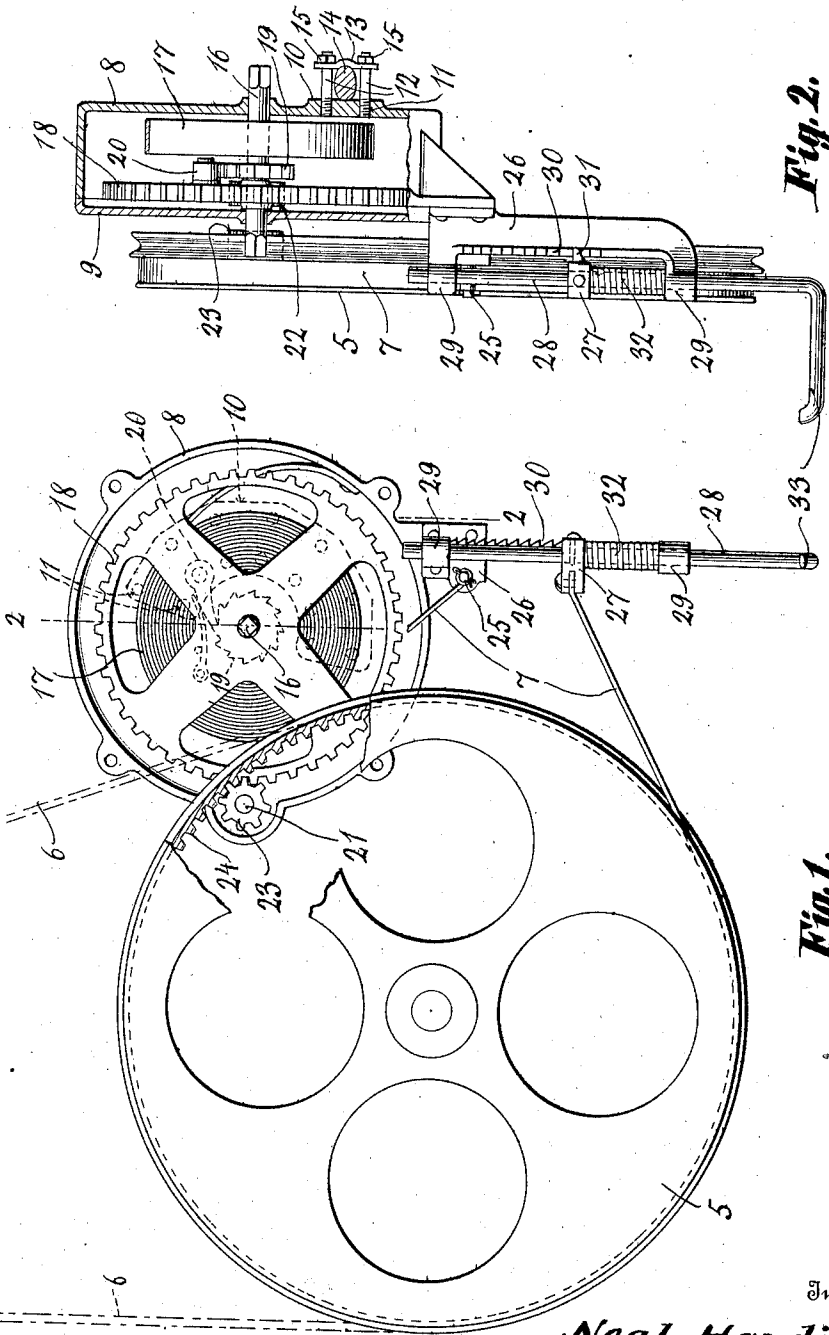


N. HARDIN.  
BAND BRAKE.

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1,039,937.

Patented Oct. 1, 1912.



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# UNITED STATES PATENT OFFICE.

NEAL HARDIN, OF MILES CITY, MONTANA.

## BAND-BRAKE.

1,039,937.

Specification of Letters Patent.

Patented Oct. 1, 1912.

Application filed July 31, 1911. Serial No. 641,510.

*To all whom it may concern:*

Be it known that I, NEAL HARDIN, a citizen of the United States, residing at Miles City, in the county of Custer and State of Montana, have invented certain new and useful Improvements in Band-Brakes, of which the following is a specification.

The brake which is the subject of the present invention is designed more particularly for spring motors used in connection with sewing machines; and it is the object of the invention to provide an improved brake by which the speed of the machine may be readily controlled to suit the operator.

