

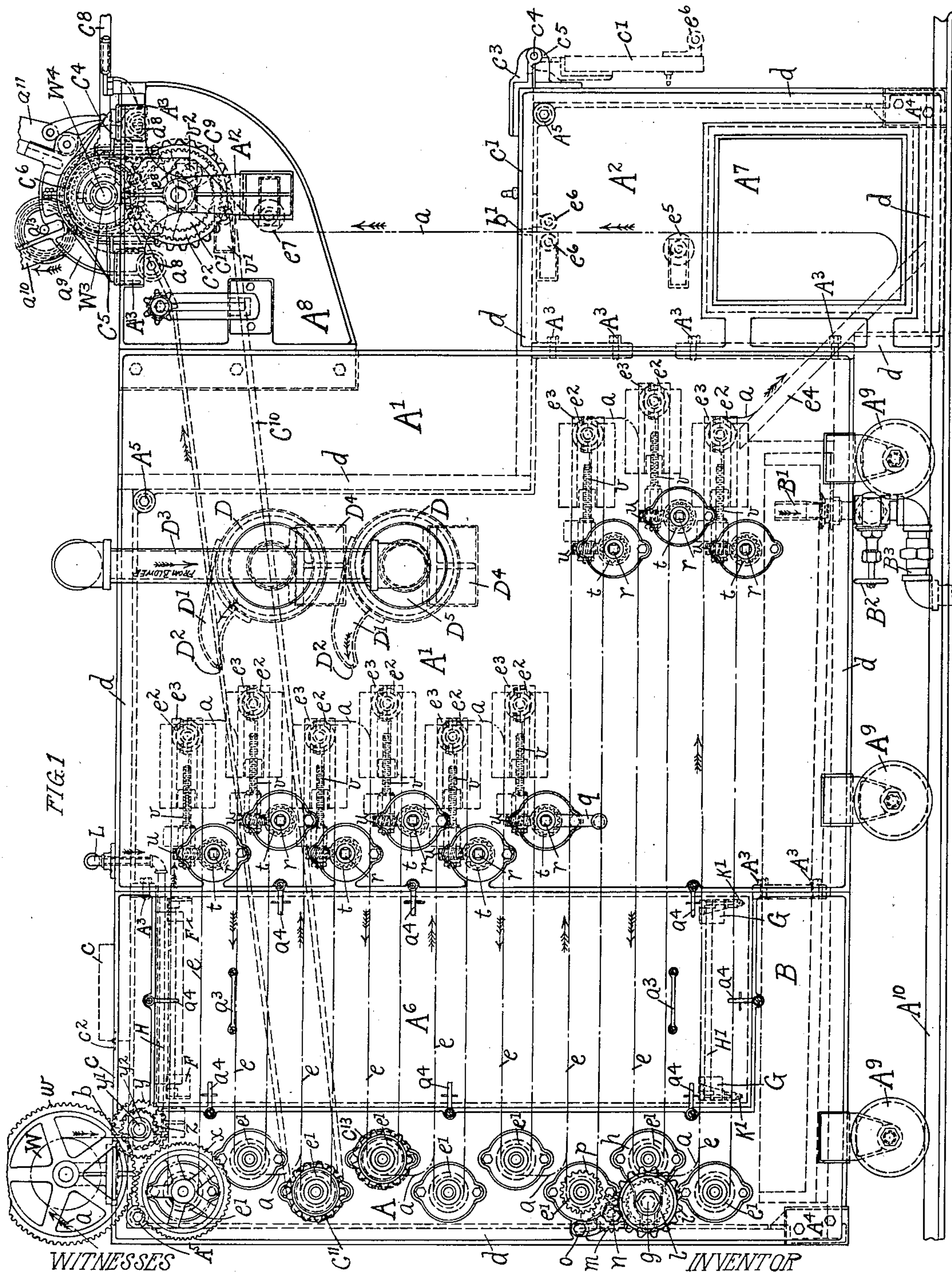
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D. GESSNER.
APPARATUS FOR THE TREATMENT OF CLOTH.
APPLICATION FILED JUNE 6, 1911.

1,154,758.

Patented Sept. 28, 1915.

