(No Model.)

S. M. HAMBLIN & W. H. GOLDSMITH.

SPOOLING MACHINE.

No. 421,400. Patented Feb. 18, 1890.

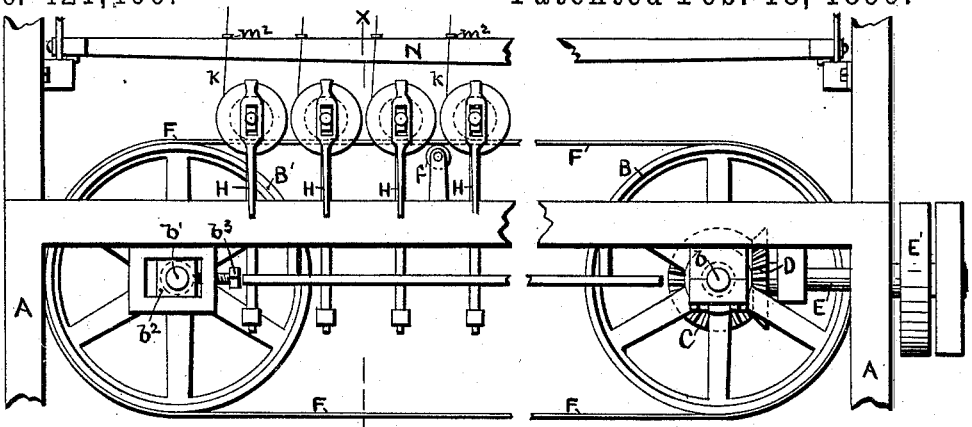

FIG. 1.

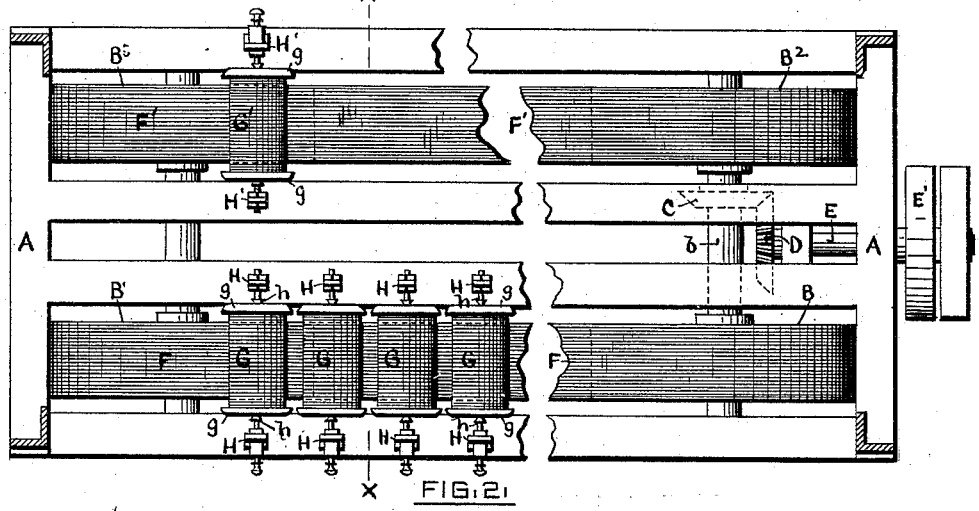

FIG. 2.

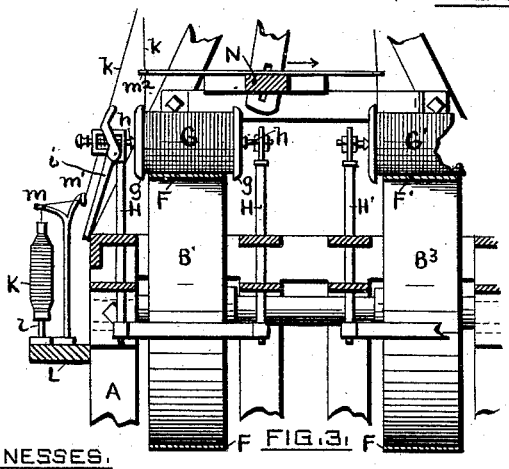

FIG. 3.

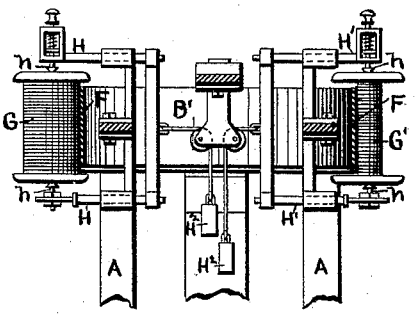

FIG. 4.

WITNESSES.

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UNITED STATES PATENT OFFICE.

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SPOOLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 421,400, dated February 18, 1890.

Application filed May 24, 1889. Serial No. 311,929. (No model.)

To all whom it may concern:

Be it known that we, STEPHEN M. HAMBLIN, of New Bedford, in the county of Bristol and State of Massachusetts, and WILLIAM H. GOLDSMITH, of Fall River, in the county of Bristol and State of Massachusetts, have jointly invented a new and useful Improvement in Spooling-Machines; and we do hereby declare the following specification, taken in connection with the accompanying drawings, forming a part of the same, to be a description thereof.

