No. 829,467. PATENTED AUG. 28, 1906.

W. GREGORY & C. HEWITT.

TRAVERSE GUIDE FOR DOUBLING AND TWISTING MACHINES.

APPLICATION FILED JULY 29, 1905.

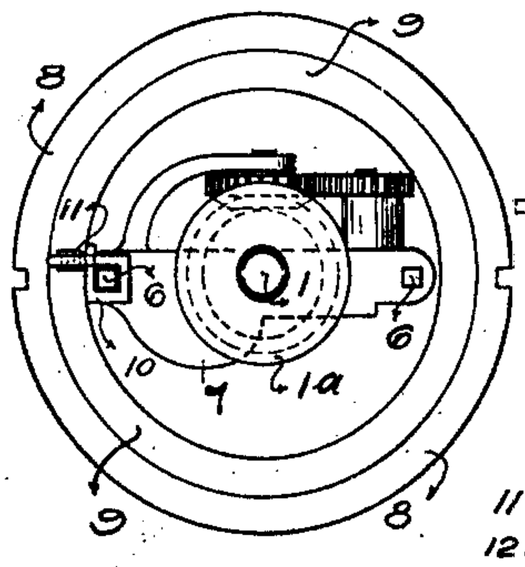

FIG. II.

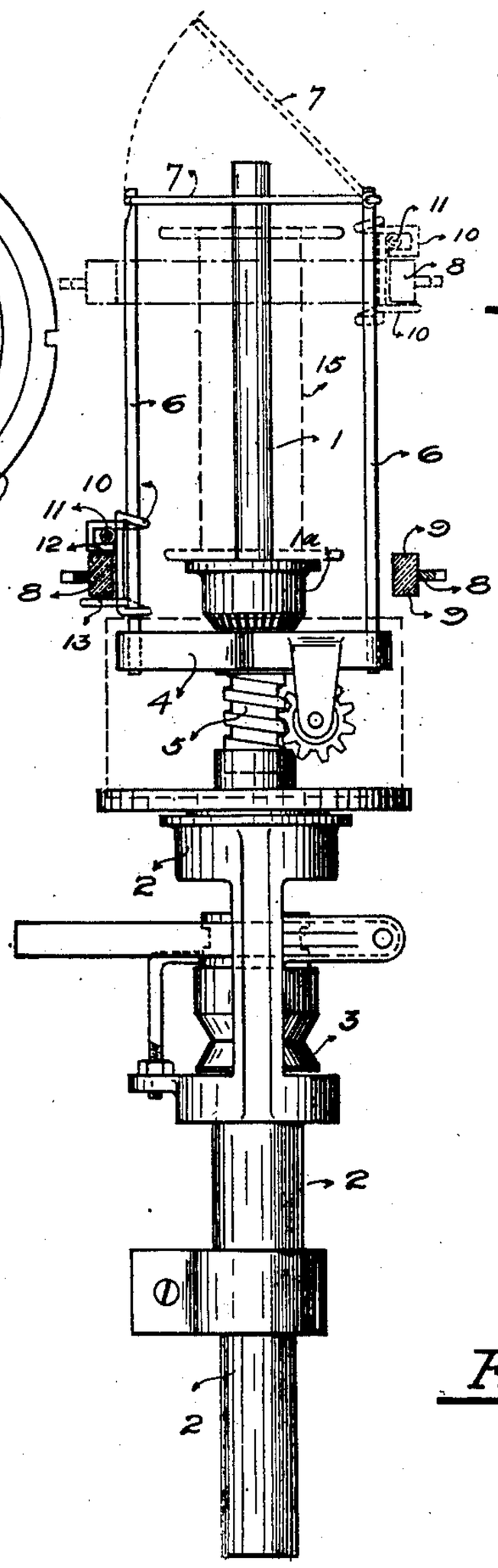

FIG. I.

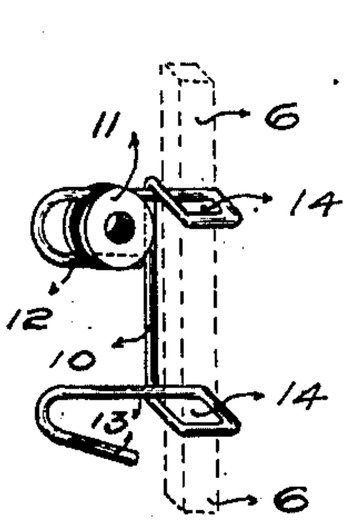

FIG. III.

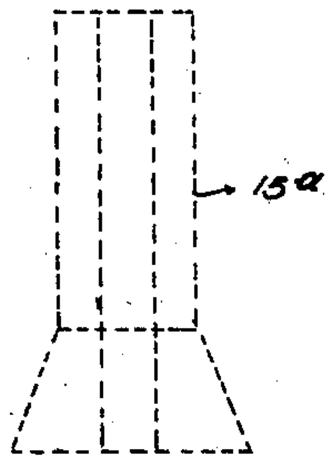

FIG IV

Witnesses
Edith Benz.
M L Ward

Inventors
William Gregory & Charles Hewitt
By their Attorney
John F. Kerr

UNITED STATES PATENT OFFICE.

WILLIAM GREGORY AND CHARLES HEWITT, OF PATERSON, NEW JERSEY.

TRAVERSE-GUIDE FOR DOUBLING AND TWISTING MACHINES.

No. 829,467. Specification of Letters Patent. Patented Aug. 28, 1906.

Application filed July 29, 1905. Serial No. 271,797.

