

No. 765,319.

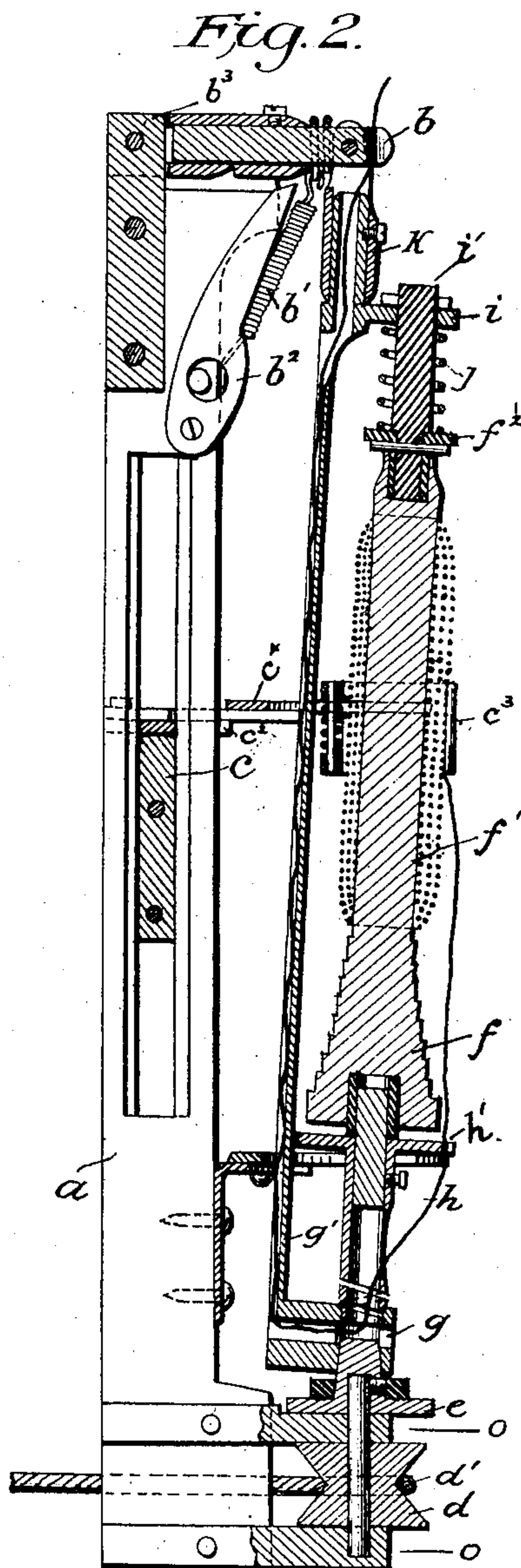
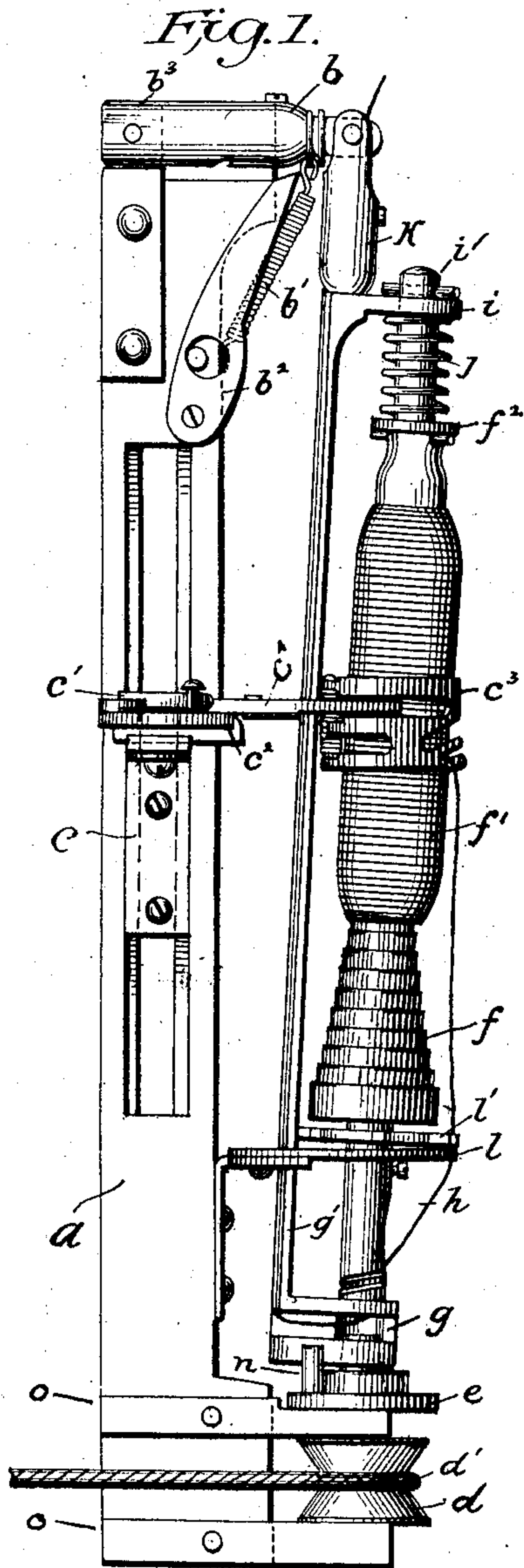
PATENTED JULY 19, 1904.

