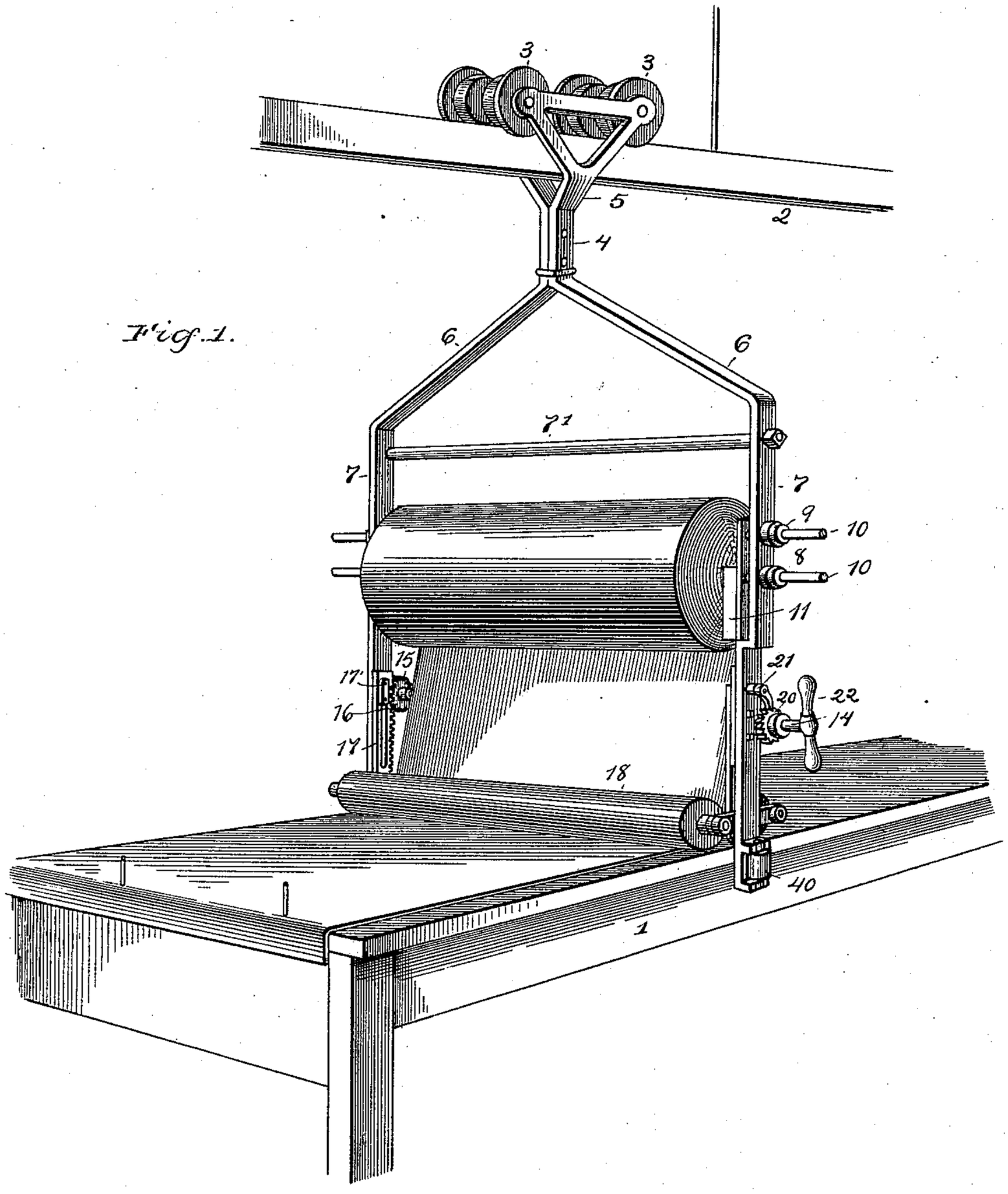
(No Model.) 3 Sheets—Sheet 1.

J. B. O'BRYAN.

MACHINE FOR PILING FABRICS.

No. 534,346. Patented Feb. 19, 1895.

Fig. 1.



