

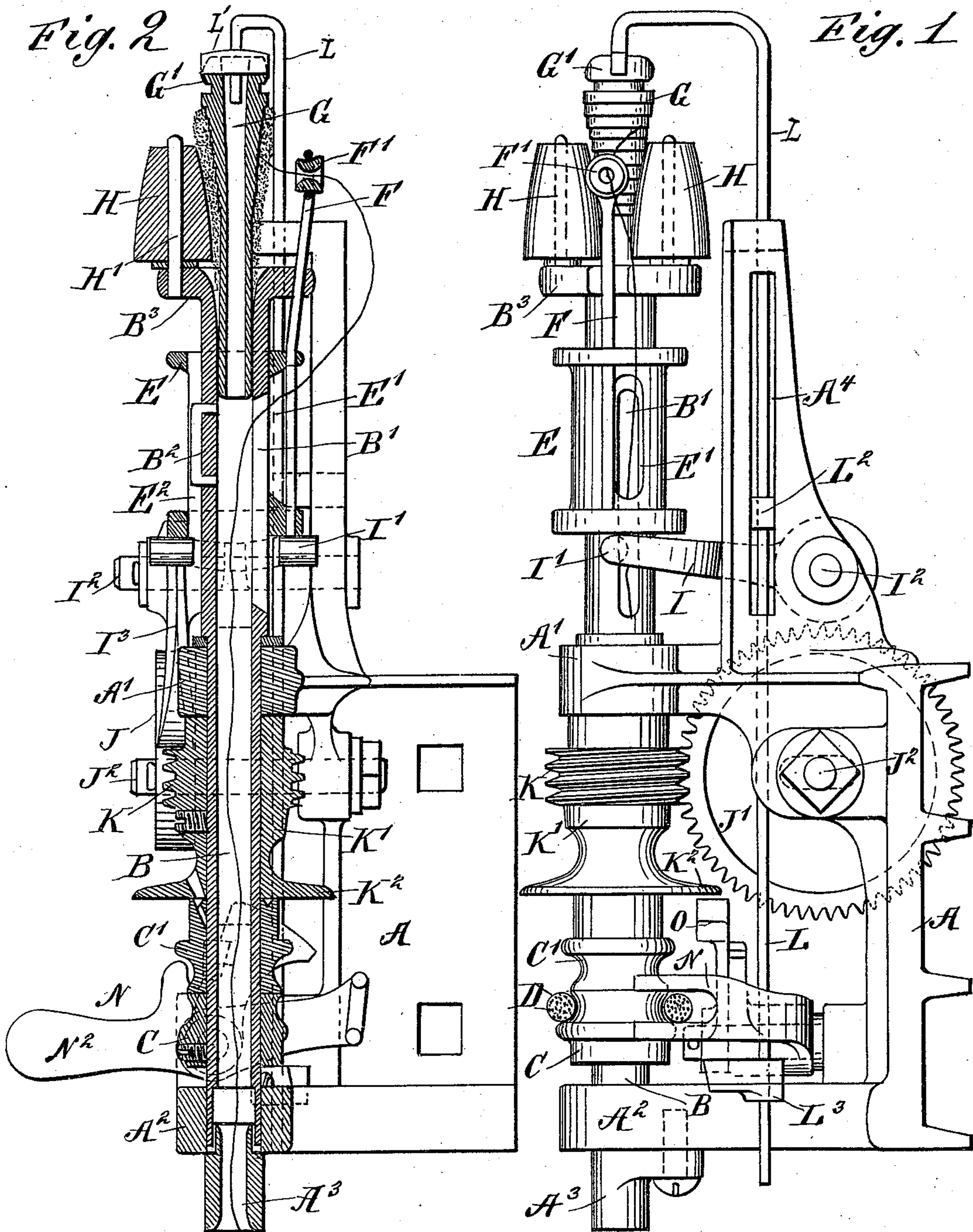
(Model.)

2 Sheets—Sheet 1.

C. JONES.
QUILL WINDER.

No. 493,093.