5 SHEETS—SHEET 1.



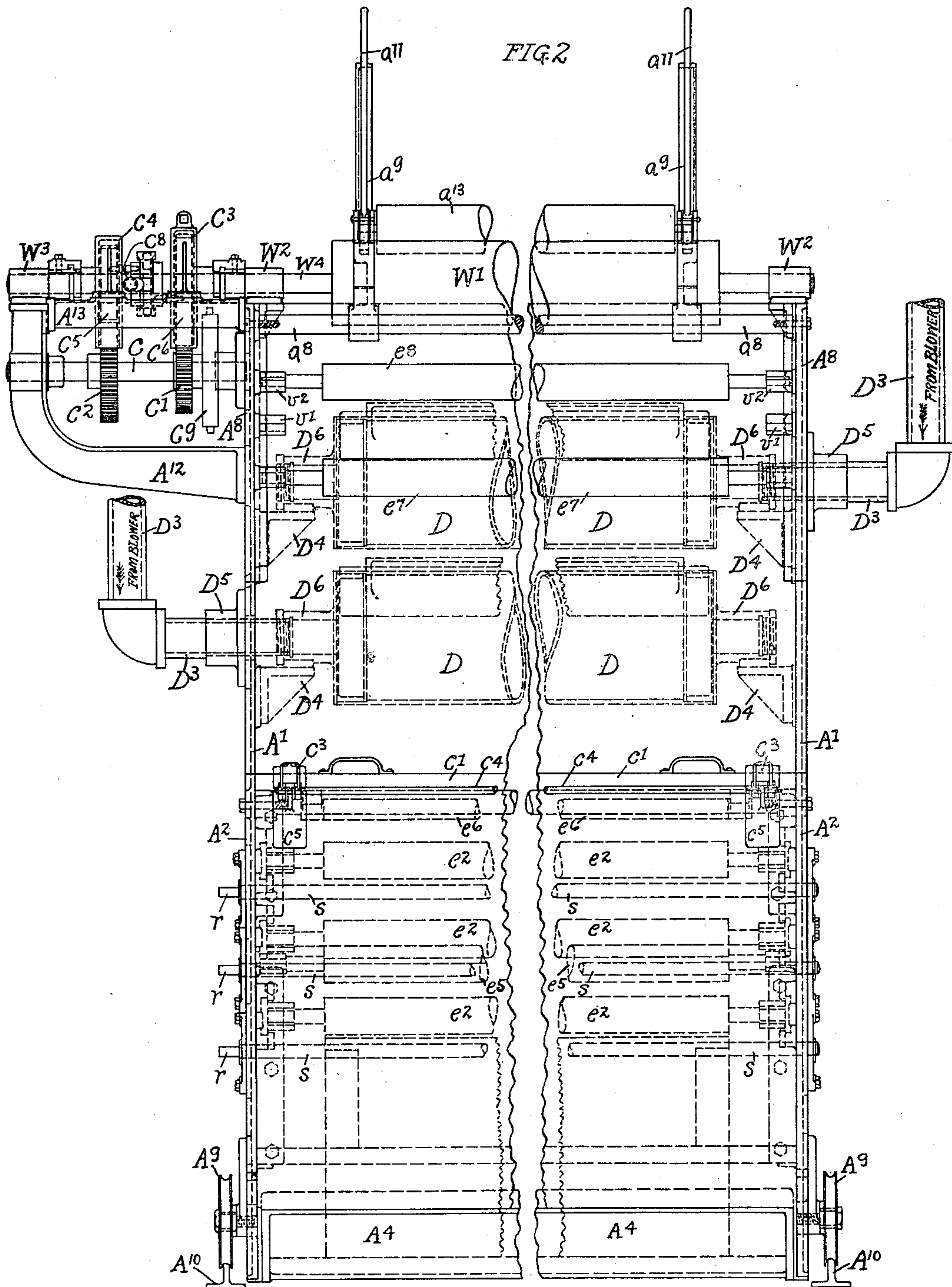
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WITNESSES

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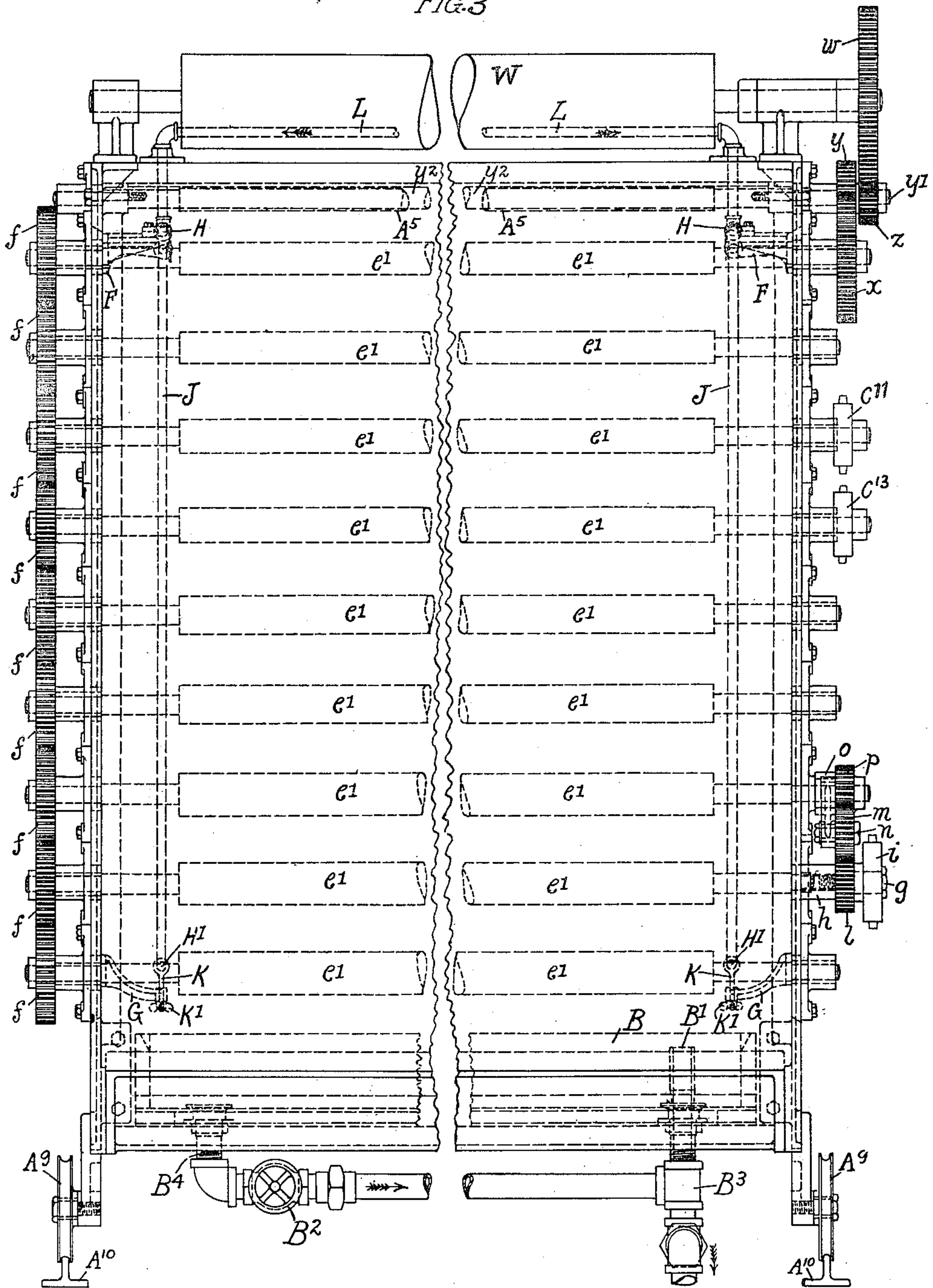
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FIG. 3