Witnesses.
Victor J. Evans.
Marie Wilson

Inventor.
J. B. O'Bryan.
by E. M. Marble & Sons
Attorneys

(No Model.) 3 Sheets—Sheet 2.

J. B. O'BRYAN.

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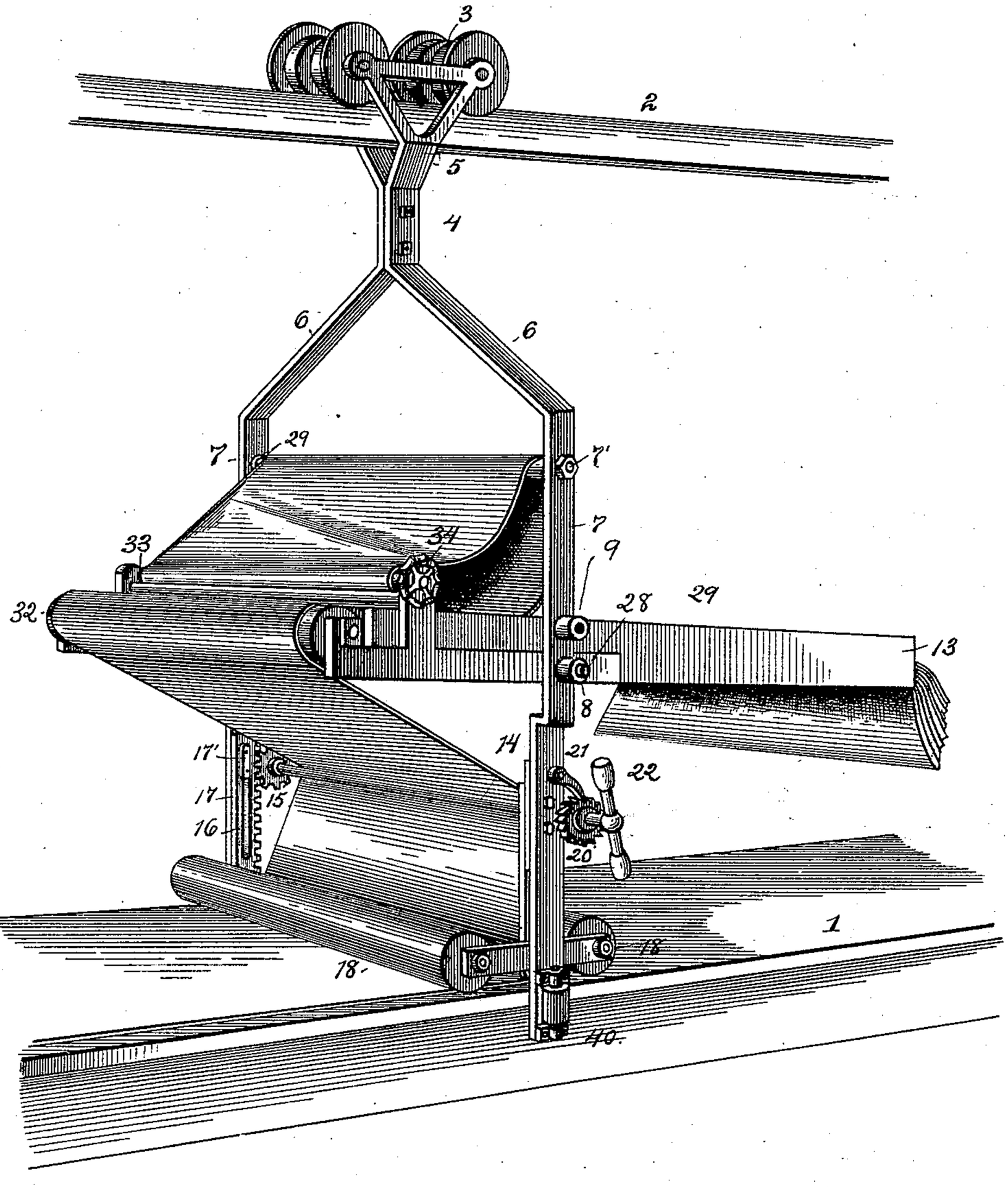
Fig. 2.