A. L. MATHEWSON.
SPINNING MACHINE.

APPLICATION FILED APR. 21, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
Chris Boyer
David W. Williams

Inventor:
Arthur L. Mathewson

No. 765,319.

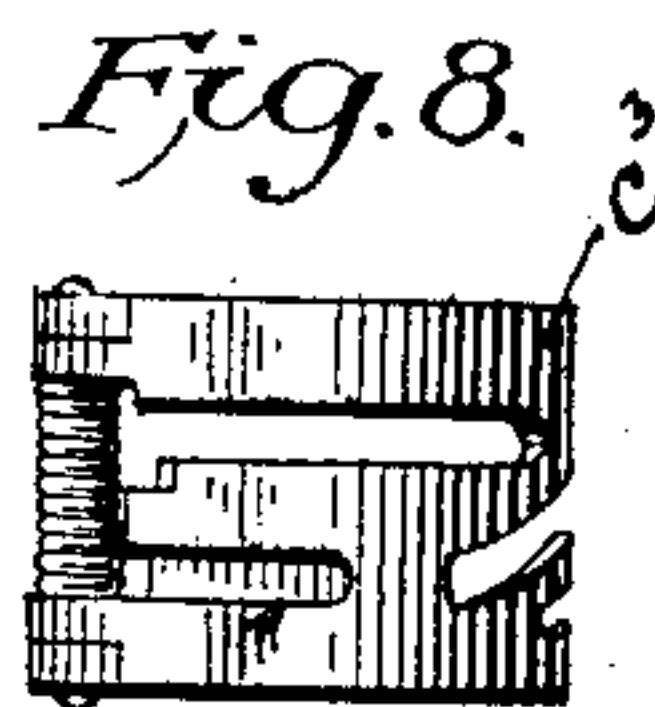
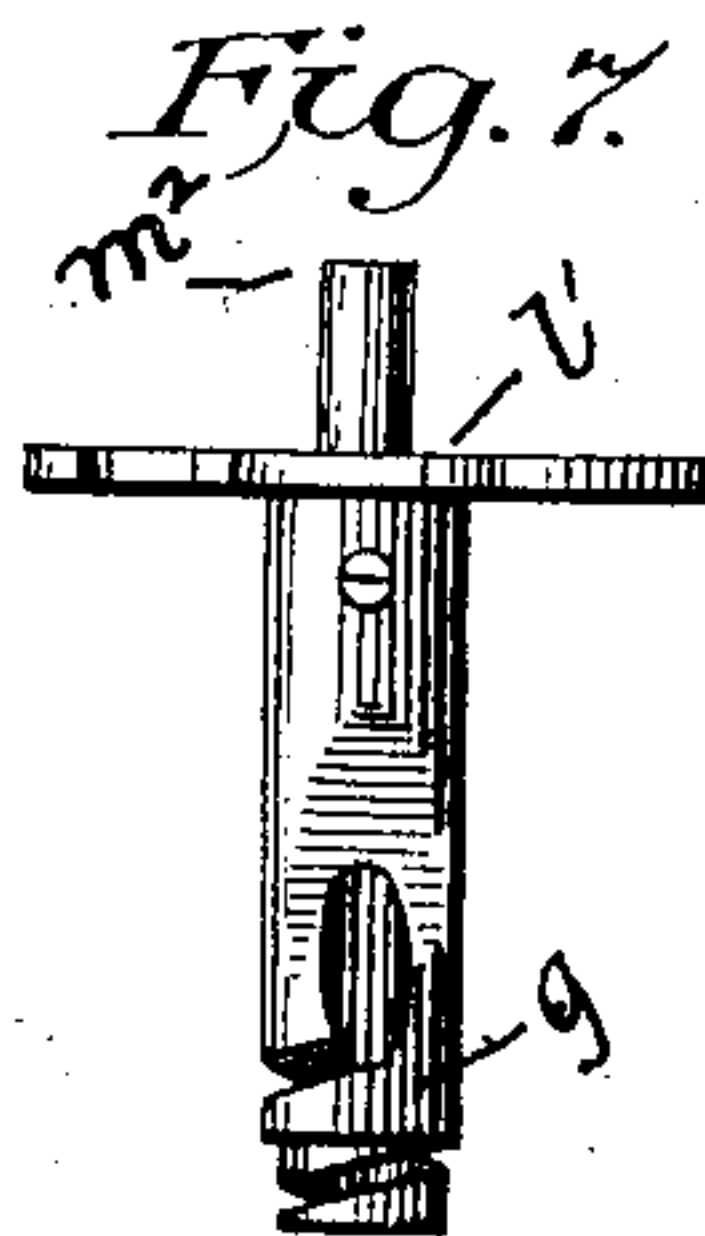
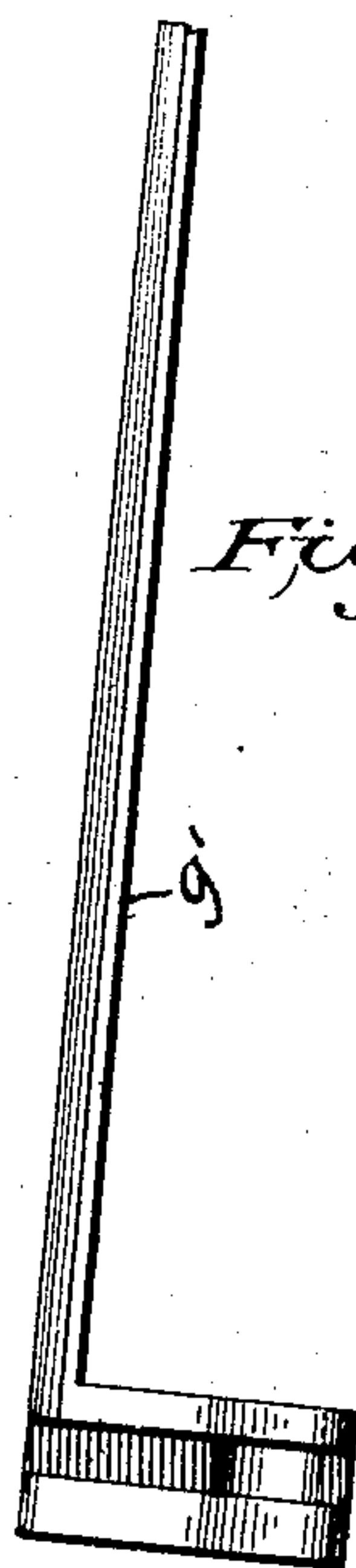
