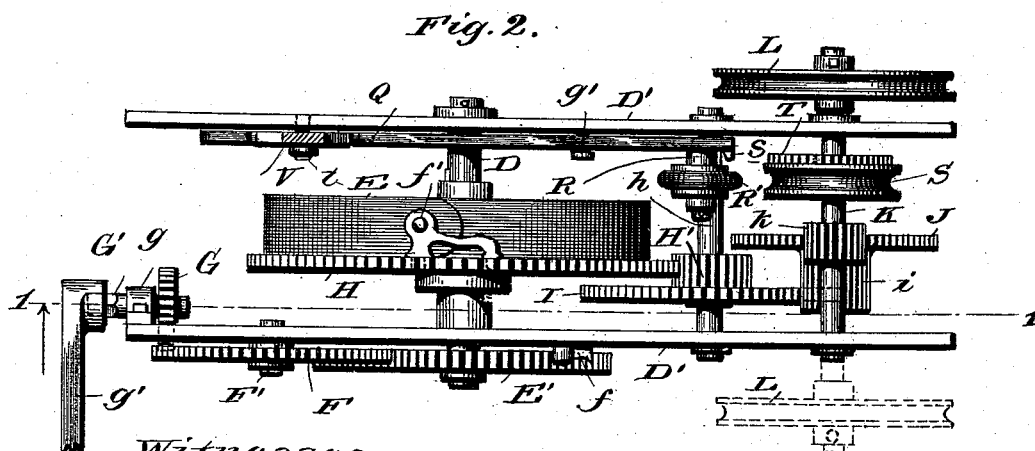
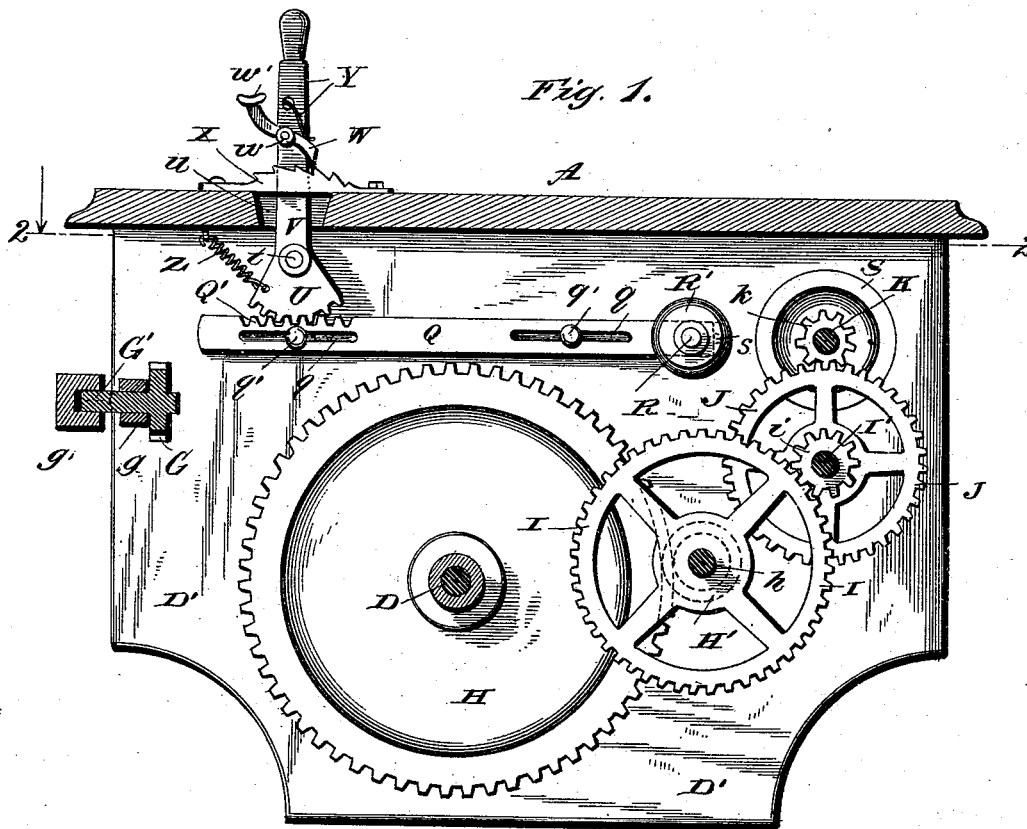


(No Model.)

A. BOULTE.
MACHINE BRAKE.

No. 494,268.

Patented Mar. 28, 1893.



Witnesses:
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UNITED STATES PATENT OFFICE.

ADOLPH BOULTE, OF ABILENE, TEXAS.

MACHINE-BRAKE.

SPECIFICATION forming part of Letters Patent No. 494,268, dated March 28, 1893.

Application filed July 2, 1892. Serial No. 438,744. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH BOULTE, a citizen of the United States, residing at Abilene, in the county of Taylor and State of Texas, have invented certain new and useful Improvements in Machine-Brakes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which appertains to make and use the same.

This invention relates to certain new and useful improvements in machine brakes and it has for its object among others to provide a brake by which the device may be brought to a stop either gradually or instantaneously as may be desired. The brake is a reciprocal one and comprises a rubber or other elastic or yielding wheel designed to engage the periphery of the fly wheel of the motor and a lug, tooth or analogous provision for engagement with a tooth of a ratchet wheel on the said fly wheel; in operating the brake the rubber wheel is first brought into contact with the fly wheel and then by continued movement of the brake lever the said lug or projection enters a tooth of the ratchet wheel and stops the revolution of the same. A spring is provided for returning the brake arm to its normal position and releasing the brake and fly wheel when it is desired to start the motor again.

