(Model.)

C. BELL.

AUTOMATIC BOBBIN WINDER.

No. 377,421. Patented Feb. 7, 1888.

Fig. 4.

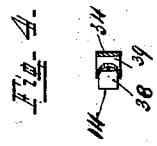


Fig. 3.

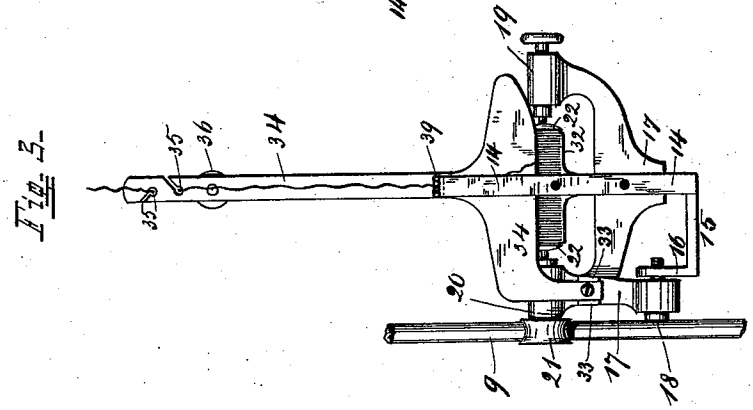


Fig. 2.

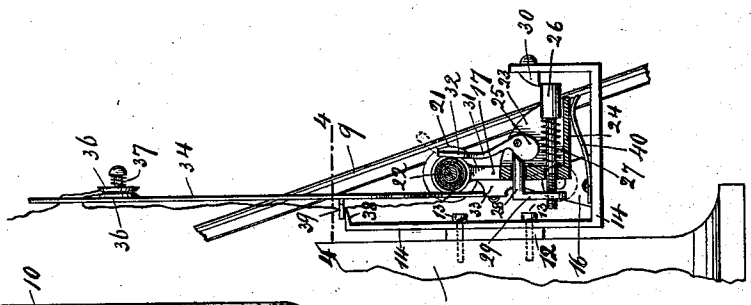
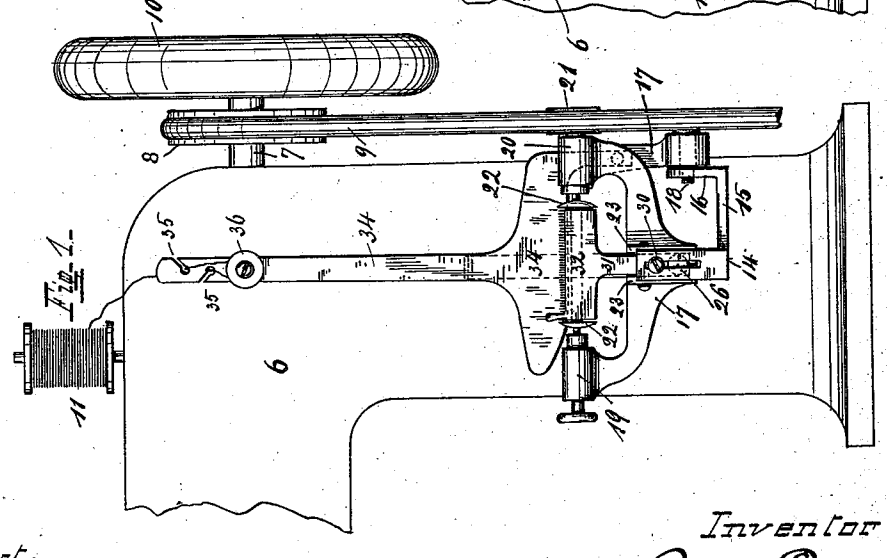


Fig. 1.



Attest
Wm. B. Robins.
Aaron E Moore

Inventor
Carl Bell
By Carl Spengel his Atty.

UNITED STATES PATENT OFFICE.

CARL BELL, OF CINCINNATI, OHIO.

AUTOMATIC BOBBIN-WINDER.

SPECIFICATION forming part of Letters Patent No. 377,421, dated February 7, 1888.

Application filed March 14, 1887. Serial No. 230,906. (Model.)

To all whom it may concern:

Be it known that I, CARL BELL, a subject of the Emperor of Germany, residing at Cincinnati, Hamilton county, State of Ohio, have invented a new and useful Automatic Bobbin-Winder, of which the following is a specification.

My invention relates to such appliances as are used to wind the bobbins of sewing-machines, and the object is to have this operation performed automatically. It also provides for the automatic severance of the thread at the end of the operation coincident with the stoppage of the mechanism. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figures 1, 2, and 3 are front, side, and rear views, respectively. Parts of Fig. 2 are shown in section. Fig. 4 is a section at the line 4 4 of Fig. 2.

