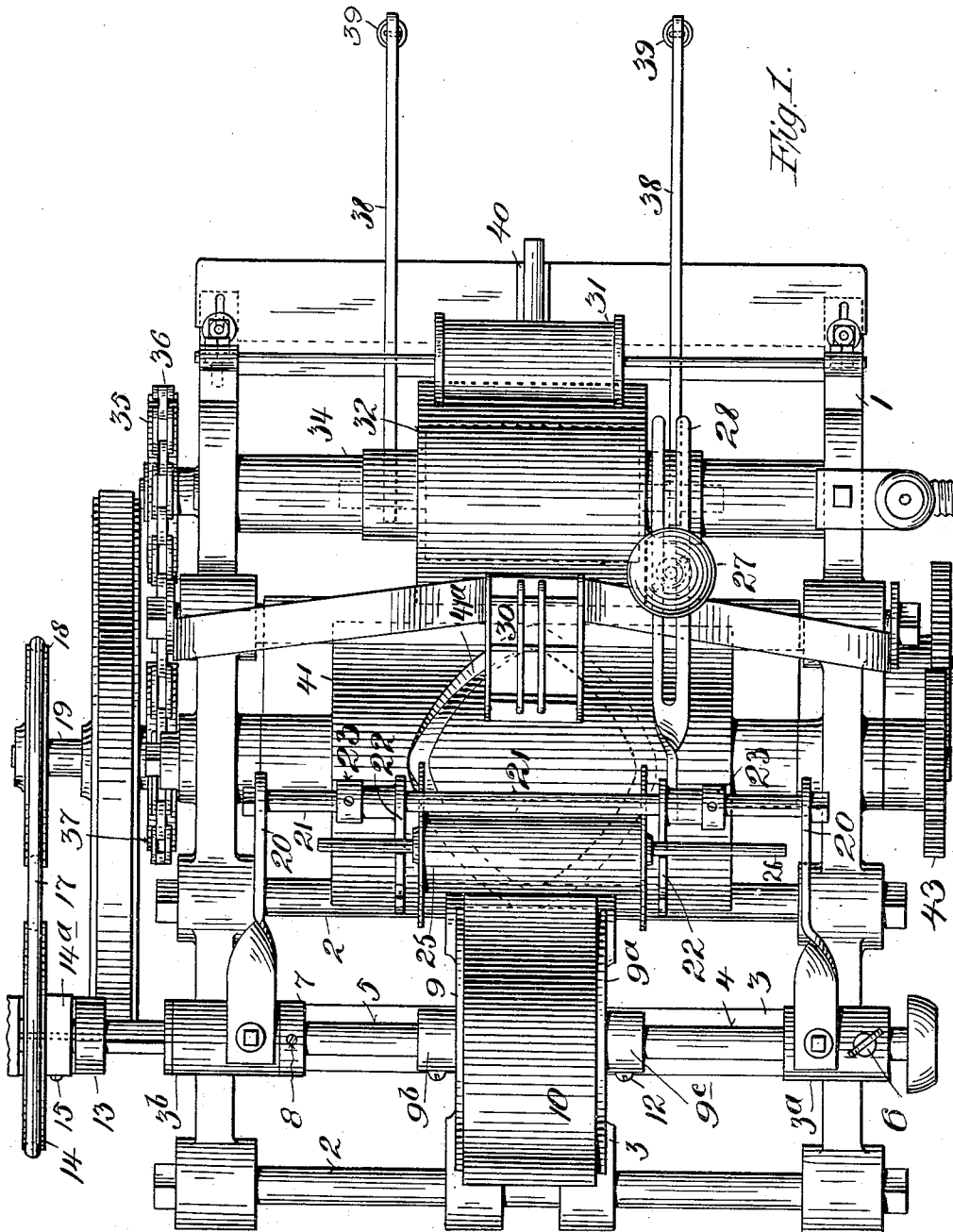


O. I. JUDELSON.
FABRIC WINDING MACHINE.
APPLICATION FILED AUG. 26, 1909.

1,064,337.

Patented June 10, 1913.