Patented Mar. 7, 1893.



WITNESSES:

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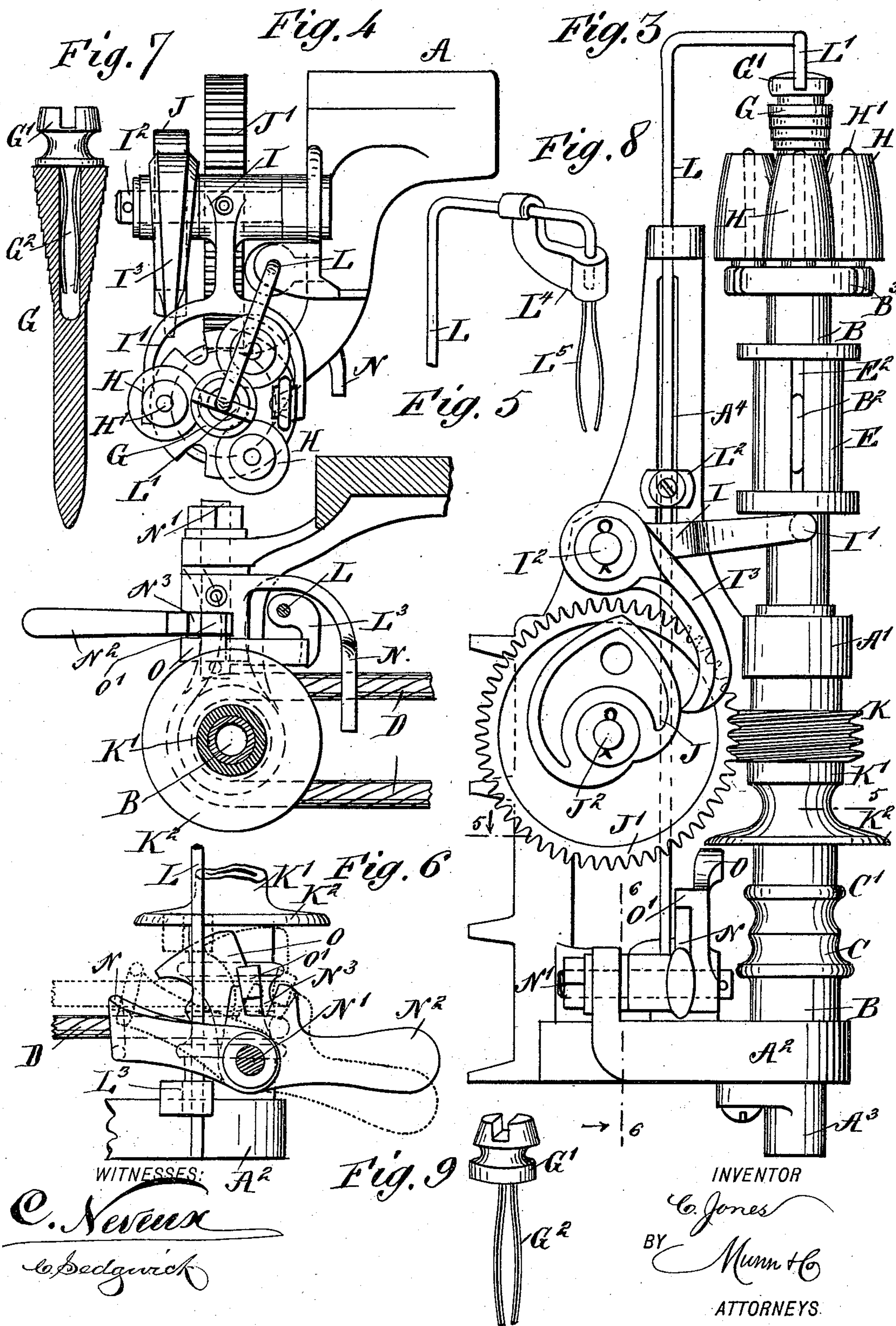
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UNITED STATES PATENT OFFICE.

