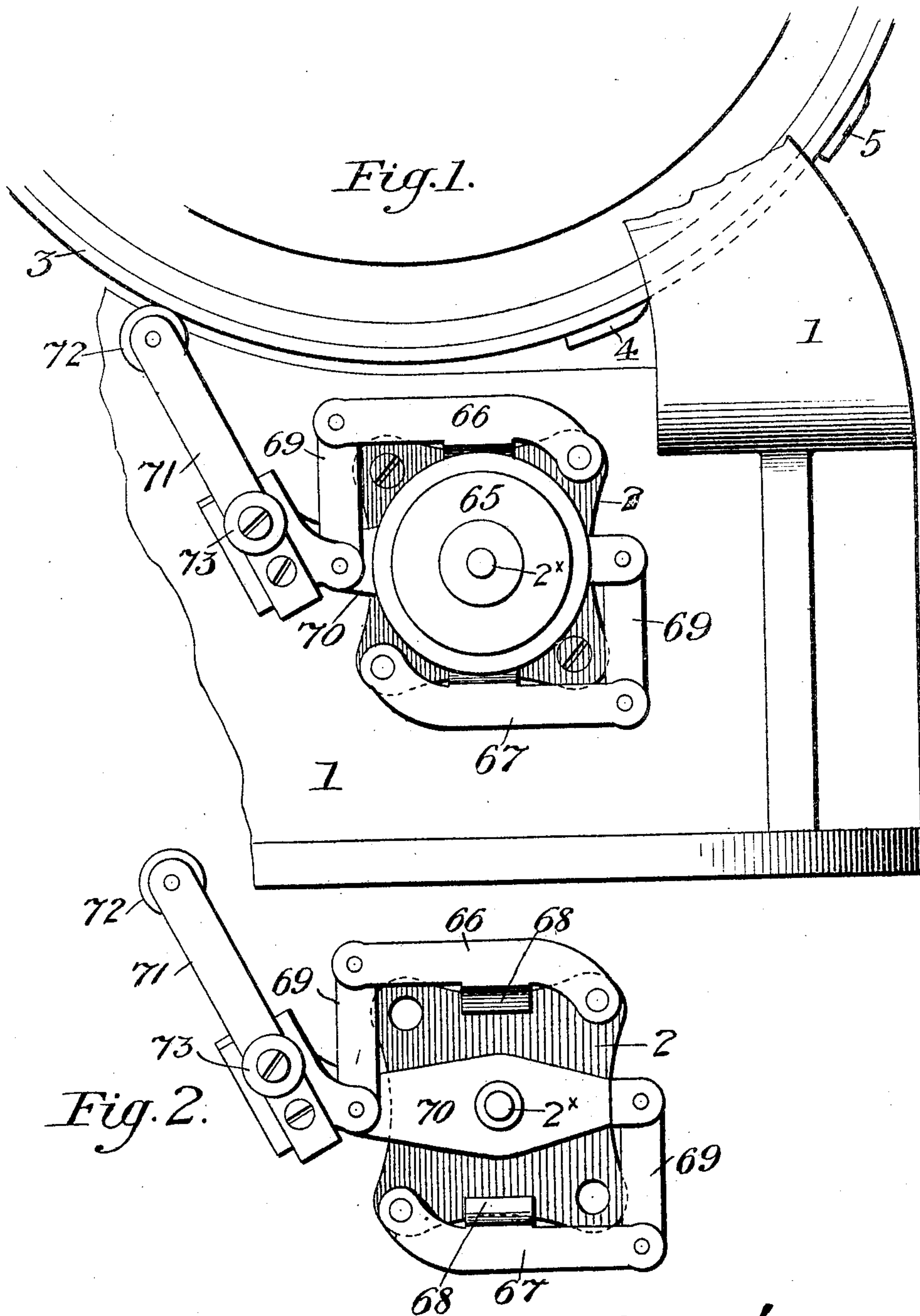


No. 804,782.

PATENTED NOV. 14, 1905.

J. H. & J. B. URSBRUCK.
TENSION MECHANISM FOR SEWING MACHINES.
APPLICATION FILED DEC. 6, 1902.



Witnesses:

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UNITED STATES PATENT OFFICE.

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TENSION MECHANISM FOR SEWING-MACHINES.

No. 804,782.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Original application filed August 6, 1900, Serial No. 26,071. Divided and this application filed December 6, 1902. Serial No. 134,092.

To all whom it may concern:

Be it known that we, JOHN H. URSBRUCK and JOSEPH B. URSBRUCK, citizens of the United States, and residents of the city of Philadelphia, State of Pennsylvania, have jointly invented certain new and useful Improvements in Tension Mechanism for Sewing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

The invention to be hereinafter described is a division of our prior application, Serial No. 26,071, filed August 6, 1900, on which Letters Patent issued December 9, 1902, No. 715,323, and relates to tension mechanism for sewing-machines, and more particularly to that general type of such devices which are made operative at predetermined times to apply and release the tension on the thread, according to the operative condition of other parts of the machine elements.

