R. M. DALGLEISH.

CLOTH DAMPENING AND SHRINKING MACHINE.

APPLICATION FILED JULY 2, 1908.

966,659.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.

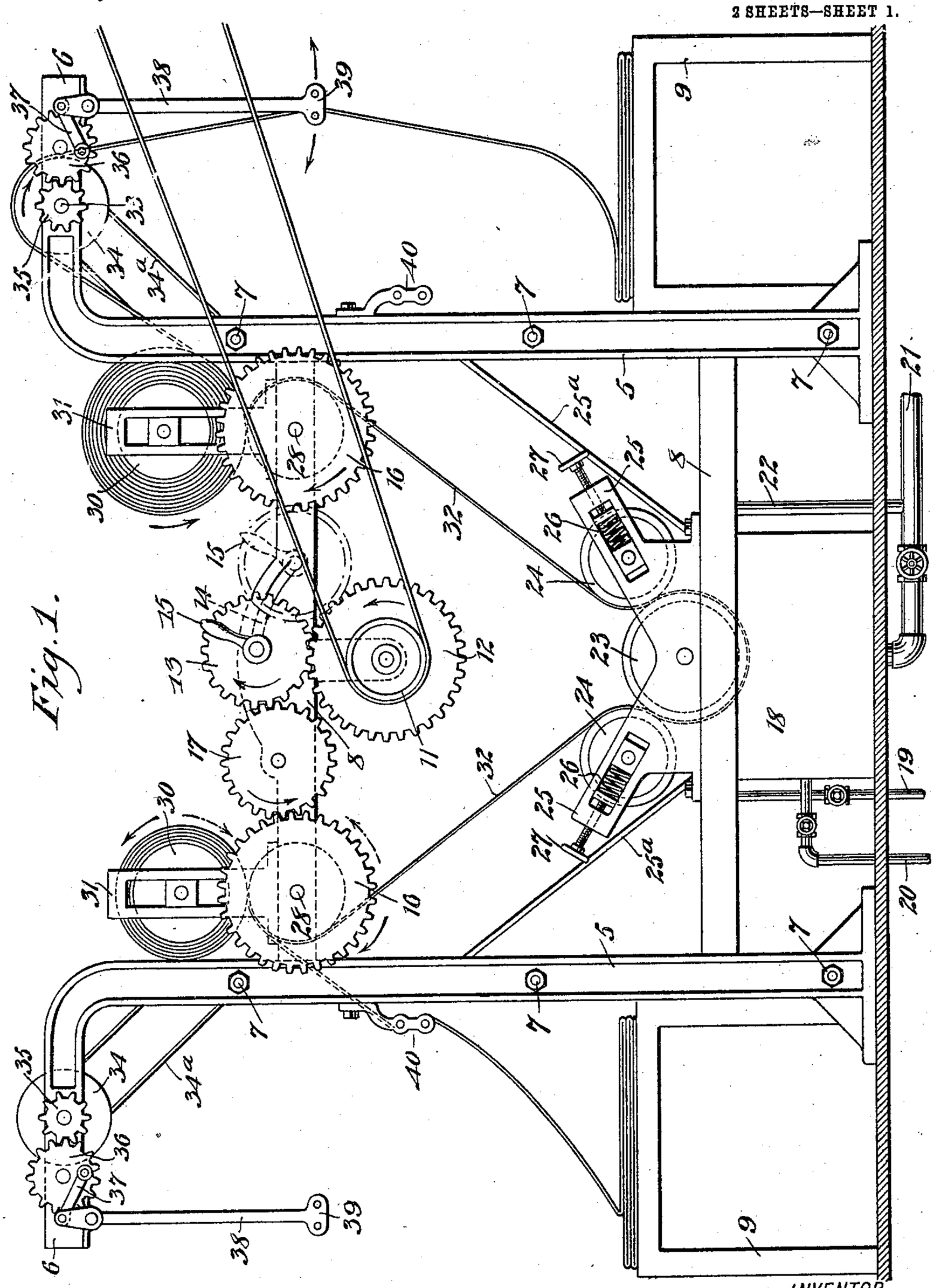

Fig. 1.