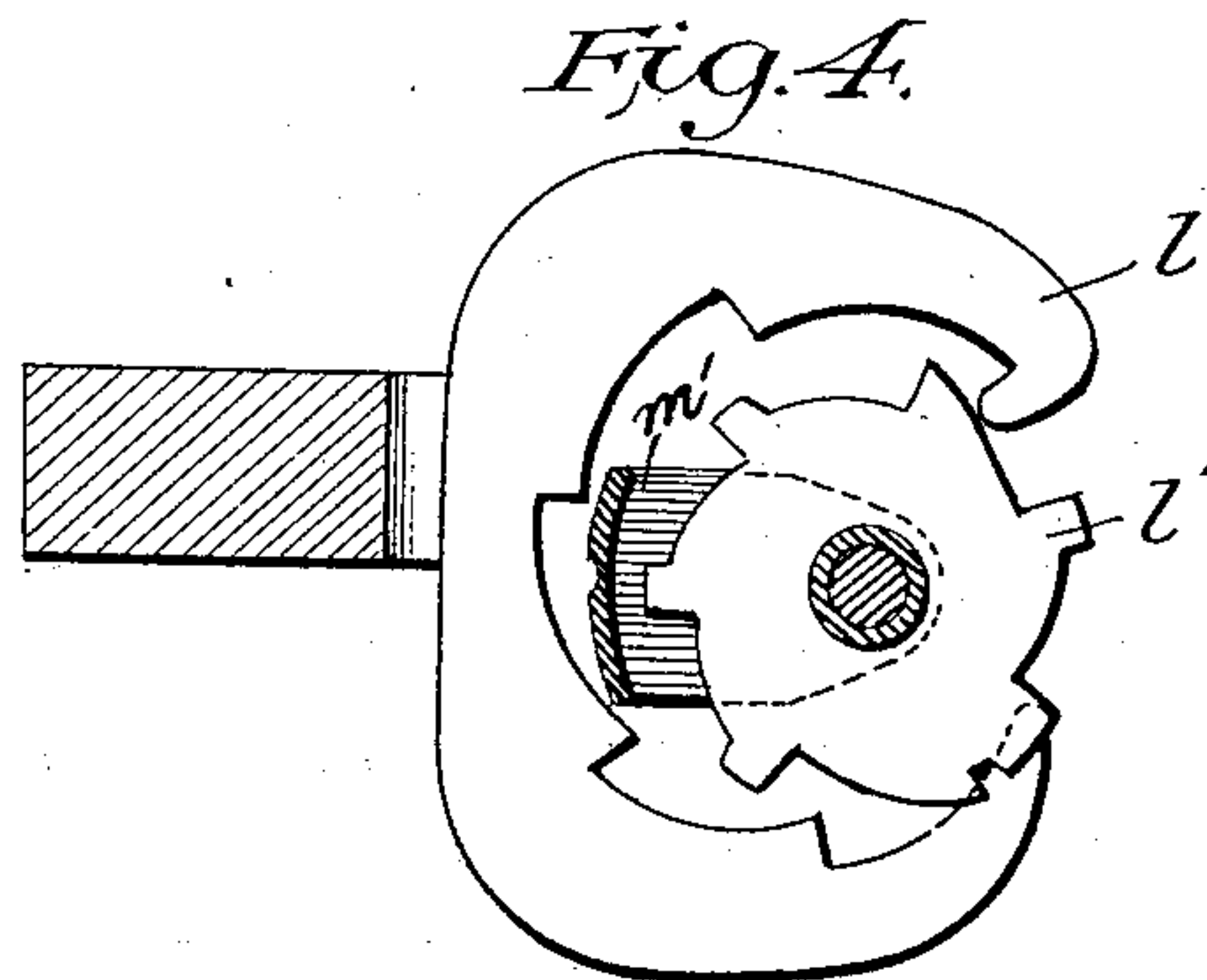
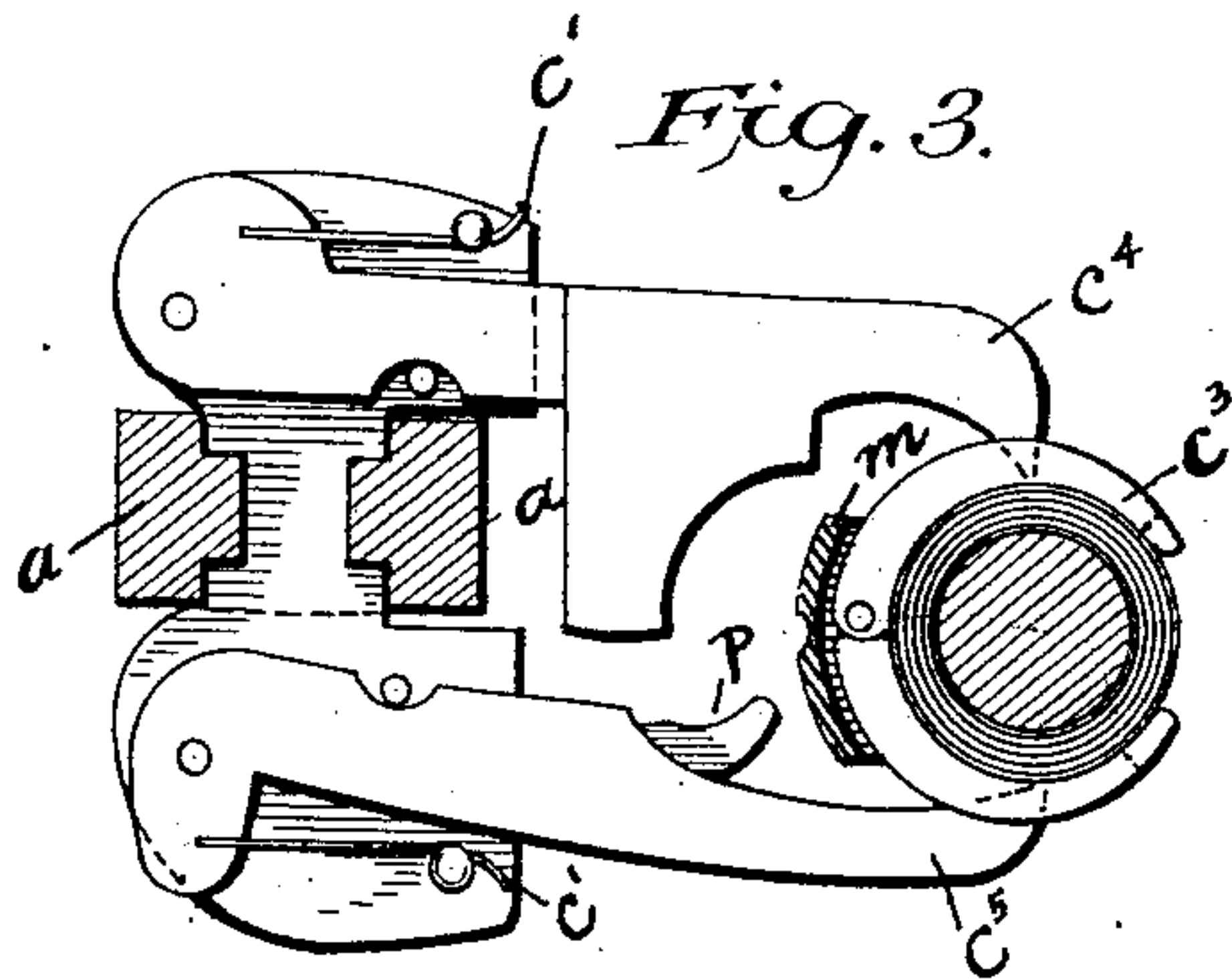
PATENTED JULY 19, 1904.

