETS—SHEET 4.

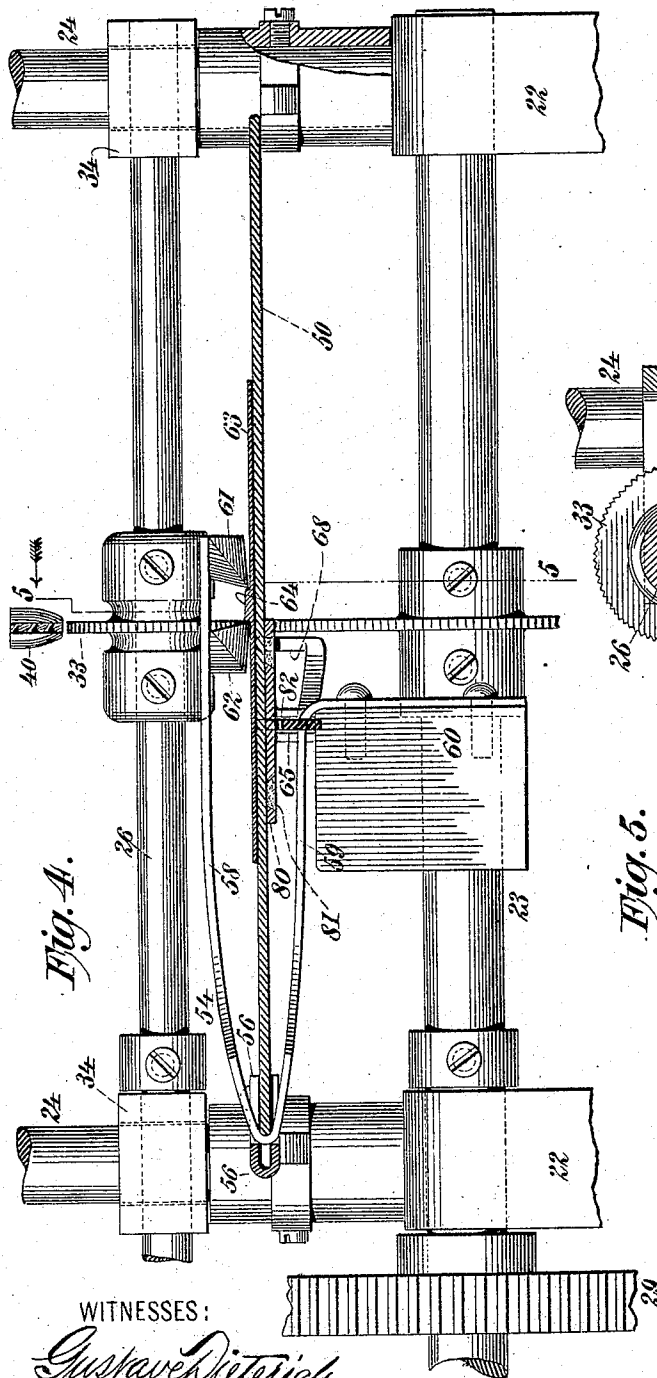


Fig. 4.

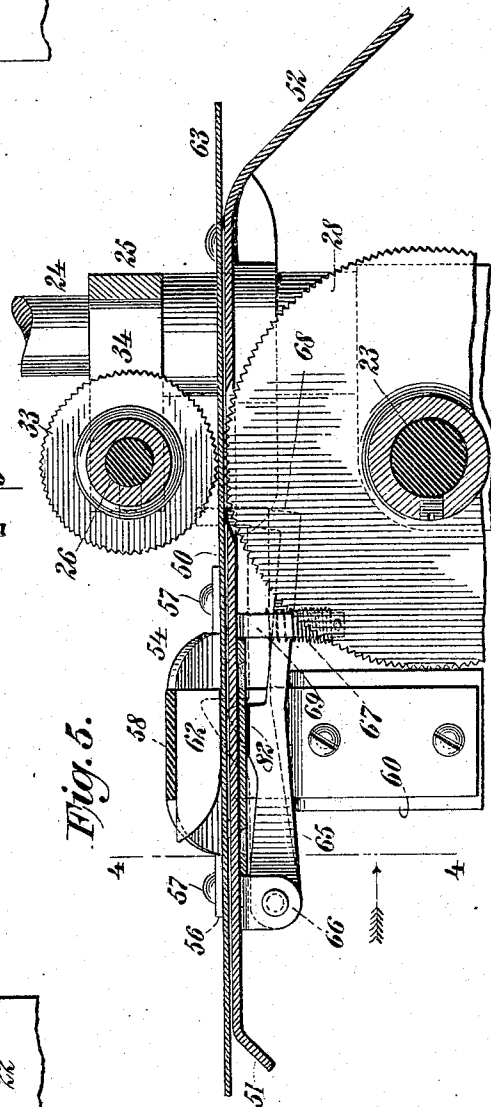


Fig. 5.