This invention relates to spooling machinery; and it consists in the employment of a traveling endless belt or band for winding yarn or thread upon spools or bobbins which are held so as to be rotated by the moving band during the winding operation, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents a side view of a portion of a spooling-machine embodying the invention. Fig. 2 shows a top view of the same. Fig. 3 is a vertical transverse section on line *x x*. Fig. 4 shows a transverse section of a machine in which the pulleys upon which the belt or band is mounted are arranged to revolve in a horizontal plane.

A is the frame of the machine, which may be of any proper form and dimensions.

B B′ are two pulleys or revolving supports, which are mounted to revolve on the frame and may be of any proper diameter. Both of said pulleys may be positively driven by any suitable or well-known means to cause them to revolve in the same time, (such means forming no part of the invention;) but, as shown in the drawings, driving mechanism is applied only to the pulley B, the shaft *b* of which has thereon a bevel-gear C. Meshing with this gear is a bevel-gear D, located on a shaft E, upon which shaft a driving-pulley E′ may be located to receive a belt from a counter-shaft.

The continuous belt or band F is mounted on the pulleys or revolving supports B B′, passing from one to the other, the said belt being composed of any suitable material, such as metal, leather, rubber, or textile substance. The ends of this belt or band are preferably joined to each other, so as to leave no ridges on its surface, as by proper brazing or soldering, if the band be of metal, or by cementing or riveting, if the band be of leather or textile material. If desired, one or more pulleys or rolls *f* may be employed to prevent the band from sagging. In order to take up any stretch of the band, the shaft *b′* of the pulley B′ may be mounted in adjustable boxes b^2, one of which is shown in Fig. 1, and screws b^3, or a spring or weight, be employed to keep the band tight. The width of the belt or band F is preferably slightly less than the distance between the inner faces of the heads *g* of the spools or bobbins G to be wound with yarn or thread.

The spools or bobbins G are mounted in any suitable frames or holders so that the spools can revolve on their own axes, the said holders serving to retain the spools in proper position to be rotated by the belt or band. The frames or holders H (shown in the drawings) are of a U shape, the vertical arms of said holders being arranged to fork the band and being supplied with suitable studs *h*, upon which the spools can revolve. The spool, when mounted in the holder, is movable toward and from the band, the holder sliding in suitable guides, as holes in the frame of the machine, through which the arms pass. The holder adds weight to the spool, and thereby causes it to hug the band more closely while being wound, thus securing tighter and more perfect winding. For retaining the spool out of contact with the band (when a spool is to be inserted or removed) the holder is supplied with suitable means, such as a trip-latch *i*, Figs. 1 and 3. No separate claim is herein made to the specific form of frame or spool-holder shown, as such holder forms the subject of another application for patent, serially numbered 311,928.

Each yarn or thread *k* passes from a bobbin or cop K, Fig. 3, which bobbin is mounted on a spindle *l*, projecting upwardly from a rail L (though the bobbins may be otherwise located, as will be readily understood) through any proper guides, as *m m′*, then up through

another guide, (not shown,) and thence down through a guide m^2 on a "traverse-bar" N. This bar is moved backward and forward in a well-known way transversely of the machine by any suitable mechanism, (not shown in the drawings,) so as to cause the yarn or thread to wind properly along the barrel of the spool or bobbin.

To double the capacity of the machine it may be supplied with a second belt or band F′, mounted on pulleys B^2 B^3, which are secured, respectively, to the shafts of the pulleys B B′. A second set of frames or holders H′ are arranged to hold a second series of spools or bobbins G′, so they shall be rotated by the band F′.

In place of arranging the pulleys or supports B B′ so they will revolve in a vertical plane, said pulleys or supports may be arranged to revolve in a horizontal plane, as shown in Fig. 4, and both stretches of the belt or band F be utilized for winding spools or bobbins. With this construction the spools would occupy a vertical position in their frames or holders H H′ and would be pressed laterally against the belt by any suitable means, as springs or weights H^2.

The operation of the machine is as follows: A spool or bobbin G is placed in a frame or holder H and then allowed to move toward the belt or band F until the barrel of the spool comes in contact with the belt. The yarn or thread is then brought to the barrel of the spool and inserted between it and the belt, when the winding of the spool commences and continues until the spool is filled and removed from its frame, the traverse-bar N properly guiding the yarn in a well-understood way.

What we claim, and desire to secure by Letters Patent, is—

1. The combination of the endless belt or band, revoluble supports for said band, and holders for the spools or bobbins to be wound by the band, which holders fork the band and are movable to and from the band, substantially as set forth.

2. The combination of the endless belt or band, revoluble supports for said band, and holders for the spools or bobbins to be wound, which holders are movable to and from the band and are furnished with means, substantially as described, for temporarily retaining the spool out of contact with the band, substantially as set forth.

3. The combination of the endless belt or band, revoluble supports for said band, holders for the spools or bobbins to be wound by the band, which holders fork the band and are movable to and from it, and a traverse-bar for guiding the yarn or thread to the spools, substantially as set forth.

4. The combination of the endless belt or band, revoluble supports for said band, which are located in a horizontal plane, spool or bobbin holders for each stretch of the band, and means for pressing the holders toward the band, substantially as set forth.

5. The combination of the endless belt or band, revoluble supports for the band, which are located in a horizontal plane, spool or bobbin holders for each stretch of the band, which holders fork the band and are movable to and from it, and means for pressing the holders toward the band, substantially as set forth.

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