Witnesses.
Victor J. Evans.
Marie Wilson

Inventor.
J. B. O'Bryan.
By E. M. Marble & Son
Attorneys.

(No Model.) 3 Sheets—Sheet 3.

J. B. O'BRYAN.

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Fig. 3.

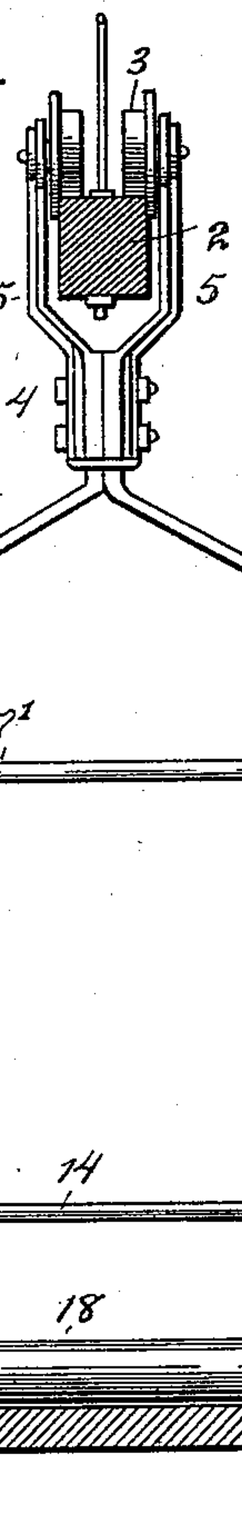


Fig. 4.

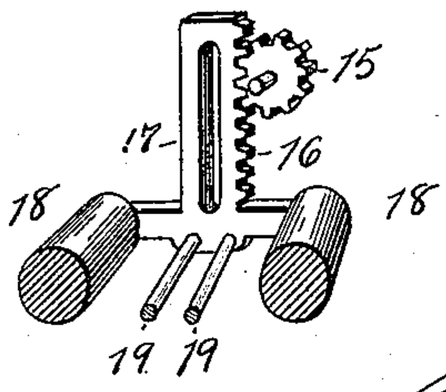


Fig. 5.

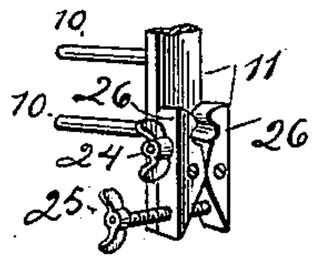


Fig. 7.

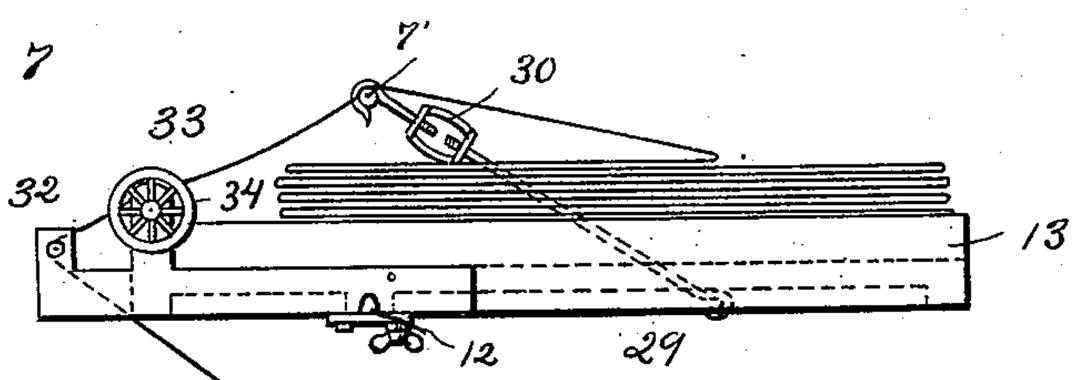


Fig. 6.