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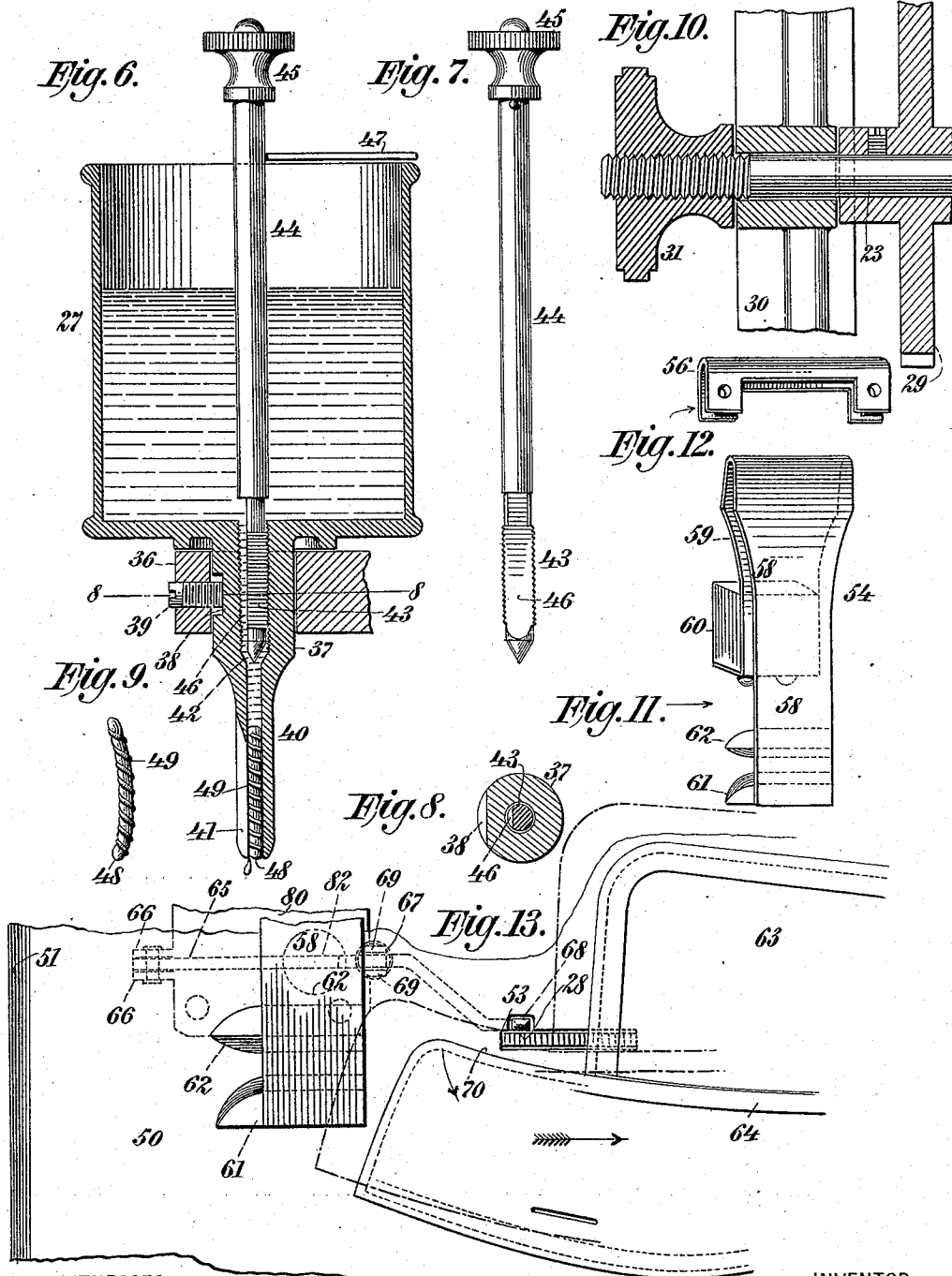
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942,233.