4 SHEETS—SHEET 1.



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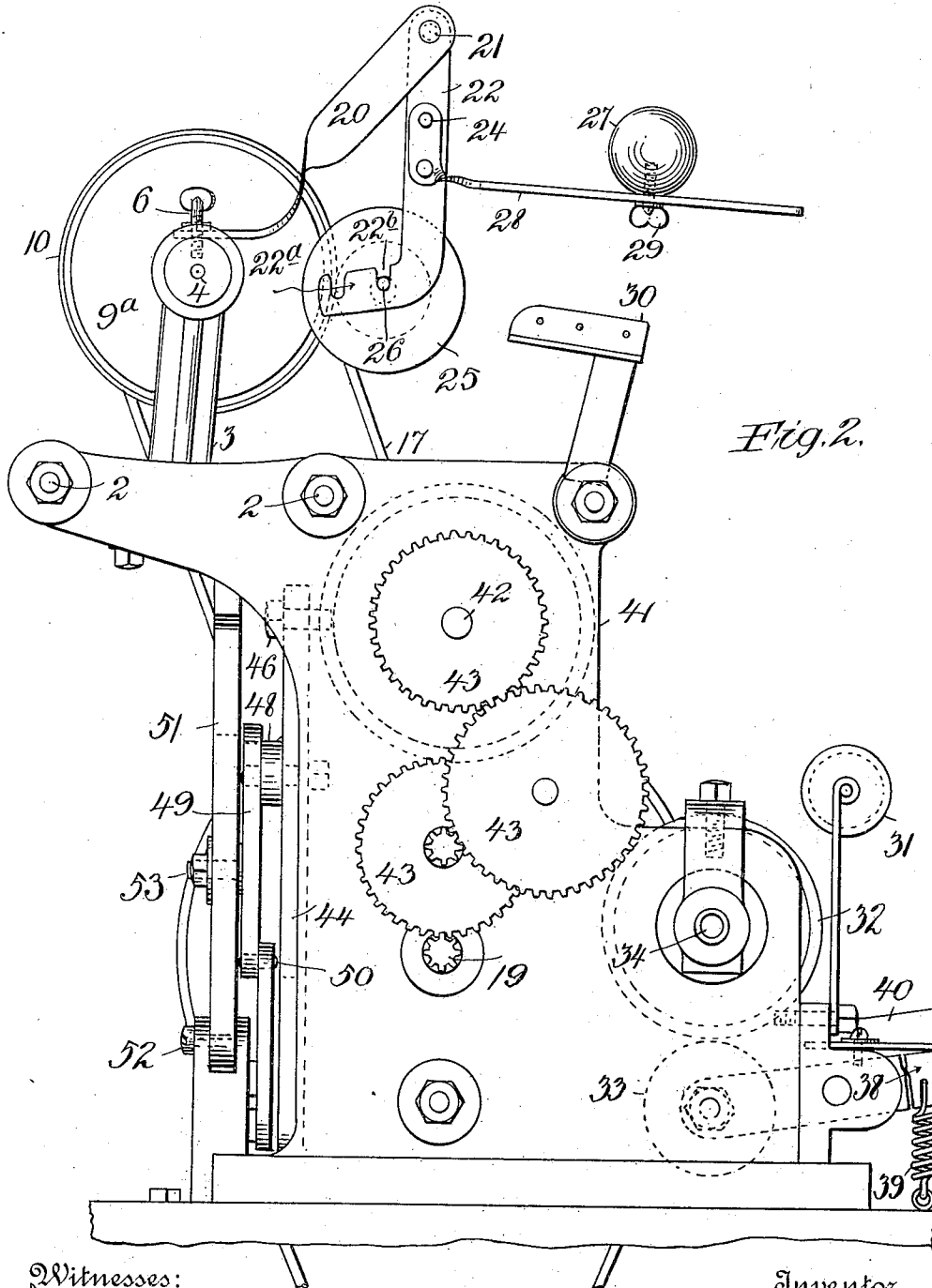


Fig. 2.

