

T. J. WATTS.
CLOTHES IRONER.
APPLICATION FILED DEC. 19, 1912.

1,162,835.

Patented Dec. 7, 1915.

2 SHEETS—SHEET 1.

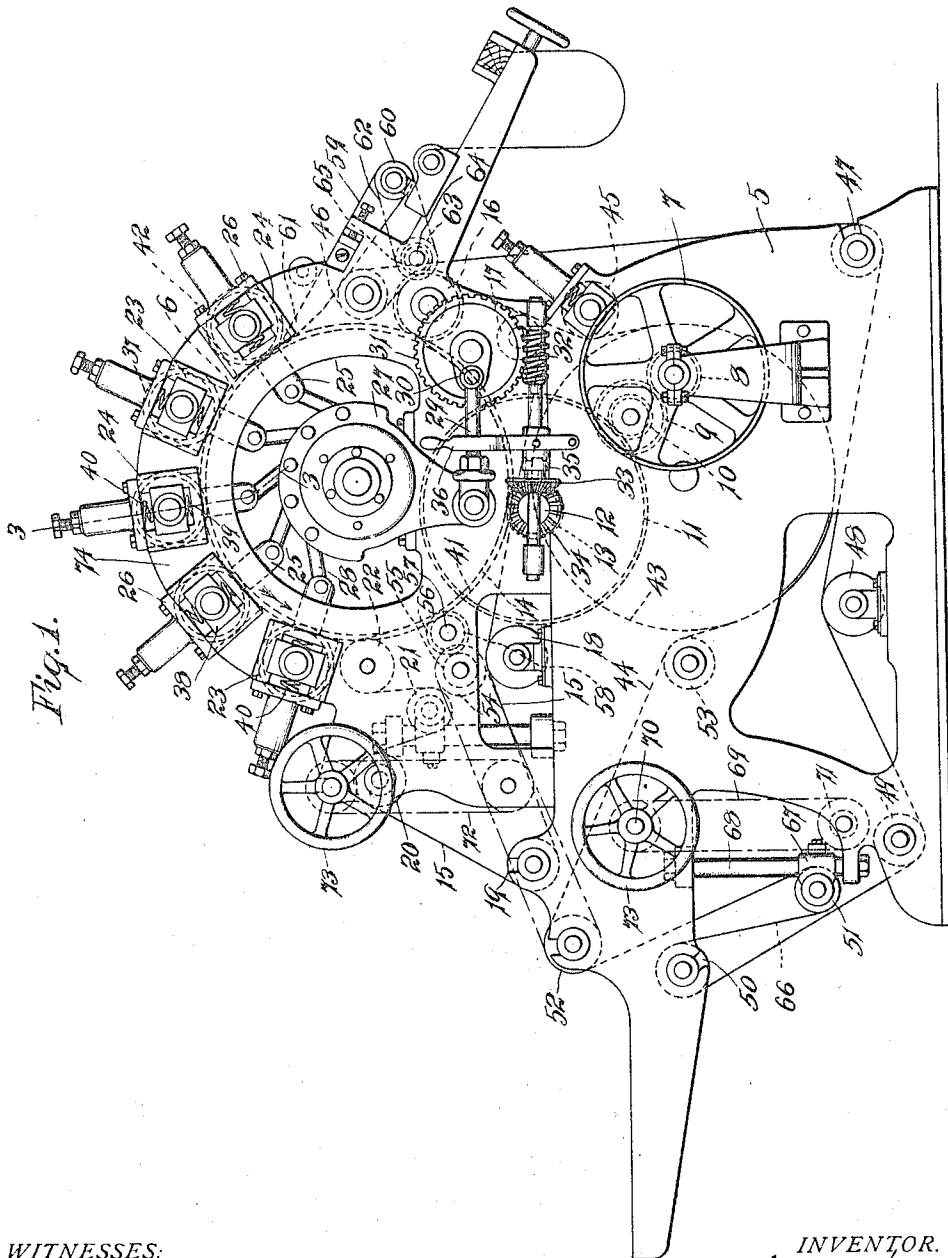


Fig. 1.

