

No. 669,032.

Patented Feb. 26, 1901.

F. H. HARRIMAN.

APPARATUS FOR DAMPENING COLLARS AND CUFFS.

(No Model.)

(Application filed Aug. 31, 1900.)

2 Sheets—Sheet 1.

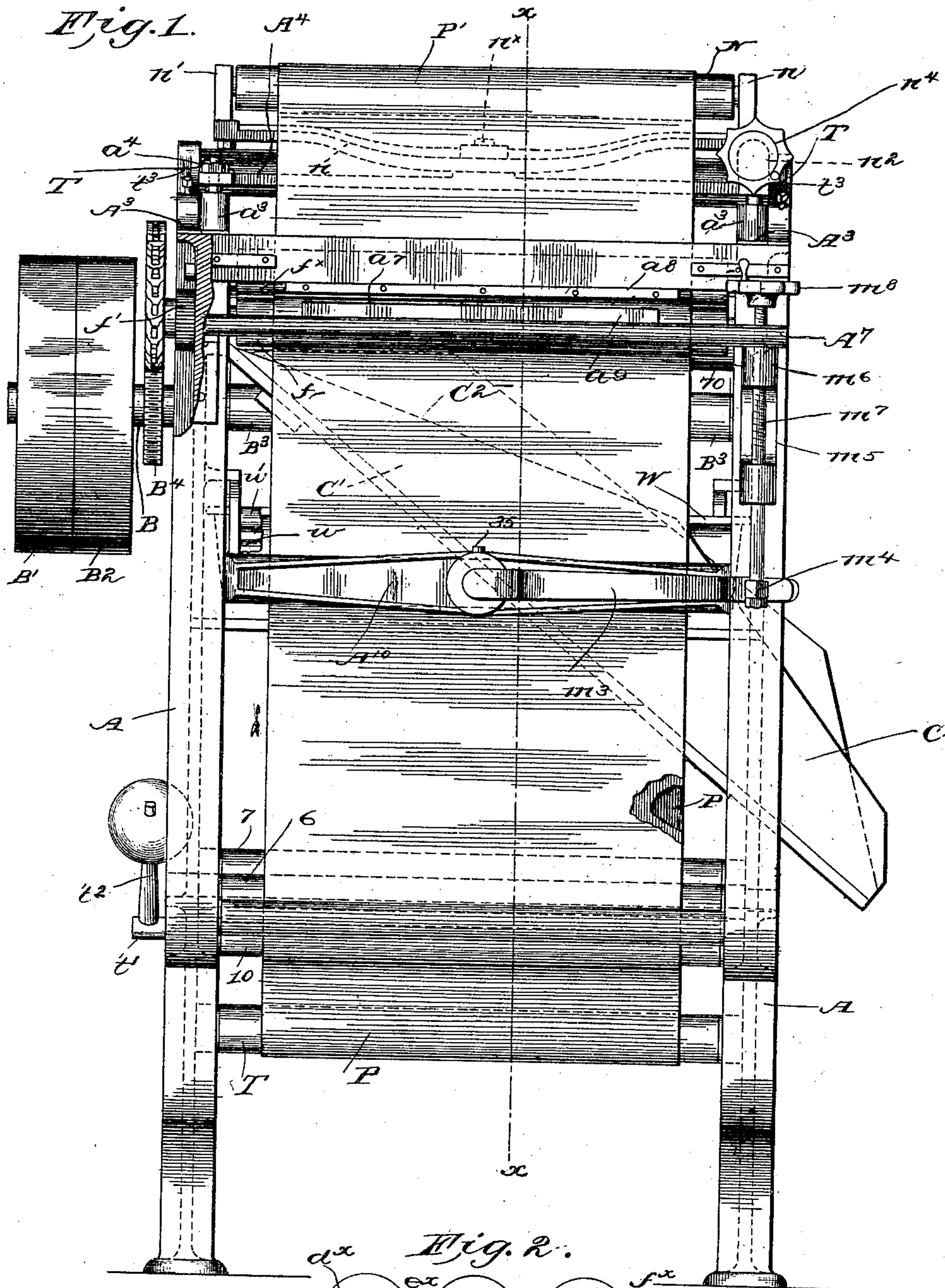
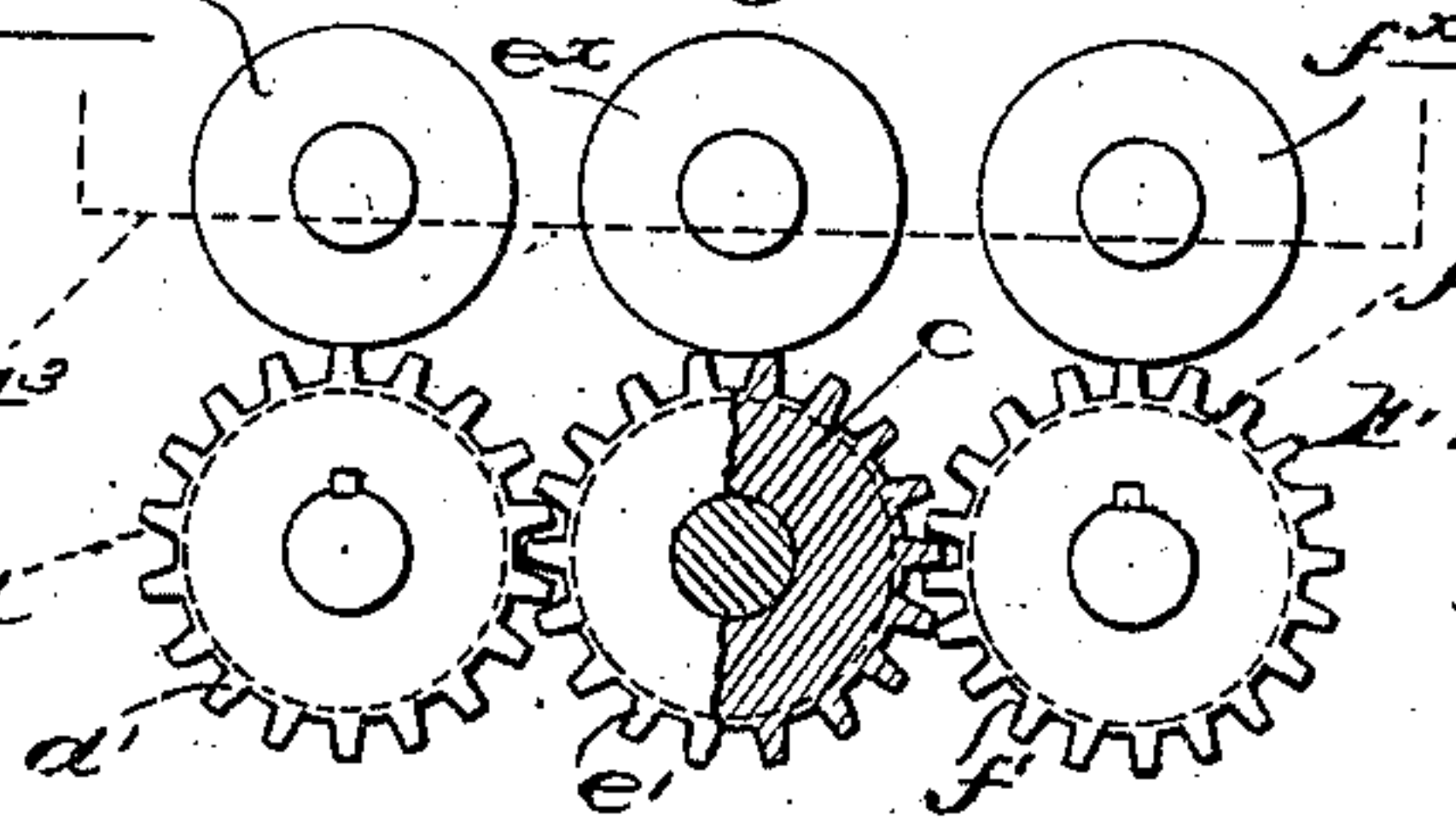