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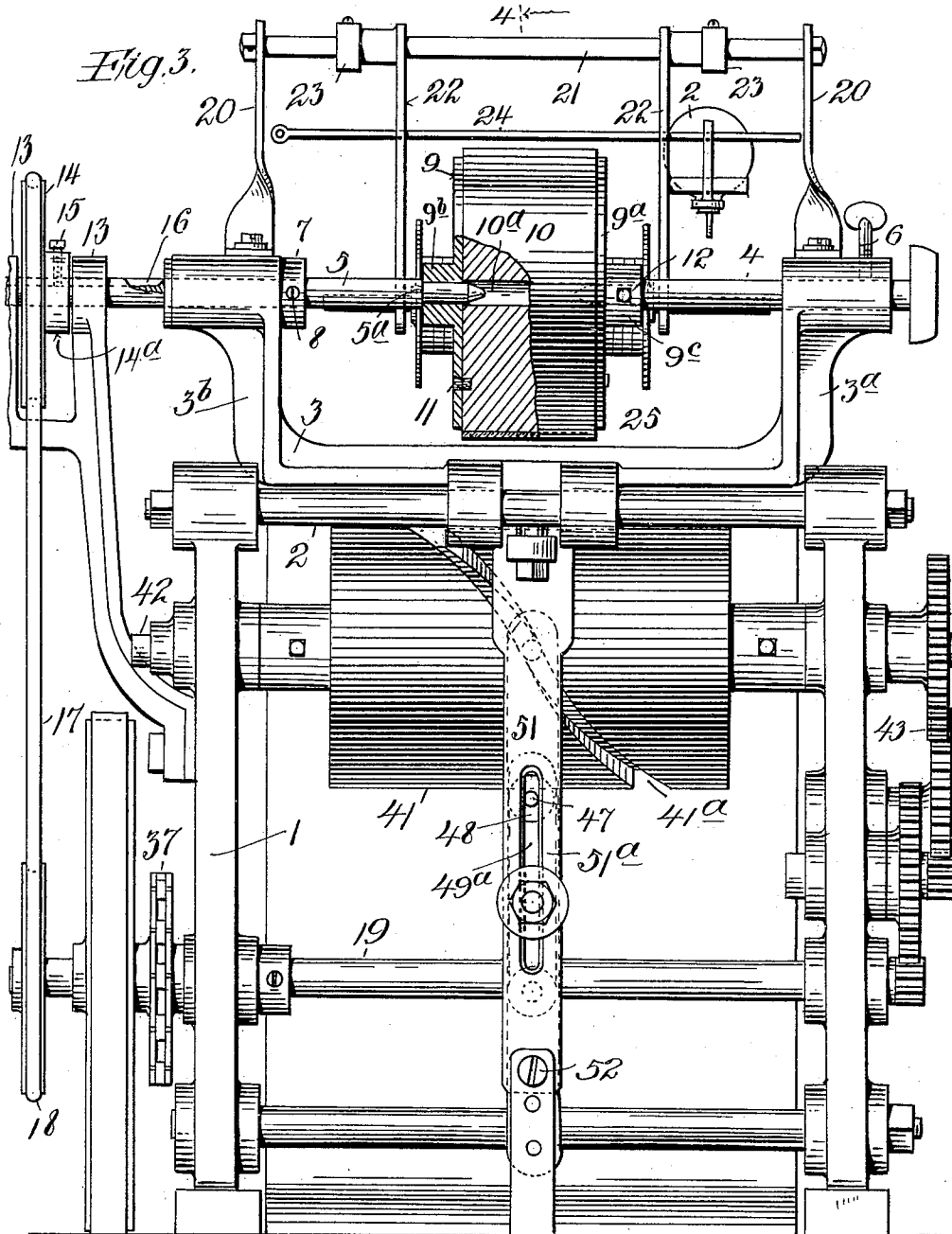
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4 SHEETS—SHEET 3.



