No. 682,947. Patented Sept. 17, 1901.

F. MEYER.

TWISTING AND DOUBLING MACHINE.

(Application filed Apr. 23, 1900.)

(No Model.) 2 Sheets—Sheet 1.

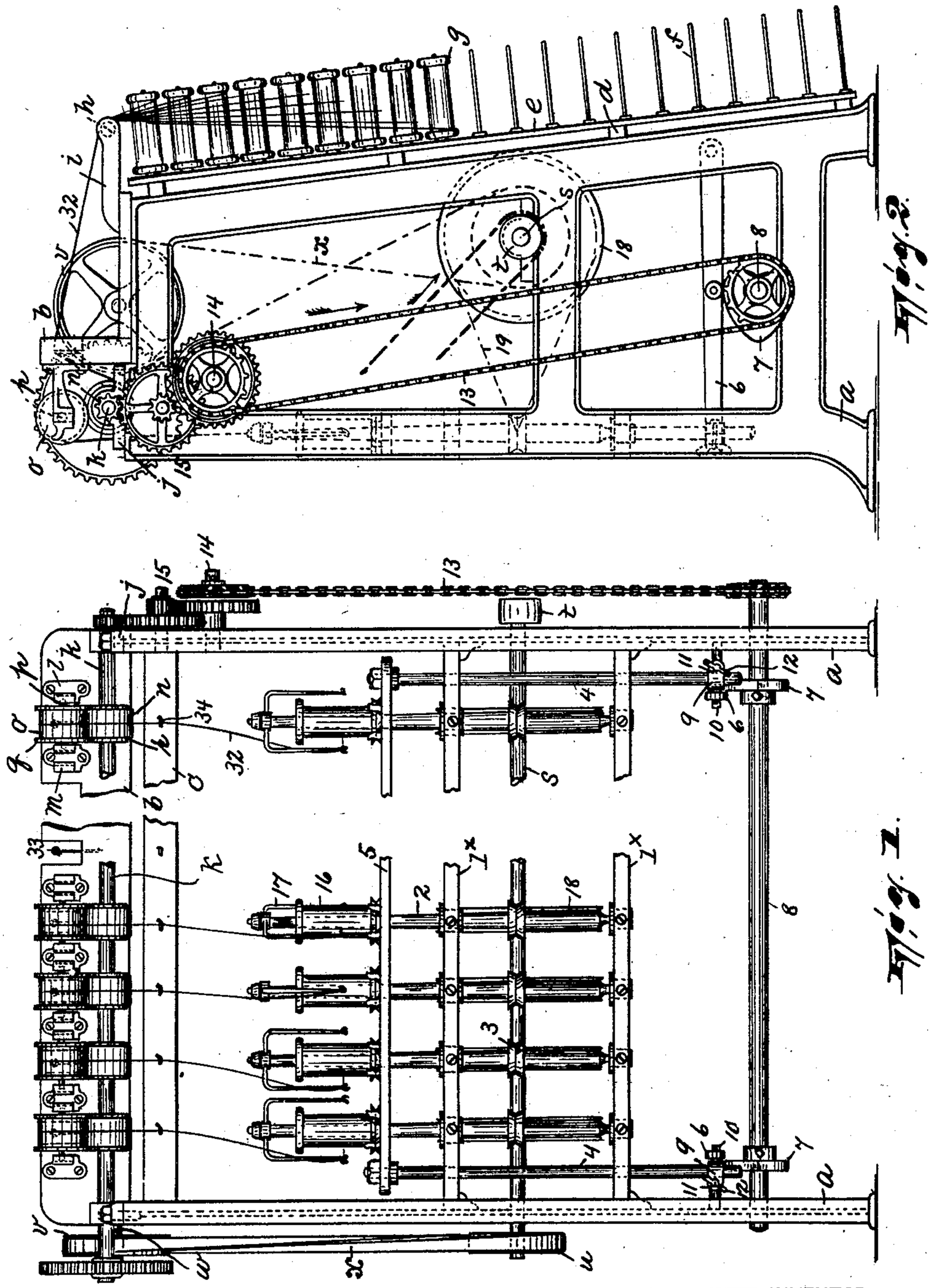

Fig. 1.