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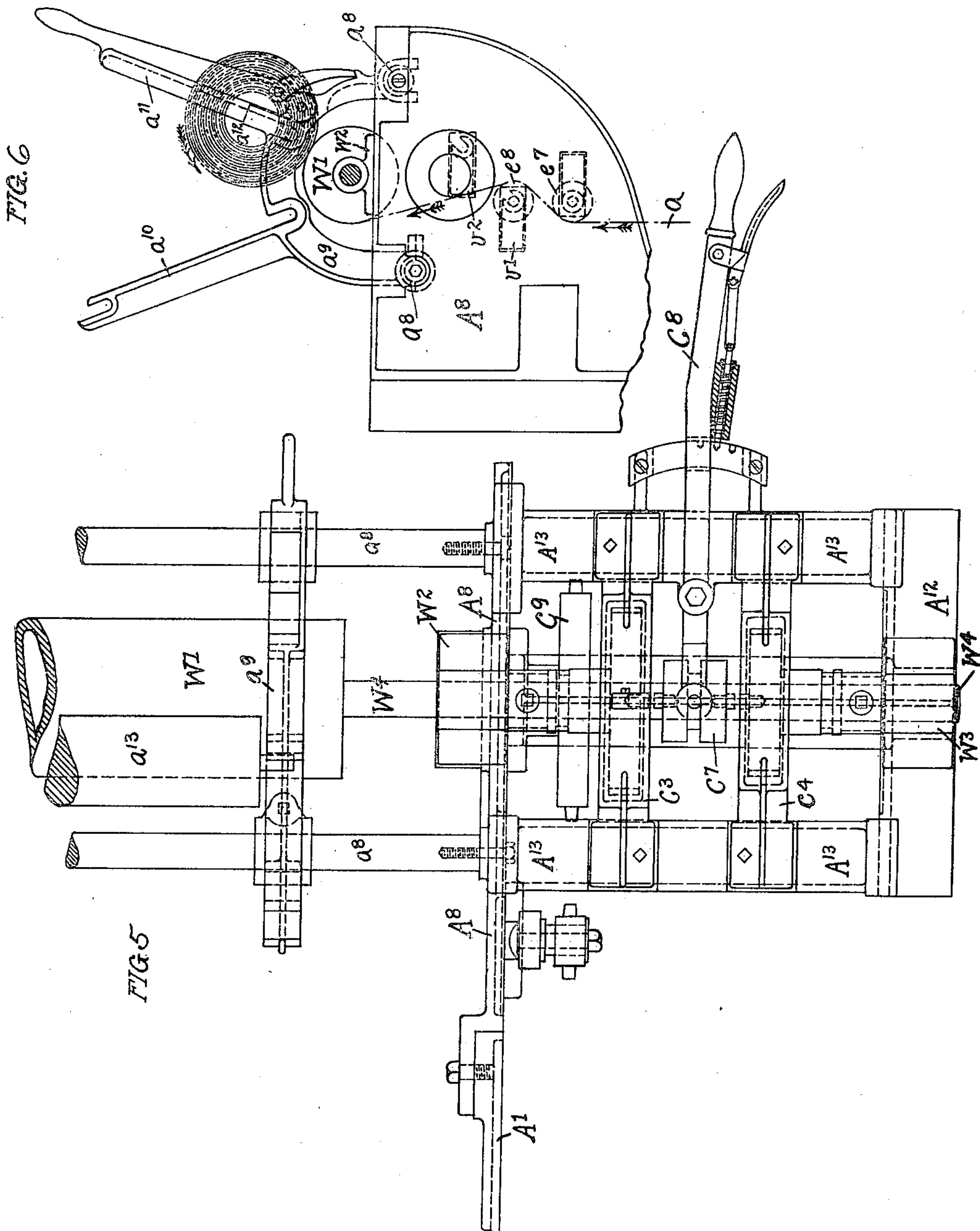
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5 SHEETS—SHEET 5.



WITNESSES

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APPARATUS FOR THE TREATMENT OF CLOTH.

1,154,758.

Specification of Letters Patent.

Patented Sept. 28, 1915.

Application filed June 6, 1911. Serial No. 631,555.

To all whom it may concern:

Be it known that I, DAVID GESSNER, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Apparatus for the Treatment of Cloth, of which the following is a specification.

My invention consists of an improvement in the treatment of cloth during its finishing process, and is particularly for the purpose of imparting to it qualities of handle, maintaining its proper weight, and insuring a final shrinkage, which, when added to what ever shrinking may have been given to the cloth (whether woolen, worsted, or dress goods), before it reaches the apparatus of this application, gives such shrinking a final set, so that, when handled subsequently by the tailor, or clothing manufacturer, it cannot be very materially affected by any one of the many modes of treatment these people are wont to give to cloth before cutting it into suits.

My present apparatus is preferably attached to the rear end of a rotary press upon floor rails so that, for the purposes of repair, it can be rolled away from the press to enable the operator to get in between the two machines.

