

A. Loiseau. Yarn Covering Mach.

Sheet 1. 2. Sheets.

N^o 37,584.

Patented Feb. 3, 1863.

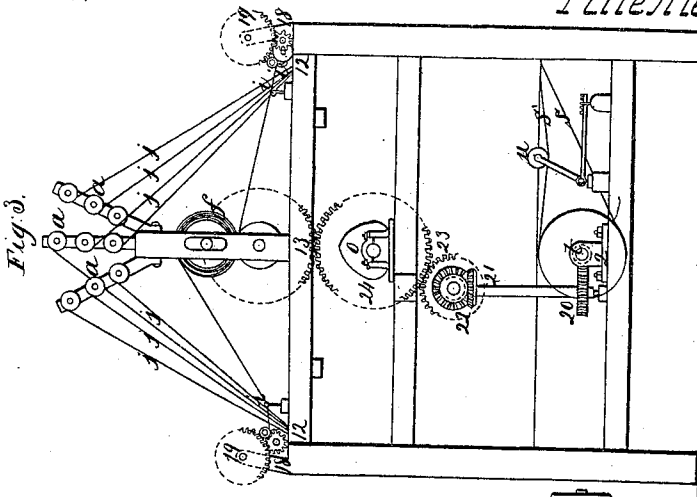


Fig. 1.

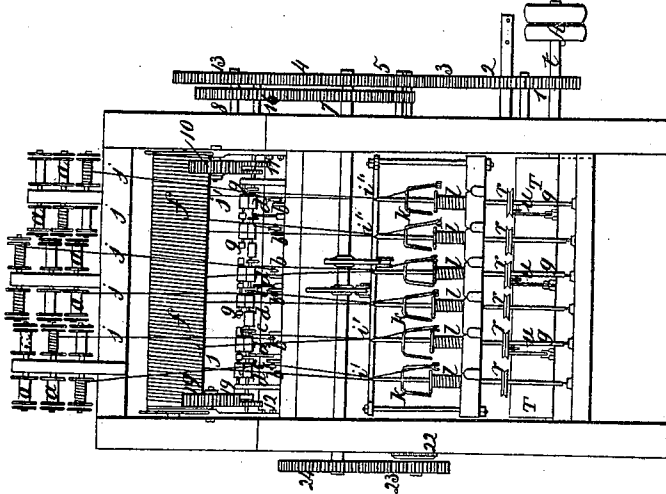
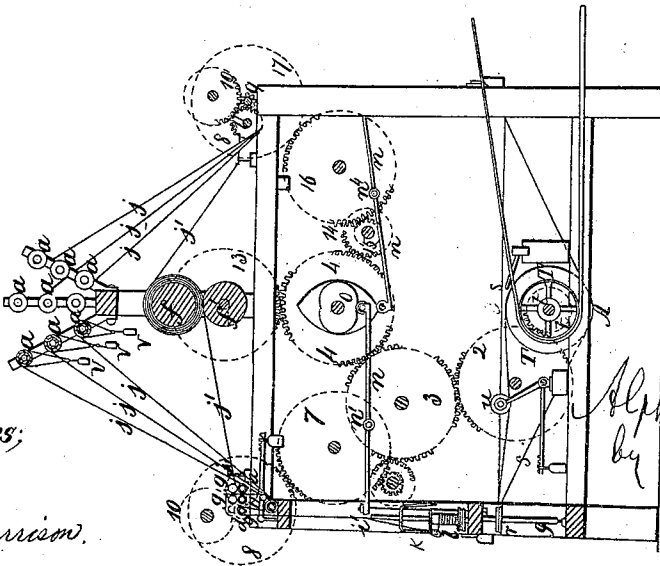


Fig. 2.



Witnesses;
Geo. E. Peirce
Wm. H. Harrison.

Inventor;
Alphonse Loiseau
by A. Pollock & Co.

UNITED STATES PATENT OFFICE.

ALPHONSE LOISEAU, OF BERNAY, FRANCE.

IMPROVEMENT IN MACHINERY FOR COATING THREAD OF ONE FIBER WITH ANOTHER FIBER.

Specification forming part of Letters Patent No. 37,584, dated February 3, 1863.

To all whom it may concern:

Be it known that I, ALPHONSE LOISEAU, of Bernay, in the Empire of France, have invented certain new and useful improvements in threads for weaving and machine for making the same, which is also applicable to the winding or coating of one thread with another; and I hereby declare the following to be a full, clear, and exact description of the same.

The invention consists in an arrangement of machinery for coating or covering a core with a thread of wool, or for surrounding a core of any material with a thread of any desired material.

I proceed to describe the machine, in which a cotton core is to be covered with a thread or sliver of woolen waste. Upon a suitable frame there are mounted bobbins carrying the woolen threads, and a roller on which the cotton is wound. There are pressure-rollers through which the cotton thread passes, and which keep it in a state of sufficient tension while the woolen thread is being wound on it. Both threads are carried down, and the woolen thread through a flier, which, being caused to revolve, completely covers the core, and the mixed thread is then wound onto a bobbin or reel. The frame upon which the reel is mounted has an up-and-down motion, in order that the thread may be regularly wound thereon. In the same machine several threads are being manufactured at the same time, there being as many receiving-bobbins as finished threads. The various motions are all derived from one main shaft.

