

(No Model.)

T. BRIGGS & E. WEBB.

DOUBLING AND WINDING MACHINE.

No. 342,063.

Patented May 18, 1886.

FIG. 3.

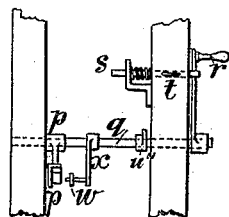


FIG. 4.

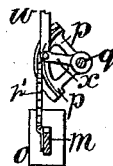


FIG. 1.

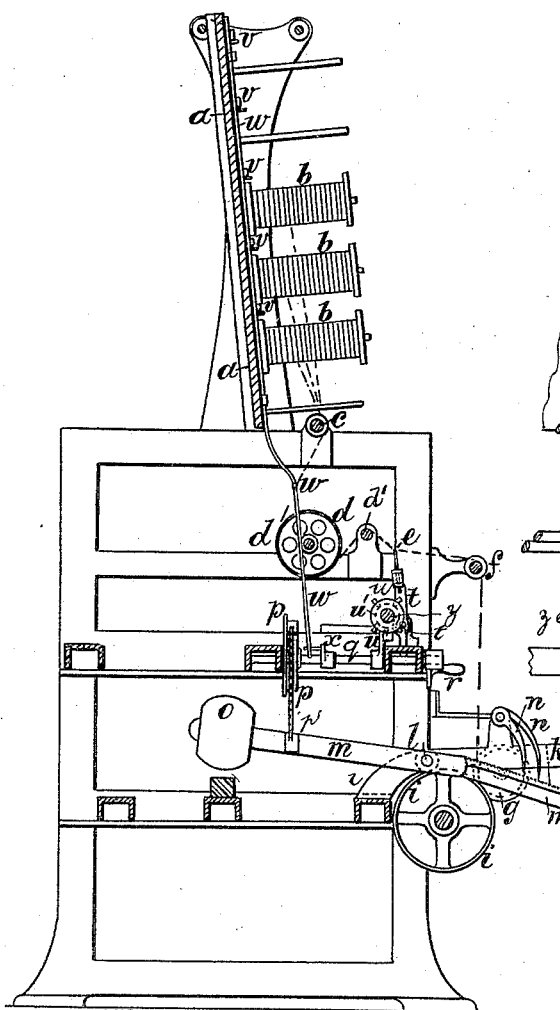
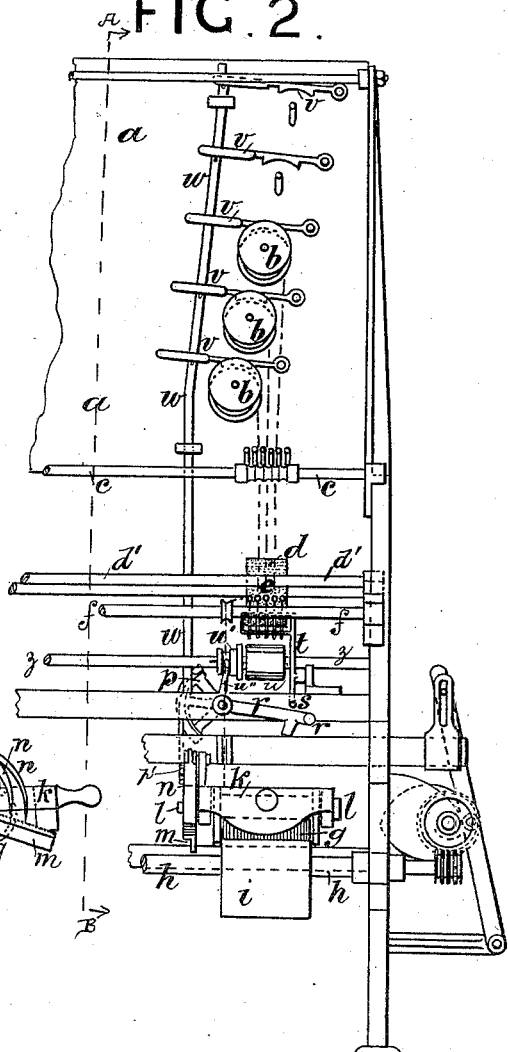


FIG. 2.



Witnesses.

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T. Briggs & E. Webb  
by their Attorneys  
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# UNITED STATES PATENT OFFICE.

THOMAS BRIGGS AND EDWARD WEBB, OF SALFORD, COUNTY OF  
LANCASTER, ENGLAND.

## DOUBLING AND WINDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 342,063, dated May 18, 1886.

Application filed May 6, 1885. Serial No. 164,518. (No model.) Patented in England January 31, 1884, No. 2,421.

*To all whom it may concern:*

Be it known that we, THOMAS BRIGGS and EDWARD WEBB, subjects of the Queen of Great Britain and Ireland, and residing at Salford, in the county of Lancaster, England, have invented Improvements in Doubling and Winding Machines, (for which we obtained a patent in Great Britain, No. 2,424, dated January 31, 1884,) of which the following is a specification.

This invention consists of improvements in the construction of machines known as "doubling-winding frames" for doubling and winding yarns or threads in two or more folds of equal lengths and tension, laid together side by side, without twisting, upon one bobbin; and in order that the same may be clearly understood, we have annexed hereto a sheet of drawings, and have marked the same with figures and letters of reference corresponding with those in the following explanation thereof.