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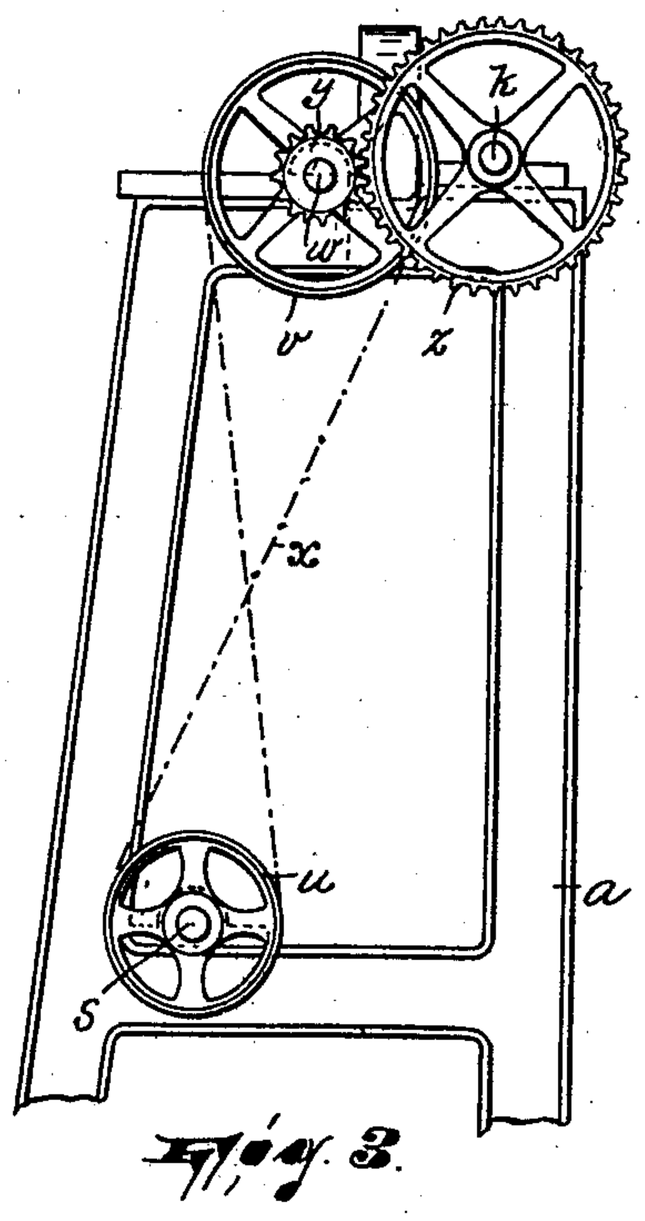

Fig. 3.

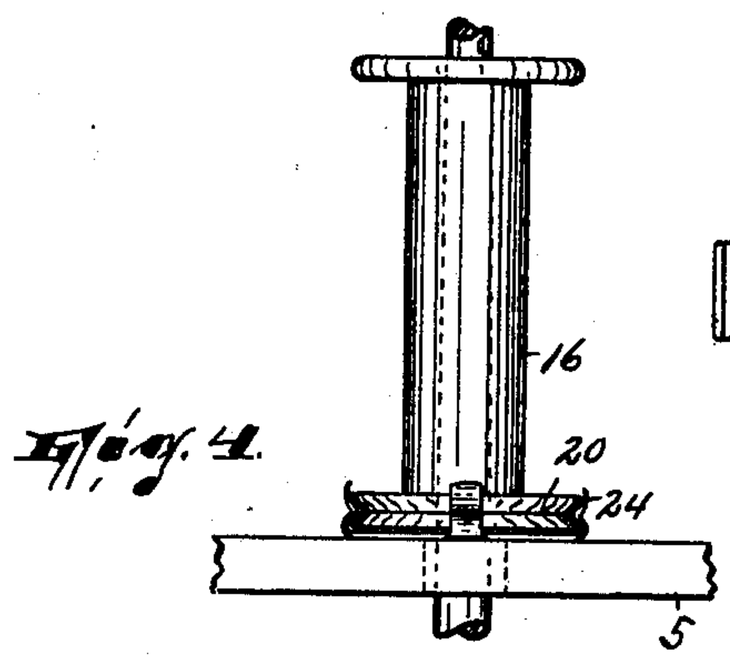

Fig. 4.