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5 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

WILLIAM A. ZEIDLER, OF NEW YORK, N. Y., ASSIGNOR TO WILLIAM A. ZEIDLER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

TURN-DOWN-COLLAR-SEAM-DAMPENING MACHINE.

942,233.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed August 9, 1907. Serial No. 387,746.

To all whom it may concern:

Be it known that I, WILLIAM A. ZEIDLER, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Turn-Down-Collar-Seam-Dampening Machines, of which the following is a specification.

The invention relates to improvements in machines for dampening turn-down collars along the line on which they are to be folded, and it consists in the novel features and combinations of parts hereinafter described and particularly pointed out in the claims.

Turn-down collars are ironed flat and thereafter folded along the line of their longitudinal seams, which vary in their curvatures in accordance with the sizes of the collars and the particular effects sought to be produced by manufacturers of collars. By properly dampening flat-ironed turn-down collars along the line on which they are to be folded, the collars when folded present a better appearance and the danger of breaking the fibers of the linen by folding the collars along said line is avoided.

The object of the present invention is to provide a machine capable of being driven by power and automatically dampening turn-down collars along their folding-line, said machine automatically guiding the collars fed to it and applying just the requisite amount of moisture to the same to enable their proper and safe folding.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Figure 1 is a front elevation, partly broken away, of a collar-dampening machine constructed in accordance with and embodying the invention; Fig. 2 is a top view, partly in section on the dotted line 2—2 of Fig. 1, of the same; Fig. 3 is a vertical section through the machine on the dotted line 3—3 of Fig. 1; Fig. 4 is an enlarged vertical transverse section through a portion of the machine, partly broken away, on the dotted line 4—4 of Figs. 2 and 5; Fig. 5 is a vertical longitudinal section through a portion of the same on the dotted line 5—5 of Fig. 4; Fig. 6 is a central vertical section through the top reservoir for water and means for controlling the passage

of the water to the upper side of the collars passing through the machine; Fig. 7 is a detached side elevation of a valve-rod for regulating the escape of the water from the top reservoir; Fig. 8 is a horizontal section through the lower stem of the reservoir, on the dotted line 8—8 of Fig. 6; Fig. 9 is a detached view of means provided in the outlet from the stem of the top reservoir for limiting the escape of the water therefrom; Fig. 10 is a detached sectional view, on the dotted line 10—10 of Fig. 2, of a portion of the machine and is presented to illustrate more particularly the clutch employed on the end of the driving shaft; Fig. 11 is a detached perspective view of the frame carrying the collar-guides; Fig. 12 is a detached perspective view of a plate employed for securing the collar guide frame upon the feed-table of the machine; Fig. 13 is a detached top view of a portion of the feed-table of the machine and illustrates the collar as having been moved laterally to carry its final tab end from the path of the dampening wheels, this occurring after the collar has been completely dampened along its folding line and for the purpose of preventing the final end button-hole tab of the collar from passing through said wheels; Fig. 14 is a detached edge view of a portion of the frame carrying the collar-guides, the rear ends of said guides being shown, and Fig. 15 is a detached top view of the plate to be secured to the lower surface of the feed-table and carrying the means for effecting the lateral movement of a traveling collar to carry its final tab end from the path of the dampening wheels.

In the drawings, 20 designates the bed-plate of the machine, this plate being supported upon suitable legs 21 and having at its opposite side edges vertical standards 22 in which the driving shaft 23 is mounted and which support vertical guide rods or posts 24 upon which is movably mounted a frame 25 carrying at its lower portion the auxiliary shaft 26 and at its upper portion the water reservoir 27.

The driving shaft 23 has secured upon its central portion the milled or finely serrated dampening wheel 28 and upon one of its end portions a gear wheel 29, adjacent to which a band-wheel 30 is freely mounted upon said shaft and adapted to be placed in engagement with the hub of the gear wheel 29 by

means of a threaded clutch-nut 31 (Figs. 1 and 10), which engages a thread on said shaft and is adapted to be screwed up against said band-wheel and thereby press 5 the hub of the latter against the hub of said gear wheel 29. The gear wheel 29 is in mesh with a smaller gear wheel or pinion 32 secured upon the end of the shaft 26, which carries the upper dampening wheel 10 33, this wheel being finely serrated or milled on its periphery and located directly above the lower dampening wheel 28.