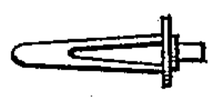
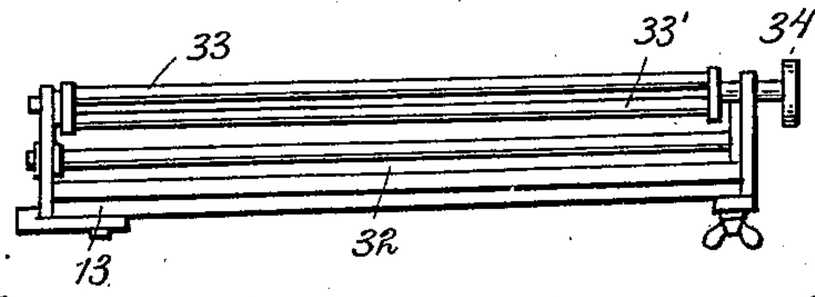


Fig. 8.



Witnesses.
Victor J. Evans.
Marie Wilson

Inventor.
J. B. O'Bryan
By. E. M. Marble & Sons.
Attorneys.

UNITED STATES PATENT OFFICE.

JOSEPH B. O'BRYAN, OF NASHVILLE, TENNESSEE.

MACHINE FOR PILING FABRICS.

SPECIFICATION forming part of Letters Patent No. 534,346, dated February 19, 1895.

Application filed December 21, 1894. Serial No. 532,573. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH B. O'BRYAN, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Machines for Piling Fabrics; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in machines for displaying and piling cloth, silks, and other fabrics, and it consists in an improved machine of this character especially adapted to feed the cloth or other fabric at a speed which can be regulated at the will of the operator, and to lay said cloth, or other fabric upon the operating table evenly and smoothly, the construction and arrangement of the parts of which will be hereinafter fully described and particularly pointed out in the claims.

In United States Letters Patent Nos. 506,535 and 506,536, I have described machines for piling cloth, silks, and other fabrics, whose particular feature is that in each of them a carriage is suspended over the operating table by wheels moving on a track, which track is held in position over and in line with the measuring table by suitable supports. Between the lower widened ends of this frame, bolts or rolls of cloth are held by suitable means, in such a manner that when one end of the roll of cloth is fastened to one end of the table, the cloth piling machine can be moved from one end of the table to the other, and by this simple movement the cloth can be laid upon the operating table in folds of any desired length; or the machine may be so modified in construction as to enable it to display cloth which comes in folds instead of rolls. I have further stated in said patents what the object of the invention therein described was, stating that where cloth is cut in quantity, the bolts of cloth, containing usually fifty or sixty yards of material, are laid in two or more folds upon a long operating table, it being necessary in most instances for the right sides of the piece of cloth to lie facing each other, in order that when the pattern is cut, the garment may be cut right and left. It is a matter of considerable inconvenience, and requiring great labor, to manually unroll the cloth in the desired manner, and the object of my inventions described in said patents, was to provide a machine by which the operation of unrolling and displaying the goods to be cut could be accomplished without much labor, and with great readiness and precision.

My present invention is an improvement upon the form of cloth piling machine shown and described in said Letters Patent. In the actual use of the devices therein shown and described, I have found that it is necessary to provide means for controlling the rate of delivery of the cloth, and that it is further convenient, if not absolutely necessary, to provide means which render it possible to lay the goods on the table without wrinkles or creases, so that it is not always necessary, after the cloth has been laid by the machine, for the operator to, by hand, stretch the cloth and smooth out the wrinkles. In constructing my present machine I have, therefore, directed my attention, first, to the cloth delivery mechanism, aiming to control the speed at which said delivery takes place, and, second, to the cloth laying devices, aiming to provide means whereby the laying of the cloth can be done with perfect smoothness and evenness, and avoidance of creases or wrinkles.

My machine further has, as one of its principle features, a frame work adapted to enable the display of both fabrics which come in bolts or rolls, and those which come in folds; and also an improved form of platform to support the goods which come in folds.

My present machine is also capable of laying goods face to face or otherwise.

