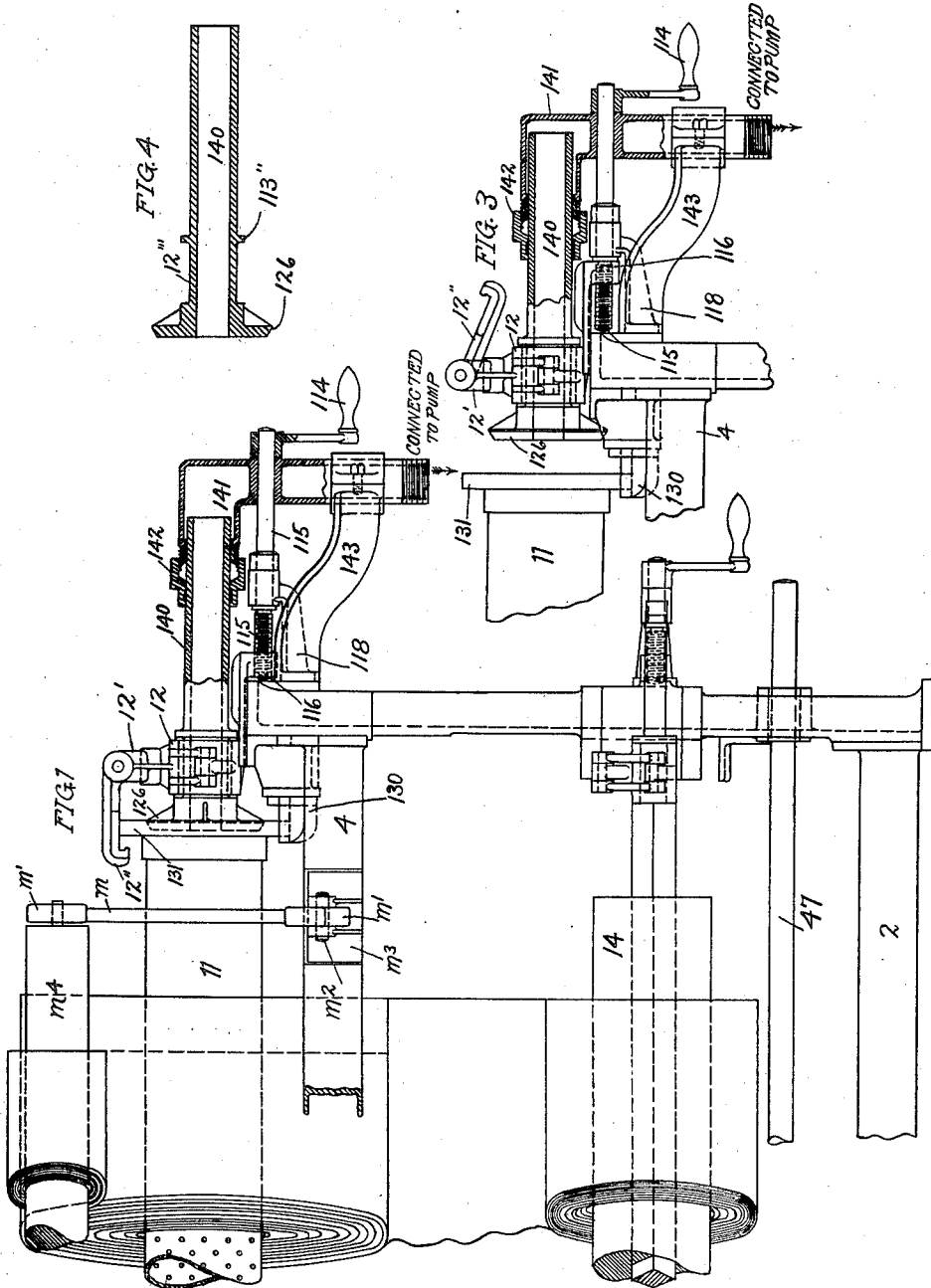


D. GESSNER.
CLOTH WINDING MACHINE.
APPLICATION FILED AUG. 6, 1910.

1,051,399.

Patented Jan. 28, 1913.