The shaft 26 is mounted in forwardly projecting lugs 34 formed on the frame 25 and 15 hence may yield upwardly with its wheel 33 from the wheel 28 so that collars varying in thickness may properly be fed between said dampening wheels.

The frame 25 is of skeleton formation and 20 formed at its upper outer ends with ears 35 to guide upon the rods or posts 24, while the lower outer ends of said frame 25 are apertured to guide upon said posts. At its upper central portion the frame 25 is formed 25 with a forwardly extending arm 36 to receive a hollow stem 37 which extends downwardly from the bottom of and is in communication with the reservoir 27, said stem being flattened or grooved on one side, as at 30 38 (Figs. 6 and 8) to receive the inner bearing-end of a screw 39 which passes through the front of the arm 36 and is utilized for securing the reservoir 27 firmly upon said arm. The stem 37 terminates at its lower 35 portion in a discharge nozzle 40 whose lower end is centrally over and close to the upper edge of the dampening-wheel 33, and the side of the nozzle 40 is preferably vertically slotted on one side, as at 41, (Figs. 3 and 6). 40 Between adjacent portions of the discharge nozzle 40 and stem 37 is formed a valve seat 42 (Fig. 6), and within the stem 37 above said seat is provided a threaded valve stem 43 formed on the lower end of a rod 44 45 which extends upwardly above the reservoir 27 and is provided with a head 45 for convenience in rotating it. The valve stem 43 is threaded to engage a thread formed on the inner walls of the stem 37 and is flattened, 50 as at 46, on one side, so as to form a passage for the water from the reservoir 27 to the discharge nozzle 40.

The rod 44 is provided with a light spring arm 47 whose outer end engages the upper 55 edge of the reservoir 27 and which serves to place a tension on the rod 44 sufficient to maintain said rod and its valve stem 43 in any position to which it may be adjusted for regulating the flow of the water around the 60 lower tapered end of said stem and by the valve seat 42 and into the nozzle 40. When the lower end of the valve stem 43 is screwed firmly down against the seat 42 no water will pass from the reservoir 27 to the nozzle 65 40, and in use the rod 44 will be so adjusted

as to permit only a limited quantity of the water to pass into the nozzle 40,—just sufficient to enable the proper dampening of the collars. Within the lower end of the nozzle 40 I place means for controlling the escape 70 of the water therefrom, these means comprising a piece of soft material, such as a lamp wick or cord 48 (Figs. 6 and 9), rather firmly wrapped spirally by a piece of wire 49, the coils of the wire being separated from 75 one another. I bend the coil of wire 49 with its inclosed filament 48 slightly, as shown in Fig. 9, before inserting it upwardly into the lower end of the nozzle 40 so that when the same is within said nozzle its ends will be 80 come flexed against the inner walls of the nozzle and thereby become secured in position. The slot 41 in the side of the nozzle exposes a portion of the filament 48 and wire coil 49 and the discharge from said 85 nozzle is mainly through said slot, the water in limited quantity trickling downwardly upon the outer side of said filament and wire coil where the same is exposed at said slot 41.

Upon the lower ends of the rods or posts 90 24 is secured a table 50 which will preferably be of sheet metal flared downwardly at its front edge, as at 51, and inclined downwardly at its rear portion, as at 52. The table 50 will preferably be nickel-plated so 95 as to present a smooth polished surface, and at its center said table is formed with a slot 53 up through which the lower dampening wheel 28 may project to a slight extent.

The table 50 supports the hinged guide- 100 frame 54 for the collars fed to the dampening wheels 33, 28, and this frame is formed from a strip of sheet metal folded upon itself, as more clearly indicated in Figs. 4 and 11, the bend of the metal being placed in 105 a recess formed in the side edge of the table 50 and there secured by a plate 56 (Figs. 2, 4, 12), which is of U-shape in cross-section and slipped upon the edge of said table, one portion of the U being above the table and 110 the other portion thereof below the same and the plate being secured in position by screws 57. The plate 56 does not bind against the guide-frame 54 but fits snugly up to the outer bent end and side edges of the same 115 and serves to keep the frame in position and permit it to have a pivotal or hinged movement, with the edge of the table serving as the pivot. The guide-frame 54 being formed of a strip of folded sheet metal, com- 120 prises an upper member 58 and lower member 59, and these members are bowed apart, as shown in Fig. 4, so that they only contact with the table 50 at their outer adjoining portion. The inner end of the lower mem- 125 ber 59 of the collar guide-frame is bent downwardly and to this downwardly bent end is secured a weight 60 which operates to pull the upper member 58 downwardly toward the table 50 with a yielding pressure. 130

The inner end of the upper member 58 of the collar guide-frame is provided with guiding lugs 61, 62, respectively, whose facing sides converge slightly downwardly and inwardly and whose lower inner edges present rather sharp angular surfaces to engage the collar (numbered 63) while the latter travels through the machine.