WITNESSES

Edward Thorpe.

INVENTOR

Robert M. Dalgleish

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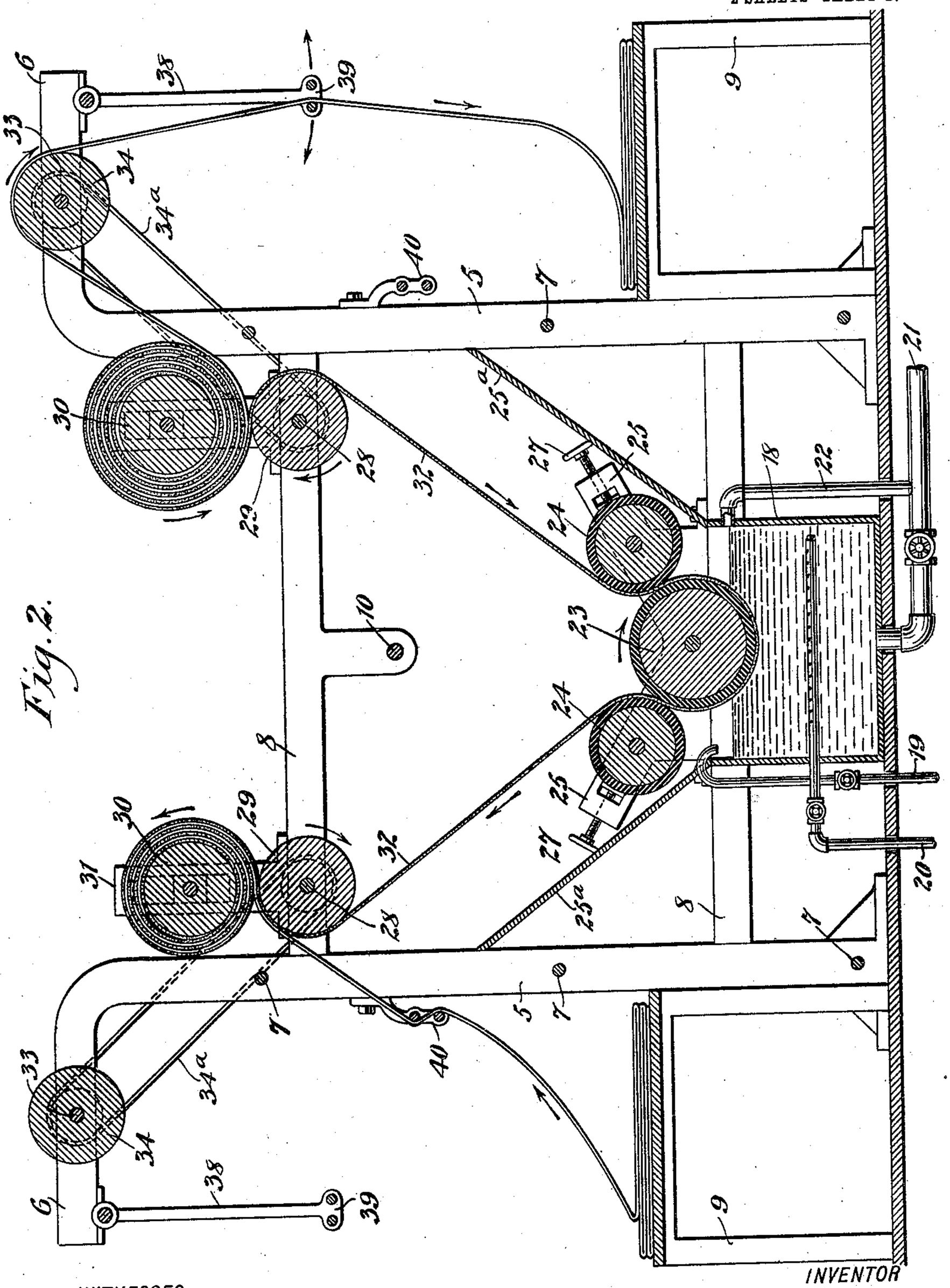

Fig. 2.

