

L. Hull
Braiding Mach.

N^o 42, 663.

Fig. 2.

Patented May 10, 1864.

Fig. 1.

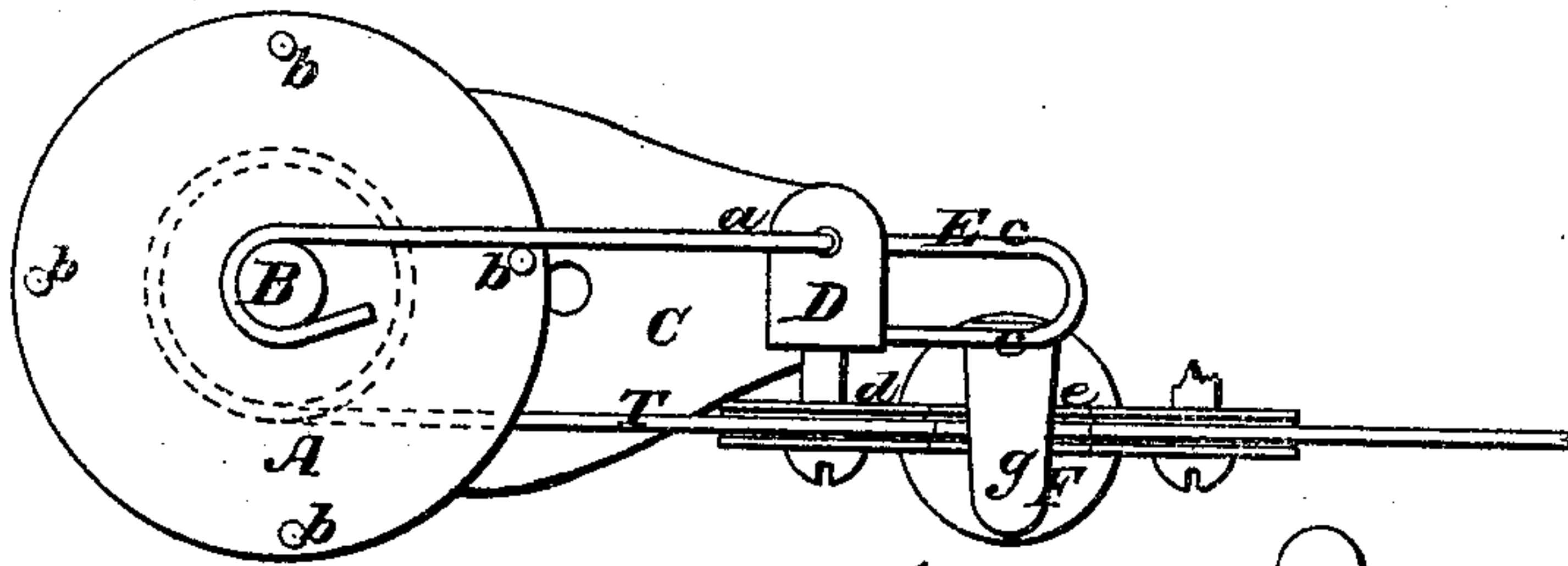
