Sheet 1. 2 Sheets.

J. Carpenter.

Cord and Rope Mach.

No 11,775. Patented Oct. 10, 1854.

Fig 1

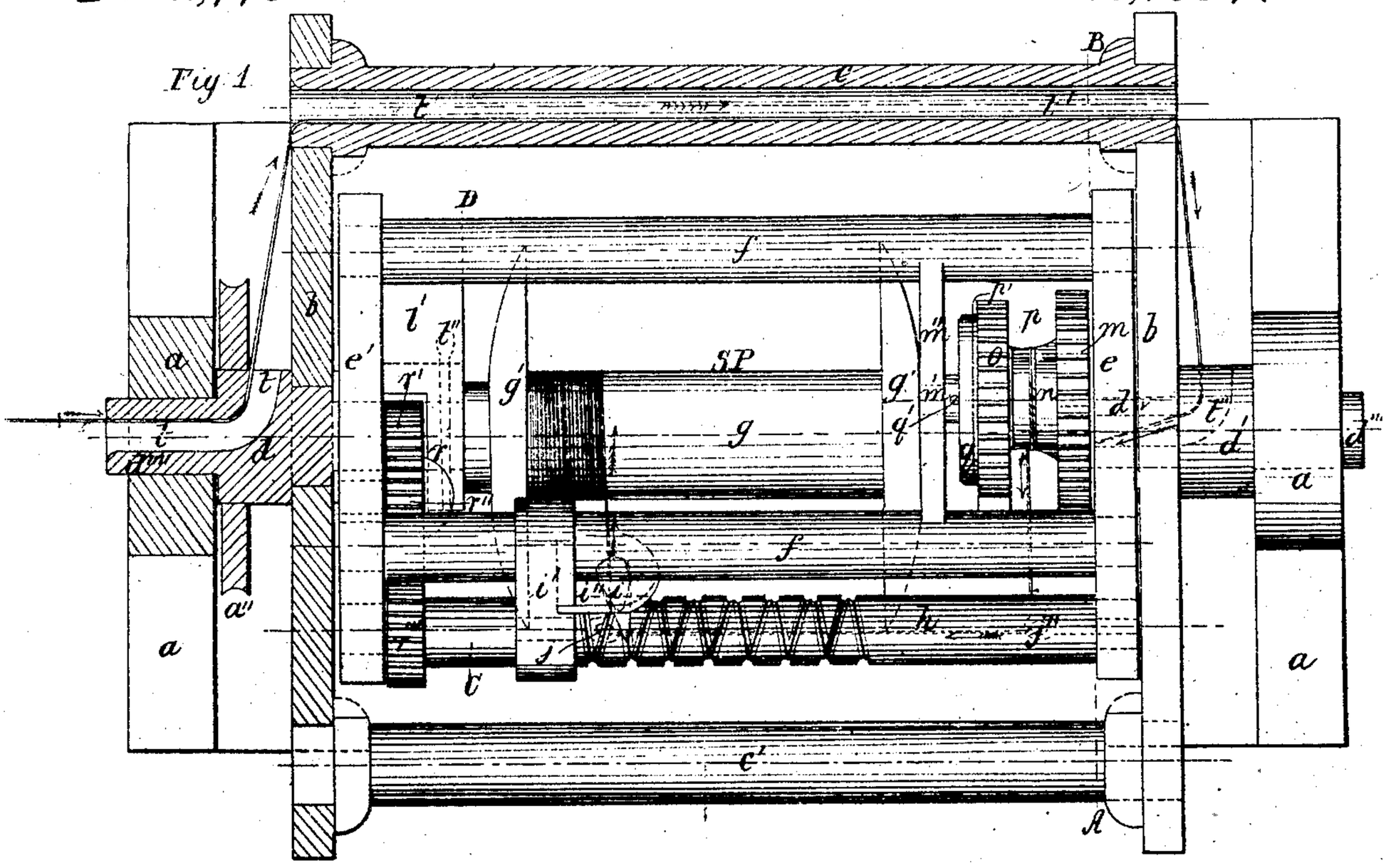
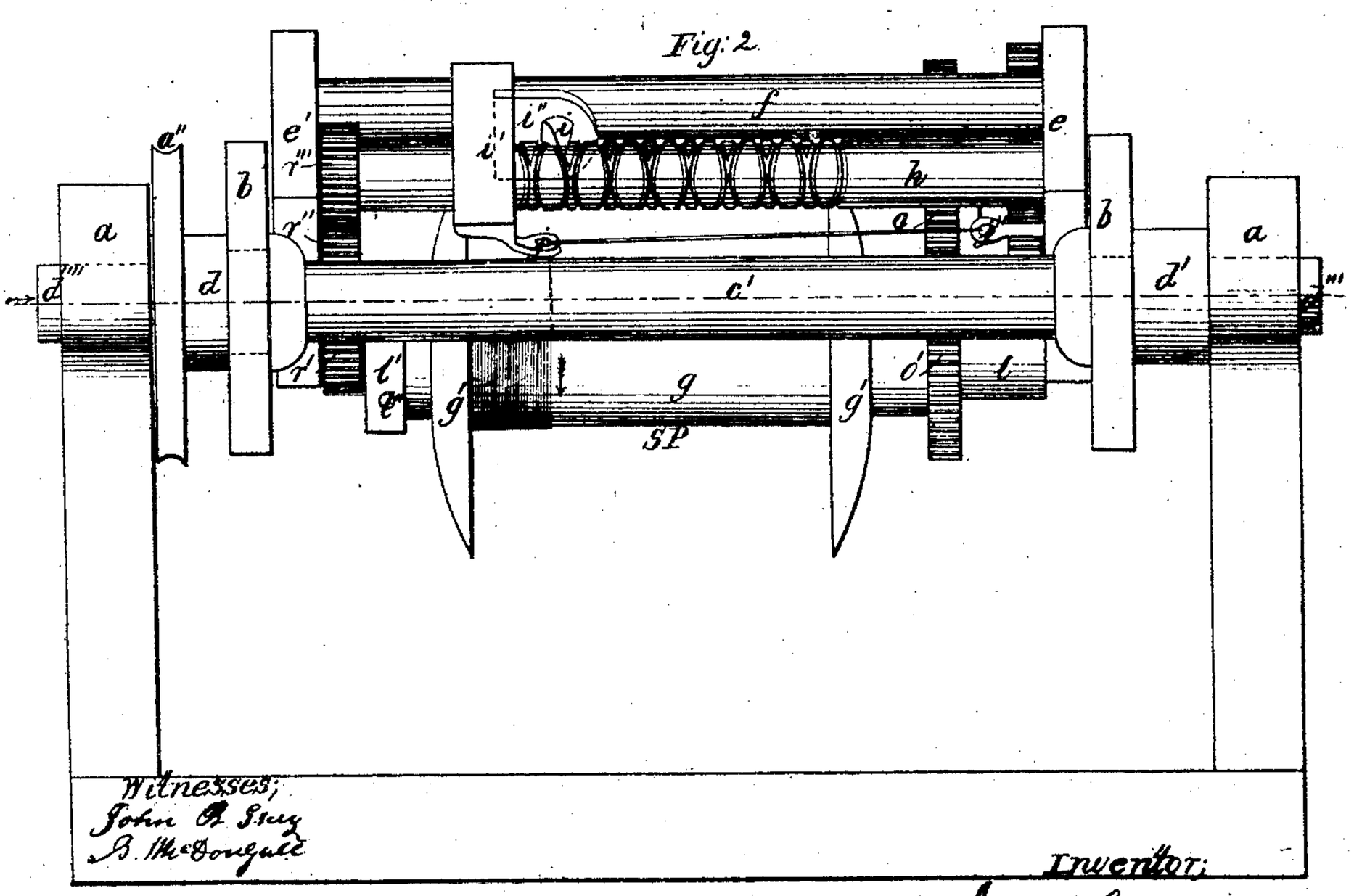


Fig: 2.



