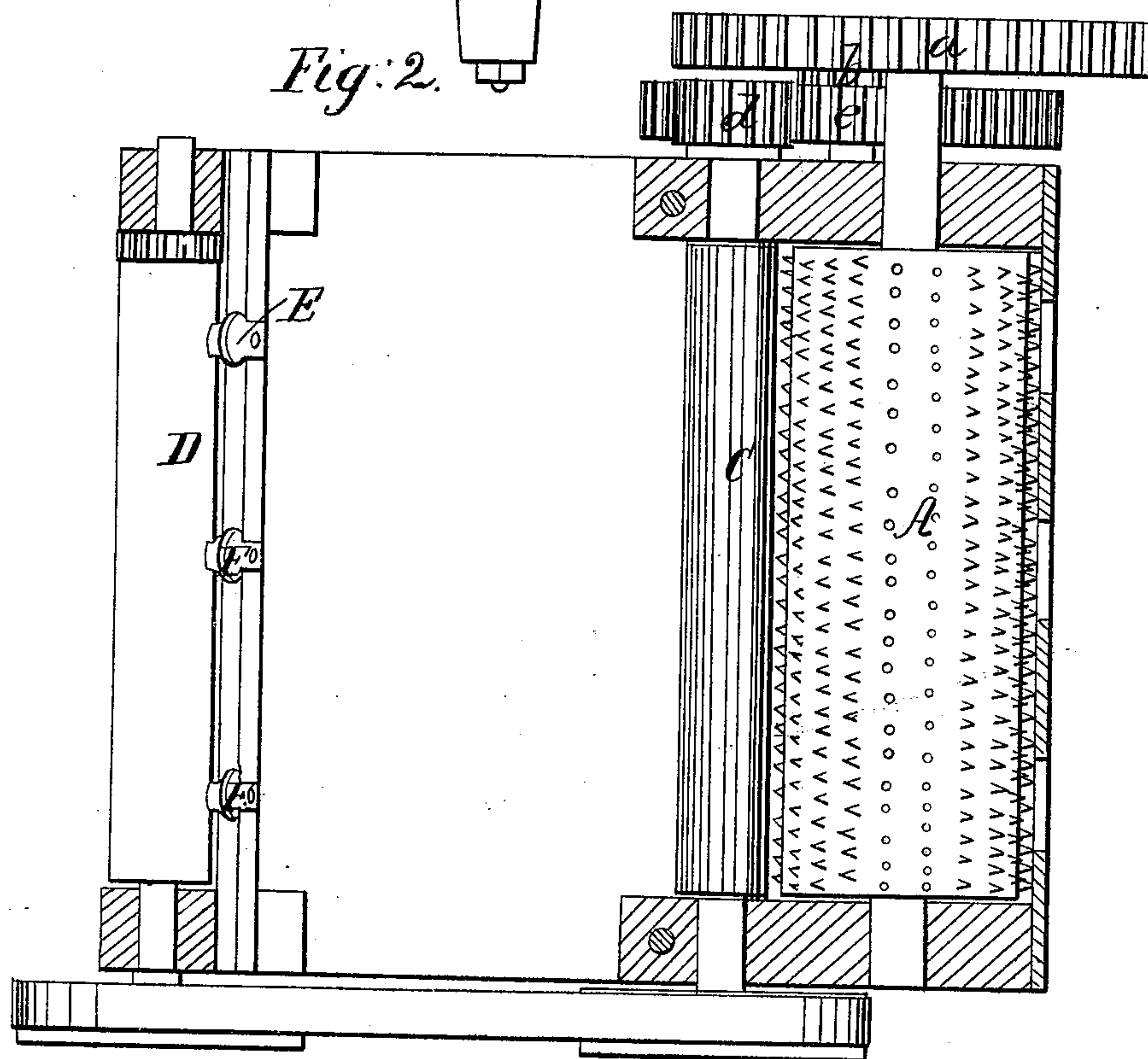