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ROBERT M. DALGLEISH, OF NEW YORK, N. Y.

CLOTH DAMPENING AND SHRINKING MACHINE.

966,659. Specification of Letters Patent. Patented Aug. 9, 1910.

Application filed July 2, 1908. Serial No. 441,580.

To all whom it may concern:

Be it known that I, ROBERT M. DALGLEISH, a citizen of the United States, and a resident of the city of New York, Flushing, borough of Queens, in the county of Queens and State of New York, have invented a new and Improved Cloth Dampening and Shrinking Machine, of which the following is a full, clear, and exact description.

This invention is an improvement in machines for dampening and shrinking lengths of fabric, and has in view a construction by which this operation can be expeditiously and practically carried out and the material returned folded in the manner in which it is ordinarily delivered to the machine.

To this end the invention may be broadly defined as consisting of two operatively-connected mechanisms, each for dampening, shrinking and folding lengths of material, and means for alternately actuating the mechanisms to apply a length of material to one of them and simultaneously therewith remove and fold the finished length of material from the other.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both views.

Figure 1 is a side elevation of a dampening and shrinking machine embodying my invention; and Fig. 2 is a vertical longitudinal section through the same.

To suitably support the various working parts of the machine, I provide a frame consisting of side frames 5 spaced apart and having outwardly overhanging arms 6, each side frame being made up of corresponding standards rigidly connected together by bolts or other suitable devices 7, and are further connected to the corresponding standard of the opposite side frame by cross-beams 8 arranged at different elevations. At the outside of each side frame under its overhanging arm is provided a table 9 for carrying the work preparatory to the dampening and shrinking operation and on which the fabric is folded after the dampening and shrinking operation is completed. Centrally between the side frames 5 is journaled on the upper cross-beams 8 a driving shaft 10, having a pulley 11 attached thereto, by which it is driven from a suitable source of power, as also a gear 12 meshing with a gear 13 which is mounted on the cross-beams 8 to move in an arc, of which the driving shaft is the center, this mounting of the gear 13 being conveniently effected by providing slots 14 in the cross-beams 8 concentric to the gear 12, in which slots the axis of the gear 13 is slidably mounted, and adapted to be shifted and held in a fixed position by a handle or other equivalent device 15. In one extreme position of the gear 13 it meshes with a gear 16, and in the other extreme position of its movement it meshes with an idly-mounted gear 17, this last mentioned gear being in mesh with a gear 16 in all respects the same as the gear likewise numbered, but located in the same relative position at the opposite side of the machine.

Between the two side frames 5 and the lower cross-beams 8 is provided a tank 18, which has a water supply pipe 19 leading thereto, as also a steam supply pipe 20, which latter passes into the tank at an intermediate point of its height, where it is perforated to uniformly discharge the steam into the water. The tank is further provided with a drain pipe 21 and an overflow pipe 22, which respectively admit of the emptying of the tank and prevent the overflow of the water. Journaled centrally over the tank is a roller 23 with which normally contact squeezing rollers 24 arranged at opposite sides, all of these rollers preferably having elastic coverings, with the rollers 24 journaled in bearings which are slidably mounted in downwardly and inwardly inclined slotted arms 25, each bearing being pressed in a direction to force the rollers 24 against the roller 23, by a spring 26, the tension of which, and consequently the pressure between the rollers, being regulated by adjusting screws 27.

Each gear 16 is attached to a shaft 28, to which is also applied an actuating roller 29 forming a support for a cloth-winding or receiving roller 30 arranged thereabove and vertically slidable, for which purpose the bearings of the roller 30 are carried by upright slotted arms 31. To the rollers 30 are attached the opposite ends of a shrinking web 32, the intermediate portion of which passes on the outer faces of the rollers 29 and around the roller 23 between the rollers 24, the latter operating to maintain a proper tension on the web and press out any excess of water taken up by the web as it passes through the tank. Such water as drips from the rollers or the web is caught by drain boards 25[a] and led back to the tank.