A. L. MATHEWSON.
SPINNING MACHINE.

APPLICATION FILED APR. 21, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:

Chris Boyer
David W. Williams

Inventor:

Arthur L. Mathewson

UNITED STATES PATENT OFFICE.

ARTHUR L. MATHEWSON, OF OMAHA, NEBRASKA, ASSIGNOR OF ONE-FOURTH TO CHARLES W. BARNEY, OF SAN FRANCISCO, CALIFORNIA.

SPINNING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 765,319, dated July 19, 1904.

Application filed April 21, 1903. Serial No. 153,651. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR L. MATHEWSON, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Spinning-Machines, of which the following is a specification.

This invention relates to improvements in machines for spinning; and its objects are to provide a machine for such purpose to take the place of spindles as now used therein, the same performing the work of two such spindles and accomplishing the same with the expenditure of less power; and my invention consists, among other things, of a carrier with a loose spindle mounted thereon, the same to be at rest while the carrier turns. The machine dispenses with the ring and travelers now commonly used, a light guide being substituted therefor, as well as what is known as the "separator," the thread being protected by the carrier. In my machine every bobbin can be doffed independently of another while it is in operation. The construction and arrangement of parts in which my invention lies are further hereinafter set forth and explained.

Figure 1 is an elevation of the machine. Fig. 2 is a longitudinal section through the same. Fig. 3 is a detail of the claws engaging the flexible ring in section and connections. Fig. 4 is a detail of stop, which is attached to frame and teeth of wheel fixed to spindle. Fig. 5 is a detail of part of carrier. Fig. 6 shows collar for spindle with slot shown in Fig. 4. Fig. 7 represents the spindle. Fig. 8 indicates the flexible ring.

The spindle of my machine is preferably made of one piece of steel and is supported at each end, the thread coming down the side of such carrier to the bottom and then up through a small slot or hole in the bottom of the spindle to the indentation K and then upon the bobbin, and thereupon as the carrier takes the thread around the bottom of the spindle while the same is at rest two twists are secured with one revolution of the machine, my contention that such machine will do the work of two spindles now used in such work in the accomplishment of the object

aforesaid being made plain by the description herein set forth.

As before generally mentioned, I do not require a traveler to run on a ring to put the material on the bobbin, as I use a guide instead of the same, it vibrating to the size of the thread to allow the same to pass by, and thereby I dispense with the traveler and the consequent great friction caused by the same running around on the ring.

The bobbin in my machine turns only with sufficient rapidity to take up the material delivered from the roll, whereby the usual resistance of the atmospheric pressure against a bobbin of yarn running at a high velocity is greatly reduced.

a in said Figs. 1 and 2 shows the supporting-frame. *b* shows the top joint pivotally attached to frame and connected by pivot to lower joint and bearing *k*, which supports the carrier *g'*. *b'* represents a spring connected to joint and frame. *b''* indicates a latch which when forced into the notch in the under side of the top joint disconnects the driving mechanism from the carrier *g'*, stopping its movement, whereupon the operator may piece ends of thread. When the operator is ready to continue his work, he releases the latch, whereupon the carrier again comes in contact with the driving mechanism, and the machine continues its work. The driving mechanism consists of arms *o o*, within which is mounted a pulley having a peripheral V-shaped groove *d*, whose revolution is caused by rope *d'*, and a circular plate *e*, with a vertical pin *n* secured thereto, whose contact with the carrier turns the same and causes it to carry the thread around the bottom of the spindle *g*, as shown. A washer may be placed to separate the plate from the carrier. *C* represents a grooved block slidable in the slot of frame *a*, the same supporting claws *c'* and *c''*, which enter the slots of flexible ring *c'*. The claws contain springs *C'* to force them inwardly, and a tooth *p* is shown in Fig. 3, which assists *a* in the operation of the ring, the said ring being pivoted to piece *m*, as shown. The said block or guide travels up and down, and the flexible ring *c'* rests on the bobbin *f'* and has a zigzag move-

ment, but does not revolve, the object thereof being to put the work on the bobbin. The spindle g rests on the carrier and has a disk l' , (shown in connection with piece with collar m' in Fig. 4,) whose teeth engage with the stop l , by which the spindle is prevented from rotating while the carrier turns. The pivot m^2 , forming part of the spindle, holds the lower end of the bobbin f in place. At the top of the bobbin is a pivot i' in connection with the carrier, which supports the top of such bobbin. i designates the projecting support for the pivot. j indicates the spiral spring between the said support and washer f^2 , which rests on the pins at the upper end of the bobbin. By the latter parts a tension is effected whereby the bobbin is caused to take up material delivered by the roll. Bearing k shows a set-screw penetrating the same, and the journal contained therein has an annular groove in which the end of said screw fits, but so as to allow of the revolution of said journal. When the latch b^2 is forced into the notch, said screw causes the raising of the carrier to free it from the driving mechanism.