Turn-down collars are first ironed flat and are fed to the machine with their wrong side or inner side uppermost. The seam along the folding line at the inner side of the collar creates a ridge (which I number 64 in Fig. 4), and the purpose of the lugs 61, 62 is to engage the collar adjacent to the edges of said ridge. In the employment of my machine the lug 62 is of the greater importance, and it, as indicated in Fig. 4, has its lower inner edge in line with the dampening wheels and close to the seam edge of the ridge 64 on the collar. While both lugs 61, 62 are of importance in the correct guiding of the collar, the lug 62 is of the greater importance of the two because it engages the seam edge of the ridge 64 and maintains a close relation to the same during the entire travel of the collar and without regard to the curvature of said ridge. The tendency of the collar is to swivel upon the table 50 while passing through the machine, and in this swiveling action the seam edge of the ridge 64 presses against and follows along the inner lower edge of the lug 62, with the result that the collar is kept upon its proper path, the seam edge of the ridge 64 accurately passing along the edge of the lug 62 and directly along the side edge of the dampening wheels 33, 28, in the manner indicated by dotted lines in Fig. 2. The lug 61 while aiding in guiding the collar (especially collars with a wide ridge 64) exerts a pressure on the collar (as does the lug 62) and serves to maintain the due relation of the latter to the lug 62 and dampening wheels 33, 28.

Upon the lower side of the table 50 are provided depending ears 66 between which is pivoted a lever arm 65 (Figs. 3, 5, 13) whose rear part is pressed upon by a light spring 67 and whose rear end constitutes a finger 68 which projects upwardly through a recess in the side of the wheel-slot 53 formed in said table, the inner or rear end of said lever 65 being deflected or bent laterally in a direction toward the path of the ridge 64 of the collar and being normally pressed upwardly by the spring 67.

The relation of the finger 68 to the collar and to the dampening wheels is more clearly indicated in Figs. 2 and 13. The spring 67 is held upon vertical fingers 69 bent downwardly from a plate 80 (Fig. 15) which carries the lugs 66 and is soldered through beveled holes 81 (Figs. 4 and 15) to the lower side of the table 50. The lever arm 65

passes between the fingers 69 and is guided by them, and said arm 65 is formed with an upwardly and rearwardly inclined finger or member 82, which normally projects upwardly through a hole in the table 50 at the left of the collar guide-lug 62, said finger 82 being in the path of the collars adjacent to a point at which said guide-lug exerts its pressure upon said collars as they are fed through the machine. The collars while upon the finger 82 keep the lever-arm 65 and finger 68 depressed against the tension of the light spring 67, and when the rear end of a traveling collar leaves the finger 82 said spring will be left free to project the finger 68 upwardly through the table 50 the moment the main body of the collar has passed through or is about leaving the dampening wheels 33, 28, the purpose being that said finger 68 shall at such time be projected upwardly so that the abruptly-turned edge 70 of the final tab of the collar may pass against the edge of said finger 68 and said finger, by forming an obstruction to the passage of said edge, be enabled to turn or swivel the collar laterally to a sufficient extent to permit said tab to travel along the side of instead of between the said wheels, whereby the said tab is enabled to pass the dampening wheels without touching or becoming dampened by them. In the absence of the finger 68 the abruptly-turned edge portion of the tab on the collar would pass between the dampening wheels, with the result that a wet streak would be applied across said tab, and this would be objectionable. The finger 68 remains inoperative therefore, except upon the passage of the final end of the body of the collar from over it, and then said finger ascends to position to be engaged by the inclined edge 70 of the final tab of the collar to force said tab laterally so that it may not pass between the dampening wheels.

The lower dampening wheel 28 rotates within a receptacle 71 containing water, which supplies the requisite moisture to said wheel, and this receptacle 71 is provided with a discharge or overflow spout 72 leading to a suitable cup 73 placed upon the bed plate 20, the latter being formed with a suitable recess 74 to hold said cup.