CORRY JONES, OF LONG ISLAND CITY, NEW YORK.

QUILL-WINDER.

SPECIFICATION forming part of Letters Patent No. 493,093, dated March 7, 1893.

Application filed October 4, 1892. Serial No. 447,791. (Model.)

To all whom it may concern:

Be it known that I, CORRY JONES, a subject of the Queen of Great Britain, at present residing at Long Island City, in the county of Queens and State of New York, have invented a new and Improved Quill-Winder, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved quill winder which is simple and durable in construction, very effective and positive in operation, and not liable to get out of order.

The invention consists of certain parts and details, and combinations of the same, as will be hereinafter described and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement. Fig. 2 is a sectional side elevation of the same. Fig. 3 is a side elevation of the same, opposite to that shown in Fig. 1. Fig. 4 is a plan view of the same. Fig. 5 is a sectional plan view of the same on the line 5—5 of Fig. 3. Fig. 6 is a transverse section of the same on the line 6—6 of Fig. 3. Fig. 7 is a sectional side elevation of a modified form of quill. Fig. 8 is a perspective view of a modified form of sliding rod; and Fig. 9 is a perspective view of the head for the modified form of quill shown in Fig. 7.

The improved quill winder is provided with a suitably-constructed frame A, adapted to be secured to the loom or other machine and provided with bearings A' and A², in which is journaled the vertically-disposed spindle B, carrying a fast pulley C and a loose pulley C', adapted to be engaged by the belt D, connected with suitable machinery for imparting a rotary motion to the said spindle B. On the under side of the bearing A² is secured an eye A³, through which passes the thread into the hollow spindle B, the said thread extending upwardly to finally pass out through a slot B', arranged vertically in the upper end of the hollow spindle B. The thread also passes through a second slot E', arranged in alignment with the slot B' and formed in the traveler E, fitted to slide on and traveling with

the spindle B, the latter being provided with a projection B², engaging a vertical slot E², formed in the traveler E directly opposite the slot E'. The projection B² serves to carry the traveler E around with the spindle, and also permits a vertical sliding of the said traveler E on the spindle B.

On the traveler E is secured a vertically-disposed rod F, formed at its upper end with an eye F', through which passes the thread after leaving the slots B' and E', the said eye guiding the thread onto the quill G, of any approved construction, and held in the upper end of the spindle B. The quill G is set with its conical part in a series of cones H, mounted to rotate loosely on spindles H', secured on the head B³, formed or fastened on the upper end of the spindle B. The spindles H' are arranged in a circle, the center of which coincides with the center of the quill G.

The up and down movement of the traveler E on the spindle B is caused by the following device: The under side of the traveler E rests on the fork I' of an arm I, pivoted on a stud I², projecting from the frame A. The arm I is provided with a downwardly-extending arm I³, engaging with its free end the periphery of a heart-shaped cam J, fastened on one face of a worm wheel J', mounted to turn loosely on a stud J², also projecting from the frame A. The worm wheel J' is in mesh with a worm K, secured on the spindle B so that when the latter is rotated the said worm K imparts a rotary motion to the worm wheel J' and to the cam J, so that the arm I³ swings inward or outward according to the configuration of the periphery of the said cam. The swinging motion of the arm I³ causes a like movement of the arm I, so that its fork I' raises and lowers the traveler E on the spindle B. It will be seen that by this construction, the traveler E exerts a downward pressure on the arm I, so that the other arm I³ is held in firm contact with the periphery of the cam J by the weight of the said traveler E. The head G', of the quill G is provided with a transverse notch which is engaged by a T L' of a rod L, mounted to slide vertically in suitable bearings on the frame A and thus the quill is prevented from rotating. In order to prevent the rod L from turning, I fasten on the said rod, a block L², fitted to slide in a

vertically-disposed slot A⁴, formed on the upper part of the frame A, as will be readily understood by reference to Figs. 1 and 3.