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B. McDougall

Inventor;
Jesse Carpenter

Sheet 2. 2 Sheets.

J. Carpenter
Cord and Rope Mach.

No. 11,775. Patented Oct. 10, 1854.

Fig: 4.

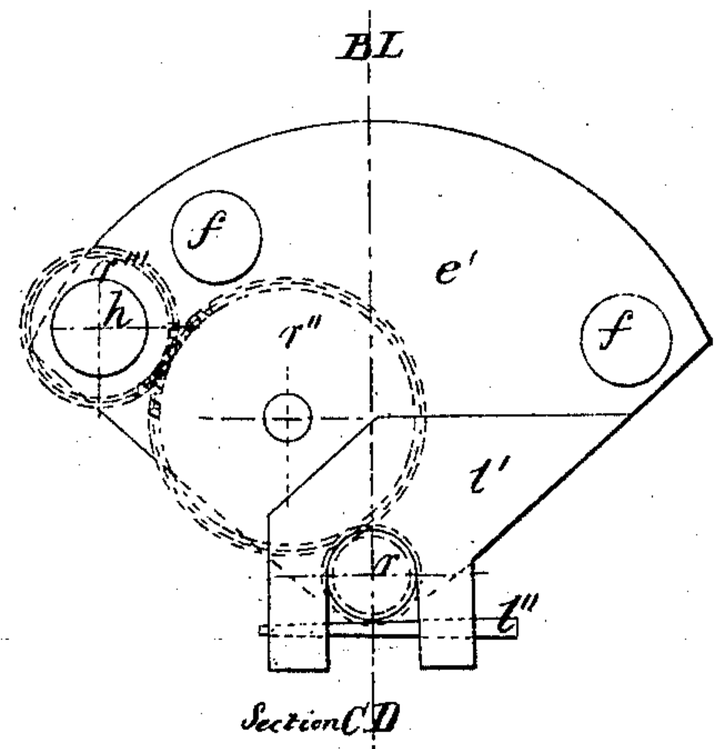
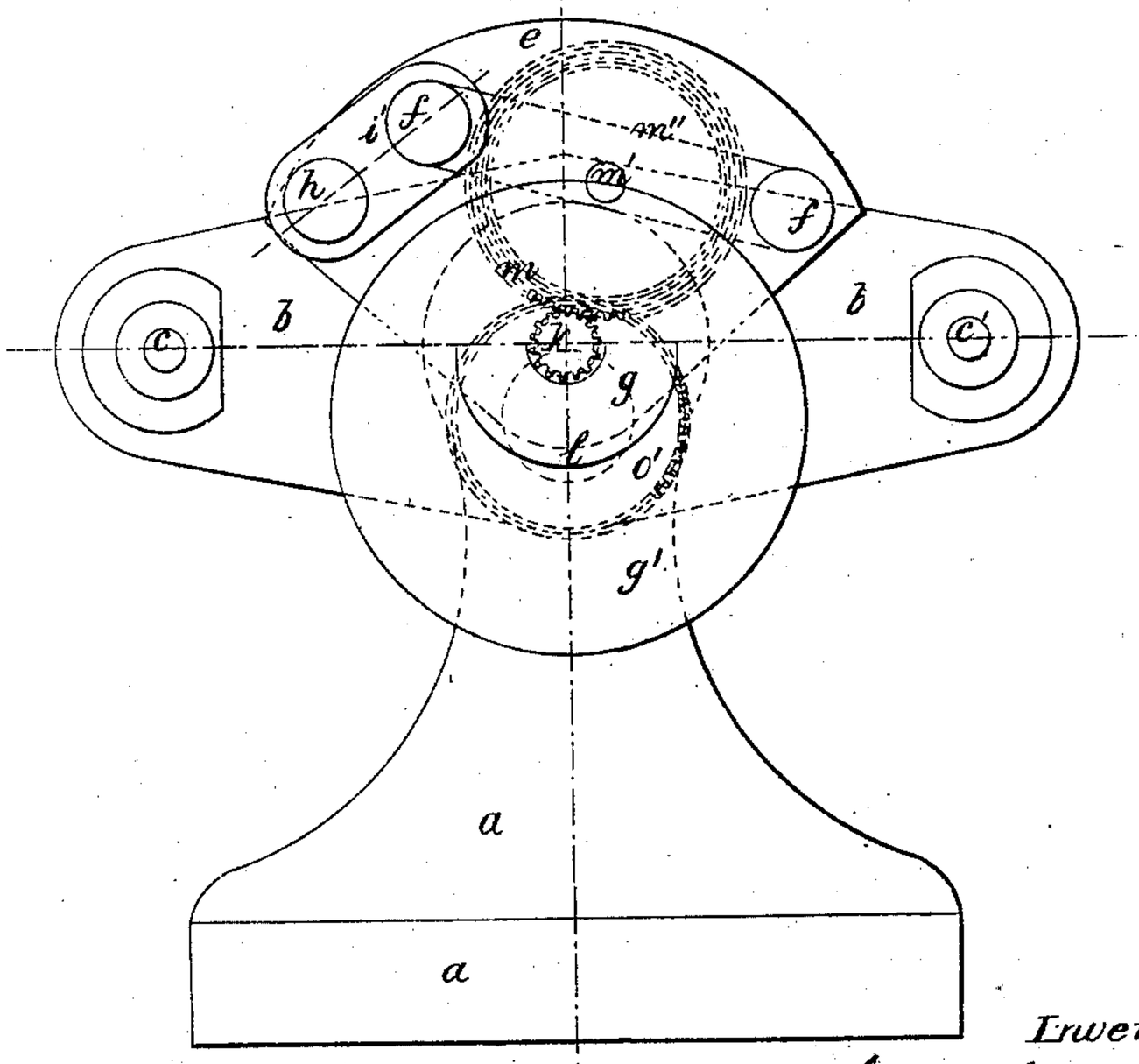