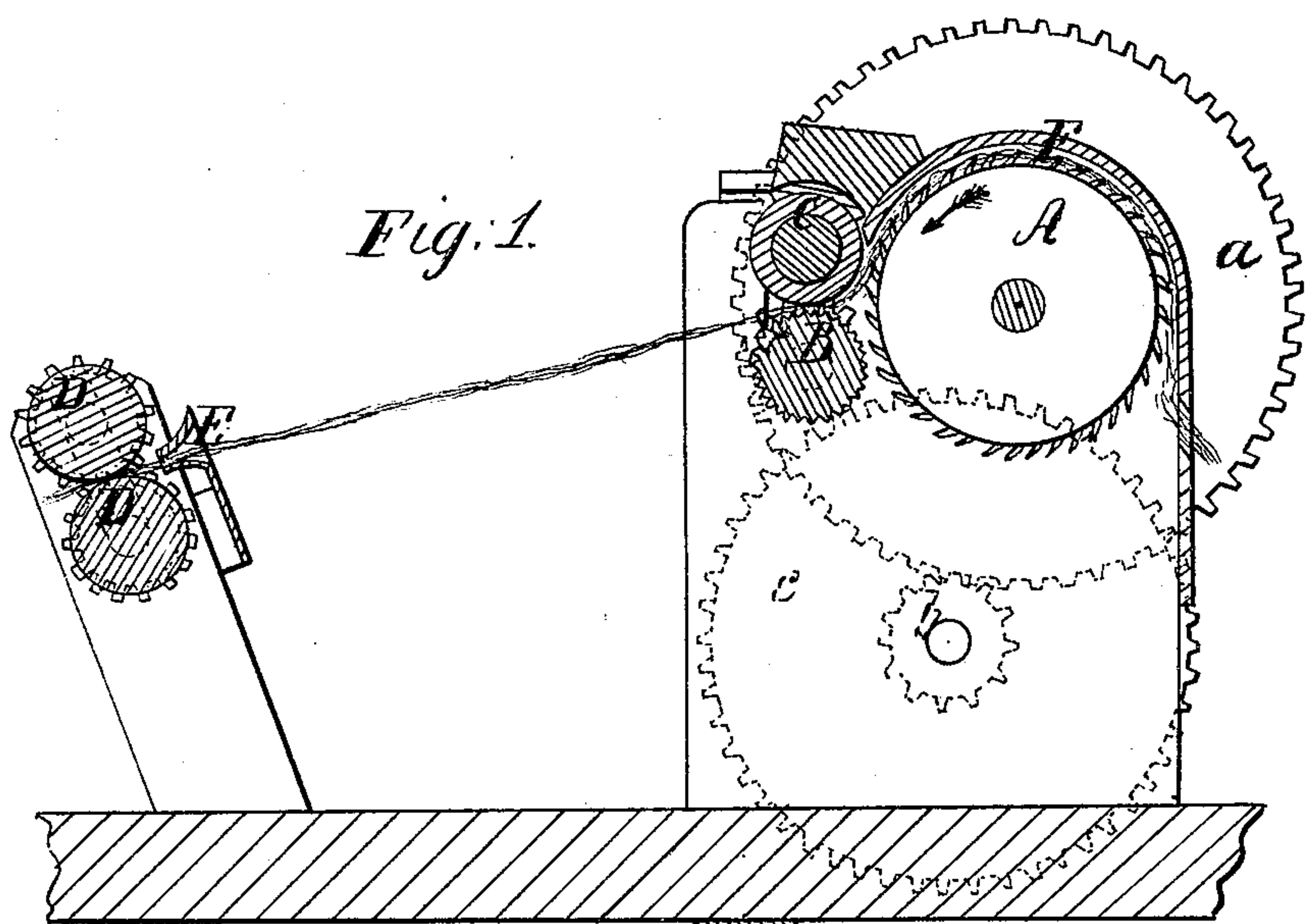