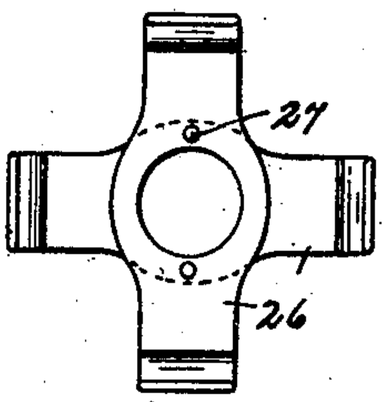

Fig. 6.

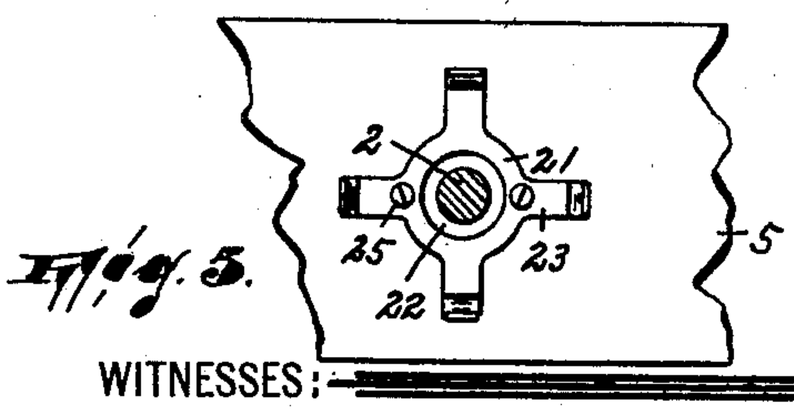

Fig. 5.

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UNITED STATES PATENT OFFICE.

FLORIAN MEYER, OF PATERSON, NEW JERSEY, ASSIGNOR OF ONE-HALF TO FREDERICK L. ATHERTON, OF SAME PLACE.

TWISTING AND DOUBLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 682,947, dated September 17, 1901.

Application filed April 23, 1900. Serial No. 13,858. (No model.)

To all whom it may concern:

Be it known that I, FLORIAN MEYER, a citizen of the United States, residing in Paterson, county of Passaic, and State of New Jersey, have invented certain new and useful Improvements in Twisting and Doubling Machines; 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, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to twisting and doubling machines; and it consists in an improved machine of this nature constructed substantially as hereinafter particularly described and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, Figure 1 is a view in front elevation of my improved doubling and twisting machine. Fig. 2 is a view in elevation of one end of the machine. Fig. 3 is a view in elevation of the upper portion of the other end thereof. Figs. 4 and 5 illustrate a detail of the invention involving a certain bobbin-holding device, Fig. 4 being a side view of the device, which is shown as holding a bobbin, and Fig. 5 being a view in elevation of said device; and Fig. 6 shows a modified form of said bobbin-holding device.

In the drawings, *a* designates the uprights or standards of the machine-frame, the same being connected and braced at their upper ends by rails *b c* and also by cross-bars *d*, secured one above the other to the inclined rear edges of said uprights and serving as means to which to secure vertical strips *e*, upon which are arranged skewers *f* for bobbins *g*.

In view of what has just been stated it will be observed that I combine with the frame of my machine and as a portion thereof a creel for holding the delivery-bobbins. Above the creel is arranged a glass bar *h*, the same being supported by arms *i*, projecting from the top of the frame.

In bearing-blocks *j* on the tops of the uprights or standards *a* is journaled a horizontal shaft *k*, and to the beam *b* are secured pairs of brackets *l*, having integral vertically-slotted bearing-pieces *m*.

n and *o* designate coacting rollers arranged in pairs, each roller *n* being secured fast upon the shaft *k* and the rollers *o* being provided with trunnions *p*, which are journaled in the bearing-pieces *m* of the pairs of brackets *l*. Each roller *o* rests upon its corresponding roller *n*, the one being provided near its ends with peripheral flanges *q* and the other with peripheral grooves *r*, adapted to receive said flanges. Since each roller *o* rests upon the corresponding roller *n*, any rotary movement of the latter will be imparted to the former to drive the same, and since the rollers are provided with engaging portions (flanges *q* and grooves *r*) said rollers will always work true with reference to each other.

s is the drive-shaft of the machine, the same being journaled in the uprights *a* and carrying a power-receiving pulley *t* at one of its ends and a power-transmitting pulley *u* at the other of its ends, the latter being connected to a pulley *v* on a stub-shaft *w*, projecting from the upper portion of the adjoining upright *a* by a crossed belt *x*. Power is transmitted from the stub-shaft *w* to the shaft *k* through the medium of an intermeshing pinion *y* and gear *z*.