When leaving the rotary press, all cloths, whether worsteds, or woolens, contain a great amount of pressing heat; and it is the general practice to roll up the cloth at the back of the press, and then let the cloth remain upon such roll until cooled, to have it ready for the next operation. Thus, all cloth, wound upon one or more of the lap-rolls of a rotary press during one day, is generally allowed to remain on the rolls until the next day, when subsequent operations may be undertaken with such cloth. For, if opened out immediately, as it comes from the press, and exposed to the air, it loses a great deal of its finish, and when folded, while still warm (instead of rolled at the rear end of the press), fold-marks are made, which are apt to show afterward. A rotary press also takes out of the cloth, during pressing, a lot of moisture, whether it be natural moisture contained in the wool fiber, or whether it be moisture artificially imparted to the cloth before rotary pressing. In other words, a piece of cloth weighing say twelve ounces per yard, before en-

tering the rotary press, may lose an ounce or so during rotary-pressing, and, unless something be done to restore this moisture, the weight will not return for a long time. A piece of cloth coming from a rotary press, and rolled up directly, for commercial purposes, will, at the end of several months, while laying in store-houses, gain very perceptibly in weight and handle, and it is customary, therefore, with many mills, to store such cloth in damp store-houses in order to have it reach its proper weight contracted for by the purchaser. As this is greatly objected to by larger establishments, owing to the accumulation of a vast amount of goods, artificial means of conditioning the cloth have been resorted to after pressing, so as to hasten the delivery thereof. Various methods are used in different mills, and different countries; all, however, having the one object in view; to restore the weight, and with the increased weight and moisture, improve the handle; particularly of light weight fabrics, and, if they can, aid the shrinkage. All this, and more, I can do with the apparatus here shown and described, by bringing the same up to the rotary press, thus making one continuous operation for pressing and conditioning the cloth. The apparatus works the better the closer it is brought to the press, because the hotter the cloth is as it enters the cooling chamber, or chill-box, the better the effect produced. My conditioning, or cooling chamber, is continuously fed with cold and damp air, which is supposed to be kept at as low a temperature as possible, the same, or nearly the same, for instance, as is maintained in an ice-box, or prevails in a cold storage plant; with the addition, moreover, that in my case the cold air is moisture-laden by being charged, as much as possible, with water, before entering the cooling chamber. The manner of cooling and humidifying the air need not be set forth in this application, but I desire to state that the colder the damp air forced into the conditioning chamber, the better results will be obtained, because, I depend largely for my results upon the sudden and complete shock which the hot cloth undergoes immediately upon entry into the cold-chamber. The hotter the cloth is at this entrance, and the cooler the damp air is within the chamber, the greater and more abrupt, and,

therefore, intense will be the shock given to the hot fibers of the cloth, which will then contract, and crimp, and crawl, far more effectually than if the shock received were lighter in extent.

I have found that cloth which is not so very hot on entering the same low damp temperature, as cloth that is of greater heat, will not shrink as effectually as cloth that possesses a higher degree of heat when meeting the chilly blast of the cooling chamber, and, therefore, the chamber should be arranged as close to the press as is possible; and the cold damp blast should be continuously kept at as low a temperature as possible.

I deposit the cloth in the cooling chamber upon endless carriers or aprons running in a horizontal position, so that these aprons may support the cloth throughout its entire travel through the chamber, because this is far better for damp cloth than if it were hung up in loops, or were made to travel up and down, in which case its own weight tends to stretch it while in a damp state, and, hence, stands in the way of a more thorough shrinkage. The slots at the entrance and exit of the cooling chamber, through which the cloth passes, possess a smaller area than the cubic area of the pipes leading to the chamber, so that there is always a surplus of cold water-laden air within the chamber, in order to allow the cloth to absorb as much moisture as possible during its passage through the machine. Besides, I keep up, in addition, a constant flow of cold water within the chamber which runs down on opposite sides thereof into a trough underneath, which covers practically the entire bottom of the cooling chamber, to help maintain a highly hydrous state of air therein. The sudden shock the hot cloth receives in the chilly, damp atmosphere of the cooling chamber causes it to swell in substance, and improves its handle to a degree not hitherto attainable by any treatment of which I am aware, while the moisture-laden air restores considerable of the weight taken out during rotary pressing.

The invention consists in the improved method and apparatus to be fully described hereinafter and the novelty of which will be particularly pointed out and distinctly claimed.

I have fully and clearly illustrated my invention in the accompanying drawings to be taken as a part of this specification and wherein:

Figure 1 is a side view of my machine; Fig. 2 is an end view in cross section of the rear end; Fig. 3 is an end view of the front end of the machine; Fig. 4 is a top plan view of it; and Figs. 5 and 6 are details of the delivery mechanism at the end of the machine.

Referring to Fig. 1, A, A' and A² are sections of one of the side frames which are bolted together at A³, A³, A³ to form a unitary structure, the two whole side-frames being tied together crosswise by cross-ties or girds A⁴, and tie-rods A⁵. The frames are boxed in all around their outer edges at the top, as well as the bottom and sides of the frames, by boards d so as to make the space within the frames an air-tight chamber except for the slot b' on top of the main frame A and the slot b on top of the section A², the open slot b being formed between the boarding d and the hinged cover c, the open slot b', being formed between the boarding d and the hinged cover c'. The cover c and the cover c' are shown thrown back in open position in dotted lines in Fig. 1; ordinary hinges c² being used for the cover c, and heavy cast-iron hinges c³ being used for the cover c', these hinges c³ being connected to and swinging from the rod c⁴ held by the brackets c⁵.