Fig. 2.



Witnesses.

W. C. Simpford.

Thomas J. Drummond.

Inventor.

Frank H. Harriman.

by Wesley Gregory,
attys.

No. 669,032.

Patented Feb. 26, 1901.

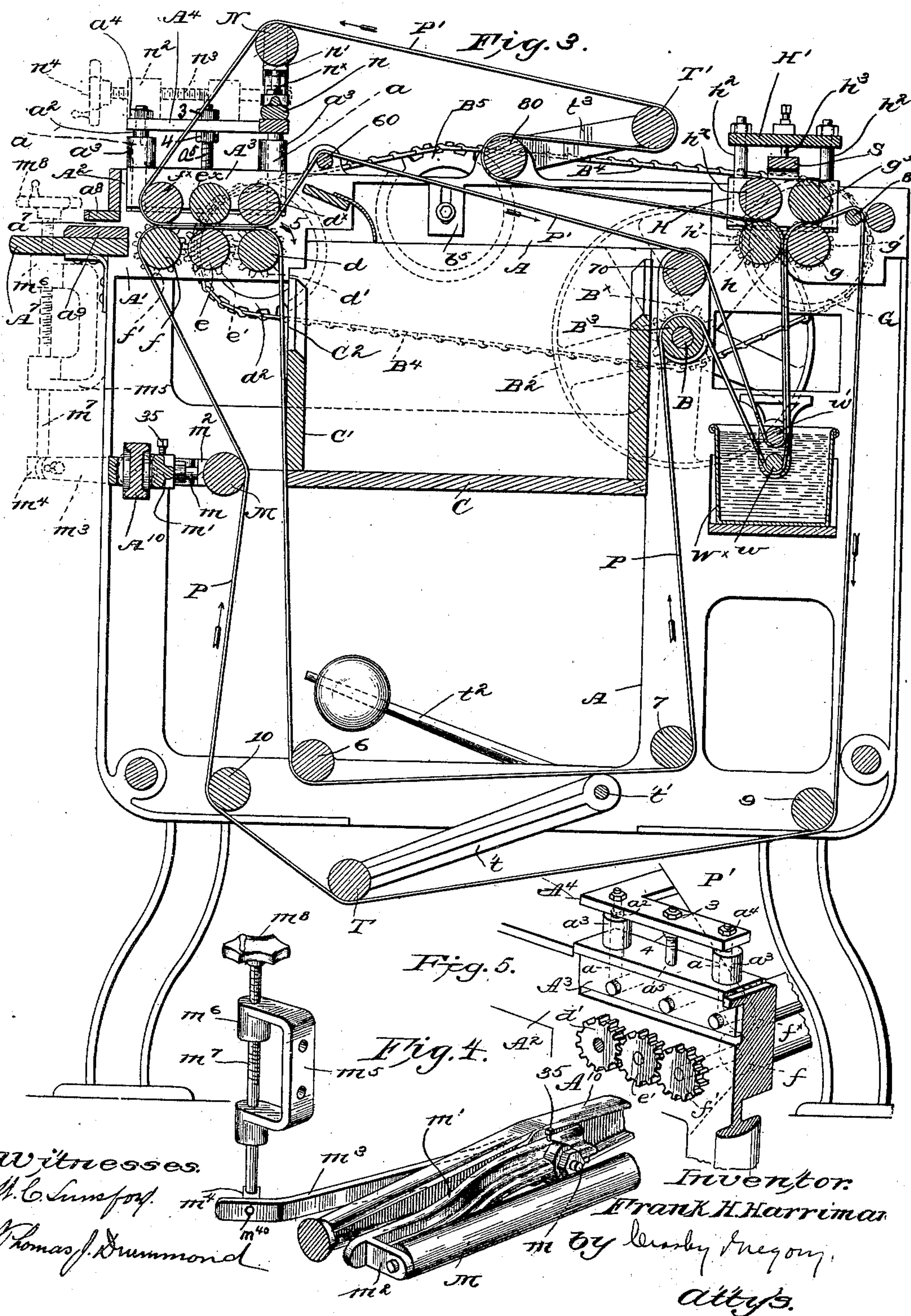
F. H. HARRIMAN.

APPARATUS FOR DAMPENING COLLARS AND CUFFS.

(No Model.)

(Application filed Aug. 31, 1900.)

2 Sheets—Sheet 2.



UNITED STATES PATENT OFFICE.

FRANK H. HARRIMAN, OF MAYNARD, MASSACHUSETTS.

APPARATUS FOR DAMPENING COLLARS AND CUFFS.

SPECIFICATION forming part of Letters Patent No. 669,032, dated February 26, 1901.