C. Whipple
Drawing for Spinning Mach.
N^o 19,394. Patented Feb. 16, 1858.



UNITED STATES PATENT OFFICE.

CULLEN WHIPPLE, OF PROVIDENCE, RHODE ISLAND.

DRAWING COTTON, &c.

Specification of Letters Patent No. 19,394, dated February 16, 1858.

To all whom it may concern:

Be it known that I, CULLEN WHIPPLE, of the city and county of Providence, in the State of Rhode Island, have invented a new and useful Improvement in the Process of Drawing Cotton, Wool, Flax, and other Fibrous Materials; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a vertical section of the principal parts of a drawing-frame, illustrating my invention. Fig. 2, is a plan of the same. Similar letters of reference indicate the same parts in both figures.

This invention consists in an improved method of drawing cotton, wool, flax, or other fibrous material viz: by means of a revolving toothed or card-clothed cylinder and a single pair of drawing rollers which draw the fibers directly from the teeth of the said cylinder, the surfaces of the said rollers revolving as much faster than the surface of the cylinder as is requisite to produce the desired degree of drawing. This mode of drawing produces a more uniform sliver, especially from stock that is of different lengths, as wool and cotton mixed, than the ordinary mode of drawing by four or six rollers.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, is the toothed cylinder, having its journals fitted to rotate in suitable fixed bearings in the framing of the machine, and covered by a concave F.

B, C, are the two drawing rollers, of the kind commonly employed, having their journals fitted to rotate in suitable bearings at such a distance from the cylinder A, as to take the shortest fibers from its teeth. The drawing rollers are geared with the cylinder by gears *a, b, c, d*, to rotate at several times the speed of the cylinder, according to the degree to which it is intended to reduce the grist of drawing. The fibers are drawn directly from the teeth of the cylinder which revolves toward the drawing rollers as indicated by the arrow upon the cylinder in Fig. 1, so as to supply fresh fiber continuously to be subjected to the drawing operation; the long and short fibers being

drawn uniformly, so that a perfectly uniform thread will be produced from the drawing, whatever the degree of drawing to which it is subjected.

D, D, are a pair of rollers with tunnel mouths E, E, in front of them, said rollers rotating at about the same or a not less speed than the drawing rollers to condense the slivers as they come from the drawing rollers.

This mode of drawing possesses the advantage over all other modes, of requiring no variable adjustment for stock of different lengths; as when the drawing rollers are adjusted relatively to the toothed cylinder, so as to take hold of and draw the shortest fibers, they suit all lengths.

I do not claim the use of a toothed cylinder for drawing when arranged between two pairs of drawing rollers, as I am aware that such arrangement is employed in gilling wool and flax.

I am aware that in the patent of W. H. Howard, May 15th, 1855, for an improvement in condensers for fibrous materials, a pair of small rollers are used in combination with the "doffer;" but Howard's arrangement is different from mine and could not be used for the same purpose. He does not employ any toothed cylinder A, nor does he use any drawing rollers.

The ordinary drawing process in spinning, or on speeders or drawing frames of all sorts, has formerly been done on the jack, by stretching the end the same as the old mode of hand spinning by running out say 30 inches, and stop the rollers, and run the carriage with the spindles 60 inches, thus drawing 30 inches in 60 of yarn; whereas I place the cylinder A as shown in the drawing, and run the rollers B, C, as much faster than the cylinder as I wish to reduce the grist, whether it be two or six revolutions which enables me to make the roving larger and draw much more on the spinning, and using the same mode of spinning as for cotton except the cylinder, which will reduce the cost and improve the quality. It will also enable me to draw, in the process of making roving or worsted, which is now drawn by the gill, by placing rollers on each side at a distance according to the length of staple, and change the distances by moving the rollers back, and forward, as we use

shorter or longer staple; but in this mode of drawing, the staples bear or press around a portion of the periphery or face of the roller, as is set forth, and the small rollers
5 in front nip the staple and draw from the teeth the long as well as the short staple at the same time, which gives a more uniform roving or thread, and takes much less work to keep it in its place. I know that gills
10 are used for drawing wool; but my method is not in any way like them, as rollers stand on each side of the porcupine roller to hold the staple, but this has nothing to hold one end of the staple, except drawing through
15 the teeth of the cylinder A, upon which the staple is caused to bear or press.

Having thus described my invention what

I claim as new, and desire to secure by Letters Patent, is:

The method herein described of drawing 20 cotton, wool, flax, or other fibrous material, viz., by means of a revolving toothed or card-clothed cylinder A, and a single pair of drawing rollers B, C, which draw the fibers directly from the teeth of said cylinder A; the surfaces of said rollers B, C, revolving as much faster than the surface of cylinder A, as is requisite to produce the
25 desired degree of drawing.

CULLEN WHIPPLE.

Witnesses:

W. SMITH,
JOSIAH S. SHANNON.