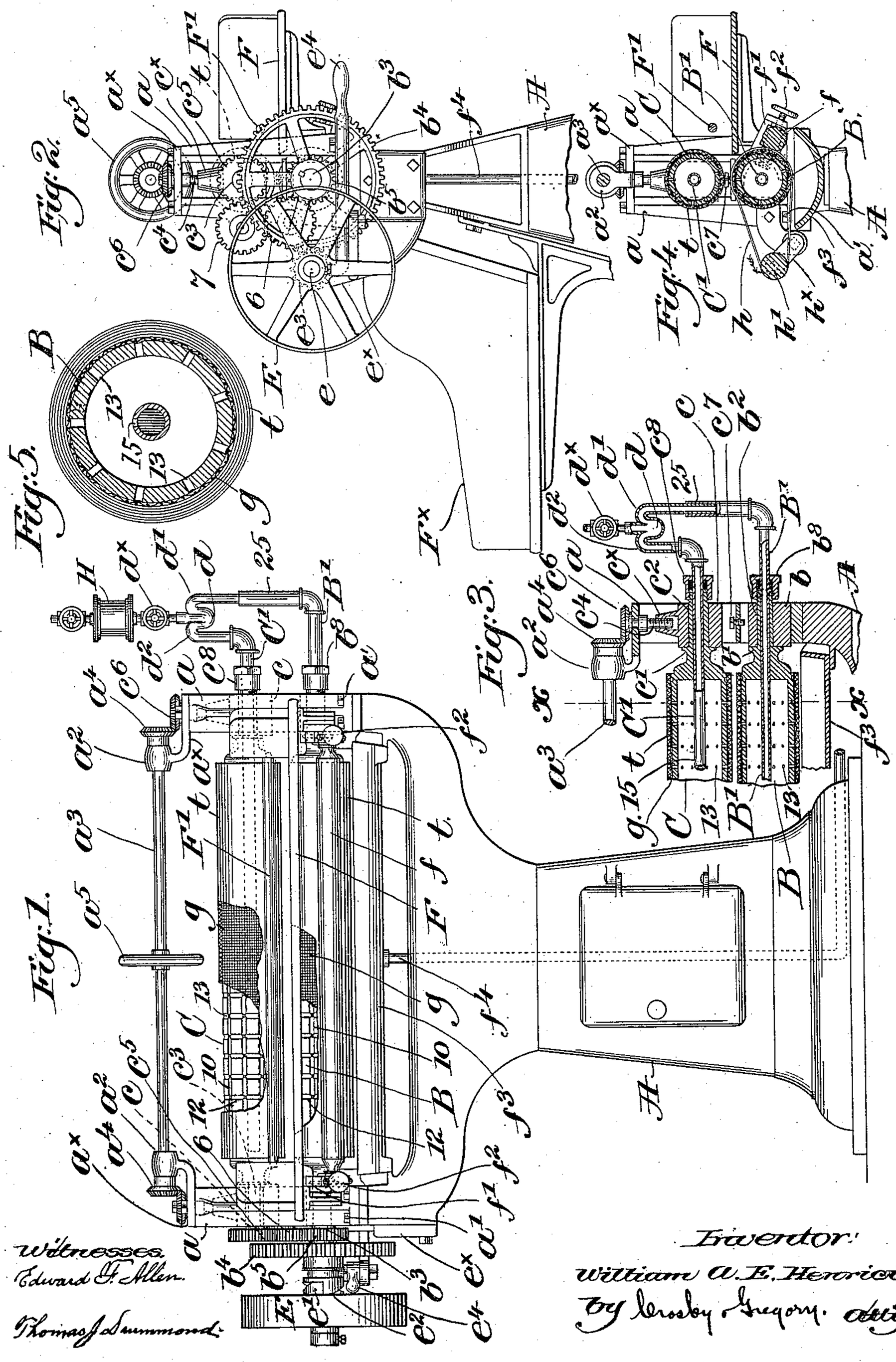
(No Model.)

W. A. E. HENRICI.

DAMPENING MACHINE.

No. 575,836. Patented Jan. 26, 1897.



UNITED STATES PATENT OFFICE.

WILLIAM A. E. HENRICI, OF CHELSEA, MASSACHUSETTS.

DAMPENING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 575,836, dated January 26, 1897.

Application filed February 15, 1895. Serial No. 538,533. (No model.) Patented in England March 2, 1895, No. 4,487.