My invention is fully represented in the drawings which accompany and form a part of this application, in which the same reference numerals refer to the same or corresponding parts, and in which—

Figure 1 is a perspective view of my improved machine, showing the same delivering a roll of cloth. Fig. 2 is a similar perspective view, showing the machine delivering cloth which comes in folds, and showing, therefore, my improved platform for supporting and delivering the same. Fig. 3 is an end view, with the cloth removed from my

improved machine, showing the rack bars and pinions by means of which the pressure rollers are adjusted in their proper relation to the table. Fig. 4 is a detail view of one of these rack bars, and the rollers connected therewith. Fig. 5 is a detail view of the removable supports for rolls of cloth. Fig. 6 is a view of one of the spindles which are used to support the rolls of cloth. Fig. 7 is a detail view of the platform on which the cloth which comes in folds is placed when about to be displayed, the dotted lines indicating the bottom of the platform. Fig. 8 is an end view of the platform shown in Fig. 7.

Referring to the drawings, 1 represents the table. The entire table is of considerable length, and it has an upper surface which is smooth, and may or may not be provided with rules or like conveniences sunk into its surface. Over the table and in line with it, there is suspended from the ceiling, or otherwise, the track 2, upon which move the trolley wheels 3, connected to the traveling frame or carriage 4. This traveling frame or carriage, as shown in the drawings, is composed of two similar pieces, each of which has an upwardly projecting arm 5, which forms a suitable support for the trolley wheels 3; the contracted portion immediately under the track, where the two pieces are bolted or otherwise secured together; a downwardly inclined and widening portion 6; and a straight portion 7, which, in connection with the corresponding portion of the other piece or part of the frame, forms sides, between which the fabric to be displayed, whether it comes in rolls or folds, is suspended. A tie-rod 7′ is provided which holds these sides firmly at a proper distance from each other and also serves, as will be hereinafter shown, to assist the delivery of the cloth which comes in folds. In the sides 7 are formed apertures 8 and 9, which are provided on the other side of the frame work with outwardly projecting bosses. These apertures are for the purpose of permitting the suspension of the cloth to be displayed, as through them are passed the studs 10, projecting from the removable supports 11, which are used in connection with the displaying of rolls of cloth, and the pivots which support the platform 13, upon which cloth which comes in folds is placed. In the sides 7 is also journaled the rod 14, which bears on either end just inside the frame work pinions 15, which mesh with the rack bar 16, formed on one side of the vertically movable frame 17. In this frame is journaled the pressure rollers 18, which serve to smooth out all folds or wrinkles in the cloth as it is delivered, and to lay the same upon the table perfectly smoothly and evenly, and the guide rods 19, through which the cloth passes as it is delivered upon the table. The frame 17 is guided in its reciprocation by lugs 17′, which are formed on the inner surface of the sides 7, the said lugs projecting through slots formed on the frame. On the rod 14 is also mounted the ratchet 20, controlled by the dog 21, which enables the frame 17 to be set at any desired point, the handle 22 enabling the bar 14 to be rotated as desired.

By means of the reciprocatory movement permitted by the pressure rolls 18, I am enabled first to start the unrolling of the piece of cloth, and second, to apply pressure to the cloth as it is unrolled, and in this manner, in connection with the delivery controlling devices which I have, I am enabled to lay the cloth upon the table without its being wrinkled or creased.

To prevent the carriage having any lateral movement in its travel along the table, one of the sides 7 is extended downward and in it is mounted a roller 40, which bears against the side of the table, and keeps the movable carriage in its proper relation to the same.

When rolls of cloth are to be displayed, spindles, such as are shown in Fig. 6, are inserted into the ends of the roll of cloth at its center, and the ends of said spindles are then placed in the removable supports 11, which have been put in place in the frame work of the machine.

The spindles shown in Fig. 6 are of a very simple type, having one end adapted to enter the opening provided therefor in the removable supports 11, and the other end bluntly pointed to enable it to enter the folds of the fabric and secure a firm hold upon the same, so that it may serve as a pivot around which the roll of cloth may rotate.