Figure 1 of the accompanying drawings is a front view of a machine constructed according to this invention. Fig. 2 is a view taken on the right-hand side, and Fig. 3 is a view taken on the left-hand side, of the same machine.

The same letters of reference refer to like parts in all the figures.

a a are bobbins carrying woolen threads *jj*.

v v are counter-weights suspended from the bobbins.

b b are grooved guide-pulleys.

c c are throats or collars formed or fitted on the end of grooved rollers *d d*.

i i are guides mounted on spindles *q*, which carry the fliers *k k* and the reels *l l*.

f is a roller or cylinder, carrying the cotton threads *j' j'*.

i i are guides fitted to the frame, and *g g* are pressure-rollers. The cotton threads *j' j'* are led from the roller *f* through the guides *i*, between the rollers *d d* and *g g*, to the guides *i'*. The woolen threads *jj* are led from the bobbins *a a*, beneath the guide-pulleys *b b*, back and over the throats or collars *c c* to the guides *i'*. The cotton and woolen threads meet at an angle of the guides *i'* and pass on together to the fliers *k k*. On motion being communicated to the said fliers, the woolen threads become twisted around the cotton threads, the latter being kept in sufficient tension by the pressure-rollers *d d* and *g g* while the twisting is taking place, and the two threads twisted into one (the cotton thread forming a core to the woolen) are wound onto the reels *l l*. The reels *l l* have an up-and-down motion imparted to them in order to produce the necessary regularity in the winding of the thread, and this motion is produced in the following manner: The reels are arranged on a frame, by preference in wood, which is in connection with the machine through a horizontal lever, *n*, Fig. 2, having its fulcrum at *n'*. One end of this lever carries a small roller, which is acted on by a cam or heart-wheel, *o*, fixed to the wheel 4, in such manner that as the heart-wheel *o* revolves it through the lever *n* imparts to the frame which carries the reels an up-and-down motion.

r r are pulleys mounted on the vertical spindles *q q*; and *T* is a drum or cylinder mounted on a shaft, *t*.

s s are straps passing round the pulleys *r r* and the drum *T*, by which means rotary motion is communicated to the spindles *q*. By employing an auxiliary pulley, *u*, one strap will drive three or more of the pulleys *r r*. Each pulley *u* is furnished with a counter-weight in order to stretch the straps or bands *s*.

Motion is imparted to the machine through the fast pulley *A*, mounted on the shaft *t*, which communicates motion to the cog-wheels 1, 2, 3, 4, 5, 6, and 7.

The grooved rollers or cylinders *d* and the wooden rollers *g* are driven in the following manner: The cog-wheels 8 and 9, which are mounted on the same shaft, drive through

the wheel 7 the first row of cylinders. (Shown at Fig. 2.) The wheel 9 gears into the wheel 11. The latter wheel, being mounted on the same shaft as the third row of cylinders, communicates motion to all in that row. The shaft on which the wheel 9 is mounted also carries the wheel 18, Fig. 3, which gears into the wheel 19, and the latter wheel gearing into the wheel 12, a rotary motion is thus communicated to the shaft on which the intermediate row of cylinders is mounted.

For the cylinders on the back part of the machine an arrangement is adopted similar to that described for driving the other cylinders, the toothed wheels 14, 15, 16, and 17 being employed for communicating the intermediate motion. The roller *f*, carrying the cotton thread, is put in motion by the lower *f'*, driven by the wheel 4 through the wheel 13.

The action of the eccentric *o* is produced in the following manner: The shaft *t* carries an endless screw, *z*, Fig. 2, gearing into a horizontal wheel, 20, the shaft of which carries a pinion, 21, gearing into a vertical pinion, 22, carrying on its axis a wheel, 23, which, gearing into the wheel 24, communicates motion to the shaft on which the eccentric *o* is mounted.

The machine just described can also be employed for the "doubling" of silk, wool, yarn, cotton, threads, and the like, whether they are used separately or combined with other materials.

Thus Figs. 1 and 2 in plate of drawings No. 2 represent the apparatus above described in a more simplified form. A in said drawings shows part of a carding-engine, known as the "American card-drum," upon which the

wool is patted and the woolen slivers, *a*, formed. The slivers are seized by corresponding carding-disks B, and are conducted to another card disk or roller, C. The cotton thread *a'* is let in between the two last-named rollers or disks, and is there covered with the wool, as above shown and described. The mixed thread issues from between the two rollers, and is received on the endless apron E, where it is duly felted by the action of the cylinder F, to which a rotary and rectilinear movement is imparted. I is the bobbin that receives and winds up the finished thread.

The distinctive characteristics in this machine are, first, entirely surrounding the thread or core by a material intended to be alone visible; second, regulating the tension of the threads while being covered and wound, in such manner that the coating filaments are not injured; third, by the simultaneous double action of the machine a great quantity of material is produced.

Having now described the nature of the said invention, and in what manner the same is to be performed, I declare that I claim—

The arrangement of machinery for coating or covering a core with a thread of wool or for surrounding a core of any material with a thread of any desired material, hereinbefore described, and illustrated in the accompanying drawings.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

Witnesses:

JAMES W. BROOKS,
L. CLAËZ.

A. LOISEAU.