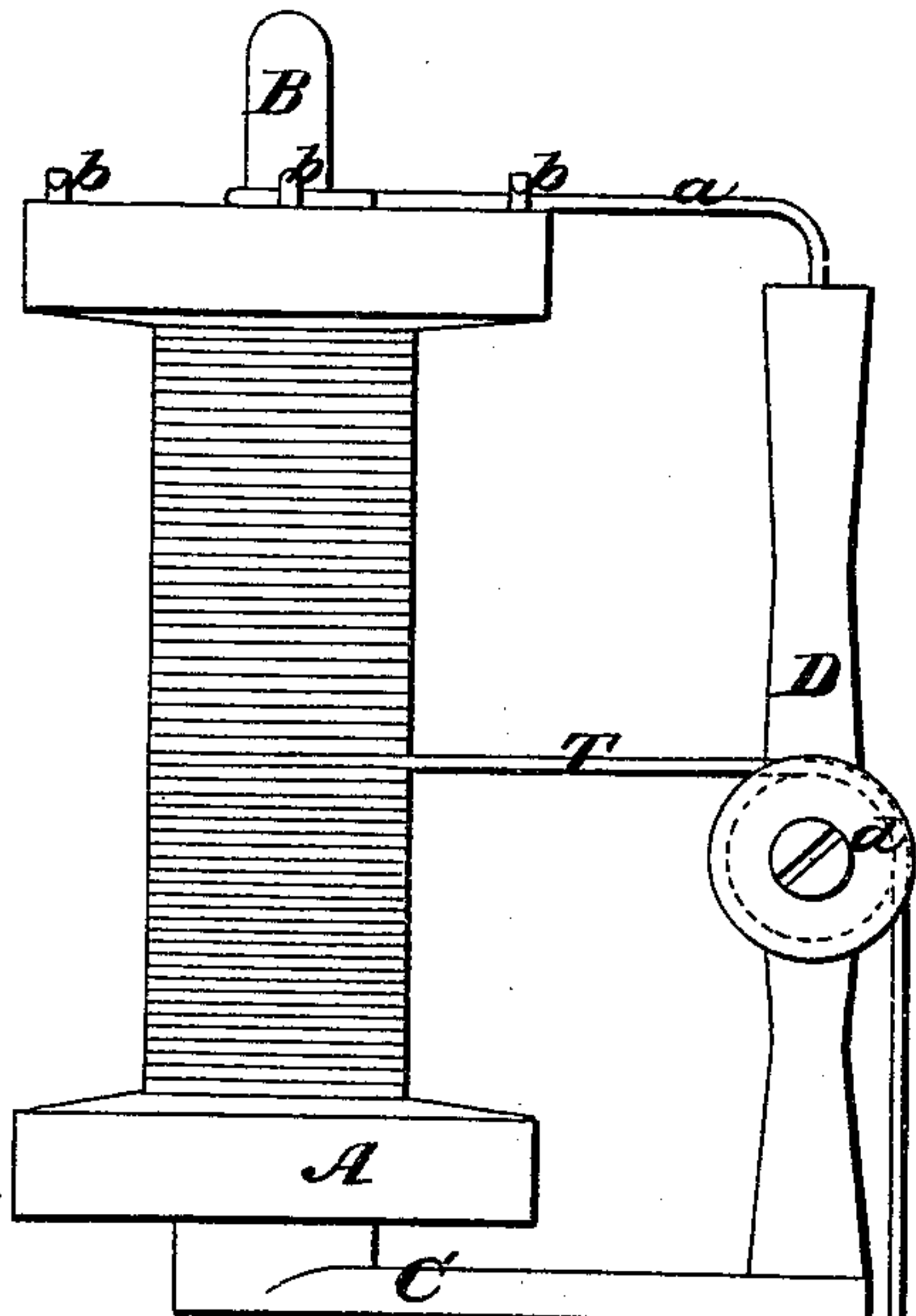
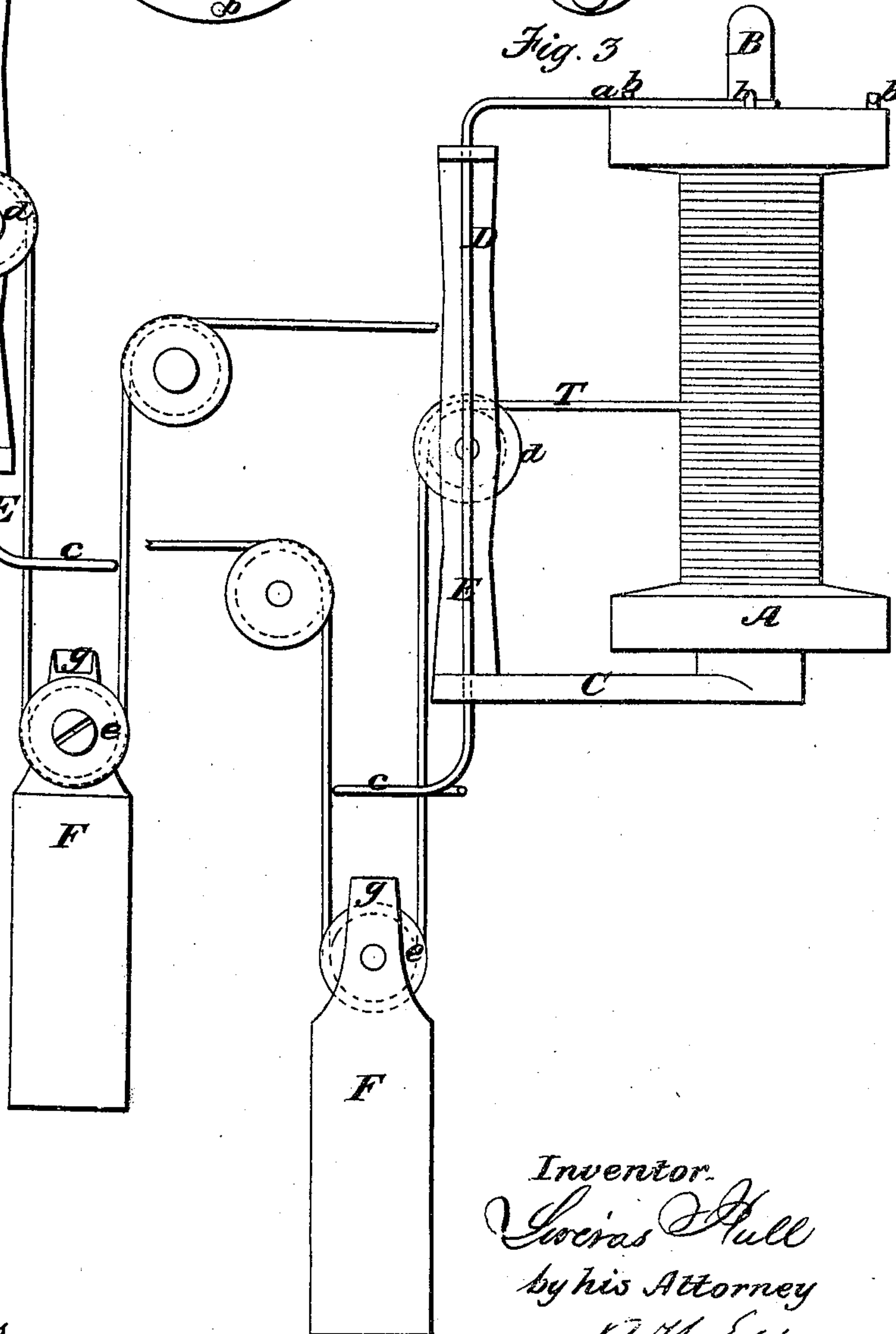