Between the section A and the section A of the main frame is fitted a section A⁶, which might be called a door, and which is held in place by the swing bolts a⁴; and which has attached to it, also, handles a³ so that, by moving the swing bolts a⁴ out of the way, the operator, by taking hold of the handles a³, can remove the section A⁶ from between the frames A and A', and thus gain access to the interior of the chamber. The end section A² of the main frame of the machine has, on opposite sides, inserted doors A⁷ which, when opened, will give access to that end of the cooling chamber. These doors may be protected by a wire screen, and are usually made in the form of a sash, to throw light into the interior of the chamber.

A⁸ are brackets fastened to the section A of the main frame, and have mounted upon them the rolling-up apparatus for the finished cloth.

A⁹ are truck wheels at the bottom of the main frame, resting upon rails A¹⁰ upon the floor.

a is the cloth being treated which, entering through the slot b, runs in the direction of the arrows, and, while passing through the conditioning or cooling chamber, drops onto an endless apron e strung over a pair of apron rollers e', and e². There are a series of such endless aprons e, placed one above the other, and made of two different lengths, the shorter ones being placed in the upper portion of the chamber, while the longer aprons are located in the lower portion of the chamber. Below, and close to the last long apron e, at its exit end, near the bottom of the conditioning chamber, is a chute consisting of a board e⁴ one end of which is placed directly under the apron roll e² while the other end rests upon the

bottom boards d of the section A^2 . The rolls e' carry upon one end, outside of their bearings, gears f which mesh into each other. Upon the stud g , screwed into the bracket h , turns loosely the sprocket i , to which is fastened gear l , which meshes into the intermediate gear m , immediately above it and revolving loosely upon the stud n , which is adjustably fastened to the bracket o , the bracket o at the same time forming an end bearing for one of the rolls e' , which carries the gear p , so that motion imparted to the sprocket i will revolve the roll e' , just referred to, which, on its opposite side, carries the gears f . The entire series of rolls e' , being provided at that end with intermeshing gears f , motion imparted to the sprocket i at the opposite end will, therefore, revolve all the rolls e' , and, through the endless aprons e , also the rolls e^2 . The rolls e^2 are mounted in adjustable bearings e^3 that can be slid back and forth, so as to enable the operator to keep the endless aprons e taut. This he does by slipping a socket wrench q (Fig. 1) provided with a handle, onto the square ends r of the shafts s , which extend across the conditioning chamber, and which are provided with proper bearings at both ends. On the inside of these bearings the shafts s carry spiral gears t which mesh with other spiral gears u upon spindles, or screws, v , that engage with the sliding bearings e^3 . So that, by applying the socket wrench q to the squares r of the shafts s the sliding bearings e^3 may be slid out to keep the aprons e taut. The bearings in which the shafts s revolve, as well as the bearings for the rollers e' , are fastened to the outside of the main frame, and are secured in such a manner as to seal them tight against in-rushing air. The sliding bearings of the rollers e^2 , being placed on the inside walls of the main frame, need no such provision.

Within the cooling chamber, near the short apron rolls e^2 , and immediately over the topmost long apron, are placed two air drums D in which air is compressed or stored, said drums being of tubular form, with curved spouts or mouth pieces D' having longitudinal slits or openings D^2 across them through which cold damp air is forced toward the traveling cloth, as it descends from the top-most of the short aprons to the one immediately below it, and again as it drops from the third to the fourth apron underneath. A pipe D^3 , leading from a blower, directs the chilled damp air into the drums D . The head pieces D^6 (Fig. 2) of the drums D rest upon shelves D^4 , fast to the inner walls of the frame members A^2 , and closure plates D^5 encircle the pipes D^3 , and seal the openings in the frame, through which the pipes D^3 from the blower have to pass in reaching the drums, against the at-

mosphere of the room, where the apparatus is being operated.

Upon the bottom of the cooling chamber directly underneath, and co-extensive with the long aprons, rests a trough or box-like receptacle B which has an inclined bottom so that water placed therein can drain off toward the lowermost corner where it contains an opening that is ordinarily sealed with an overflow-plug B' , discharging into a pipe B^3 which leads from the trough outdoors. A second discharge pipe B^4 leads into the first discharge pipe B^3 and is controlled by a valve B^2 (see Fig. 3). Against the inner surface of the doors, or frame-sections A^6 on both sides of the frame are bolted at the top a pair of brackets F , and near the bottom a second pair of brackets G . Extending across from one bracket F to the other is a perforated brass tube H . Over and around this perforated tube H is hung an endless cotton apron J depending in a perpendicular position (Fig. 3). In the lower part of this endless apron or bag J lies inserted a brass rod H' , and onto the ends of this are slipped a couple of screw-eyes K which in turn are held by the brackets G . By taking up the thumb-nuts K' on the screw-eyes K , the rod H' can be raised or lowered; in other words the cotton bag, or endless apron J , can thus be kept taut and properly adjusted. Through a water feed pipe L water can be fed into the perforated brass tube H , and from there it escapes onto the cotton bag, trickling down it, and keeping it saturated as long as the supply from pipe L continues, while the surplus water escapes into the trough B underneath.

Looking at Figs. 1, 3 and 4, it will be noticed that the topmost apron-roller e' has fastened upon its opposite end from its driven end (where it carries the gear f) a gear x which meshes into a gear y fast upon the journal y' of the small roller y^2 located above the topmost apron e , and directly under the hinged cover c . A pinion z is likewise fastened upon journal y' (at its outer end) and meshes into the gear w immediately above it, and fast upon the journal of the feed-roll W , so that, as soon as the uppermost of the short apron-rolls e' is set in motion by the gear f at one of its ends, its opposite end will set in motion also the small roller y^2 and the feed roll W , located above it.