Fig: 3.



Witnesses;
John C. Gray
B. McGrayall

Inventor;
Jesse Carpenter

UNITED STATES PATENT OFFICE.

JESSE CARPENTER, OF NEW YORK, N. Y.

IMPROVEMENT IN SPINNING ROPE AND CORDAGE.

Specification forming part of Letters Patent No. **11,775**, dated October 10, 1854.

To all whom it may concern:

Be it known that I, JESSE CARPENTER, of the city and State of New York, have invented a new and useful Improvement on Cullen Whipple's Machine for Spinning Vegetable Fiber, which consists in increasing the speed of spinning by Whipple's process and in winding up the yarn as fast as it is thus spun; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, and to the figures thereon, in which—

Figure 1 is a top view of the machine with the bail inverted, looking down upon it. Fig. 2 is a side view of the same with the bail inverted. Fig. 3 is a cross-section of the same at A B. Fig. 4 is a cross-section of the same at C D without the flier.

The several parts of the machine are indicated and described by the following letters of reference on the drawings:

a is the frame or stand of the machine; *a''*, the driving-pulley for revolving the flier; *b b*, the flier-heads, the form of which is left to the judgment of the builder; *c c'*, the flier-arms, which are tubular to allow the passage of the yarn through them; *d d'*, the two shafts of the flier, which revolve on the bearings *d''' d''''*; *e e'*, the bail-heads, which hang and play upon the inner ends of the flier-shafts *d d'*, and which must be of such form and dimensions as to allow the flier to revolve around about them; *f f*, two rods or arms connecting and supporting the bail-heads *e e'*; *g*, the spool-barrel, around which the yarn is wound up; *g g'*, the spool-heads; *h*, an endless screw, on which plays back and forth the slide *i'* by means of the fork *i* upon the arm *i''*; *j j''*, guide-loops (pulleys may be substituted) on the slide *i'* and on the bail-head *e'* for regularly distributing the yarn as it traverses the length of the spool-barrel; *k*, a driving-pinion on the inner end of the flier-shaft *d'* for driving the capstan-gearing, with which it is connected; *l l'*, projections or bearers of any convenient form attached to the bail-heads *e e'* for supporting the bearings of the spool-shaft; *l''*, for keeping bearing *r* of the spool-shaft in the bearer *l'*; *m*, gear-wheel connected with the pinion *k* for driving the capstan-shaft *m'*; *m''*, bearer supported by the arms *f f* of the bail for holding capstan-shaft *m'*; *n*, capstan for drawing in and giving a greater or less twist to the yarn in its passage through the flier-tubes to the spool; *o*, friction gear-wheel connected with the gear-wheel *o'* and armed with the leather washers *p* and *p'* on each side of it for revolving the spool by friction; *q*, collar, and *q'* pin through the capstan-shaft *m'* for keeping collar in place; *r*, spool-shaft bearing in the bearer *l'*; *r'*, pinion cut on the end of the spool-shaft *r* for driving the endless screw by means of the intermediates *r''* and *r'''* as the spool revolves; ➡, the yarn, showing the direction in which it is drawn through the aperture *t* of the bearing *d''''* and the shaft *d*, thence through the tube *t'* of the arm *c'* of the flier, thence through the aperture *t''* of the shaft *d'* and bearing *d''*, thence around the capstan *n*, thence through the guide-loops *j''* and *j*, and thence around the spool-barrel *g*.

The nature of my invention consists in elevating the spool above the flier-shafts, so as to make it occupy nearly all the space between the arms of the flier and the bail, by which arrangement the heads of the flier can be shortened and a greater velocity given to the revolution of the flier in order to obtain greater speed in spinning by Whipple's process, and in regulating the revolution of the spool by means of a friction-wheel, so as to enable it to wind up the yarn, whose draft and twist are governed by a positive motion as fast as it is delivered and with less tension and less liability to break.

The frame or stand of the machine and the several parts of the latter, except the spool barrel and heads, should be made of the best steel and iron. The bail or frame B L, that hangs upon the flier-shafts *d d'* and within the flier-arms *c c'*, must be built sufficiently heavy, for in the revolution of the flier around and about it it is intended always to hang pendent by its own weight, though it may slightly oscillate upon its bearers without affecting the result in any way. The spool must always be hung above and parallel with the flier-shafts, so that its bearings must be equidistant between the arms of the flier and of the bail, and it may be made to revolve either with or against the flier by a suitable

arrangement of the gearing, though I prefer to revolve it against the flier because it moves more steadily. As the flier-shaft revolves on its axes it drives, by means of the pinion *k* through the intermediate *m*, the capstan *n*. The velocity with which the capstan revolves regulates the draft and twist of the yarn as it passes through the flier-arm tube *c*. With an increase of the diameter of either the capstan *n* or the gear-wheel *m* the draft of the yarn will be accelerated and the twist consequently lessened, and vice versa, and with any given regulation of the draft and twist by means of the capstan the winding up of the yarn on the spool will fully accord, for the motion given to the spool through the intermediate *o'* is governed and adjusted by the friction-wheel *o*, whose velocity is determined by the speed required to wind up the yarn as it is delivered from the capstan *n*.

Now I do not claim the principle or process by which Cullen Whipple gives a double twist in spinning vegetable fiber; but

What I do claim, and desire to secure by Letters Patent, is—

The elevation of the spool S P above the flier-shafts *d d'* so as to occupy the space between the flier and the bail, whereby the heads of the flier can be shortened and a greater velocity obtained for the revolution of the flier, thus increasing the speed of spinning by Whipple's process, and the regulation of the revolution of the spool S P by means of the friction-wheel *o*, whereby the yarn, whose draft and twist are governed by the capstan *n*, is wound up as fast as it is delivered with less tension and with less liability to break, the whole substantially as above described.

JESSE CARPENTER.

Witnesses:

B. McDOUGALL,

JOHN R. GRAY.