The dampening wheels 33, 28, have milled or finely serrated edges so as to enable them to readily carry the liquid to the collar being fed through the machine, and the lower wheel 28 is larger than the upper wheel 33 so that any surplus of liquid may run down the sides of the same in lieu of being carried to the collar, it being desired to apply less moisture to the outer or right side of the collar than to the inner or wrong side of the same. In view of the diameter of the lower dampening wheel 28 any surplus of water carried upwardly by said wheel will have

time to flow back down the sides of the wheel without reaching the collar, whereas if the wheel 28 were small the water carried upwardly by it would reach the collar and
5 might unduly dampen the same.

In the employment of the machine of my invention water will be supplied to the reservoir 27 and receptacle 71 and power applied to the belt-wheel 30, the latter being
10 by means of the clutch-nut 31 placed in firm engagement with the gear wheel 29. The collars will be fed, one at a time, to the machine by the attendant, the reverse or inner side of the collar being uppermost, and the
15 seam edge of the longitudinal ridge 64 of the collar being delivered against the dampening wheels and the right hand edge of the guide-lug 62, whereupon the collar may be left to itself, since it will be accurately
20 guided through the machine and discharged from the rear end thereof, the dampening wheels 33, 28 properly dampening the collar along its folding line or along the line of the seam edge of the ridge 64. The
25 quantity of liquid fed to the collar from the reservoir 27 may be regulated from the valve rod 44. During the travel of the collars through the machine they are held flat upon the table by means of the weight
30 60 and guide lugs 61, 62, and also by the weight of the frame 25 which carries the water reservoir 27, shaft 26 and upper dampening roller 33. The frame 25 is vertically movable upon the posts 24 and is
35 caused to move upwardly to a slight extent by the thickness of the collars fed between the dampening wheels. As hereinbefore explained the final tab end of the collar is prevented from passing between the dampening wheels by its contact with the finger
40 68, which after being permitted to ascend by the body of the collar leaving it, stands in the path of the edge of said tab and deflects the latter toward the right clear of the path of said wheels, the collar finally
45 falling down the rear inclined portion 52 of the table 50.

The finger 68 becomes depressed by the passage of the collar upon the finger 82 of the lever-arm 65 and hence it is removed
50 from the path of the collar before the latter reaches the dampening wheels 28, 33.

The weighted hinged guide-frame 54 carrying the guide lugs 61, 62 performs an important duty in the operation of the machine, in that the correct guiding of the collar is of the utmost importance. The frame 54 places a considerable weight upon the collar at the folding line of the latter, and
55 the lugs 61, 62 receive between them the seam-ridge 64 formed on the collar. The front ends of the lugs 61, 62 have downwardly and inwardly inclined surfaces, so as to facilitate the passage of a collar under
60 them, while the lower inner edges of said

lugs beyond the entrance thereto are straight. The front end of the lug 61 curves inwardly at its inner side, while substantially the entire inner side of the lug 62 is straight for the purpose of compelling the inclined edge
70 portion of the final tab of the collar to pass under said lug. If the inner side of the front end of the lug 62 curved inwardly, as does the like portion of the lug 61, the edge of the final tab of the collar might, when
75 not absolutely flat, ride against such curved surface and divert the collar from its true path. The rear ends of the lugs 61, 62 are shown in Fig. 14. The straight edge of the lug 62 by engaging the seam edge of the
80 ridge on the collar keeps the collar on a proper feed line, and said lug is assisted in its work by the lug 61.

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

1. In a collar-dampening machine, a pair of dampening wheels disposed one over the other, means for rotating the same, and means for supplying water to said wheels, combined with a feed-table over which collars are fed to said wheels, means for engaging the seam-edge of the seam-ridge of the collar for guiding the same, and a yielding finger normally held inoperative by the body of the traveling collar and adapted when
95 unrestrained to project upwardly through a hole in said table in the path of the inclined edge of the tab-end of the collar for deflecting the same from passage between said wheels; substantially as set forth. 100

2. In a collar-dampening machine, a pair of dampening wheels disposed one over the other, means for rotating the same, and means for supplying water to said wheels, combined with a feed-table over which collars are fed to said wheels, and a guide for the collars, said guide comprising a folded plate hinged at its fold on said feed-table and comprising an upper member extending inwardly above said table and a lower member extending inwardly below said table, said lower member being weighted and said upper member having at its inner end depending lugs to engage the collar at opposite sides of its seam-ridge and one of said
115 lugs being in line with said wheels and adapted to engage the seam-edge of said ridge; substantially as set forth.