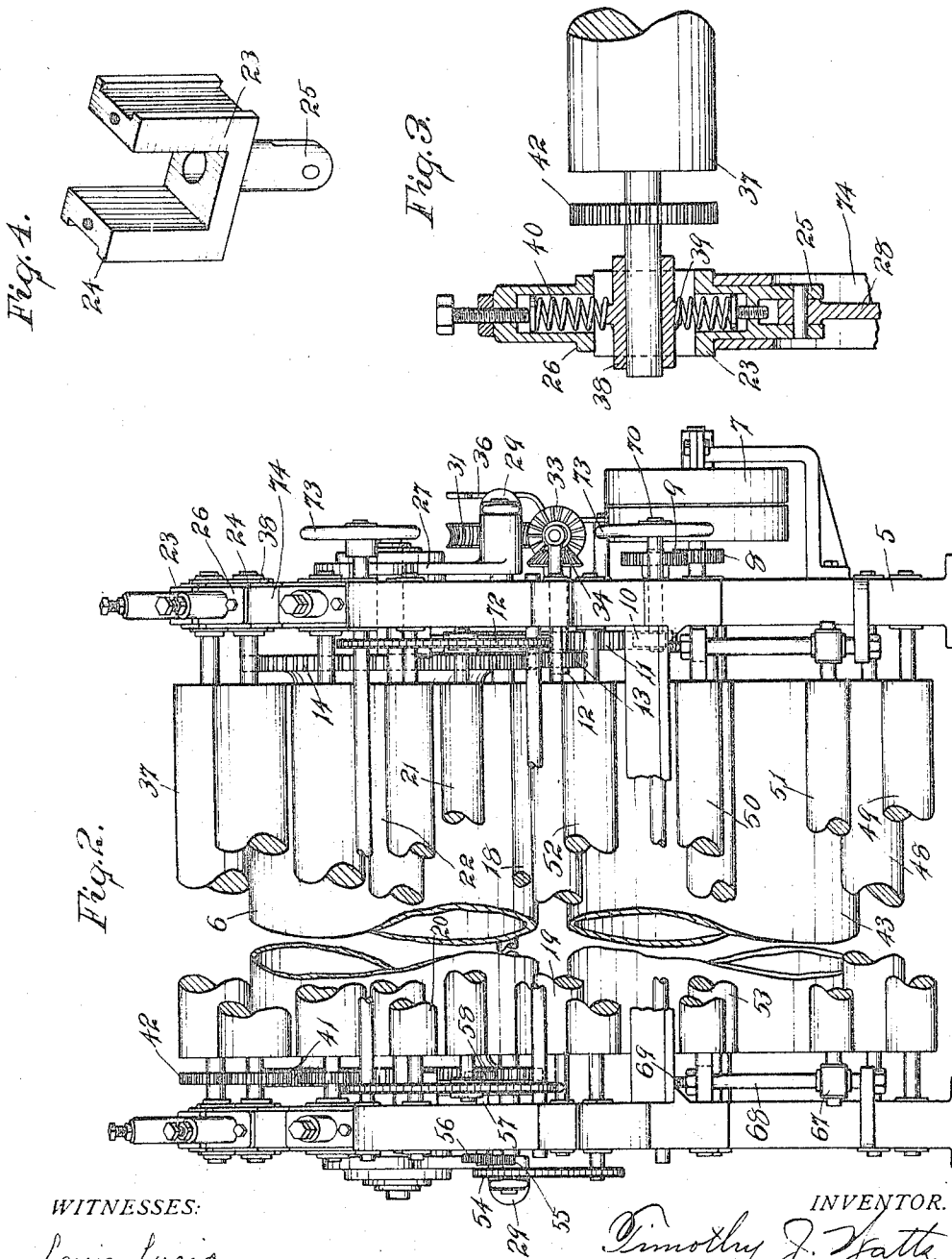
WITNESSES:
Louis Lucia
Examiner

INVENTOR.
Timothy J. Watts,
BY
Arthur B. Jenkins,
ATTORNEY.

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ATTORNEY.

UNITED STATES PATENT OFFICE.

TIMOTHY J. WATTS, OF SOUTH WINDHAM, CONNECTICUT.

CLOTHES-IRONER.

1,162,835.

Specification of Letters Patent.

Patented Dec. 7, 1915.

Application filed December 19, 1912. Serial No. 737,595.

To all whom it may concern:

Be it known that I, TIMOTHY J. WATTS, a citizen of the United States, and a resident of South Windham, in the county of Windham and State of Connecticut, have invented a new and Improved Clothes-Ironer, of which the following is a specification.

My invention relates to the class of machines employed for ironing clothes, and an object of my invention, among others, is to provide a machine of this class in which articles may be effectually ironed on both sides as they travel through the machine; and a further object of the invention is to provide means for so regulating the pressure upon the articles as to avoid injury to buttons and other devices attached to said articles being ironed.