To all whom it may concern:

Be it known that I, WILLIAM A. E. HENRICI, of Chelsea, county of Suffolk, State of Massachusetts, have invented an Improvement in Dampening-Machines, (for which Letters Patent No. 4,487, dated March 2, 1895, have been secured in Great Britain,) of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

This invention has for its object the production of a simple, compact, and efficient machine for dampening shirts and other articles in laundry work, whereby the article is uniformly and rapidly dampened as it is passed through the apparatus, means being provided for regulating the amount of moisture to be imparted to the articles to be dampened; and the invention consists in various details of construction and arrangement hereinafter fully set forth in the specification and more particularly pointed out in the claim.

Figure 1, in front elevation and partially broken out, represents a dampening-machine embodying my invention. Fig. 2 is a left-hand elevation thereof, the base being broken off to save space in the drawings. Fig. 3 is a vertical sectional detail view taken through the axes of the rolls. Fig. 4 is a transverse section thereof, taken on the line $x\ x$, Fig. 3; and Fig. 5 is an enlarged transverse sectional detail of one of the dampening-rolls.

I have herein shown the machine as comprising a preferably hollow base or support A, the upper part branching laterally, as shown in Fig. 1, and standards a are secured thereto at the sides of the machine, as by suitable bolts a', the said standards forming guides for journal-boxes b c, through which extend the journals of the dampening-rolls B and C. The lower roll B for receiving and delivering the articles to be laundered is made hollow, as shown in Figs. 3 and 4, and each end is reduced in diameter to leave an annular shoulder b' and at one end a hollow journal b^2, (shown in Fig. 3,) the reduced portion b^3 at the other end being left solid and having secured thereto a gear b^4 (see Figs. 1 and 2) beyond the adjacent journal-box, the journal b^3 having fast thereon between the journal-box and the gear b^4 a smaller gear b^5, in engagement with an intermediate gear 6, which is engaged by another intermediate gear 7, the latter meshing with a gear c^5, fast on the solid journal c^3 of the hollow roll C. The intermediate gears 6 and 7 are mounted on suitable studs secured in one of the standards a, positive rotation being transmitted from the gear b^5, through the intermediates, to the gear c^5. The opposite end of the roll C is reduced to leave a shoulder c' and a hollow journal c^2, extended through the journal-box c, as clearly shown in Fig. 3, it being evident from the foregoing description that the roll B is rotatably mounted in the boxes b, which rest in the bottom of the guideway formed of the standards a, while the roll C is rotatably mounted in the vertically-adjustable boxes c. The boxes c are provided with suitably-threaded bosses $c^\times$, which are entered and engaged by threaded portions of short shafts c^4, rotatable in but held from longitudinal movement by the cross-pieces $a^\times$, secured to the top of the standards, said cross-pieces forming bearings a^2 for a shaft a^3, having beveled gears a^4 thereon in engagement with similar gears c^6, fast on the threaded shafts c^4.

Rotation of the shaft a^3, by means of a suitable hand-wheel a^5, in one or the other direction will raise or lower the boxes c, and consequently the roll C, so that the space between the rolls B and C is readily adjusted.

Limiting-stops (shown as bolt-heads c^7) regulate the movement of the boxes c in the direction of the bottom of the standards.

The rolls B and C are made of metal, preferably brass on account of its non-rusting properties, and they are exteriorly grooved longitudinally and circumferentially at 10 and 12, respectively, and preferably perforated at the intersections of said sets of grooves, as at 13, so that water being admitted to the interior of the rolls, as will be described, will pass through the perforations 13, and, by means of the exterior grooves, will be quickly and evenly distributed to all parts of the circumference. The rolls are covered with a casing of wire-gauze g, and over the gauze a textile fabric t is tightly wrapped and secured in any manner, the number of thick-

nesses or layers of the textile covering depending upon the size of the rolls and the general character of the work to be dampened. The gauze or similar foraminous covering *g* breaks up and still more thoroughly distributes the moisture upon the surface of the roll, and the textile covering *t* becomes in a short time thoroughly and evenly dampened in such manner as to impart to the articles passed between the rolls the sufficient degree of dampness desired.