3. In a collar-dampening machine, a pair of dampening wheels disposed one over the other, means for rotating the same, and means for supplying water to said wheels, combined with a feed-table over which collars are fed to said wheels, a collar guide formed of a folded plate passed upon the
120 edge of said table and adapted to have a hinged action thereon, and a U-plate secured on said edge for maintaining said plate in position, said guide comprising an upper member extending inwardly above said table 130

and a lower member extending inwardly below said table, said lower member being weighted and said upper member having at its inner end depending lugs to engage the collar at opposite sides of its seam-ridge and one of said lugs being in line with said wheels and adapted to engage the seam-edge of said ridges; substantially as set forth.

4. In a collar-dampening machine, a pair of dampening wheels disposed one over the other, means for supplying said lower wheel with water, means for rotating said wheels to draw collars through the machine and dampen them along their folding line, and means for guiding said collars, combined with means for feeding water in limited quantity to said upper wheel and comprising a water-reservoir having a hollow depending discharge nozzle containing a valve-seat and slotted in its side, a valve-rod adjustable toward and from said seat, and means in said nozzle and extending along its slotted side to control the escape of water from said nozzle; substantially as set forth.

5. In a collar-dampening machine, a pair of dampening wheels disposed one over the other, means for supplying said lower wheel with water, means for rotating said wheels to draw collars through the machine and dampen them along their folding line, and means for guiding said collars, combined with means for feeding water in limited quantity to said upper wheel and comprising a water-reservoir having a hollow depending internally threaded stem with a discharge nozzle extending downwardly therefrom and containing a valve-seat and slotted in its side, a threaded valve rod in said stem adjustable toward and from said seat and having a flattened side, and means in said nozzle and extended along its slotted side to control the escape of water from said nozzle; substantially as set forth.

6. In a collar-dampening machine, a pair of dampening wheels disposed one over the other, means for supplying said lower wheel with water, means for rotating said wheels to draw collars through the machine and dampen them along their folding line, and means for guiding said collars, combined with means for feeding water in limited quantity to said upper wheel and comprising a water-reservoir having a hollow depending discharge nozzle containing a valve-seat and slotted in its side, a valve-rod adjustable toward and from said seat, and a fibrous core spirally wrapped with wire in said nozzle and extending along its slotted side to control the escape of water therefrom; substantially as set forth.

7. In a collar-dampening machine, a pair

of dampening wheels disposed one over the other, means for supplying the lower wheel with water, a feed-table up through which said lower wheel projects slightly, a power shaft upon which said lower wheel is secured, guide posts secured to the frame of the machine and extending above said table, a vertically movable frame mounted on said guide posts, a shaft for the upper dampening wheel carried by said frame, gearing connecting said shafts, a water reservoir carried by said frame above said upper wheel, and means for effecting a controlled discharge of water from said reservoir to said upper wheel, combined with means for guiding the collars to said wheels with the seam-edge of the seam-ridge of the collars against the side edge of said upper wheel; substantially as set forth.

8. In a collar-dampening machine, a pair of dampening wheels for feeding and dampening the collars, a feed-table over which the collars are fed, and means for guiding the collars with the seam-edge of their seam-ridge at the side edge of the upper wheel, combined with a yielding finger normally in the path of the inclined edge of the final tab-end of the collar, and a finger connected therewith and in the path of the main body of the collar and adapted to be depressed by the passage of the collar over it and depress said yielding finger; substantially as set forth.

9. In a collar-dampening machine, a pair of dampening wheels for feeding and dampening the collars, a feed-table over which the collars are fed, and means for guiding the collars with the seam-edge of their seam-ridge at the side edge of the upper wheel, combined with a pivoted lever arm having a finger to be engaged by and form an obstruction to the inclined edge of the final tab-end of a collar and a finger in the path of the body of the collar, and means normally pressing said lever to project said fingers upwardly into the path of the collars; substantially as set forth.

10. In a dampening machine, in combination, a table having a slot, a kick-off pivoted to the table with its free end normally above the table and capable of moving through the slot to a point below the table, and means for moving the free end of the kick-off through the slot.

Signed at New York city, in the county of New York and State of New York, this seventh day of August A. D. 1907.

WILLIAM A. ZEIDLER.

Witnesses:

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