Looking at Figs. 1, 2, 5 and 6 there will be noticed (at the exit end of the machine) a second feed or delivery roll W' running in bearings W^2 on top of the main-frame-brackets A^8 , one of which brackets carries a yoke A^{12} . On the upper and outermost extension of this yoke A^{12} is placed a third bearing W^3 for this feed roll, and connecting this yoke-extension with the top of bracket A^8 are short girds A^{13} .

Extending about midway between this yoke A^{12} and the bracket A^8 lies a shaft C carrying fastened to it two gears C' of smaller diameter and C^2 of larger diameter. Under hoods or guards C^3 and C^4 , fastened to the tops of girds A^{13} , is a second pair of gears C^5 and C^6 , which revolve loosely upon shaft W^4 and carry clutch pins that may engage with corresponding clutch pins in a double-clutch-member C^7 (operated by a clutch handle C^8) splined loosely upon shaft W^4 .

The yoke-shaft C has fastened to it also a sprocket C^9 which, through a chain C^{10} , is connected to a sprocket C^{11} keyed to the journal of the third short apron-roll e' which is driven on its opposite side through one of the gears f .

The gears C' and C^2 , of unequal diameter, and fast upon the yoke shaft C , impart to the two corresponding gears C^6 and C^5 , running loosely upon shaft W^4 , two different speeds, a slow one and a faster one, and according to the way the operator throws the clutch-lever C^8 , the delivery roll W' , may, therefore, be made to travel faster or slower, although the apron-rolls and remaining rolls travel at a uniform speed.

Straddling two tie-rods a^8 which unite the brackets A^8 are two rolling up brackets a^9 having two runs or tracks, one of which is a stationary one a^{10} , and the other of which, all, can be reclined when wishing to take down a lap-roll a^{12} after it has been wound with a piece of cloth subsequent to its passage through the cooling chamber. According to the direction of speed given to the delivery roll W' , a roll of cloth may be wound upon a lap-roll a^{13} and made to follow either the stationary track a^{10} , as in Fig. 1, or to run upon the track a^{11} , as in Fig. 6. When it is desired to reverse the direction of rotation of the feed roll W' , and the lap-roll a^{13} , from that, shown in Fig. 1 of the drawings, to that shown in Fig. 6, the operator simply throws the chain C^{10} off the sprocket C^{11} and places it around the sprocket C^{13} which revolves the opposite direction from said sprocket C^{11} .

There are bolted inside of the main-frame-brackets A^8 two small open-mouthed guide-roll brackets v' and v^2 which may contain a guide-roll e^8 . According to the direction in which the operator desires to run the feed roll W' he places the guide-roll e^8 either into the open bracket v^2 , as in Fig. 1, or he puts it into the open bracket v' , as shown in Fig. 6, because when reversing the direction of rotation of the feed roll W' , he must also place the cloth a so as to contact with the opposite side of the roll from that used before in order to be able to roll it up on the other rolling-up track of the bracket a^9 .

The idler e^5 within the last section A^2 of the cooling-chamber, and the still smaller

idlers e^6 , e^6 (one attached to the boarding d and the other to the lower side of the trap-door c'), as well as the idler e^7 , simply serve to keep the cloth-line straight when the operator changes the shifting-idler e^8 from v' to v^2 and prevent chafing of the cloth against the edges of the slot b' between the boarding d and the trap-door c' .

The little driven roller y^2 (Figs. 1, 3 and 4) serves the same purpose at the mouth of the entrance side of the machine when the operator opens the trap-door c to drop the cloth-end of a coming piece onto the top apron e . It requires a straight line for the cloth to travel between the entrance feed roll w and this small roller y^2 , and prevents chafing of the goods against the sides of the slot C .

The curved spouts or mouth pieces D' , with their slots D^2 of the air drums, are placed high, and the drums themselves are made tubular, so that, should occasional drops of water be carried along with the air through the pipes D^3 , they can roll to the bottom of the circular walls of the compressors, and thus will never pass the slots D^2 and reach the passing cloth a . By removing a few boards from the housing or covering d to the rear of the drums, the latter are accessible at any time, whenever this should be necessary.

The operation of my machine is extremely simple. The operator, upon taking the foremost end of a piece of cloth that is just leaving the pressing surfaces of a rotary press, draws the same over and around the entrance-feed-roll W , lifts the trap-door c , and drops the cloth-end upon the uppermost of the endless aprons, which act as cloth carriers, and then shuts the trap-door again. As the operator is very likely the same person who is expected to run the rotary press also, he may then return to the press to do whatever work he may have there, while the cloth, dropping from the uppermost apron to the next, and so on, until the lowermost apron is reached, will slide down the chute e^4 , into the bottom of the end-section A^2 , where, if the operator should not be on hand just then, quite an amount of cloth can accumulate, and the cloth, being thoroughly cold by that time, cannot be injured by wrinkles forming at that stage of the process. A glance through the sash in door A^7 will disclose to the eyes of the operator, whether enough cloth has accumulated in the bottom of the rearmost section of the cooling chamber, to reach, if picked up, to the final delivery roll W' , there to be wound onto a lap-roll a^{13} . To do so he simply opens and then shuts again the trap-door c' . Before drawing the end of the cloth over the final delivery roll to start a lap around the small lap roll, the operator may, if he wishes, stop that roll entirely, without in-

interrupting the forward passage of the cloth through the rest of the apparatus, by simply throwing his clutch lever C^8 into the position shown in Fig. 5, when the double-clutch C^7 is out of engagement with either of the two gears C^5 , C^6 , one of which will furnish a faster speed for the delivery roll than the other gear, the speed of which is so gaged as to keep up merely with the regular feed of the rest of the machine. The operator uses the faster feeding gear occasionally for a few seconds, when he deems the amount of cloth accumulated in the bottom of the cooling chamber more than sufficient. By using the fast feed a few moments, he can take up quickly any over-accumulation of cloth at the chute e^4 which might happen to an inexperienced hand who bungles or takes more time than is necessary to properly start a good lap on one of the lap rolls, on top of the back delivery roll W' .