6 is the arm of a sewing-machine. 7 is the shaft; 8, the driving-pulley; 9, the belt; 10, the fly-wheel, and 11 the spool from which the thread is to be taken. The bobbin-winder is secured, preferably, to a raised block, 12, on arm 6 by screws 13, passing through member 14 of it. This member has a lateral extension, 15, from which rises a vertical lug, 16, to which an oscillating member, 17, is pivoted by means of screw 18. Member 17 spreads out from the center to each side, and forms on one side a spring-bearing, 19, and on the other a bearing, 20, for the shaft of a friction-pulley, 21. Between these two bearings the bobbin 22 of the sewing-machine shuttle is placed to be filled with thread. This mode of attachment is well known, and needs no further description. From about the center of member 17 extend forward preferably two—though one may be used—wings, 23, which are united at their lower ends at 24. To and between these wings is pivoted a trigger, 25, which operates a spring-bolt, 26 27, which is located between said wings and slides in member 17.

28, another short bolt which also slides in member 17, is connected to spring-bolt 26 by a downward extension, 29.

30 is an adjustable catch secured to the slotted upright front portion of member 14.

The trigger 25 has an upward extension or arm, 31, and a flat horizontal leaf, 32, bearing against bobbin 22 between its flanges.

To one side of member 17, and between two lugs, 33, thereon, is secured an upright member, 34, which serves principally as a guide for the thread. The latter passes from spool 11 through two holes, 35, around and between two disks, 36, pressed together by a spring, 37, and thence underneath the horizontal portion of upright 34 to the bobbin. Holes 35 and disks 36 are merely for the purpose of giving the desired tension to the thread as it winds around the bobbin.

On its way to the bobbin the thread passes through between two shear-blades, 38 and 39, one of which, 38, is secured to or integral with member 14, while the other, 39, is secured to upright 34.

My apparatus is secured to the arm of the sewing-machine in the manner described, and in such proximity to the belt 9 that when the member 17 is pressed down, pivoting on the bolt 18, so that the spring-bolt 26 engages beneath the catch 30, the friction-pulley 21 will come into contact with the belt and be rotated thereby. The thread, having been fastened to the bobbin previously, during which operation leaf 32 may have been turned down and out of the way, commences now to fill up the bobbin as it is revolved by friction-pulley 21. Plate 32 being held against the bobbin by spring 27 pressing against the bolts 26 and 28, and the latter against eccentric 25, prevents any uneven accumulation of thread. As the latter accumulates, plate or leaf 32 is slowly pressed outward, causing the trigger 25 to move bolt 28, and with it bolt 26, inward until the latter becomes clear of catch 30. At this moment spring 40 will be free to exert its force, and, bearing against portion 24 of oscillating member 17, will swing this member and all parts attached to it with a sudden jerky motion a short distance around its pivot 18. This movement will be sufficient to bring friction-pulley 21 out of contact with belt 9, thus stopping the mechanism, and also to bring the two shear-blades 38 and 39 together, severing the thread. As the winding goes on as long as bolt 26 is held down by catch 30, this may be regulated by lengthening or shortening the

former by screwing it in or out of connecting-piece 29; also, if found preferable, the bobbin-winder may be attached to the table of the sewing-machine.

I claim—

1. In an automatic bobbin-winder, the combination of a stationary shear-blade, a stationary member, a swinging member pivoted thereto and having the bobbin-bearings, a friction-pulley and a shear-blade, a stationary catch, a spring-catch co-operating therewith to hold the swinging member in such a position as to bring the friction-pulley into contact with the moving parts of the sewing-machine, a trigger for operating the spring-catch, secured to the swinging member in such proximity to the bobbin as to be moved or lifted by the accumulating thread thereon, and a spring acting on the said swinging member, all as and for the purpose described.

2. The combination of stationary member 14 15 16, shear-blade 38, pivot 18, catch 30, oscillating member 17, bobbin-bearings 19 20, friction-pulley 21, spring 27, bolt 26, connecting-piece 29, short bolt 28, trigger 25, arm 31, leaf 32, upright 34, shear-blade 39, and spring 40, as and for the purpose explained.

3. The combination of stationary member 14 15 16, shear-blade 38, pivot 18, catch 30, oscillating member 17, bobbin-bearings 19 20, friction-pulley 21, spring 27, bolt 26, connecting-piece 29, short bolt 28, trigger 25, arm 31, leaf 32, upright 34, having holes 35, friction-disks 36, shear-blade 39, and spring 40, all as and for the purpose explained.

In testimony of which invention I hereunto set my hand.

CARL BELL.

Witnesses:
CARL SPENGEL,
AARON E. MOORE.