4 SHEETS-SHEET 1.



WITNESSES

O. H. K. K. K.
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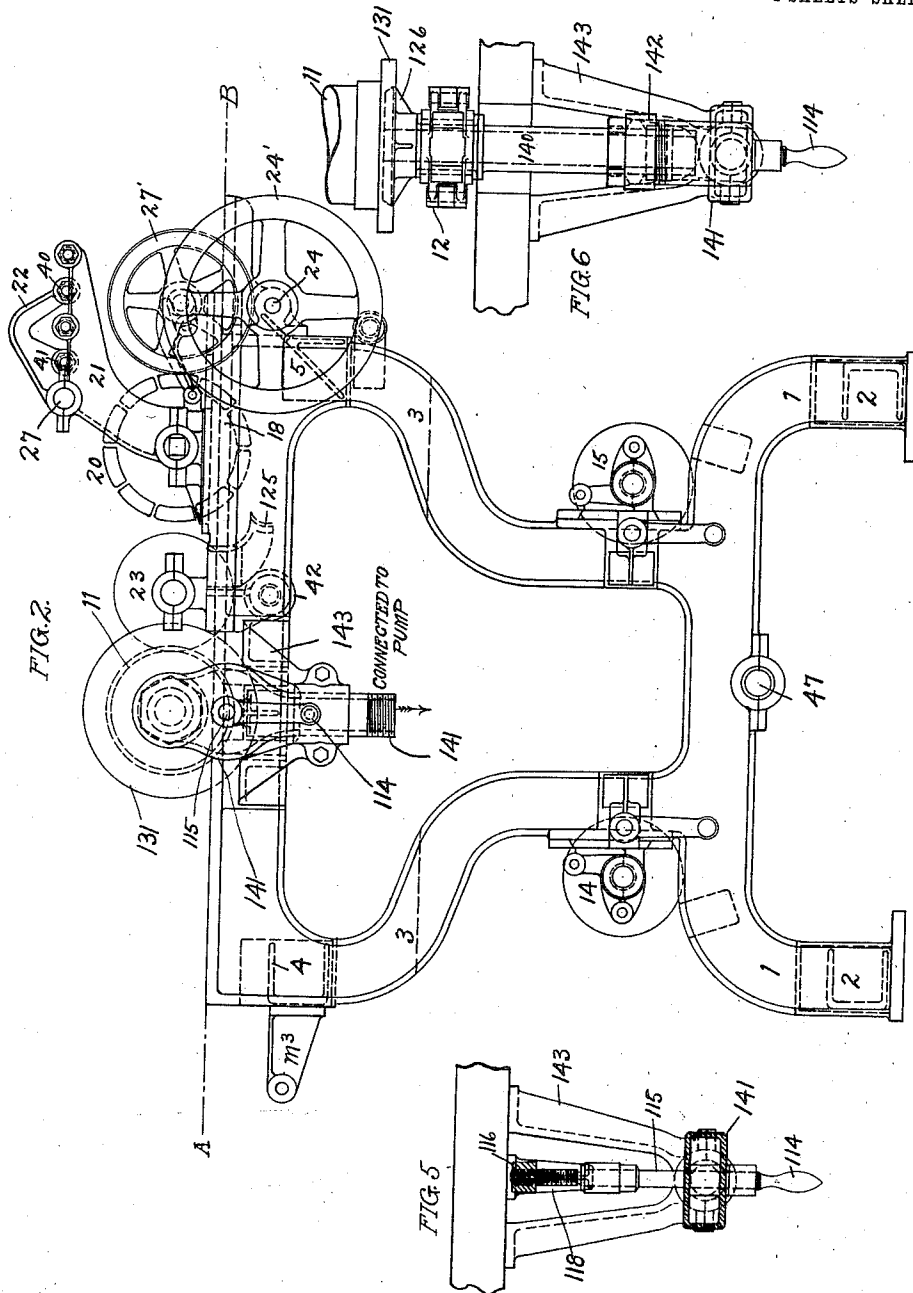
David Gessner
Clifford Bull, his ATTY'S.

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4 SHEETS-SHEET 2.