On the overhanging arms 6 of the side frames 5 shafts 33 are journaled, each of which has an attached roller 34 and a pinion 35, and is driven from the shaft 28 by a belt 34ª. The pinion is in mesh with an adjacent pinion 36 which in turn is connected by an eccentrically mounted link 37 to the upper arm of a pivotally suspended folding device, the folding device at its lower end being provided with a guide 39 for receiving the material being dampened and shrunk. A similar guide 40 for the material is attached to the outer face of each of the side frames 5.

Assuming the tank to have been filled with water which has been brought to the proper temperature by the admission of the steam, and the web to be wound on one of the rollers 30, a bolt of cloth is deposited on the table 9 adjacent to the roller 30 from which the web has been drawn, and the end of the fabric is carried through the guide 40 over the top of the web between the adjacent rollers 29 and 30. The gear 13 is then shifted to mesh with the gearing at this side of the machine, and the machine started. The positively-driven roller 29 then draws the web from the opposite roller 29 and causes the web and the cloth to be wound on the roller 30. When the cloth has been fully wound, the movable gear is shifted to an intermediate position and a bolt of cloth deposited on the other table 9 and the cloth led between the rollers 29 and 30 at this side of the machine. The movable gear is then intermeshed with the opposite gearing, causing the web to be drawn from the roller 30 on which the cloth was first wound, and, together with the new bolt of cloth, is wound in a like manner on the roller 30 at this side of the machine. As the web is drawn from the roller 30 on which the cloth was first wound, the shrunk piece of cloth is unwound and is carried through the adjacent folder, which at this time is driven by the unwinding of the web through the roller 29, belt 34ª, shaft 33, gears 35 and 36 and the link 37. When the first length of cloth is completely folded, the second piece of cloth, if of the same length, has been fully wound and is discharged and folded by again shifting the gear 13, at which time another length of material is wound at the opposite side of the machine. It is thus seen that one length of cloth is passed into the dampening and shrinking mechanism simultaneously with the removal of another length of cloth at the opposite side of the machine, thus adapting the shrinking and dampening operation to be rapidly carried out.

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

1. In a dampening and shrinking machine, the combination of rollers, a dampening web adapted to wind on either of the rollers with a length of material to be shrunk, means to alternately actuate the rollers to wind the web and a length of material on one of them and simultaneously draw the web and a shrunk length of material from the other roller, a folding mechanism for each roller to fold the shrunk length of material as it unwinds, and means for driving each folding mechanism, partly included in the first mentioned means and actuated by the web.

2. In a dampening and shrinking machine, the combination of a tank, a roller journaled in the tank, squeezing rollers arranged at opposite sides of and pressed to the tank roller, two sets of actuating and receiving rollers, with the receiving roller of each set vertically movable with relation to and supported by the actuating roller, a web passing between the squeezing rollers and leading to the receiving rollers, and means for alternately driving the actuating rollers.

3. In a dampening and shrinking machine, the combination of two sets of receiving and actuating rollers, the receiving roller of each set vertically movable to and from the actuating roller, a tank, a web passing through the tank and passing to the receiving rollers of each set around the actuating rollers, a folding device driven by the actuating roller of each set of rollers, and means for alternately positively driving the actuating rollers.

4. In a dampening and shrinking machine, the combination of a tank, a roller having the lower portion thereof submerged in the tank, and with the upper portion thereof arranged above the water level in the tank, cloth-winding rollers, a web passing underneath the tank roller and to the cloth-winding rollers, and means for pressing the water from the web before leaving the periphery of the tank roller in passing to either of the winding rollers.

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

ROBT. M. DALGLEISH.

Witnesses:
W. W. Holt,
John L. Lindsay.