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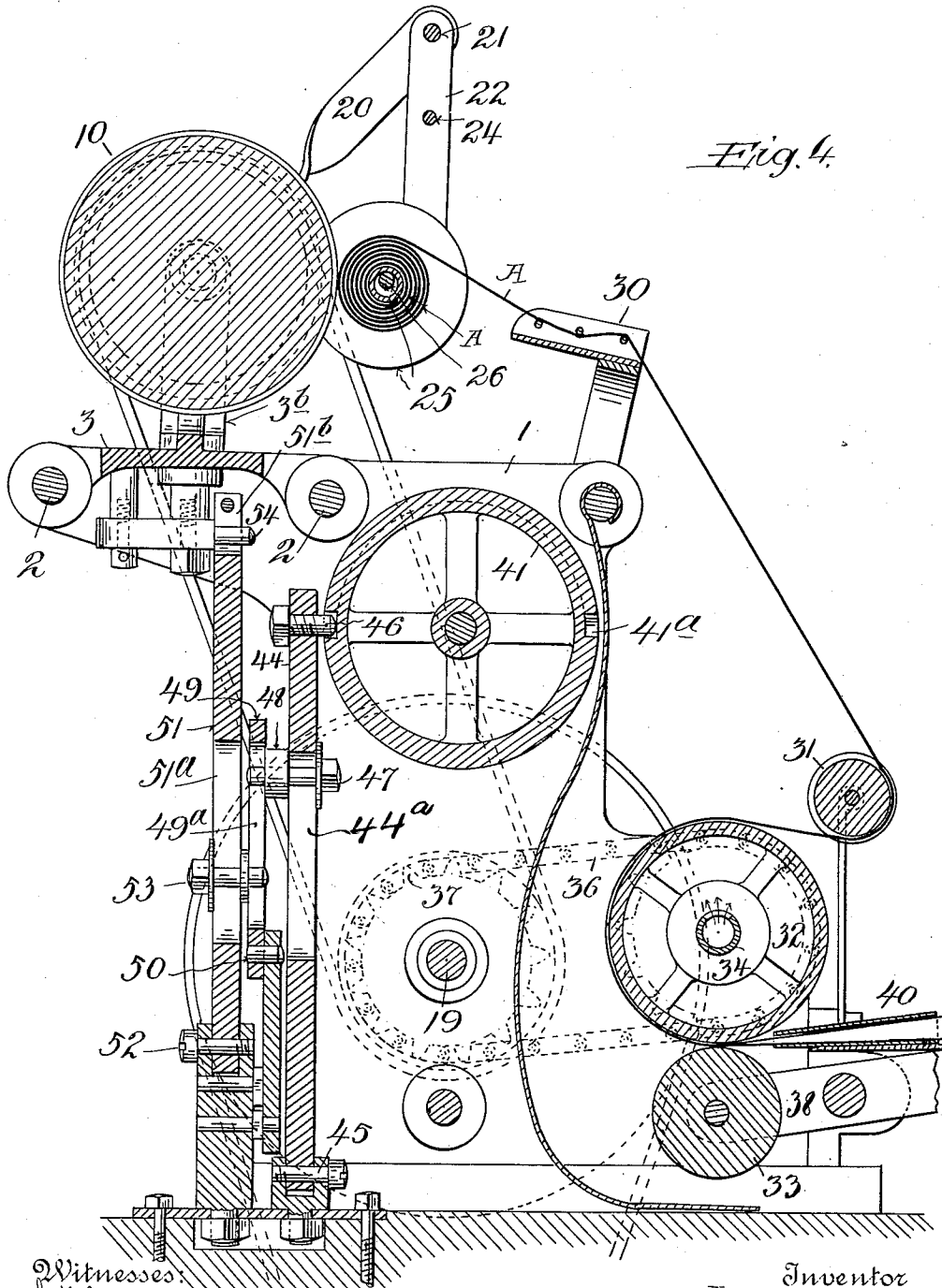


Fig. 4.

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UNITED STATES PATENT OFFICE.

OSCAR I. JUDELSON, OF NEW YORK, N. Y.

FABRIC-WINDING MACHINE.

1,064,337.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed August 26, 1909. Serial No. 514,711.

To all whom it may concern:

Be it known that I, OSCAR I. JUDELSON, a citizen of the United States, and resident of New York city, in the county of Kings and State of New York, have invented certain new and useful Improvements in Fabric-Winding Machines, of which the following is a specification.

The object of my invention is to provide improved means for winding tapes, bindings and similar flat strips in the form of rolls or spools and to enable such fabric to be wound without creating undue tension on the same so as not to stretch the goods.

My invention comprises the novel details or improvement and combinations of parts that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming part hereof, wherein,

Figure 1 is a plan view of a winding machine embodying my invention; Fig. 2 is a side view thereof; Fig. 3 is a rear view looking from the left in Fig. 2, and Fig. 4 is a vertical section substantially on the plane of the line 4, 4, in Fig. 3.

Similar numerals of reference indicate corresponding parts in the several views.