As clearly shown in Fig. 3, distributer-pipes B′ and C′ are passed through the hollow journals b^2 c^2 of the rolls, the said pipes being perforated, as at 15, within the rolls and extending from one to the other end thereof. These distributing-pipes afford a means for evenly distributing the water over the whole inner surfaces of the revolving rolls throughout their length, so that even a very limited amount of water may also be evenly distributed thereover. The outer ends of the pipes are connected by suitable unions to an equalizer *d*, the exits *d′* and d^2 thereof being equally curved to form overflows, as it were, intermediate the equalizer *d* and the distributer-pipes B′ and C′, respectively, so that water admitted into the equalizer by means of a suitable valve $d^\times$, preferably a needle-valve, will pass in equal quantities therefrom to the distributer-pipes, the amount of water distributed being controlled by the valve $d^\times$. As shown, the inner ends of the distributing-pipes are closed, and the perforations 15 are located in their upper sides.

The ends of the hollow journals of the rolls are shown as projecting beyond their respective journal-boxes and threaded to receive thereon the stuffing-boxes b^8 c^8 to prevent any leakage at such points, and the shoulders b' c' on the rolls bear upon the journal-boxes and prevent longitudinal movement of the rolls.

A belt-pulley E is loosely mounted on a shaft *e* at the rear of the machine and secured to a bracket $e^\times$, Figs. 1 and 2, the pulley having thereon one member, as *e′*, of a clutch, the movable coöperating member e^2 being also rotatable and longitudinally movable on the shaft *e*, and having secured thereto a gear e^3, (see dotted lines, Fig. 2,) in engagement with the large gear b^4. A clutch-shifter e^4 moves the member e^2 of the clutch into or out of engagement with the member *e′*, so that the machine may be stopped or started at the will of the operator, power being transmitted to the apparatus from any suitable source by means of a belt (not shown) applied to the pulley E.

A squeeze-roll *f* is mounted in brackets *f′* at the sides of the machine and is adapted to bear upon the periphery of the roll B to squeeze the surplus moisture therefrom, the pressure between the two rolls being regulated by adjusting-screws f^2, adapted to bear upon the journals of the squeeze-roll.

The surplus moisture is preferably collected in a trough f^3 beneath the lower roll and running the length of the machine, from which it is conveyed by a suitable outlet-pipe f^4 to any desired point of discharge.

The articles to be dampened are fed in between the dampening-rolls B and C over a feed-table F, preferably provided with a finger-guard F′ to prevent the operator's fingers from being drawn between the rolls by coming into contact therewith as the articles are fed along table F beneath the finger-guard. The dampened article is carried into a suitable receptacle $F^\times$ (see Fig. 2) by means of a traveling apron *h*. (Shown only in Fig. 4.)

I preferably mount a roll *h′* at the rear of the machine and beyond the roll B, supporting it in suitable brackets $h^\times$, the traveling apron *h* consisting, preferably, of a series of endless tapes passing around the periphery of the roll B and the roll *h′*.

The movement of the apron in the direction of the arrow, Fig. 4, assists in delivering the article beyond the operating parts of the apparatus.

In order to insure thoroughly pure and clean water for the dampening, I prefer to insert a suitable filter, as H, Fig. 1, between the equalizer-valve $d^\times$ and the source of water-supply.

By the construction herein shown and described various articles may be rapidly and evenly dampened, the structure of the rolls and the coöperating parts of the apparatus being such that the moisture is distributed evenly and thoroughly throughout the article as it passes through the machine, with the result that all parts are dampened alike, greatly facilitating and improving future operations in the laundry.

The teeth of the gears c^5 and 7 are sufficiently long to remain in engagement, while permitting vertical movement of the former gear in adjusting the roll C, and, as a matter of fact, very slight vertical movement of the roll is sufficient to adjust it.

The angular movement of a plane passed through the axes of the roll C and the gear 7, about the axis of the latter as a center, is never great enough to throw the teeth of the two gears out of proper engagement, the length of the teeth in consequence being increased but little over the ordinary.

The equalizing device is rigidly connected to one of the distributer-pipes, herein shown as the pipe C′, and to the other pipe, as B′, by a telescopic joint 25, whereby the movement of the roll C in adjusting it is permitted, though obviously the arrangement could be reversed without departing from the invention.

I claim—

In a dampening-machine, a perforated roll having stationary bearings, a superposed perforated roll, and means to move it toward or from the lower roll, combined with distributer-pipes extended axially into and to deliver water into the interior of said rolls, an equal-

izing device rigidly connected to one and by a telescopic joint to the other of said pipes, said equalizing device being constructed to automatically cause equal flow of water into the respective pipes and rolls, whatever may be the amount or pressure of water entering said equalizer, and means to rotate the rolls, substantially as described.

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

WILLIAM A. E. HENRICI.

Witnesses:
AUGUSTA E. DEAN,
JOHN C. EDWARDS.