If the cloth entering the cooling chamber be run in face-up, it will be rolled up at the final delivery roll W' , as shown in Fig. 6. That is to say, the lap-roll will be caused to run up track a^{11} , and, if the cloth enters the chamber face-down, it will be wound onto a lap-roll running up the track a^{10} , as shown in Fig. 1.

It will be noticed that the cloth nowhere throughout the entire apparatus is held taut or in a tense condition. It falls loosely and naturally, from apron to apron, and is at all times given every opportunity to contract and shrink, and one side is always fully exposed to the cold damp air, and the other to the cold damp apron alternating constantly from side to side. The cloth-holding capacity of the chamber is large enough to contain at least a quarter of a length of an entire piece of cloth in order to expose every yard of it for several minutes to the influence of both cold and dampness, the atmosphere in the chamber being laden to its limit with water. This enables me to keep up with the ordinary speed that rotary presses are run in this country, and therefore insures also quantitatively a satisfactory production, while the quality of work leaves little or nothing to be desired.

What I claim and desire to secure by Letters Patent of the United States is:—

1. A machine for treating cloth, comprising a casing, means for propelling a web of cloth through the casing, and means within the casing for passing water vertically in proximity to the cloth and exposed thereto, but out of contact therewith whereby the cloth is subjected to the vapors given off by the water.

2. A machine for treating cloth, comprising a casing, means for feeding a web of cloth therethrough in separated stretches, and means within the casing for passing a body of water in proximity to the cloth

but out of contact therewith whereby the cloth is subjected to the vapors given off by the water.

3. A cloth treating apparatus of the character described, comprising a chamber, means for feeding a web of cloth there-through in a loose untensioned state, and means within the chamber for chilling the cloth, and means for subjecting the cloth to a dampening medium.

4. A cloth treating apparatus of the character described, comprising a chamber, means for feeding a web of cloth there-through in a loose untensioned state, and means in the chamber for blowing a current of chilled air over the cloth and for hydrating the same.

5. A cloth treating apparatus of the character described, comprising a chamber, means for feeding a web of cloth there-through in a loose untensioned state in a plurality of separated superimposed layers, means for blowing a current of chilled air over said layers, and hydrating means inside said chamber.

6. A cloth treating apparatus of the character described, comprising a chamber, means for feeding a web of cloth there-through in a loose untensioned state in a plurality of separated superimposed layers, means for blowing a current of chilled air over said layers, hydrating means inside said chamber, said hydrating means comprising a vertically disposed absorbent surface, and means for feeding liquid thereto.

7. A cloth treating apparatus of the character described, comprising a chamber, means for feeding a web of cloth there-through in a loose untensioned state in a plurality of separated superimposed layers, means for blowing a current of chilled air over said layers, hydrating means inside said chamber, said hydrating means comprising an absorbent surface, means for feeding liquid thereto, and a catch pan beneath the lowermost run of cloth.

8. A cloth treating apparatus of the character described, comprising a chamber, means for feeding a web of cloth there-through in a loose untensioned state, comprising a plurality of superimposed endless belts between which the cloth is adapted to be threaded, means for feeding cloth to the uppermost of said belts, a chute for the cloth leading from the lowermost belt, and means within the chamber for subjecting the cloth to a dampening medium while being propelled through the chamber.

9. A cloth treating apparatus of the character described, comprising a chamber, means for feeding a piece of cloth there-through in a loose untensioned state, comprising a plurality of superimposed endless belts between which the cloth is adapted to be threaded, means for feeding the cloth

to the uppermost of said belts, a chute for the cloth leading from the lowermost belt, winding means arranged to lift the cloth from said chute, and means within the
5 chamber for subjecting the cloth to a dampening medium while being propelled through the chamber.

10. A cloth treating apparatus of the character described, comprising a chamber,
10 means for feeding a web of cloth lengthwise through the chamber in a loose untensioned state, a nozzle extending transversely of the chamber and directed toward the cloth transversely thereof, and hydrating
15 means in the chamber to one side of the cloth.

11. A machine for treating cloth comprising a casing, means for feeding a web of cloth therethrough, means within said
20 casing for flowing water in a substantially vertical direction adjacent the cloth while being fed through the chamber, and a catch pan beneath the cloth for catching the water.

25 12. A cloth treating apparatus of the character described, comprising a chamber, means for feeding a piece of cloth therethrough in a loose untensioned state, said means consisting of a plurality of superimposed
30 endless belts between which the cloth is adapted to be threaded, means for loosely feeding the cloth onto the uppermost belt, and means within the chamber for subjecting the cloth to a dampening medium while
35 being propelled through the chamber.

13. A cloth treating apparatus of the character described, comprising a chamber, means for supporting and feeding a web of cloth therethrough in a loose and untensioned
40 state in a plurality of separated superimposed substantially horizontal layers, and means within the chamber for subjecting the cloth to a dampening medium while being propelled through the chamber.

45 14. In a cloth-treating apparatus, a chamber, means for feeding a web of cloth therethrough in a single layer, a drum in the chamber, and a supply of chilled air to the drum, the drum having an opening into the
50 chamber.

15. In a cloth-treating apparatus, a chamber, means for feeding a web of cloth therethrough in a single layer, a drum in the chamber, a supply of chilled air to the drum, the drum having an outlet nozzle directed
55 toward the cloth.