The numeral 1 indicates a suitable frame shown provided with cross bars or ways 2 upon which a suitable form of carriage 3 is mounted to reciprocate transversely of the machine. The arms 3^a, 3^b of said carriage have suitable bearings which respectively support the rod 4 and spindle or shaft 5. In the example illustrated rod 4 is held in adjustable position by thumb screw 6, and shaft 5 has a collar 7 which may be adjusted along said shaft by screw 8. At 9, 9^a are disks or flanges adapted to bear against and rotate the winding roll or pulley 10. Said winding roll or pulley 10 is shown provided with a bore 10^a adapted to receive the ends of rod 4 and shaft 5, and between disks 9, 9^a and roll 10 are interlocking means, shown in the form of pins 11 projecting from the disks and entering recesses in roll 10, whereby the latter is rotated by said disks. The disks 9, 9^a respectively are shown provided with hubs 9^b, 9^c receiving rod 4 and shaft 5 respectively, and hub 9^c is provided with a screw 12 adapted to enter an annular groove in rod 4 so as to rotate freely around the latter, but not to slide thereon. Shaft 5 has a shoulder 5^a shown bearing against hub 9^b. When a roll or pul-

ley 10 is placed between disks 9, 9^a and the latter are set tight against the faces of said roll in proper position, shaft 4 is secured by screw 6 and collar 7 is secured on shaft 5 against the face of the bearing of arm 3^b, whereby roll or pulley 10 is centered for rotation. By the means shown roll or pulley 10 may be removed and replaced by a wider or a narrower roll according to the length of spool upon which the fabric is to be wound. Shaft 5 is also guided to slide in suitable bearings 13, and at 14 is a pulley mounted upon shaft 5 between the bearings 13 the hub 14^a of which pulley is provided with a screw 15 adapted to enter a groove 16 in shaft 5, whereby said shaft may slide through bearings 13 and pulley 14 and be rotated simultaneously by said pulley. A belt 17 passing from pulley 14 over a pulley 18 on main driving shaft 19 rotates pulley 14, shaft 5 and roll 10. Carriage 3 is provided with suitable arms 20 spaced apart and connected by a cross rod 21. Upon rod 21 are depending arms 22 hung freely upon said rod and limited for lateral adjustment by collars 23, adjustably secured upon rod 21. At 24 is a rod passing freely through arms 22 to retain them in relative position while permitting them to be adjusted laterally. Arms 22 support the spool or roll 25 upon which the tape, binding or other strip of fabric A is to be wound. Arms 22 are adapted to detachably suspend rod 26 that passes through spool 25, and for this purpose I have shown arms 22 provided with lateral extensions 22^a having notches 22^b to receive rod 26, whereby spool 25 will be maintained suspended at one side of roll 10 to be rotated thereby. Arms 22 are adapted to swing laterally relative to roll or pulley 10 and I provide a weight 27 having a tendency to normally press arms 22 toward roll 10. I have shown a slotted arm 28 extending outwardly from arm 22, weight 27 being provided with a screw 29 passing through the slot of arm 28, whereby said weight may be adjusted and held in set position.

While strip A may be delivered to spool 25 in any suitable manner I have shown a guide 30 to which the strip passes from a guide roll 31 suitably supported to rotate upon frame 1, and at 32, 33 are pressing rolls between which the strip A passes and by which said strip is fed. Roll 32 is mounted upon a shaft 34 journaled in suit-

able bearings on frame 1 and shown provided with a sprocket wheel 35 receiving a chain 36 from a sprocket 37 on main shaft 19. Roll 33 is shown carried by levers 38 pivotally supported upon frame 1 and acted upon by a spring 39 to press roll 33 against the fabric passing over roll 32.

At 40 is a suitable former adapted to fold the edges of the fabric in well known manner, such as bindings, when that character of fabric is to be wound on spools 25.

To reciprocate roll or pulley 10 and spool 25 so as to wind the fabric upon said spool in a zigzag or other desired course I provide suitable means wherein adjustment may be made for varying the reciprocations of roll or pulley 10 and spool 25 in accordance with the length of such spool. For this purpose I provide a cam 41 carried by shaft 42 journaled on frame 1 and driven by suitable reducing gearing 43 from shaft 19.