WITNESSES
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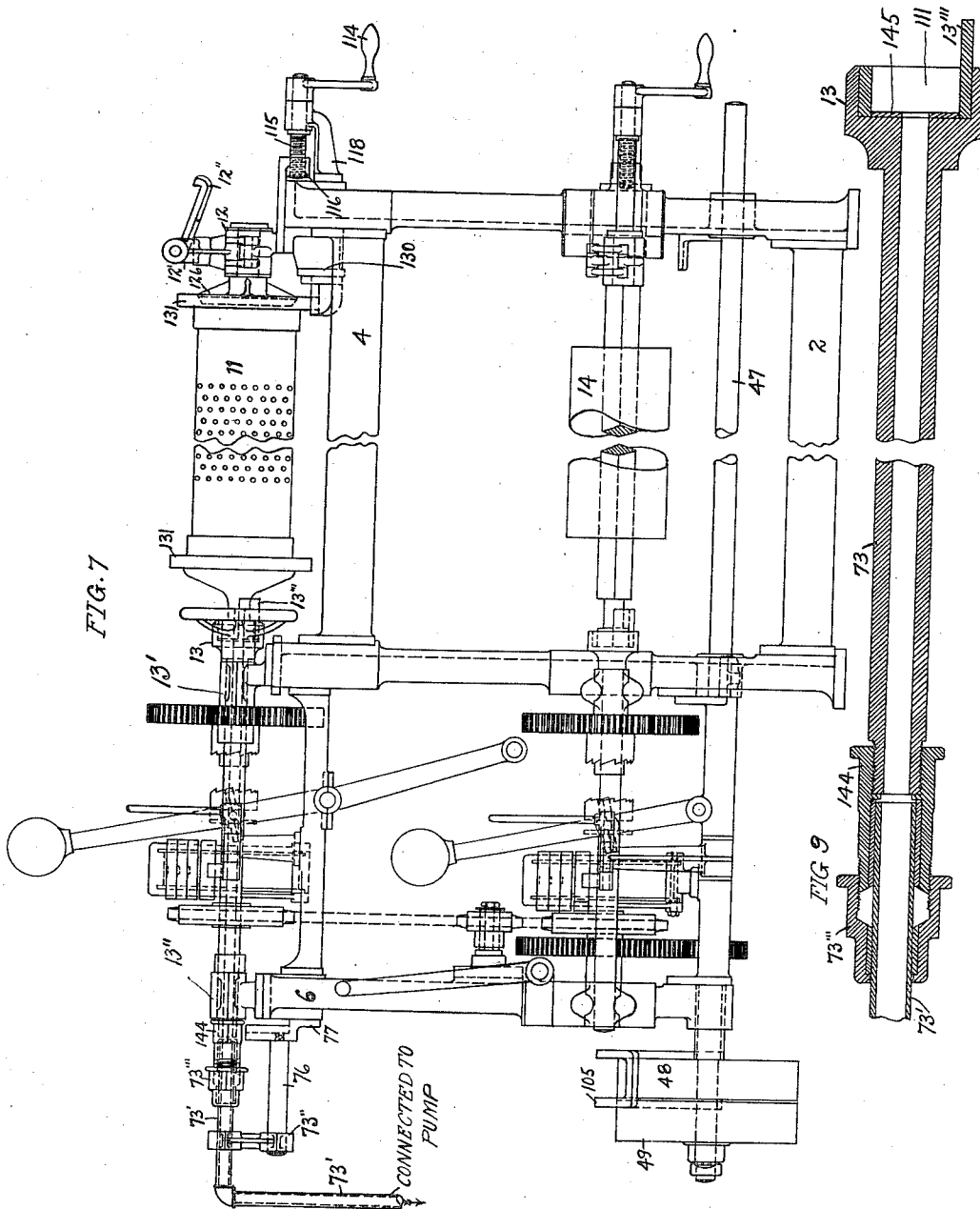
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4 SHEETS—SHEET 3.