Fig. 3



Witnesses.
H. P. Hale Jr
Frederick Curtis.

Inventor
 Lucas Full
 by his Attorney
 R. M. Eddy

UNITED STATES PATENT OFFICE.

LIVERAS HULL, OF CHARLESTOWN, MASSACHUSETTS.

IMPROVEMENT IN THREAD TENSION AND DELIVERY MECHANISM FOR BRAIDING MACHINES, &c.

Specification forming part of Letters Patent No. 42,663, dated May 10, 1864.

To all whom it may concern:

Be it known that I, LIVERAS HULL, a resident of Charlestown, in the county of Middlesex and State of Massachusetts, have invented an improved thread tension and delivery mechanism for apparatus for either braiding or weaving; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, and Figs. 2 and 3, side elevations, of a bobbin and its stand, provided with my invention.

My improved thread tension and delivery mechanism differs from others in use in having to its latch or pawl an extension or slider arranged to slide vertically within the supporting-frame of the bobbin and to project from the frame so as to be met and elevated by the tension-weight, and elevate the latch, when the said weight may be moved sufficiently by the draft of the thread.

In the drawings, A denotes a bobbin or spool, placed on a vertical spindle, B, projecting upward from a frame, C. This frame C is provided with a post, D, through which there extends and is applied so as to be capable of sliding freely in vertical directions, a rod, E, which just above the post is bent at right angles and extended toward and made to encircle the spindle B, the part *a* so bent being a latch or pawl to operate with a series of teeth or studs, *b b b b*, projecting from the upper head of the bobbin and disposed at proper distances asunder. The rod E at its foot is formed with an elongated eye or open arm, *c*, projecting horizontally from the rod. There is a grooved roller, *d*, applied to the post D, and there is also another such roller, *e*, applied to a tension-weight, F, each roller being free to revolve on a pin or journal. The thread T from the bobbin should be led to and partially around the periphery of the roller *d*, thence down through the eye *c*, thence underneath and around the roller *e* of the

weight F, and thence upward to and over a guide-pulley or to the position where it is to be either woven or braided.

In the process of weaving or braiding the thread, as the case may be, the weight by hanging on the thread produces the proper tension of it. As the thread may be woven or braided, it will raise the weight so as to cause it or the projection *g* of it to be drawn up against the foot of the slider E, and so as to force the slider upward and cause it to elevate a latch *a* above the series of studs *b b b b*. As soon as this may have taken place, the bobbin will be free to revolve on its spindle, and by the draft of the weight on the thread will be caused to do so and give off or deliver thread, which it will do until the latch may have dropped by its gravitating power and the bobbin been estopped from rotation by another of the teeth being brought into contact with the latch.

I am aware that it is not new to have the latch raised by a weight elevated by the thread, in which case, as in the movable racers of braiding-machines, the weight has been so applied to the racer as to be movable with it and incapable of falling out of or from or below the racer. With my application of the weight it is independent of the frame which supports the bobbin, and can fall below it, and thus can fall a much greater distance than the length of the bobbin.

I do not claim, as in the racers of braiding-machines, the application of the weight to the supporting-frame of the bobbin so as to be carried thereby or travel with it.

I claim—

The combination and arrangement of the guide-roller *d*, the frame C, the bobbin A, (or the spindle B,) the rod E, and the weight F.

LIVERAS HULL.

Witnesses:

R. H. EDDY,
F. P. HALE, Jr.