The general object of the present invention is to provide a device of this character which will be simple in construction and yet effective in applying the tension quickly and at desired times under the operative influence of a positively-acting means and then as readily releasing said tension at the proper instant in the stitch-forming cycle of the machine.

With these general objects in view as thus outlined the invention consists of a tension-drum and friction-brakes operative at desired times to apply friction to the drum and consequent tension to the thread, all as will hereinafter more fully appear and then be definitely pointed out in the claims.

In the drawings, Figure 1 is a side elevation of our improved tension mechanism, showing only so much of the coöperating mechanism as is necessary to illustrate the workings thereof, and for further illustration of said mechanism reference may be had to the prior application hereinbefore referred to. Fig. 2 is an enlarged detail of the tension mechanism with the tension-drum omitted to better show the workings of the parts.

The tension mechanism, to be hereinafter described, is suitably mounted upon the supporting-framework 1 in proximity to the cam-wheel 3, having suitable cams 4 and 5 for

operating the tension mechanism. Supported upon the plate 2 of the tension mechanism is a stud 2^x, upon which is suitably mounted the tension-drum 65, which is free to rotate on said stud when not restrained by the friction-brakes hereinafter described. Also mounted upon said stud 2^x is a lever 70, the opposite ends of which are connected by the links 69 to the ends of the levers 66 and 67, pivoted upon the plate 2 and carrying friction-shoes 68.

The needle-thread is drawn from a spool suitably located and passes first around the tension-drum 65, which is under control of the friction devices, whereby such pressure can be applied to the hub of the drum at the proper times as to prevent rotation of the same, and thus lock the thread or prevent any pulling off of the same from the spool. In the preferred form of our construction these friction devices comprise the levers 66 and 67, each provided with a friction-shoe 68, as shown, and both of said levers being hung to the supporting-plate 2 on the frame of the machine and their free ends connected, as stated, to the lever 70. The link connection 69 69, joining the free ends of the levers 66 and 67 to the lever 70, being disposed one on one side of the fulcrum of said lever 70 and the other on the opposite side of said fulcrum and the levers 66 and 67 being likewise oppositely pivoted to the plate 2, movement of the lever 70 in one direction will tend to draw the friction-shoes 68 into contact with the hub of the tension-drum 65, so as to arrest rotation of the same, while movement of said lever 70 in the opposite direction will carry the friction-shoes out of contact with the head of the drum, so as to permit the same to rotate freely.

The lever 70 has a projecting arm 71, carrying at its end an antifriction-roller 72, which is disposed in the path of cams, as 4 or 5, on the periphery of the cam-disk 3. When either of the cams 4 or 5 contact with the antifriction-roller 72, referred to, they will cause a downward movement thereof and through the links 69 and levers 66 and 67 cause the brake-shoes 68 to firmly engage frictionally with the hub of the drum 65, and thus lock the thread or prevent any pulling off of the same from the spool. When, however, the

cams 4 or 5 on the cam-disk 3 are not acting upon the roll 72, the drum 65 will be free to rotate.

Mounted upon the arm 71 is a roll 73, which acts as a thread-guide and around which the thread as it passes from the tension-drum 65 may pass.

The simplicity of this device and yet its effective and ready action under the control of the cams 4 or 5 will be readily apparent, the timing of the parts being more fully set forth in the prior application referred to and of which this is a division.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination in a sewing-machine, of a tension-drum about which the thread is passed, a pair of brake-levers having shoes for acting on said drum, a single lever pivoted axially of the drum and having its opposite ends projecting to opposite peripheral sides of the drum and connected by said ends, one to each of the pair of brake-levers, and a cam-disk having cams for imparting vibrating movement to said single lever.

2. A tension device for sewing-machines comprising a tension-drum around which the thread is passed, a single lever having its ends extended to opposite sides of the tension-drum, a pair of brake-levers each having a shoe for

acting upon the tension-drum, link connections between the opposite ends of the single lever and the ends of the brake-levers, said single lever at one end having a rigid projecting arm, carrying a thread-guide to engage and direct the thread as it leaves the tension-drum, and a cam-disk having cams for engagement with said arm to apply the brake.

3. A tension device for sewing-machines, comprising a supporting-frame, a tension-drum around which the thread is passed, a single lever fulcrumed axially of said drum and having its free ends projecting to each side thereof, a pair of brake-levers fulcrumed to the frame on opposite sides of the drum with their free ends oppositely extended, link connections between the opposite ends of the single lever and the free ends of the brake-levers, a rigid projection carried by one end of the single lever, and a cam-disk having cams to engage said rigid projection to apply the brake-levers to the drum.

In testimony whereof we have hereunto affixed our signatures this 1st day of December, A. D. 1902.

JOHN H. URSBRUCK.
JOSEPH B. URSBRUCK.

Witnesses:

GEO. W. REED,
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