Application filed August 31, 1900. Serial No. 28,685. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. HARRIMAN, a citizen of the United States, residing at Maynard, county of Middlesex, State of Massachusetts, have invented an Improvement in Apparatus for Dampening Collars and Cuffs, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to apparatus of the type forming the subject-matter of United States Patent No. 615,983, granted to me December 13, 1898, wherein an apparatus is shown and described for properly and evenly dampening articles preparatory to ironing, particularly collars and cuffs, the object being to so dampen the articles that a spotted or uneven surface would be prevented in the finished article.

My present invention has for its object the improvement in various particulars of the apparatus referred to, whereby certain practical objections have been obviated or overcome.

Figure 1 is a front elevation of a dampening-machine embodying my invention. Fig. 2 is a detail in side elevation of the gearing for driving the lower set of pressure-rolls. Fig. 3 is a vertical sectional view of the machine, taken on the line $x\ x$, Fig. 1, looking toward the left. Fig. 4 is a perspective detail of a portion of the device for maintaining the lower belt straight during its travel, and Fig. 5 is a perspective detail showing one of the bearing-blocks in which the upper pressure-rolls are mounted and also showing some of the adjacent parts of the apparatus.

The main frame A, of suitable shape and provided with bearings for the operative parts of the apparatus, has mounted therein a main shaft B, provided with suitable fast and loose pulleys B' B^2 , driven by a belt, (not shown,) and a sprocket-gear B^x is made fast on the shaft outside the frame. A roll B^3 is loosely mounted on the shaft B between the sides of the frame for a purpose to be described. At the front of the frame, near its top, a series of like pressure-rolls $d\ e\ f$ are mounted in fixed bearings A' , a sprocket-wheel d^2 being secured to the journal of the roll d , as herein

shown, outside of the frame, and a pinion d' is also secured to said journal in mesh with an intermediate pinion e' , loose on the journal of the roll e , the intermediate pinion in turn meshing with a pinion f' , rotatable with the roll f , so that the rolls d and f will be positively rotated in the direction of arrow 5, Fig. 3. The frame is provided at each side with an open guideway A^2 for bearing-blocks A^3 , carrying three upper pressure-rolls $d^x\ e^x\ f^x$, located above the three rolls $d\ e\ f$, the upper rolls being suspended by the bearing-blocks A^3 . Upright guide-rods a , fixed in the bearing members A' , extend loosely through the blocks A^3 and through bosses a^3 thereon and have shoulders a^2 , on which rests a substantially \sqcap -shaped stand A^4 , held in place by nuts a^4 , screwed onto the threaded upper ends of the guide-rods. (See Figs. 3 and 5.) A threaded adjusting-rod a^5 , rigidly secured to the block A^3 , passes loosely through the stand A^4 and is provided with check-nuts 3 4, so that by turning them in the proper direction the block A^3 and the upper pressure-rolls suspended thereby can be raised or lowered to adjust the distance between the upper and lower rolls and regulate the pressure, the upper rolls being driven by frictional engagement, as will hereinafter appear. These pressure-rolls are made of rubber or other suitable moisture-repellent yielding material, and I have herein shown two endless belts or aprons $P\ P'$, passed around and between the two series of rolls, the aprons at such time being in parallelism and in close proximity, one superposed upon the other and normally in contact. The aprons are preferably made of Russian crash, or any other suitable material may be used which will carry the proper amount of moisture.

A wringer-roll g , having fast on its shaft a sprocket-wheel G , is mounted in the frame at the back (see Fig. 3) and has rotatable there-with a pinion g' , which meshes with a like pinion h' on an adjacent wringer-roll h , the rolls $g\ h$ being mounted in fixed bearings in the frame, and above these rolls coöperating rolls $g^x\ h^x$ are mounted in bearing-blocks H , vertically movable in guideways in the main frame, a transverse leaf-spring S extending across the machine and bearing at its ends on

the blocks, one at each side of the frame, in the ordinary manner.

A cross-bar H' , mounted on upright guide-rods h^2 , is provided substantially midway between its ends with a threaded bolt h^3 , which at its lower end bears on the spring S to regulate the pressure between the upper and lower wringer-rolls, the two aprons passing between the rolls g h in juxtaposition, thereafter separating, the apron P' passing between the rolls h^x h , while the apron P passes between the rolls g^x g , as clearly shown in Fig. 3.