One form of device embodying my invention and in the construction and use of which the objects hereinabove set out, as well as others, may be attained, is illustrated in the accompanying drawings, in which—

Figure 1 is a detail view in end elevation of an ironing machine embodying my invention. Fig. 2 is a view in rear elevation of the machine, the aprons being removed and the central portion of the machine being broken out. Fig. 3 is a detail view on enlarged scale and in section through one of the arches on plane denoted by dotted line 3—3 of Fig. 1. Fig. 4 is a detail view in perspective, also on enlarged scale, of one of the roll supports.

In the accompanying drawings the numeral 5 indicates end parts of the frame of the machine, which ends may be of any suitable form, preferably what is known as "box" construction, and composed of any desired material. These end parts are connected by various shafts, rollers, &c., having their bearings in said end parts, that may have other members if required to rigidly unite them. Pressure roll supporting arches 74, constituting portions of the ends of the frame are mounted, one upon each end part of the frame, and a cylinder 6 is rotatably mounted in suitable bearings in these arches, being supplied in any suitable manner with a heating medium for applying heat thereto.

Driving pulleys 7 consisting of ordinary fast and loose pulleys rotated in the usual manner, are mounted outside of the frame, a pinion 8 secured to rotate with the shaft bearing these pulleys, or at least with one of the pulleys, meshing with an intermediate

gear 9 located outside the frame and secured to a shaft mounted in the frame and supporting an intermediate pinion 10 located inside of the frame. The pinion 10 meshes with a cylinder driving gear 11 secured, inside the frame, to a shaft 12 mounted in the frame, this shaft also having a driving pinion 13 secured thereto, and meshing with a cylinder gear 14 secured to the cylinder 6, and by which the cylinder is rotated.

An apron 15 passes under the cylinder 6, in contact therewith, around apron supporting rolls 16, 17, 18, 19, 20, 21, and 22, each roll extending from end to end of the frame and having its bearings located in the end parts thereof.

The parts thus far described apply to a machine of old and well known construction and further and detailed description is therefore omitted at this point.

Each of the pressure roll supporting arches 74 contains bearings for the pressure rolls and these arches 74 may be of any suitable form and construction, preferably the "box" construction hereinbefore referred to, and in the machine herein shown they are formed separately from the end parts to which they are secured, resting upon the upper edges thereof. These arches are constructed to receive bearings for the pressure rolls, which bearings are so mounted that the rolls may be moved in a radial direction with respect to the axis of the cylinder 6, each of the arches having a series of box openings extending in a radial direction and within which the boxes are free to move in a radial direction as hereinbefore mentioned. A box support 23 is slidably mounted in each of said openings, each support having flanges 24 resting against the outer surface of the frame to hold the supports in place, and each support also having a projection 25 for the connection of a toggle arm to be hereinafter described. A cap 26 is secured to each of the supports, said caps containing springs to be hereinafter referred to.

A toggle plate 27 is rotatably mounted outside of the frame, preferably on the support for the cylinder 6 at each end of the frame, and toggles 28 connect these plates with each of the projections 25 for the purpose of moving the box supports. Each toggle plate is connected by a pitman 29 with a crank 30 secured to the shaft of a worm wheel 31, which shaft is supported upon and extends across the frame, and the

worm wheel meshes with a worm 32 at one end of a shaft bearing a bevel gear 33 meshing with a bevel gear 34 secured to the shaft 12. The bevel gear 33 is loosely mounted upon its shaft and is arranged to be connected and disconnected from said shaft by means of a clutch 35 of any suitable construction. It will be noted that the crank 30 is rotated at such a speed, that by means of a handle 36 for operating the clutch 35, the plates 27 may be mechanically operated to carry the box supports, and the rolls supported thereby, away from the periphery of the cylinder, or toward it, to such extent as may be desired, and when the desired amount of movement is obtained, disengagement of the clutch parts will stop the movement, and the parts will maintain the relative positions to which they have been moved.

Each of the pressure rolls 37 is mounted in a bearing block or box 38 located at each end of the roll in the box supports 23, each box resting upon a supporting spring 39 and having a resisting spring 40 seated against the opposite side of the box and projecting into the cap 26, each of these springs being supplied with means for adjusting their tension, as clearly shown in Fig. 3 of the drawings. Each of the rolls supported by the arches is driven by means of a pinion 42 secured to each roll and meshing with a roll driving gear 41 secured to the opposite end of the cylinder from the gear 14. The teeth of the pinions and gear are so formed as to permit radial movement of the pinions with the rolls while preserving the driving connection.