On the lower end of the rod L is secured an arm L³, adapted to engage the belt shifter N, fulcrumed on a stud N' projecting from the main frame A. The prongs of the belt shifter N engage one of the strands of the belt D so as to move the latter from the fast pulley C onto the loose pulley C' or back again from the latter to the fast pulley, as hereinafter more fully described.

The belt shifter N is provided with an arm N², for conveniently manipulating the shifter by hand, the said arm also serving as a counter weight. On top of the belt shifter N directly above the stud N' is arranged a notch N³, engaged by a lug O' of an arm O, fulcrumed loosely on the stud N' and adapted to engage with its upper or free edge the under side of a disk K², formed on the hub K' of the worm K. The lug O' has sufficient play in the notch N³ to permit a free movement of the belt shifter N before the lug is actuated to throw the arm O into engagement with the under side of the disk K² to lock the latter in place by frictional contact.

As illustrated in Figs. 1, 2 and 3, the quill G is of ordinary construction, the head G' being an integral part of the quill.

In Figs. 7 and 9, the French quill is illustrated in which the head G' is separated from the quill and is provided with springs G², engaging a central aperture in the quill.

The head G' is provided with a recess adapted to be engaged by the T L' so as to hold the quill stationary. If desired, the T L' may be omitted and the device illustrated in Fig. 8, substituted. This device consists of an arm L⁴, held on the upper end of the rod L and provided with springs L⁵, engaging a central aperture in the quill, similar to the springs G² illustrated in Fig. 7. The head G' on the quill can in this case, be entirely omitted.

The operation is as follows: When the belt D is on the fast pulley C and the belt is actuated in the usual manner, then a rotary motion is given to the spindle B which by the worm K meshing in the worm wheel J' causes a swinging of the arms I³ and I, and consequently a raising and lowering of the traveler E, as before explained. The thread passing through the spindle B and out of the traveler to pass through the eye F' onto the quill G is wound on the latter in the usual manner, it being understood that the quill is held stationary by the T L' during the operation, and the quill is raised as it fills with thread by the action of the cones H. The upward sliding movement of the quill G causes the rod L to move in a similar direction, as the said quill

is directly connected with the said rod, as before explained. When the quill is finally filled the rod L is sufficiently raised to bring the arm L³ in contact with the arm O, so that the latter is swung upward to engage and brake the disk K². At the same time the arm O engages the shifter N and swings the same upward, thereby moving the belt D from the fast pulley C onto the loose pulley C'. The arm O acts as a friction brake on the worm wheel K, and consequently on the spindle B, so that the rotation of the latter ceases. The operator now removes the filled quill, inserts a new one in the upper end of the spindle B and connects the T L' again with the head of the quill, and then passes the thread onto the quill, at the same time starting the machine by again moving the handle N² upward so that the belt shifter N shifts the belt from the loose pulley C' onto the fast pulley C. The above described operation is then repeated.

It will be seen that this device is very simple and durable in construction, is composed of but a few parts, and hence is not liable to get out of order.

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

1. A quill winder, comprising a frame, a hollow slotted spindle journaled thereon and provided with a disk and a fast and loose pulley below the disk, a traveler actuated from the spindle and provided with a slot and a thread guide, a vertically movable rod actuated by the rise of the quill, and having an arm or projection on its lower end, a pivoted brake arm below the disk and in the upward path of said arm or projection, a belt shifter loosely engaged by the said pivoted brake arm and shifted thereby, substantially as set forth.

2. A quill winder comprising a revoluble spindle, and cones supported on the head of the said spindle to actuate the quill set on the spindle between the cones, a rod engaging the upper end of the said quill to hold the latter in position, the said rod being mounted to slide and provided with an arm at its lower end, a belt shifter to move the actuating belt from the fast pulley of the spindle onto the loose pulley at the time the quill is filled, and a separate and independent brake arm adapted to be actuated by the arm on said rod to make frictional contact with a disk on the said spindle, and in turn acting on the belt shifter to cause it to shift the belt, substantially as shown and described.

CORRY JONES.

Witnesses:

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