$l^{\times}$ designates horizontal rails which connect the uprights *a* and in which is journaled a series of spindles 2, having driving-whirls 3 disposed between said rails. In these rails are guided vertically and longitudinally movable rods 4, said rods being connected at their upper ends by a horizontal rail 5. Said rods and the rail together constitute a vertically-movable frame, the latter being adapted to be reciprocated by levers 6, resting on cams 7, which are secured upon a horizontal shaft 8, journaled in the uprights *a*, said levers being fulcrumed in the uprights and suitably coupled to the movable frame by means of clamps 9, from which project pins 10, which the free ends of the levers receive. Each clamp consists of a split collar whose extremities 11 are adjustably secured together by a thumb-screw 12. The connection between the movable frame and the levers being thus adjustable, the range of movement of the former may be altered to different elevations. The shaft 8

is driven by a chain-and-sprocket connection 13 with a stub-shaft 14, projecting from the upper end of the upright remote from the gearing already described, said stub-shaft being adapted to be driven through the medium of gearing 15, connecting it with the shaft *k*. The rail 5 is penetrated by the several spindles 2, and it carries a series of bobbins 16, which said spindles also penetrate loosely. Above the bobbins the spindles carry fliers 17, adapted to rotate therewith, so as to wind the material upon said bobbins. It should be remarked that the spindles 2 are driven from sheaves 18, carried on the shaft *s*, through the medium of bands 19. In order to prevent the bobbins from moving vertically and also to prevent their normal rotation, I form in the lower flange of each of them a peripheral groove 20, that is adapted to engage a certain holding device, such as those shown in Figs. 4 to 6. One form of this device consists of a cross-shaped metallic clip 21, having a central orifice 22 for the reception of one of the spindles 2 and having the extremities of its arms 23 turned upwardly in the shape of angular projections 24, which are adapted to engage the peripheral grooves 20 of the bobbin-flange, as shown in Fig. 4. This plate may be secured on the rail 5 by means of screws 25 or in any other desired manner. If desired, and as shown in Fig. 6, it may consist of two crossed plates 26, having registering openings 27 for the securing-screws 25, this device being otherwise substantially like that already described.

It is thought that the operation of the machine will be understood without description, it being only necessary to remark that the threads 32 extend from the delivery-bobbins first over the glass bar *h*, then through suitable thread-guides 33 on the beam *b*, then under and around the rollers *n*, then over and around the rollers *o*, and then down through eyelets 34 on the beam *c*, through the eyelets of the flier, and onto the bobbins, being meantime doubled and twisted and while being wound on the bobbins being given a traverse motion by the motion of the reciprocating frame, so as to be laid evenly on said bobbins, all in the usual manner.

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

1. In a spinning-machine, the combination of a supporting-frame, rails arranged one above the other in said frame, spindles journaled in said rails, a vertically-reciprocating frame guided by said rails, spring-clips secured to the reciprocating frame, and bobbins secured to the frame by said clips to thereby enable the frame to positively move the bobbin lengthwise of the spindles, as the frame is reciprocated.

2. In a spinning-machine, a supporting-frame having bobbin-skewers fixed thereto and carrying the operating parts, a plurality of rails connecting the side framing, a vertically-reciprocating frame guided by each of said rails and having metallic clips with upwardly-projecting arms secured thereto adapted to engage bobbins to cause them to move with said frame, and means to operate said vertically-reciprocating frame, comprising a cam, a lever, and an adjustable coupling between the lever and frame, said coupling being pivotally connected to said lever.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of April, 1900.

FLORIAN MEYER.

Witnesses:
ALFRED GARTNER,
JOHN W. STEWARD.