It will be seen that the teeth of the roll pinions and the roll driving gear may be readily formed to properly mesh while permitting radial movement of the rolls, as this radial movement is comparatively slight, depending merely upon the thickness of the clothes being operated upon. The rolls are moved radially to their full extent only when the machine is not in operation, and to remove pressure, and it is then immaterial whether the gears and pinions are in mesh or not, as, upon starting the machine, which must be done before the rolls are moved toward the cylinder, the pinions upon the rolls will readily engage the gear 41, which is rotating at this time.

The cylinder 6 is employed in ironing one side of the article, and an ironing chest 43 supported on the frame and heated in any suitable manner, is employed to iron the articles on the opposite side as they are passed in contact with its surface. This chest is maintained stationary, with its surface suitably prepared to receive and act upon the articles that are carried beneath it by an apron 44 supported by rolls 45—16—46—47—48—49—50—51—52 and 53.

As herein shown a gear on the shaft of the apron roll 16 meshes with the cylinder gear 14, to rotate the roll 16 and move the apron 15, and this, by reason of contact of the aprons on the roll 16, aids in moving the apron 44, positive movement to which, however, is imparted by means of a sprocket wheel secured to the shaft of the roll 52 that receives a chain from a sprocket wheel 54 having a pinion 55 meshing with a gear 56 secured to a shaft 57 rotatably mounted in the frame and having secured thereto a pinion 58 meshing with the roll driving gear 41. The sprocket wheel 54 and pinion 55 are mounted on a stud projecting from the side of the frame.

A feed apron 59 passes around a feed apron roll 60 and a toe piece 61, the roll 60 being driven as by means of a sprocket chain 62 passing around a sprocket on the shaft of the roll 60 and a sprocket wheel 63 secured to a shaft 64 mounted in the frame and having a pinion 65 meshing with the gear for driving the roll 16.

Tension upon the aprons 15 and 44 is maintained by mechanism constructed as follows, a description of one being sufficient for both: A loop 66 is formed in the run of the apron 44, the roll 51 being located in this loop and mounted in bearing blocks 67, at each end of the roll, slidable upon guide rods 68 secured to the frame. Each of these blocks is secured to a sprocket chain 69 passing about a sprocket wheel secured one near each end of an equalizing shaft 70 extending across the frame, each chain passing around an idle sprocket wheel 71 mounted on a stud secured to the frame. It will be seen that should one end only of the tension roll be moved for any cause, this movement is at once imparted through the shaft 70, sprocket wheel and chain 69 to the opposite end of the roll and an equal tension upon both ends of the apron is thus preserved. A similar construction of tensioning device for the apron 15 embodies a sprocket chain 72 and other mechanism corresponding to that just above described.

A hand wheel 73 may be employed upon each of the equalizing shafts for moving the tension rolls to affect the tension.

In the operation of the machine the articles are placed upon the feed apron 59, by which they are carried into the throat between the cylinder 6 and the first pressure roll 37 at the right hand side of the machine, and then between said cylinder and the succeeding pressure rolls to the apron 15 on the supporting roll 22. The articles are then carried beneath the cylinder and between it and the apron 15, passing out from between said members at the supporting roll 16, at which point they enter the throat between the aprons 15 and 44, traveling partly around the roll 16 and down—

ward, passing out from between the aprons at the supporting roll 17. The articles then pass into the throat between the apron 44 and the chest 43 underneath which chest
5 and in contact therewith they are carried about the apron 44 passing out from between said chest and apron at the roll 53. From this point the articles are carried by the apron 44 over the roll 52 and on to the
10 table at the left hand side of the machine.

It will be understood that the several driving elements, as sprocket wheels, sprocket chains, gears, pinions, and other
15 devices, may be duplicated at each end of the machine to any extent that may be desired to cause perfect operation and movement of the parts through shafts, or like devices extending across the machine.

While I have shown and described herein
20 a preferred construction of apparatus embodying my invention, it will be understood that the invention may be contained in apparatus somewhat different from that herein shown and described, and I do not there-
25 fore desire to limit my invention to a ma-

chine constructed in exact accordance with that herein disclosed.

An important feature of my invention resides in the mounting of the rolls whereby they yieldingly resist pressure in opposite
30 directions, this providing a structure in which great efficiency is obtained in the operation of the machine.

I claim—

A cylinder, means for rotating the cylin- 35
der, an arch supported at each end of the cylinder, rolls mounted in the arches about the periphery of the cylinder, independ-
ently adjustable resilient mounting means
40 for opposite sides of the roll ends associated with the arches, the said resilient mounting means being capable of adjustment whereby to compensate for the weight of the differently positioned rolls bearing upon the cylinder.

TIMOTHY J. WATTS.

Witnesses:

ARTHUR B. JENKINS,
E. F. EATON.