At 44 is a lever pivotally supported upon frame 1, as at 45, and provided with a projection 46 adapted to enter a suitably shaped cam groove 41^a of cam 41, whereby said lever will be rocked as cam 41 rotates. Lever 44 is provided with a vertical slot 44^a carrying a screw 47 adapted to be secured in adjusted position by nut 48, the end of screw 47 entering a vertical slot 49^a in lever 49 that is pivotally supported upon frame 1 at 50. At 51 is a lever pivotally supported upon frame 1 at 52 and provided with a vertical slot 51^a receiving the end of a screw 53 passing from the slot 51^a and held in set position by its nut. Lever 51 is movably connected with carriage 3, as by pin 54 projecting from said carriage entering a slot 51^b in the upper end of lever 51. The arrangement is such that, as cam 41 rotates, the lever 44 will be rocked and through the medium of levers 49 and 51 carriage 3 will be reciprocated so that roll or pulley 10 and roll 25, while remaining in relative position with respect to each other, will be simultaneously reciprocated by and with carriage 3. By adjusting screws 47 and 53 up or down the extent of movement back and forth of carriage 3 may be varied to suit requirements in accordance with the length of spool 25 or the desired character of winding the fabric thereon.

The strip or fabric A being passed between pressing rolls 32 and 33 and fastened upon spool 25 and the machine started the pressing rolls will feed the strip, and as the latter winds upon spool 25 the strip will bear against roll or pulley 10 so that the contact of the latter with the strip will cause winding of the latter upon the spool, which winding will be in proportion to the feeding of the strip by rolls 32, 33, so that the strip will not be stretched while it is being wound, and as the strip is thus wound on the spool the latter and roll or pulley 10 will be reciprocated

with respect to guide 30 in accordance with the adjustments of screws 47 and 53 to wind the strip in a zigzag course upon the spool, whereby roll or pulley 10 at all times bears substantially equally on the fabric along the spool. By suspending arms 22 at the side of roll or pulley 10 and adjusting weight 27 toward or from said arms in accordance with the character of fabric to be wound, I am enabled to press the winding fabric against roll or spool 10 with relatively light pressure which will be compensated by the lateral movement of arms 22 as the spool of fabric increases in diameter, as the weight of the spool is borne by the arms and the spool of fabric does not rest upon roll 10, but merely bears against the side of the latter for the purpose of creating sufficient friction on the fabric to wind the latter upon the spool. For instance, when the fabric is first attached to the spool arms 22 will swing toward roll or pulley 10 and the adjustment of the weight 27 with respect to arms 22 may be made for the desired pressure to produce the frictional contact required between roll 10 and fabric, and as the diameter of the fabric increases upon the spool the arms 22 will swing laterally and the increasing weight of the spool of fabric will be counterbalanced by reason of the shifting position of arms 22 in a lateral direction.

Changes may be made in the details of construction shown and described, within the scope of the appended claims without departing from the spirit of my invention.

Having now described my invention what I claim is:

1. In a fabric winding machine the combination of a reciprocative carriage, a winding roll and spool supporting means carried thereby, a cam, a lever operated by the cam, a lever connected with the carriage, a lever interposed between the first named levers, and means operatively connecting said interposed lever with the first named levers.

2. In a fabric winding machine the combination of a reciprocative carriage, a winding roll and spool supporting means carried thereby, a cam, a lever operated by the cam, a lever connected with the carriage, a lever interposed between the first named levers, and means operatively connecting said interposed lever with the first named levers, said means being adjustable to permit variation in the reciprocating movements of the carriage.

3. In a fabric winding machine the combination of a reciprocative carriage, a winding roll and spool supporting means carried thereby, a cam, a lever operated by the cam and provided with a slot, an adjustable screw in the slot, a lever provided with a slot receiving said screw, a third lever having a screw entering the head of the second

lever, and means connecting the third lever operatively with the carriage.

4. In a fabric winding machine the combination of a reciprocative carriage, a winding roll and spool supporting means carried thereby, a cam, a lever operated by the cam and provided with a slot, an adjustable screw in the slot, a lever provided with a slot receiving said screw, a third lever provided with a slot and having an adjustable screw in said slot entering the slot of the

second named lever, and means operatively connecting the third named lever with the carriage.

Signed at New York city, in the county of New York, and State of New York, this 23rd day of August, A. D. 1909.

OSCAR I. JUDELSON.

Witnesses:

T. F. BOURNE,
RALPH H. RAPHAEL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."