To all whom it may concern:

Be it known that we, WILLIAM GREGORY and CHARLES HEWITT, citizens of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Traverse-Guides for Doubling and Twisting Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

In devices for ring-spinning it is always customary to use what are termed "drawing-rolls," which draw the yarn from bobbins, cops, or the like and deliver it to another bobbin or cop in the center of a ring. The ring is provided with a channel or groove on its edge on which what is known as a "traveler" moves and guides the yarn to the bobbin or cop in a uniform manner.

When the rolls are geared to run fast, thus giving a slack twist, the traveler adjusts itself to the speed, and when the rolls are geared to run slow to give a tight twist the traveler adjusts itself to the changed condition. The traveler merely acts to guide the yarn on the bobbin. It is necessary to use rollers for cotton-spinning, for the reason that the yarn must be drawn apart to make the required size and to deliver it to the bobbin or cop through the traveler, as above described. This is not true of silk. It is just at this point where attempts at doubling and twisting have not been as successful as they should be. Various kinds of rolls have been used for this purpose, but they are constantly drawing the yarn around them, thus making much waste and causing loss of time.

It is the purpose of our invention to dispense with the rolls entirely. Attempts have been made to do this by having the traveler run on the ring, as above stated; but this is unsatisfactory, for the reason that the traveler drags very heavily on account of the weight of the bobbin from which the yarns are drawn, causing the life of the traveler to be very short. Another defect is that it is practically impossible to keep the bobbin in the center of the ring. This causes the yarn to jerk, and it often breaks in its passage through the traveler to the bobbin. A link or yoke has been used by some to overcome this trouble; but it only relieves the rigidity of the traveler from the arm that drags it. Our invention overcomes these troubles in the following manner: In the first place, we transfer our traveler from the ring to a flier-arm provided for this purpose. It is thus very evident that with a flier-arm moving with a traveler the wear is reduced to a minimum. Our spindle always forms the center, around which the traveler moves in a circle, causing the yarn to run evenly and smoothly in its passage through the eye of the traveler to the bobbin 15^a, which is of peculiar construction. The traveler being controlled in its movement by the flier-arm and the bobbin by the spiral, we get a positive relative movement one from the other, the ring serving as the means of raising and lowering the traveler, its upper and lower surface engaging the traveler for this purpose. In cotton-spinning no flier-arm has hitherto been required where a ring was used, for the reason that the rollers delivered the yarn to the bobbin, thus regulating the twist; but our invention may be applied to cotton as well as silk, doing away with the use of drawing-rolls.

The object of our invention is to provide an improved means for guiding and laying the fiber or thread on the bobbin mounted to receive said fiber and which will be particularly adapted for use in the doubling and twisting machines for silk.

The invention may be employed in traverse-motion mechanisms or devices in the cotton industry also; but we propose to use the same in an improved doubling and twisting machine, which we do not deem it necessary to describe fully in connection with this case.

In the accompanying drawings, which illustrate our invention, similar numerals of reference indicate similar parts in the various views, in which is shown also a driving device which forms the subject of an application filed by us July 25, 1905, Serial No. 271,133, for doubling and twisting machines, and in which—

Figure 1 represents a spindle provided with our improved flier, traveler, and traverse-ring, the ring shown in section and the ring-rail being omitted. Fig. 2 is a plan view of Fig. 1; and Fig. 3 is an enlarged view in perspective of our improved traveler, the flier-arm around which it passes being shown in dotted lines. Fig. 4 shows in dotted lines a modified form of bobbin 15^a.

In the drawings, 1 represents a spindle-inclosing tube and oil-reservoir carried by the flier.

1^a represents the crown-gear for engaging

the bobbin 15; 2, the spindle-support; 3, the driving device for the spindle; 4, the flier; 5, a spiral sleeve to communicate differential speed to the bobbin; 6 6, the flier-arms; 7, the hinged locking device for the flier-arms; 8, the traverse-ring for raising and lowering the traveler 10. The hinged locking device 7 prevents the spreading of the flier-arms by centrifugal force when the machine is in operation.

Our ring has a broad upper and lower surface 9, which engage, respectively, the upper and lower arms 12 and 13 of the traveler 10 in ascending and descending in a traverse motion. It is obvious that the arms of the traveler loosely engage the flat even surface 9 of the traverse-ring 8 as it rises or falls, and that there is not that tendency to drag which is manifested to a higher or less degree in all other travelers in turning around the ring. There is absolutely no binding between our traveler and the ring and it ascends with facility upon the flier-arm 6, around which it fits loosely. The arm 12 of the traveler is bent to hold an eyelet 11. The traveler is simple in construction and inexpensive. A strand or wire of suitable metal or other material may be bent to form the members 12 and 13 and the openings 14 for the flier-arm.

With this description of our invention we claim as new and desire to secure by Letters Patent—

1. The combination of a rotating flier and spindle, of a traveler carried by and longitudinally movable on the arm of said flier, a traverse-ring, and two members on said traveler extending one on each side of said ring, the path of revolution of the latter being determined laterally by the flier-arm.

2. The combination with a spindle and a rotating flier of a traverse-ring, a traveler loosely surrounding and slidable on the arm of said flier and provided with two members, one extending into the path of the traverse-ring when it moves in one direction, and one extending into the path of the traverse-ring when it moves in the opposite direction, the traveler being free from lateral restraint by the ring and a guide-eye carried by one of said members.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM GREGORY.
CHARLES HEWITT

Witnesses:
EDITH BENZ,
JOHN F. KERR.