WITNESSES

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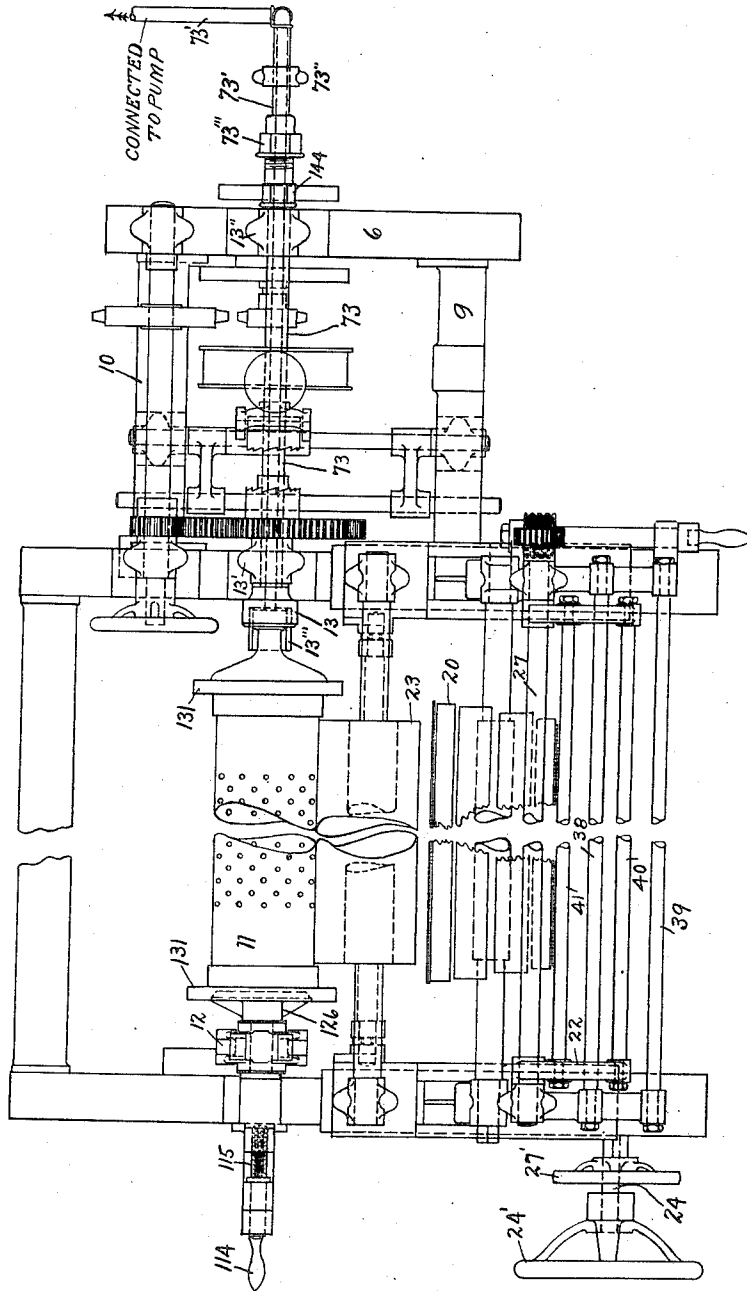
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4 SHEETS—SHEET 4.

FIG. 8



WITNESSES

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UNITED STATES PATENT OFFICE.

DAVID GESSNER, OF WORCESTER, MASSACHUSETTS.

CLOTH-WINDING MACHINE.

1,051,399.

Specification of Letters Patent.

Patented Jan. 28, 1913.

Application filed August 6, 1910. Serial No. 575,880.

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 Cloth-Winding Machines, of which the following is a specification.

My invention relates to new and useful improvements in cloth-treating apparatus and particularly contemplates improvements in winding machines of the character shown and described in my pending application for Letters Patent Serial No. 446,958, filed August 4, 1908, and Serial No. 542,386, filed February 7, 1910, whereby a roll of cloth may be cooled during the unwinding by said machine.

In describing the details of my improvements and the best way of attaching them to an unwinding machine for unwinding hot cloth from a steaming-roll just coming from a heated steaming-chamber, I have selected as the most suitable apparatus to illustrate the same the machine shown and described in my pending application, Serial Number 542,386, although I am aware that my invention could be incorporated in, or practised by, other machines or apparatus, with equal profit and facility. Hence, I do not wish to be understood as limiting myself to applying it only to the particular construction of unwinding machine here shown. To be sure, for purposes of illustration, the drawings are largely a reproduction of those contained in the pending applications above referred to, with simply such changes and additions thereto as are necessary to disclose the nature of my present invention and a proper manner of carrying it out.