I simplify the construction and arrangement of the parts, rendering the device more compact and lessening the liability to breakage or injury.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a vertical cross section through my improved device on the line 1 1 of Fig. 2 looking in the direction of the arrows. Fig. 2 is a top plan with the table top removed, on the line 2 2 of Fig. 1 looking in the direction of the arrows.

Like letters of reference indicate like parts throughout both views.

In order to better illustrate the application

and operation of the invention I have shown it in connection with a motor which latter will be described before proceeding with the description of the brake; no claim however is made in this application to the motor.

Referring now to the details of the drawings by letter, A designates what we will consider as the top or table of a sewing machine of known construction except as hereinafter specified.

B is the head or arm, A' is the balance or fly wheel, and B' the belt-pulley; as the other elements of the sewing machine have nothing to do with my present invention none of them have been shown in the drawings, except the large wheel C, which wheel is carried by the shaft C'.

D is a shaft suitably supported or journaled in the plates D' and upon this shaft is arranged the spring E which may be of any desired length and upon the extended end of this shaft outside the plate D' is fast the pinion E' which meshes with the smaller pinion F' carried by a stub shaft F' held in the plate D' and which is toothed upon its inner face to mesh with the small pinion G which is carried by a shaft G' journaled in a bracket or support g on the inner face of the plate D' which shaft G' is at right angles to the shaft F' and its end is extended beyond the plate and is adapted to receive a suitable lever or handle g' by which the said shaft will be revolved, and, through the medium of the pinions above described will wind up the spring E, in a manner which will be readily understood. Suitable spring-pressed pawls f are provided to engage the pinion E' to prevent retrograde movement thereof.

f' is the main spring catch.

On the shaft D is a large pinion H which is designed to mesh with the small pinion H' on the shaft h supported in the side plates D' parallel with the shaft D and which carries the larger pinion I which meshes with the small pinion i on the shaft I' on which is also a larger pinion J which in turn meshes with a small pinion k on a shaft K to the outer end of which is secured a grooved belt-pulley L (or it may be on the shaft I', if preferred) as seen best in Fig. 2; this belt-pulley may be arranged upon either end of this shaft as will be understood from Fig. 2 in which it is shown

at one end in full lines and at the other end by dotted lines.

The operation will be readily understood from the foregoing description when taken in connection with the annexed drawings, and a further description thereof is not deemed necessary.

In order to stop the device when desired I provide a brake arm Q which is provided with elongated slots *q* to engage the guide pins *q'* on the inner face of one of the side plates D' as seen in Fig. 1, and one end of this brake arm is provided upon its upper edge with the toothed or rack portion Q', while at its other end it carries a lateral arm R on which is rotatably held a rubber or analogous wheel R', which, when the brake arm is moved in the proper direction, is designed to engage the periphery of a fly wheel S on the shaft K as seen in Figs. 1 and 2, the said periphery being preferably grooved as seen in Fig. 2 and the rubber wheel formed with a convex outer edge as is also shown in said Fig. 2 to increase the frictional contacting surface. On one side of this fly wheel is a ratchet wheel or gear wheel T and on the brake arm is a tooth, lug or projection *s* as seen in Fig. 2, which is designed to engage one of the teeth of the wheel T to bring the device to a stop instantaneously. The brake arm is moved in a horizontal plane toward the fly wheel by a toothed segment U engaging the rack portion of the said arm as seen in Fig. 1 and this segment is carried by a lever V which is pivoted at *t* which works through an opening *u* in the table A as seen in Fig. 1, its upper end being formed into a suitable handle and pivoted on this lever above the table is a pawl W pivoted between its ends as at *w* and its upper portion formed into a finger or thumb piece *w'*; this pawl is designed to engage a notched curved plate X secured to the top of the table over the opening *u* and a spring Y is provided on the lever and acting upon the pawl to keep it normally in engagement with the said notched plate. Movement of this lever in one direction will move the brake arm in one direction and cause the rubber wheel to engage the fly wheel and slow the speed of the mo-

tor; a further movement of the lever will increase the friction on the fly wheel and still further movement will bring the lug *s* into engagement with a tooth of the ratchet or gear wheel T and bring the motor to a sudden stop. Of course, if it is desired to stop the motor suddenly the brake arm will be moved at once far enough to cause the lug or projection to engage the wheel T. In order to restore the brake arm to its normal position after the device has been brought to a stop and it is stopped I provide a spring Z which is connected at one end to the table top or some fixed part and at the other end to the segment as seen in Fig. 1; when it is desired to release the brake the thumb or finger is placed upon the finger piece *w'* of the pawl which disengages it from the notched plate and then the spring acts to draw the brake arm back to its normal position. The brake lever should be arranged convenient to the hand of the operator.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

1. The combination with the fly wheel of a spring motor, of a longitudinally movable brake arm a brake wheel carried thereby, and means, including a toothed segment and rack, for reciprocating the brake arm, as set forth.
2. The combination with the fly wheel of a spring motor, and a gear wheel thereon, of a longitudinally movable brake arm carrying a wheel to engage the fly wheel and a projection to engage the said gear wheel, as set forth.
3. The combination with the fly wheel of a spring motor, of a gear wheel carried thereby, a longitudinally movable brake arm provided at one end with a projection and a rubber wheel, means for moving the brake arm in one direction, and a spring for moving it in the opposite direction, substantially as specified.

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

ADOLPH BOULTE.

Witnesses:

E. H. SINTENIS,
E. S. KEAN.