16. A cloth treating apparatus of the character described, comprising a chamber, means for feeding a web of cloth therethrough in a loose and untensioned state, said means consisting of a plurality of oppositely driven superimposed endless belts,
60 said belts being staggered so that one end of each alternating belt projects beyond the adjacent end of the belt next above it, means

for feeding cloth in a loose state onto the uppermost belt, and means in the chamber for subjecting the cloth to a dampening medium during the passage of the cloth through the chamber.

17. In an apparatus for treating cloth, a chamber, means for feeding a web of cloth therethrough, a horizontally disposed perforated pipe at the side of the path of movement of the cloth, a sheet of moisture-carrying material hung to receive liquid from said
75 pipe, and means for admitting a blast of chilled air into the chamber, said chamber walls having removable side panels or doors to permit access to the interior thereof.

18. In an apparatus for treating cloth, a chamber, means for introducing air and moisture into the chamber, means for feeding cloth back and forth through the chamber in loose condition, a supplemental chamber to receive the cloth from the feeding
85 means, and winding means for withdrawing the cloth from the supplemental chamber.

19. In an apparatus for treating cloth, a chamber, means for introducing air and moisture into the chamber, means for feeding cloth back and forth through the chamber in loose condition, a supplemental chamber to receive the cloth from the feeding
95 means, a chute to direct the cloth from the feeding means to the supplemental chamber, and winding means for withdrawing the cloth from the supplemental chamber.

20. A cloth treating apparatus of the character described, comprising a chamber, means for feeding a piece of cloth therethrough in a loose untensioned state, and means within the chamber for continuously subjecting the cloth to a dampening medium while being propelled through the chamber.
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21. A cloth treating apparatus of the character described, comprising a chamber, means for feeding a piece of cloth therethrough in a loose state, said means consisting of a plurality of superimposed endless
110 belts between which the cloth is adapted to be threaded, means for loosely feeding the cloth onto the uppermost belt, and means within the chamber for continuously subjecting the cloth to a dampening medium while being propelled through the chamber.
115

22. A cloth treating apparatus of the character described, comprising a chamber, means for feeding continuously a web of cloth lengthwise therethrough, and means
120 within the chamber for subjecting the cloth to water vapors, said last-named means comprising a vertically disposed member of absorbent material, and means for feeding water thereto.

23. A cloth treating apparatus of the character described, comprising a chamber, means for feeding continuously a web of cloth lengthwise therethrough in a substantially horizontal direction, and means with-
125

in the chamber for subjecting the cloth to a dampening medium, said last-named means comprising a vertically disposed member of absorbent material arranged at one side of the web of cloth, but out of contact therewith, and means for supplying a dampening medium to said member.

24. A machine for treating cloth, comprising a means for propelling a strip of cloth in substantially parallel stretches, and means for exposing a vertically disposed body of water in proximity to said stretches but out of contact with the cloth whereby the cloth is subjected to the vapors given off by the water.

25. A machine for treating cloth, comprising a casing, means for propelling a strip of cloth through the casing in separated stretches, and means within the casing for exposing a body of water from the top portion to the bottom portion of the casing in proximity to said stretches but out of contact with the cloth whereby the cloth is subjected to the vapors given off by the water.

26. A machine for treating cloth, comprising a casing, means for propelling a strip of cloth in substantially separate stretches, a member of absorbent material disposed adjacent to but out of contact with the cloth, and means for supplying water to said member whereby the cloth is subjected to water vapors given off by the water.

27. A machine for treating cloth, comprising means for propelling a strip of cloth in substantially horizontal parallel stretches, and in an untensioned state, vertically disposed members of absorbent material arranged on opposite sides of said stretches and in proximity thereto, but out of contact therewith, and means to supply a dampening medium to said members.

28. A machine for treating cloth, comprising means for propelling a strip of cloth in substantially horizontal parallel stretches, and in an untensioned state, vertically disposed members of absorbent material arranged on opposite sides of said stretches and in proximity thereto, but out of contact therewith, means to supply a dampen-

ing medium to said members, and a receptacle beneath the stretches of cloth and adapted to catch the dampening medium flowing from said members.

29. A machine for treating cloth, comprising a casing, means for feeding a web of cloth therethrough in separated stretches, and means within the casing for passing a body of water in a substantially vertical direction in proximity to the cloth but out of contact therewith whereby the cloth is subjected to vapors given off by the water.

30. A machine for treating cloth comprising a casing, means for feeding a web of cloth therethrough in separated stretches, and means within the casing for passing a body of water in a substantially vertical direction in proximity to the cloth but out of contact therewith whereby the cloth is subjected to vapors given off by the water, said means comprising a vertically disposed member, and means for flowing water onto the surface of said member.

31. A machine for treating cloth comprising a casing, means for feeding a web of cloth therethrough in separated stretches in a loose and untensioned condition with the cloth supported free of its weight exerted longitudinally thereof, and means within the chamber for passing an exposed body of water in proximity to the cloth but out of contact therewith whereby the cloth is subjected to the vapors given off by the water.

32. A machine for treating cloth, comprising a casing, means for propelling a web of cloth through the casing, and means for passing a body of relatively cold water in proximity to the cloth, but out of contact therewith whereby the cloth is subjected to the vapors given off by the water.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

DAVID GESSNER.

Witnesses:

M. E. McNinch,
C. G. Heylmun.

It is hereby certified that in Letters Patent No. 1,154,758, granted September 28, 1915, upon the application of David Gessner, of Worcester, Massachusetts, for an improvement in "Apparatus for the Treatment of Cloth," errors appear in the printed specification requiring correction as follows: Page 2, line 76, for the reference-letter "b'" read *b*; same page, line 77, for the reference-letter "b" read *b'*; page 4, line 79, for the word "requires" read *insures*; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 19th day of October, A. D., 1915.

[SEAL.]

R. F. WHITEHEAD,
Acting Commissioner of Patents.