The block c , working in slot of frame a with adjacent parts c^2 c' and others shown in Fig. 3, contains novel features to build the bobbin. The operation of my attachment may be effected by rigidly securing frame a in an upright position, and the same being in its proper place the pulley d is caused to turn toward the left, and pin n will by its contact with the carrier cause it to revolve. In each revolution of the carrier it is thrown from center, changing the position of the spindle so that the teeth of the same come in contact with those of stop l , the latter causing the spindle to remain still, the stop being so adjusted as to cause this contact. The consequent throwing from center of said carrier causes the operation of the claws C^4 and C^5 , as intended.

The expansible ring C^3 rests on the bobbin or material covering the same. When the bobbin does not contain any material, the ring clasps the same; but as it becomes covered with the material the ring expands, enlarging with the increase of such material.

The claws entering the slots of the ring hold it back as the carrier revolves, and the bobbin turns to take on the material delivered by the spinning-roll, they moving up or down in the building of the bobbin. The bobbin is controlled by the spiral spring at the top of the carrier maintaining a tension between the carrier and such bobbin, and thereby causing the forward movement of such bobbin. The claws being attached to the grooved block and penetrating the slots of the ring thereby cause its upward or downward movement in the building of the bobbin.

My machine having an incline from center of five-eighths of an inch where the bobbin is pivoted at the top of the carrier, the path of the bobbin is such that the carrier does not

come in contact with the claws in its movement, but only the ring on the bobbin comes in contact with them, so that if the thread is kept in its place in the groove of the carrier as it goes down to the bottom it will be free to perform its work.

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

1. In an attachment to frames for spinning the combination with a revolving carrier, a dead-spindle with stop connections supporting bottom of bobbin, an expansible ring encircling said bobbin, said parts having apertures permitting the passage of material, adjustable claws supporting said ring, a disk and pin for turning said carrier, means for holding top of carrier in position, substantially as shown and described.

2. In an attachment to frames for spinning the combination of a spindle having a pivot upon which a bobbin turns, a carrier traveling around said spindle, a flexible ring encircling said bobbin, said elements having recesses and apertures for conducting material to the part intended to receive it, claws for supporting said ring and a stop connection for controlling said spindle, substantially as shown and described.

3. In an attachment to frames for spinning the combination with a slotted carrier traveling around a dead slotted spindle, a stop connection for controlling said spindle, a bobbin mounted on said spindle, an expansible slotted ring encircling said bobbin, claws and connections for supporting and guiding said ring and a latch for holding said carriers free from the driving mechanism substantially as shown and described.

4. In an attachment to frames for spinning the combination with a slotted carrier traveling around a dead slotted spindle, a stop connection, a bobbin mounted on said spindle, a flexible slotted ring encircling said bobbin, claws and connections for supporting and guiding said ring, a wheel and bolt for turning said carrier, and a latch for holding said carriers free from the driving mechanism, substantially as shown and described.

5. In an attachment to frames for spinning the combination with a slotted carrier traveling around a dead slotted spindle, a bobbin mounted on said spindle, a slotted ring and in contact with the periphery of said bobbin and movable thereon, connections for grasping and controlling said ring, a latch for raising said carrier and freeing it from the driving mechanism, substantially as shown and described.

6. In an attachment to frames for spinning the combination of the following instrumentalities: a dead slotted spindle, a bobbin mounted thereon, a slotted carrier traveling around said spindle, a slotted ring encompassing said bobbin, claws for controlling said ring, a support for holding said carrier free from the

driving mechanism, and a grooved block slidable in a slot, substantially as shown and described.

7. In an attachment to frames for spinning
5 the combination of the following instrumentalities: a dead slotted spindle, a bobbin mounted thereon, a slotted carrier traveling around said spindle, a flexible slotted ring surrounding said bobbin, a slidable block and claws for
10 controlling said ring, a movable support for

holding said carrier free from the driving mechanism, and means for bearing vertically on said bobbin, substantially as shown and described.

In testimony whereof I affix my signature in 15
presence of two witnesses.

ARTHUR L. MATHEWSON.

Witnesses:

CHRIS. BOYER,

DAVID W. WILLIAMS.