Figure 1 is a transverse section of a doubling-winding frame constructed according to our invention, the section being taken through the line A B in Fig. 2. Fig. 2 is a front elevation of part of the machine, showing one section thereof, parts being broken away; and Figs. 3 and 4 are detached views of parts of the stop-motion hereinafter described.

In carrying out our improvements we place the creel *a a*, containing the bobbins *b b b* of single yarn, above the frame, and (contrary to the usual method in winding, but similar to the ordinary arrangement in twisting) we draw the threads downward over a rod, *c c*, then round a roughened roller or guide-pulley, *d*, over the rod *d'*, and through the eyes of the drop-pins *e*, from whence they pass over a rod, *f*, direct to the "winding-on" bobbin *g*. Across the front of the frame, about eighteen inches above the floor-line, extends a shaft, *h*, fitted with drums *i*.

Each of the bobbins *g* for the reception of the yarn rests upon and is driven by frictional contact with one of these drums *i*, and the bobbin *g* is carried by an inclosing-frame, *k*, which is hinged to a rod, *l*, behind the center of the drum *i*, the hinge admitting of the necessary rise of the bobbin *g* in the process of filling. Pivoted at one side of this frame *k*,

upon the same rod *l*, is a lever, *m*. On the upper side of the front end of this lever is cast or cut a number of ratchet-teeth, into which a pawl or pawls, *n*, attached to the side of the bobbin-frame *k*, engages.

We prefer to use two pawls *n*, one set so as to engage in the teeth slightly (say about one-half a tooth) after the other, so as to insure more certain action without slipping. At the opposite end of the lever *m* is attached a weight, *o*, sufficient to raise the bobbin *g* and frame *k* out of contact with the driving-drum *i*. Attached to the same end of the lever *m* as the weight *o* is a chain, *p'*, which passes round a small pulley or sector, *p*, fixed upon a rod, *q*, supported by the rails of the frame immediately over the aforementioned lever *m*. At the opposite end of the rod *q*, just referred to, and in front of the frame, is a small crank or handle, *r*, which, when forced down, turns the rod *q* and the small pulley or sector *p*, upon which the chain *p'* is wound, thus raising the weight *o* and the end of the lever *m*, and at the same time lowering the opposite end, which supports the bobbin-frame *k*, and bringing the bobbin *g* into contact with the friction-drum *i*.

The small crank or handle *r*, above referred to, is held in position by a latch, *s*, Fig. 3, acted upon by a small lever, *t*, which is attached to the oblong frame containing the usual detector or drop pins, *e*, Fig. 2. Immediately behind and just below this oblong frame is a revolving shaft, *z*, upon which are fitted a number of bosses, *u*, with projections thereon—one boss to each set of drop-pins—so that when a thread breaks or a bobbin runs empty its corresponding pin *e* drops, and one of the projections of the boss, coming into contact with it, acts upon the lever *t*, supporting the oblong frame. This withdraws the latch *s* and releases the handle *r*, causing the weighted end of the lever *m* to fall and raise the opposite end. The bobbin *g* is thereby raised out of contact with the drum *i*, and at once the winding is stopped.

We prefer to mount the boss *u* loosely on the shaft *z*, and to cause it to revolve by means of a boss, *u'*, provided with a face-plate and projection, and mounted on a feather on the said shaft. This boss *u'* is moved away from

the boss *u* by the small lever *u''* on the transverse rod *q* when the "section" is thrown out of gear, and thus the projections on the boss *u* are not constantly coming into contact with the drop-pin *e* when the section is stopped.

Another part of the invention consists in the construction of separate brakes, *v v*, acting simultaneously upon each of the bobbins *b b b* in the creel *a*, in such a manner as to prevent them from overrunning upon the sudden stopping of the machine. These are so arranged that immediately the machine is started the brakes are raised out of contact with the bobbins by a rod, *w*, worked by a small lever, *x*, on the before-named rod *q*, on which is fixed the crank or handle *r* for starting the winding.

We claim as our invention—

1. The combination of the driving-drum *i* and pivoted frame *k*, carrying the bobbin to be driven, and pawls pivoted to said frame, with a weighted pivoted lever, *m*, having ratchet-teeth, with which the said pawls engage, and devices, substantially as described, for retaining and releasing the lever *m*, all substantially as set forth.

2. The combination of the creel carrying a number of bobbins, and brake-levers *v* for the

bobbins, with a lifting-rod, *w*, for the brake-levers, weighted lever *m*, and connecting devices, and means, substantially as specified, for retaining and releasing the lever *m*, to operate the rod, all substantially as described.

3. The combination of the rod *q*, handle *r*, sector *p*, chain, weighted lever *m*, driving-drum *i*, and frame *k*, and pawls carried thereby, with a latch, *s*, to engage with the handle *r*, lever *t*, carrying the detector-pins, boss *u*, and driving mechanism for the latter, all substantially as specified.

4. The combination of the detector-pins, rotating shaft *z*, boss *u*, loose thereon, and sliding boss *u'*, with rod *q*, having a lever, *u''*, and devices, substantially as set forth, for retaining the rod *q* and releasing it on the failure of a thread, all substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

THOS. BRIGGS.  
EDWARD WEBB.

Witnesses:

JNO. HUGHES,  
J. ERNEST HUGHES.