A sprocket-chain B^4 passes around the sprocket-wheels d^2 G and the sprocket-gear B^x , by which latter it is driven, the wheels d^2 G being of the same diameter, so that the pressure and wringer rolls are driven at the same speed, and the chain also passes over a tension-gear B^5 , the journals of which are adjustably mounted in supports b^5 , one of which is shown in Fig. 3, whereby the chain can be kept properly taut, each support being vertically slotted to receive the journal, which is maintained in vertically-adjusted position by a bolt and washer in well-known manner.

The apron P passes from between the pressure-rolls down around two guide-rolls 6 7, up over the loose roll B^3 , descending thence around a roll w in a tank W^x , containing water, and up through the wringer-rolls, as described, then around guide-rolls 8 9 beneath, preferably, a tension-roll T , up around a guide-roll 10, and past a device, to be described, for maintaining the path of the apron straight to the pressure-rolls. The apron P' after leaving the pressure-rolls is led up over a guide-roll 60, then toward the back of the machine over a second guide-roll 70, down into the tank W^x , beneath a roll w' , immersed in the water, and up between the wringer-rolls g h , then around a guide-roll 80 and preferably a tension-roll T' over a straightening-roll to the pressure-rolls, the two aprons separating at a very obtuse angle as they pass from between the pressure-rolls, so that the collars or cuffs may not cling to either apron.

In my present invention it will be manifest that both aprons are wet by passing through the water in the tank W^x , and, viewing Fig. 3, they travel in contact, or substantially so, up to the wringer-rolls g h , which latter squeeze out the surplus moisture and evenly dampen both aprons, the latter being thereafter subjected separately to a second squeezing by the rolls h^x g^x , the latter being so adjusted that when the aprons pass them there will be no accumulation of water, which would render the dampening irregular.

The tension-rolls T T' act upon the aprons as they approach the pressure-rolls, maintaining them smooth and taut as they come together and pass between the upper and lower pressure-rolls.

The roll T is mounted in arms t on a rock-shaft t' , journaled in the frame and having a weighted arm t^2 , as shown in Fig. 3, while

the roll T' is mounted in arms t^3 and acts by its own weight to put sufficient tension upon the apron P' .

A discharge-chute C is secured to the frame, one side C' being located adjacent the downwardly-moving part of the apron P as it leaves the pressure-rolls, the edge C^2 acting as a clearer to remove from the apron any of the dampened articles which may stick to it.

A transverse shelf A^7 , secured to the frame in front of the pressure-rolls, supports the articles as they are fed in between the aprons, and in order that the articles may enter in a flattened condition, thus preventing crumpling and uneven dampening, I have provided a wide throat a^7 of sufficient height to admit the article when flat, the throat being formed by top and bottom pieces a^8 a^9 in parallelism and located just in front of the pressure-rolls, the bottom piece extending toward the front of the machine beyond the top piece. The throat acts to spread or flatten the collars and cuffs as the operator passes them through, so that when they are carried through the pressure-rolls they will be spread out flat between the juxtaposed portions of the aprons, the articles being quickly and evenly dampened by contact with the aprons under the requisite amount of pressure.

From the foregoing it will be remembered that the upper set of pressure-rolls is suspended in the bearing-blocks A^3 , so that the weight of these rolls does not act upon and is not supported by the lower rolls, and I thereby prevent the collection of a thin film of water in front of the first pair of rolls, the presence of such water acting to unevenly damp the work, and in some instances wetting it.

The upper rolls are adjusted so that when an article passes through just the right pressure is attained; but when the aprons are running free there will be practically no pressure thereon due to the upper set of rolls.

In the patented machine referred to I have found in actual practice that the aprons at times work from side to side, permitting moisture to collect at the edges, so that such portions become too wet and the articles cannot always be dampened properly and uniformly, and in order to obviate or prevent this I have herein provided means for straightening the aprons or adjusting them laterally, so that they will travel in straight paths and be properly suspended one upon the other.