Referring to the drawings, Figure 1 represents a side view of one end of my unwinding machine, showing steaming roll 11, the apron roll 14, and the lap roll m^4 , and some other parts partly in cross section. Fig. 2 shows an end view of the same end, with the cloth and apron, however, left out. Figs. 3, 4 and 5 show the main details of my invention, more or less in cross section, Fig. 6 being a still further detail thereof. Fig. 7 is a side view, and Fig. 8 a top view of my unwinding machine, showing how to apply my invention to the other end of the machine, if desired, and Fig. 9 is a detail thereof.

Before proceeding with a detailed description of my present invention, I would state that I have illustrated the same in connection with a winding machine of substantially the same form shown in the two applications referred to and in this form the machine may consist in part of a pair of bearings adapted to detachably receive a hollow steaming roll, one of which bearings is driven and the other of which is movable relative thereto to place the roll supported by the bearings in connection with the driven bearing to be driven therefrom. The driven bearing is shown at 73 and carries at its inner end a head 113 having an angular-walled socket 111 to receive a squared gudgeon on the steaming roll, said socket piece having a shelf 113' to support the roll when it is not in engagement with the socket either before or after it is inserted in the latter. The movable bearing consists of a slide piece mounted in guides on the top of the frame and carrying a split bearing 12 in which is rotatably mounted a hollow shaft 140 having a head 126 adapted to be moved into engagement with the open end of the cloth roll 11 to connect said head and roll and also to move the latter so as to place the squared head thereon in driving connection with the shaft 73 by means of the socket 111. On this slidable bearing is a pillar 12' upon which is pivoted a hook 12'' adapted to be hooked over the flange 131 at the adjacent head of the roll 11, so that when the sliding bearing is moved away from the fixed bearing the squared head of the roll will be pulled out of the socket 111. Any suitable means may be employed for sliding the movable bearing, such, for instance, as the threaded shaft 115, threaded into the bearing and rotatably mounted in a bracket 118 on the main frame, said shaft having a crank 114 by means of which it is rotated. All the parts just described are shown in the two applications referred to, and it is my purpose to further increase the efficiency of the machine by rendering it capable of performing a cooling and drying operation while the cloth is being either rolled on or from the roll 11. While I have shown in detail the other working parts of the machine, I do not deem it necessary to specifically describe the same here, as my improvements can be fully understood without such description.

Referring to the drawings, Fig. 1 shows

the hollow perforated steaming roll 11, with its head 131, held detachably by the inserted plunger-head 126 carried by the plunger-barrel, or plunger shaft 140, which in the present instance is made hollow as shown in detail in Fig. 4. Shaft 140 has a journal portion 127, between the plunger-head 126 and the collar 113, which can freely revolve in the split sliding-bearing 12, mounted on top of the winding machine frame, and which can slide also lengthwise in the hollow elbow-piece 141. The screw shaft 115, which is revolvably held between two collars in the bracket 118, secured to the frame, and can also revolve freely in the elbow piece 141, has, at one end, a handle 114, while its opposite end, which is screw-threaded, connects with the screw-threaded portion 116 of the sliding-bearing 12, so as to move the bearing to connect or disconnect the plunger head 126 on shaft 140 from the head 131 of the roll 11, as described, the plunger-barrel 140 at the same time sliding back and forth in the hollow elbow piece 141, as shown in Fig. 1, and Fig. 3. The lower end of the elbow piece 141 is screw-threaded, so as to receive a pipe leading to an air exhaustor, or pump, the exhaustor being operated only when the plunger-barrel 140 has its head 126 engaged with the roll 11, as shown in Fig. 1. The exhaustor may sometimes be applied to the opposite end of the machine, in which case, as shown in Figs. 7 and 8, the plunger is constructed as shown in said applications, while the shaft 73, which revolves in the bearings 13' and 13'', and which carries the socket head 13 with its projecting receiving-shelf 13'', may be bored out the entire length, as shown in detail in Fig. 9. The pocket 111, in the socket head 13 of the shaft 73 (see Fig. 9), which receives the square end of roll 11 when placed into the winding machine, has a packing ring 145 inserted in the rear thereof, against which the square end of the roll 11 will be pressed to make an air-tight joint when the handle 114 is turned to move the bearing 12, with the plunger head 126, forward, to lock the roll 11. The opposite end of the shaft 73 carries a collar 144, to which is screwed a packing-nut 73'', reaching around the pipe 73' and making an air-tight joint. The pipe 73' is held fast by the bracket 73'', which is held rigidly upon a stud 76 screwed to pad 77 secured to yoke 6 of the main frame, thus holding the pipe 73' rigidly, while the shaft 73 may be revolved freely. The pipe 73' being connected to an exhaustor, the air may be drawn through a body of cloth, wound upon the perforated steaming roll 11, as readily from that end as from the other.

