

(No Model.)

H. BRIGGS.
TAKE-UP FOR SHOE SEWING MACHINES.

No. 518,911.

Patented Apr. 24, 1894.

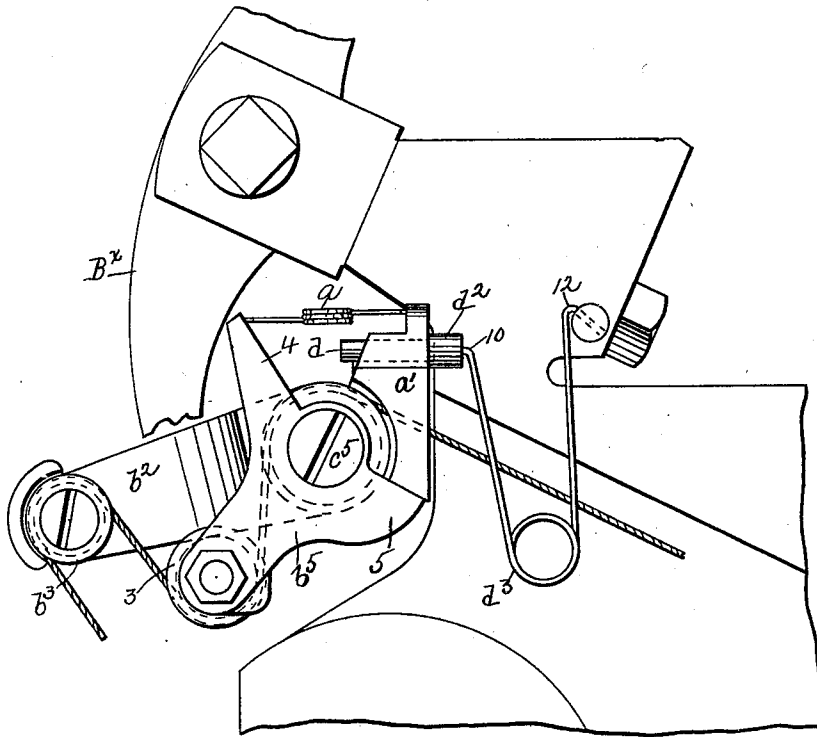
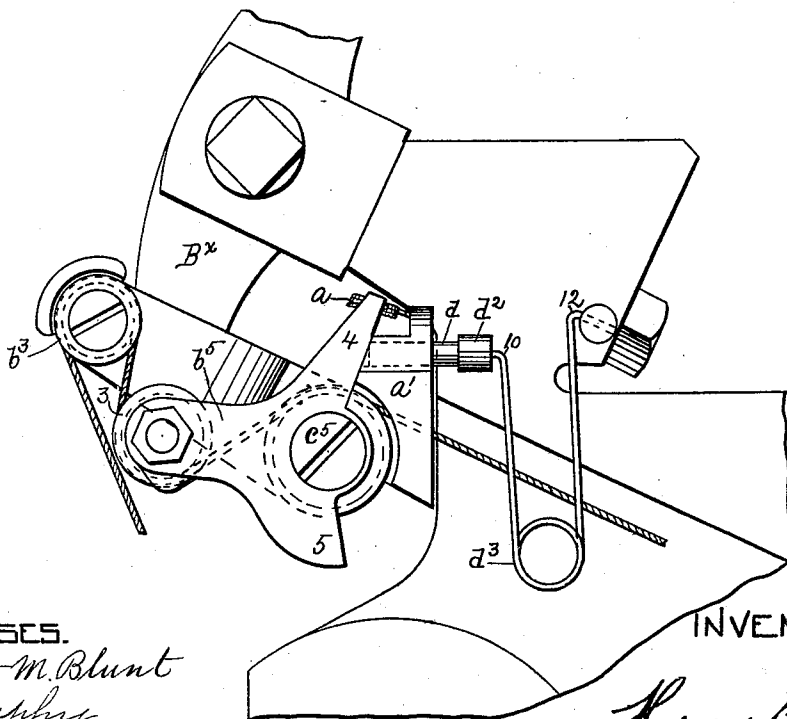


Fig. 1.



WITNESSES.

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Fig. 2.

UNITED STATES PATENT OFFICE.

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TAKE-UP FOR SHOE-SEWING MACHINES.

SPECIFICATION forming part of Letters Patent No. 518,911, dated April 24, 1894.

Application filed July 13, 1893. Serial No. 480,327. (No model.)

To all whom it may concern:

Be it known that I, HENRY BRIGGS, residing in Hasbrouck Heights, in the county of Bergen and State of New Jersey, have invented an Improvement in Shoe-Sewing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention is an improvement upon shoe-sewing machines employing an auxiliary take-up for the thread, and substantially such as shown and described in United States Patent No. 412,704, dated October 8, 1889.

This invention relates more particularly to a retarding device for the auxiliary take-up, which retarding device becomes active during only a portion of the movement of the auxiliary take-up in one direction, for a purpose as will be described.

In the machine shown and described in the patent referred to, the auxiliary take-up is carried upward on the movement of the main take-up by the wax thread, and its upward movement is limited or arrested by a stationary portion of the machine constituting a stop therefor. The auxiliary take-up in its upward movement is brought to a sudden stop by the contact of the auxiliary take-up against its stop, and the thread, at the time the auxiliary take-up meets the said stop, is placed under more or less severe tension, which is apt to strain and break the thread.