To enable the ends of the spindles to be inserted into the removable supports 11, and then held in the same with sufficient firmness to prevent their getting out of position, and to act as a brake for controlling the rate at which the cloth is delivered, I pivot to the outer face of one of such removable supports, wedge-shaped blocks 26, the upper ends of which are rounded and hollowed so as to form a receptacle for the end of the spindle. Thumb screws 24 and 25, operating above and below the pivotal point of the blocks, enable the position of the same to be controlled, and the hold on the spindle end to be made as strong as desired. The end of the cloth is then drawn down over the rod 14, between the rods 19, and under whichever of the pressure rollers 18 it is desired to use, the roller used being determined by the direction in which the carriage is first to be moved, and the pressure rollers being raised. Guides 27 are provided which are mounted on the rod 14, and may be adjusted back and forth upon said rod by means of a set screw formed in the same, so as to conform with the width of the cloth to be displayed. The pressure rollers 18 are now moved downward so that they press against the top of the measuring table. The end of the piece of cloth having been secured in some suitable manner to the end of the table, the carriage or traveling frame is moved upon the track and the cloth is displayed. The breaking action of the thumb screws 24 and 25 against the spindles on which the roll of cloth is sup-

ported, is sufficient to prevent the feeding of the cloth from the rolls to take place too quickly, and the piece of cloth being delivered over the rod 14 comes to the guide rods 19 in an almost vertical direction, so as to prevent any looseness of the cloth there. The consequence is that the piece of cloth is sufficiently taut to enable the cloth to be laid upon the table evenly and smoothly, the pressure rollers 18 smoothing out any wrinkles or creases which there may be in the cloth.

When it is desired to display cloth which comes in folds, the cloth is laid upon a platform, such as shown in Fig. 7. As there shown this platform has a smooth surface, and is provided at each side with a U-shaped opening 12, in which is to be inserted, when the platform is in position between the sides of the traveling frame, pivot pins 28, (shown in Fig. 2,) thus enabling the platform to freely tilt in its position. To control this tilting and to hold the platform at any desired angle, I usually use the regulating rod 29, which is provided with the turn buckle 30. As one end of this regulating rod is attached, as shown, in Fig. 7, to the rod 7′, and the other end to the platform 13 at some distance from the point at which it is pivoted, by lengthening or shortening said rod by the use of the turn buckle, the angle of the platform to the table can be changed within the desired limits. At the extreme end of the said platform I journal the guide roller 32, and near the same delivery controller 33, which consists of two rods separated from each other sufficiently to allow a fold of cloth to pass between the same, and at their ends bent together so as to have a common bearing in the upward projections formed on the top surface of the carriage 13, and to be controlled by the common hand-wheel 34. By adjusting the delivery controller 33, the tension of the cloth delivered and the speed of delivery can be regulated. The course of the piece of cloth as it is delivered from the platform is over the tie-rod 7′, which thus serves the useful purpose, as is best shown in Fig. 2, of enabling the delivery of the folds of cloth to take place without interruption; over the guide roller 32; thence in the usual manner over the rod 14; through the guide rods 19; and out under one of the pressure rollers 18. By turning the delivery controlling rods 33, one is enabled to adjust the tension of the piece of cloth as it is delivered, and thus, the tension being controlled and the pressure rollers operating in the manner hereinbefore described, the piece of cloth is laid upon the operating table perfectly smoothly and evenly.

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

1. In a machine for piling fabrics, the combination with a table, and a track suspended over said table, of a carriage, having parallel downwardly extending sides moving on said track, means for supporting pieces of fabric between said sides, a vertically movable frame, in which pressure rolls are journaled supported between and guided by said sides, and means journaled in said sides for reciprocating said frame, and at the same time guiding the cloth being delivered, substantially as described.

2. In a machine for piling fabrics, the combination with a table, and a track suspended over said table, of a carriage 4 having parallel downwardly extending sides 7, a vertically movable frame 17 in which pressure rolls 18 and guide rods 19 are journaled, supported between and guided by said sides, said frame 17 being formed with rack 16, and the rod 14, provided with pinions 15 and operative wheel 22 for reciprocating said frame, and at the same time serving as a guide for the cloth being delivered, substantially as described.

3. In a machine for piling fabrics, a platform upon which goods which come in folds may be supported, delivery controlling rolls 33 mounted on said platform, said rolls being provided with a common bearing 33′, on one end of which is mounted a hand wheel 34 whereby the delivery controlling rods can be turned so as to regulate the delivery of the fabric, and a guide rod 32 over which the cloth passes after it has gone through the delivery controlling rods and before it is delivered from the platform, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH B. O'BRYAN.

Witnesses:

LOUIS M. WEILLER,

MAT PETSCHEL.