In practising my invention the hot steaming roll 11 is placed in the winding machine and the cloth is connected to the lap-roll m^4 and the apron to the apron-roll 14,

and the machine is then operated to wind the cloth off the roll 11 onto the roll m^4 and the apron onto the roll 14, all of which is fully described in detail in my said application Serial No. 542,386, during which unwinding operation the pump is operated to suck cooling air through the roll 11 to cool the cloth. By this method of procedure the outer layer of cloth is cooled and immediately removed so that each outer layer is successively subjected to the action of cool air, instead of the inner layers being subjected to air which has become heated through contact with previous layers, as in the old method. It will thus be seen that my invention makes it possible, by causing but a slight change at a trifling expense in the construction of my winding and unwinding machine (as shown and described in my pending applications, Serial Numbers 446,958 and 542,386), to cool the cloth during the act of unwinding, without necessitating first a transfer of a hot cloth-roll from a steaming-chamber to either a cooling chamber, a cooling frame, or a cooling room, which transfer means a delay of from one half hour to twenty-four hours and a great deal more work, without accomplishing any more than I can by my new machine.

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

1. In a cloth winding machine, in combination, a frame, a cylindrical perforated open-ended cloth roll, a pair of bearings on the upper portion of the frame, means whereby one of said bearings is slidable toward and away from the other bearing, a shaft in each of said bearings in longitudinal alinement with each other, the shaft in the sliding bearing being hollow, and communicating through its end portion with the interior of said cloth roll through the open end of the latter, said shaft being provided with a head to engage and close the open end of the cloth roll, and with an extension outside its bearing, a bracket on the frame, a chamber supported by the bracket and having a horizontal portion slidably receiving said extension of the shaft, and air suction means connected with said chamber.

2. In a cloth winding machine, in combination, a frame, a cylindrical perforated open-ended cloth roll, a pair of bearings, means whereby one of said bearings is slidable transversely of the frame toward and away from the other bearing, a shaft in each of said bearings in longitudinal alinement with each other, the shaft in the slidable bearing being journaled therein at a point intermediate its ends and communicating through its inner end portion with the interior of the cloth roll through the hollow open end of the latter, said shaft being provided on its inner end with a head to engage and close the open end of the cloth

roll, a bracket on the frame, a chamber supported by the bracket and having a horizontal portion slidably receiving the outer end of said hollow shaft, and air suction means connected with said chamber.

3. In a cloth winding machine, in combination, a frame, a cylindrical perforated open-ended cloth roll, a pair of bearings, means whereby one of said bearings is slidable transversely of the frame toward and away from the other bearing, a shaft in each of said bearings in longitudinal alinement with each other, the shaft in the slidable bearing being journaled therein at a point intermediate its ends and communicating through its inner end portion with the interior of the cloth roll through the hollow open end of the latter, said shaft being provided on its inner end with a head to engage and close the open end of the cloth roll, a chamber supported by the frame and having a horizontal portion slidably receiving the outer end of said hollow shaft, and air suction means connected with said chamber.

4. In a cloth winding machine, in combination, a frame, a cylindrical perforated open-ended cloth roll, a pair of bearings on

the frame, one of said bearings being slidable toward and away from the other bearing transversely of the frame, a shaft in each of said bearings in longitudinal alinement with each other, the shaft in the slidable bearing being journaled therein at a point intermediate its ends, said shaft being hollow and communicating through its inner end portion with the interior of the cloth roll through the hollow end of the latter, said hollow shaft being provided with a head on its inner end to engage and close the open end of the cloth roll, a bracket on the frame, an elbow shaped bracket having its dependent member supported by the bracket and having a horizontal member slidably and rotatably receiving the outer end of said hollow shaft, and air suction means connected with said dependent member.

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

DAVID GESSNER.

Witnesses:

M. E. McNinch,

C. G. Heylmur.