With this object in view, the invention consists in a novel construction and arrangement of parts to be hereinafter described and claimed.

In order that the invention may be better understood, reference is had to the accompanying drawing forming a part of this specification, in which drawing—

Figure 1 is a front elevation of the machine, the cover of the motor casing being shown broken away. Fig. 2 is an end view partly in section, the plane of the section being on the line 2—2 of Fig. 1.

Referring specifically to the drawing, 5 denotes the belt wheel of a sewing machine. The periphery of this wheel has two grooves, one of which receives the belt 6 which transmits motion to the machine. The other groove receives a brake-band 7, the operation of which latter will be presently described.

At 8 is denoted a casing which incloses a spring motor. The casing has a removable front wall or cover 9, and the back of the casing has a thickened portion 10 which is provided with a series of tapped holes 11 arranged in pairs to receive studs 12 on which are mounted clamps for securing the casing to the machine. One of these clamps is shown in Fig. 2, the same comprising a cross bar 13 which is slipped over the studs 12. Some suitable part 14 of the machine frame is placed between the studs, and the cross bar is clamped against said part by nuts 15 screwed on the outer ends of the studs, whereby the part 14 is securely held between the back of the casing and the cross bar. Any number of clamping devices may be provided, a plurality of holes 11 being made in the back of the casing so that the

clamps may be located according to the structure of the machine frame.

In the casing 8 is mounted a shaft 16 to which one end of a spiral spring 17 is made fast, the other end of the spring being made fast to the side wall of the casing. The shaft is journaled in the front and rear walls of the casing and projects therefrom, its ends being squared to receive a hand crank or other suitable device for winding the spring. The rotary motion imparted to the shaft 16 by the spring 17 is transmitted to a spur gear 18 by means of a ratchet disk 19 made fast to said shaft, and engageable by a spring-pressed, pivoted pawl 20 carried by one of the spokes of the spur gear 18, which latter is loose on the shaft.

The motion of the gear 18 is transmitted to belt wheel 5 by the following means: The front wall of the casing has a bearing in which is journaled a shaft 21 carrying pinions 22 and 23, respectively, the former being located in the casing and in mesh with the gear 18. The pinion 23 is located outside the casing and is in mesh with an internal gear 24 on the belt wheel 5.

The brake-band 7, by which the speed of the machine is regulated, is attached at one of its ends, as indicated at 25, to a bracket 26 which is secured to the casing 8. The other end of the brake-band is made fast to a collar 27 carried by a rod 28 which is loosely mounted in spaced bearings 29 on the bracket. In one edge of the bracket are rack teeth 30, and on the collar 27 is a tooth which is adapted to engage the rack teeth. Between the collar 27 and the lower bearing 29 a spring 32 is coiled around the rod. The rod is rotatably and slidably mounted in the bearings 29 so that by giving it a slight turn the tooth 31 is disengaged from the rack 30, whereupon the rod is released, thus permitting the spring 32 to expand and slide the rod upwardly. The collar 27 moves upwardly with the rod, and as one end of the brake-band is made fast to the collar, the brake-band will be tightened by this movement of the collar, thus regulating the speed of the machine. In order to facilitate the actuation of the rod, its lower end has a side bend 33 to be engaged by the operator's foot when the rod is to be released as herein described.

I claim:

1. The combination with a brake-band, of

means for adjusting the tension thereof, said means comprising a fixed support for one end of the band, a rotatable rod slidable in the direction of its length, a collar fixed on  
5 the rod, to which collar the other end of the brake-band is connected, bearings supporting the rod, a spring coiled around the rod between one of the bearings and the collar, a stationary rack extending parallel to the  
10 rod, and a tooth on the collar adapted to engage the rack, said tooth being disengageable from the rack by rotation of the rod.

2. The combination of a supporting  
15 bracket having bearings, a rack on the bracket, a rod slidably and rotatably mounted in the aforesaid bearings and extending

parallel to the rack, a collar fixed on the rod, said collar having a tooth which is adapted to engage the rack and is disengageable from the latter by the rotation of  
20 the rod, a spring coiled around the rod between the collar and one of the bearings, and a brake-band having one of its ends connected to the collar and its other end to the supporting bracket.

In testimony whereof I affix my signature  
25 in presence of two witnesses.

NEAL HARDIN.

Witnesses:

S. D. McKINNON,  
GRACE O'KEANE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."