This invention has for its object to relieve the thread from strain due to a sudden shock or stopping of the movement of the auxiliary take-up, and the said object is accomplished by providing a retarding or cushioning device which is acted upon by the auxiliary take-up toward the end of its upward movement, and which device offers a resistance to the upward movement of the auxiliary take-up, sufficient to prevent the auxiliary take-up being brought in contact with its stop with a sudden blow, the cushioning device being forced backward so as to permit the auxiliary take-up to be finally brought in contact with the said stop. By this construction, the tension on the thread is gradually increased after the cushioning device begins to act, so that by the time the auxiliary take-up engages with the fixed stop on

the frame, the tension on the thread will be almost at the tension required to be given by the main take-up, and therefore, the main take-up will act to set the stitch without producing any sudden jar on the thread. The cushioning device is preferably made as a plunger or piston extended through a suitable hole in that portion of the frame-work which constitutes the stop for the auxiliary take-up, and the said plunger or piston is normally forced forward so as to project beyond the solid portion of the machine and into the path of movement of the auxiliary take-up, by a spring or other suitable means. These and other features of my invention will be pointed out in the claims at the end of this specification.

Figure 1 represents in elevation partially broken out, a sufficient portion of a shoe-sewing-machine embodying my invention, the main take-up and the auxiliary take-up being shown in their lower position, and the cushioning device being shown extended into the path of movement of the auxiliary take-up. Fig. 2 represents the take-ups in their raised positions with the cushioning device forced back and the auxiliary take-up seated against its stop.

The shoe-sewing-machine, with which I have chosen to illustrate my invention, is and may be substantially the same as that shown in the patent referred to, the looper B^x , the take-up b^2 provided with the roller b^3 , the stud c^5 upon which is loosely mounted an auxiliary take-up b^5 provided with a roller 3 and notched or cut away to leave the projections 4, 5, are and may be the same as that shown in the patent referred to, wherein the same parts are designated by like letters. In the present instance, the auxiliary take-up is moved from its raised position, shown in Fig. 2, to its lower position shown in Fig. 1, by means of the bent spring a , (this being the usual means of operating auxiliary take-ups) having one end secured to the projection 4, and its other end fastened to a fixed or solid portion a' of the frame-work, the said spring corresponding to the spring marked 7 in the said patent. The fixed or solid portion a' of the frame-work forms a stop with which co-operates the projection 4

of the auxiliary take-up, and which stop serves to limit the upward movement of the said auxiliary take-up.

In the upward movement of the take-ups, the thread is placed under tension, and if the auxiliary take-up is brought up against the frame, or against an adjustable stud affixed thereto, as has heretofore been the practice, the thread, when under tension, is apt to be strained and broken by the sudden stopping of the auxiliary take-up in its upward movement. To avoid this, I provide the auxiliary take-up with a cushioning device located normally in its path of movement and adapted to be engaged by the said auxiliary take-up toward the end of its upward movement and before the said auxiliary take-up is brought in contact with its stop.

The cushioning device may and preferably will be made as herein shown, it consisting of a plunger d extended through a suitable hole or cylinder in the portion a' of the framework, and provided at its rear end with means to arrest its forward movement, it being herein shown as provided with an enlargement or head d^2 . The plunger d is made of sufficient length to be projected beyond the front end of its cylinder and into the path of movement of the projection or arm 4 of the auxiliary take-up, as shown in Fig. 1, which may and preferably will be accomplished as herein shown by means of a spring d^3 , having one end 10 fixed to the piston head d^3 and its other end 12 fastened to a stud d^5 fixed in the framework of the machine.

The take-up b^2 may be moved after the manner shown in the patent referred to, and in operation it will be noticed that the projection or arm 4 of the auxiliary take-up is brought in contact with the plunger d , which is forced backward into its cylinder or hole against the action of the spring d^3 , until the projection 4 meets the portion a' of the framework which forms the stop by which the upward movement of the auxiliary take-up is arrested. The spring actuated plunger d re-

sists the movement of the auxiliary take-up, so that the latter is seated or brought in contact with the stop a' gradually and without shock, and the tension on the thread, which passes over the auxiliary take-up, is gradually increased almost to the degree required, before the main take-up acts, and thereby the thread is relieved from sudden jars and breaking of the same is avoided.

I claim—

1. In a shoe-sewing-machine, the combination with a main take-up an auxiliary take-up, and a stop to arrest or limit the movement of the said take-up, of a cushioning device normally extended beyond the stop into the path of movement of the auxiliary take-up and resisting the movement of the auxiliary take-up before the engagement of the latter with its stop, substantially as described.

2. In a shoe-sewing-machine, the combination with a main take-up an auxiliary take-up, and a stop to arrest or limit the movement of the said take-up, of a cushioning device, consisting of a spring actuated plunger or rod normally extended beyond the said stop but moved backward by the auxiliary take-up to permit the latter to be gradually arrested in its movement, substantially as described.

3. In a shoe-sewing-machine, the combination with the main take-up b^2 , and the auxiliary take-up b^5 , of the stop a' for the said auxiliary take-up provided with a hole or cylinder, the rod or plunger d normally extended through said hole or cylinder into the path of movement of the auxiliary take-up, and means to act on the said rod or plunger to resist the movement of the piston by the auxiliary take-up substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY BRIGGS.

Witnesses:

JAS. H. CHURCHILL,
J. MURPHY.