Referring to Figs. 3 and 4, a cross-girth A^{10} of the frame below the pressure-rolls has pivotally mounted thereon by a stud m a transverse yoke m' , the ends of which are intumed to form bearing-ears m^2 for a guide-roll M , which bears against the outer face of the apron P between the guide-roll 10, mounted in fixed bearings, and the pressure-rolls. The outer end of the stud m is rigidly secured to an arm m^3 , having pivotally mounted at its free end on a stud m^{40} a block m^4 . A bracket m^5 is secured to the main frame A , below and at the right hand of the shelf A^7 , having a

threaded bearing m^6 for a screw-shaft m^7 , which at its lower end is connected with the block m^4 , and by means of a hand-wheel m^8 the shaft is turned to raise or lower the arm m^3 , and thereby tilt the yoke m' , which is secured to the stud m by a set-screw 35. Such tilting of the yoke and roll M will cause the apron P to move laterally to one or the other side, according to the manner in which the roll is tilted. A very similar device is provided for the apron P', comprising a guide-roll N, mounted in upturned ears n' of a yoke n , pivoted at n^x on the L-shaped stand A^4 , (see Figs. 1 and 3,) said stand having a bearing-lug n^2 (see dotted lines) for a screw-shaft n^3 , connected at its inner end with the adjacent end of the yoke n , so that by turning the hand-wheel n^4 in one or the other direction the position of the roll N relative to the travel of the apron P' will be changed and the latter will be moved to one or the other side, as may be necessary. Thus the attendant can at all times maintain the aprons in proper relative position, the adjusting devices being located near each other and convenient for manipulation, as may be required.

It will be understood that the arrangement by which the aprons P P' are separated widely upon leaving the pressure-rolls (see Fig. 3) insures the discharge of the goods at once, the bending of the aprons over the rolls facilitating this, and the machine is not hampered, therefore, in its operation by any tendency of the goods to cling to the aprons and be carried around into conflict with other parts.

Having described my invention, what I claim as new, and desire to obtain by Letters Patent, is—

1. In an apparatus of the class described, two traveling aprons moving in parallelism and in close proximity to each other for a portion of their length, to receive between them thereat the article to be dampened, two series of pressure-rolls between which the aprons pass at their said proximate, parallel portions, means to positively suspend the upper series of rolls, and means located at a distance from the pressure-rolls to separately and adjustably dampen each of the aprons to a predetermined degree.

2. In an apparatus of the class described, two traveling aprons moving in parallelism and in close proximity to each other for a portion of their length to receive between them thereat the article to be dampened, means to

wet both of said aprons, at a point remote from the parallel portions of the aprons, wringer-rolls for each apron, and between which the latter pass to remove surplus moisture and make the dampening uniform, a series of lower pressure-rolls over which the aprons travel at their proximate portions, a cooperating series of suspended idle upper rolls, and means to positively drive only the lower series of rolls.

3. In an apparatus of the class described, pressure-rolls, two separate traveling aprons adapted to pass between the rolls and to dampen articles inserted therebetween, means to dampen the aprons, and separate means to maintain the aprons accurately superposed one upon the other as they pass between the pressure-rolls, each of said means comprising a yoke, a smooth guide member mounted therein and over which the apron passes, a rock-shaft to which the yoke is secured at its center, a rocker-arm on the shaft, and a screw-shaft operatively connected with the rocker-arm, rotation of the screw-shaft tilting the yoke on its fulcrum to move the adjacent apron laterally.

4. In an apparatus of the class described, pressure-rolls, two separate traveling aprons adapted to pass between the rolls, and to dampen articles inserted therebetween, and means to dampen the aprons, said means including a water-tank, separate submerged rolls around which the aprons pass to be wet, two pairs of wringer-rolls, one apron passing between each pair to accurately and equally dampen each apron, and means to simultaneously regulate the pressure of said pairs of wringer-rolls.

5. In an apparatus of the class described, two separate traveling aprons adapted to pass between pressure-rolls and to dampen the articles inserted therebetween, means to dampen the aprons at a point distant from said rolls, upper and lower pressure-rolls between which the aprons pass at their proximate portions, fixed bearings for the lower rolls, vertically-adjustable bearings for and in which the upper rolls are suspended, and means to positively drive only the lower rolls.

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

FRANK H. HARRIMAN.

Witnesses:

ALEXANDER C. PROUDFIT,
AUGUSTA E. DEAN.