

J. Gibbs.

Winding Yarn for Making Tape.

N^o 51,171.

Patented Nov. 28, 1865.

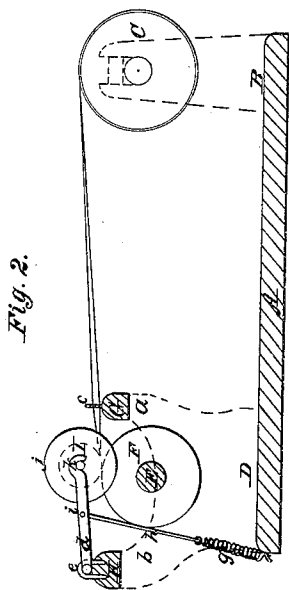


Fig. 2.

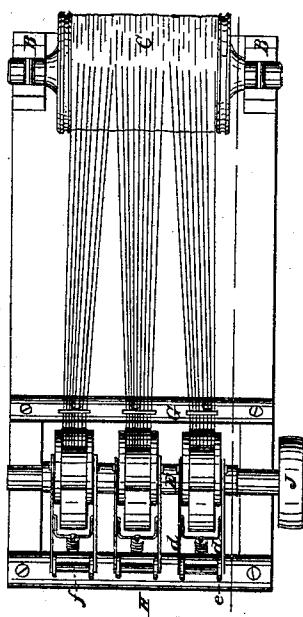


Fig. 1.

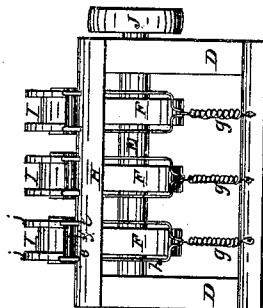


Fig. 3.

Witnesses,

Wm. Fuller
Thos. H. Dodge

Inventor

J. Gibbs

UNITED STATES PATENT OFFICE.

I. GIBBS, OF WARREN, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR WINDING YARN FOR WEAVING TAPE.

Specification forming part of Letters Patent No. 51,171, dated November 28, 1865.

To all whom it may concern:

Be it known that I, I. GIBBS, of Warren, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in the Mode of Winding Yarn for Weaving Tape; 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, in which—

Figure 1 represents a top or plan view of a machine arranged for winding sized yarn according to my invention. Fig. 2 represents a longitudinal section, and Fig. 3 represents a front view.

In the drawings, A represents the frame of the machine, with two uprights, B B, at the rear, in which the yarn-beam C is placed, as indicated in the drawings.

At each side of the front of frame A is attached a standard, D, with arms *a* and *b*.

Upon the top of standards D and between the arms *a* and *b* rests the winding-shaft E, upon which is fastened a series of narrow wheels or pulleys, F F F.

A guide-supporting piece, G, is fastened to the top of the arms *a a*, to which is fastened the yarn-guide *c*.

To the top of the arms *b b* is fastened a cross-piece, H, upon which the bent holding-arms *d* are fastened by staples, *e e*, which encircle the round part *f* of arms *d d*, as fully shown in the drawings.

Arms *d d* are drawn down by springs *g g g*, attached to the lower part of the bent wire rods *h*, the ends *i i* hooking into the arms *d d*.

I I I are the narrow tape-yarn beams, having flanges *j j*, which fit down by the sides of the narrow wheels or pulleys F F F on shaft E, while the hooked ends *k* of the arms *d* rest upon the ends of the journal of the tape-yarn beams, as fully shown in the drawings.

The operation is as follows: The yarn is sized and dried as it is wound upon beam C. Beam C is then placed in position, as shown in the drawings, when the threads are separated and passed through the thread-guides *c* and around the tape-yarn beams I. Power is now applied to pulley J upon the end of shaft E, thus causing the wheels or drums F to revolve, which wheels or drums F, acting upon the surface of the tape-beams I, cause them in turn to revolve by friction, whereby the yarn is unwound from

the large beam C and rewound upon the small tape-beams I in a uniform and even manner.

It will be observed that it makes no difference how few or how many threads may be selected to be wound upon the various tape-beams I, since they are all wound by friction, and consequently one tape-beam may fill much faster than another having a less number of threads wound thereon, and yet the yarn will be wound upon both in an even and uniform manner. I have only shown three tape-beams in the drawings, but in practice a much greater number are used.

From the above it will be seen that the manufacturer of tape can go to a cotton-mill and purchase a beam of sized cotton-yarn designed for another purpose, and then rewind it by my process or mode upon the tape-beams in an expeditious and economical manner, and can at the same time wind upon and fill tape-beams for weaving different widths of tape, without change of machinery, all at the same time.

To illustrate the great advantage of my mode of winding the sized yarn upon the tape-beams over the modes heretofore practiced I will describe the old modes.

One mode has been to make tape-yarn beams with holes through them, so that they could be slipped upon a shaft and then fastened thereto, so that they would all move with the shaft when the latter was revolved. By this mode tape-beams with a different number of threads could not be well filled at the same time, since those having the greatest number of threads would be filled first; and, as all the beams had the same positive motion, the tape-beams having the greatest number of threads would wind the hardest, and the threads so wound would have to do all the work of turning the large beam C, while the yarn wound upon the tape-yarn beams having the least number of threads would be wound loosely and snarl and knot up.

The other mode consisted in sizing and drying the yarn in the skein and then winding it upon the tape-yarn beams. In manufacturing tape it does not pay to fit up machinery for dressing the yarn; nor does yarn sized in the skein make good tape, since it is rough, the fibers not having been brushed down. So expensive and difficult have been the modes of

preparing and winding the yarn upon the tape-yarn beams that until quite recently the manufacture of tape has been confined to foreign countries, where cheap labor could be obtained.

By the introduction of my invention the manufacture of tape has commenced in this country and with every prospect of successfully competing with foreign manufacturers. The tape-manufacturer can purchase, as before stated, from the cotton-mill a beam of sized yarn, and then quickly rewind it by my mode upon tape-yarn beams having different numbers of threads, all the yarn being wound in a uniform and even manner upon the different beams. Again, in case one tape-beam is filled before the others, it can be removed and an empty beam put on without removing the others, and the winding proceeded with.

The beams I can be removed and replaced by simply lifting up the arms *d d*.

Weights may be used instead of the springs *g* to hold the arms *d d* down.

Having described my improved mode of winding yarn for weaving tape, I would observe that I do not wish to be understood as laying claim to the use of a pressure-roller revolving between the flanges of the spool and to giving motion to it by frictional contact; but

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. Rewinding the sized yarn from beam *C* upon a series of narrow and independent yarn-beams, *I*, by a series of friction-wheels, *F*, as and for the purposes stated.

2. The combination of the self-adjusting arms *d d* and friction wheels or drums *F* with the beams *I*, substantially as and for the purposes set forth.

I. GIBBS.

Witnesses:

W. L. FULLER,
THOS. H. DODGE.