March 6, 1951

A. A. J. SCHOU

MACHINE FOR SUPPLYING AIR TO PNEUMATIC RELOOPING TOOLS

2,544,051

Filed Nov. 10, 1948

2 Sheets-Sheet 1

Fig. 1.

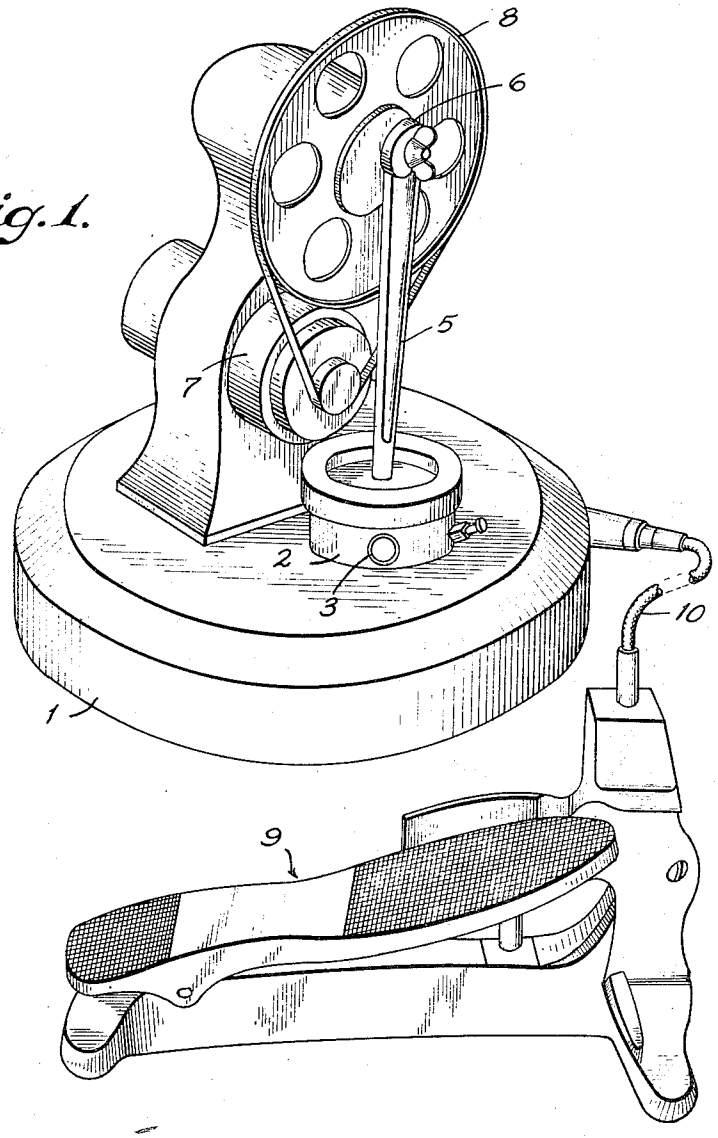

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Fig. 2.

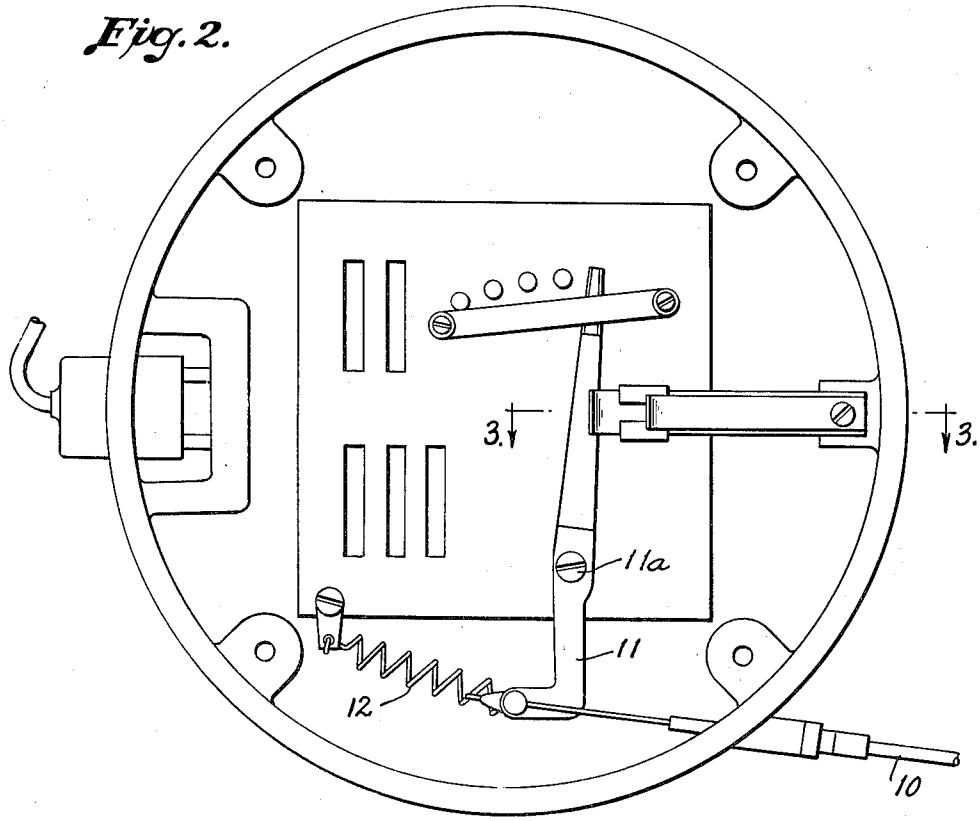


Fig. 4.

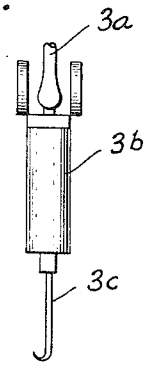
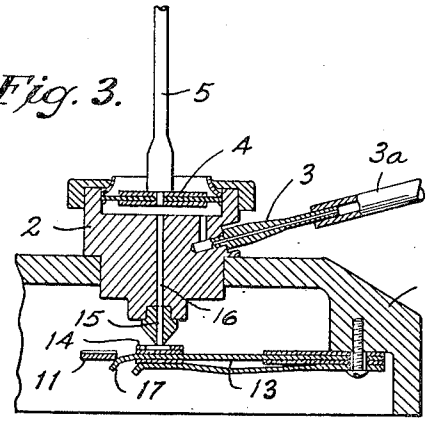


Fig. 3.



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Patented Mar. 6, 1951

2,544,051

UNITED STATES PATENT OFFICE

2,544,051

MACHINE FOR SUPPLYING AIR TO PNEUMATIC RELOOPING TOOLS

Aage Andreas Juul Schou, Copenhagen, Denmark

Application November 10, 1948, Serial No. 59,390

2 Claims. (Cl. 60—62.6)

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This invention relates to improvements in pneumatically operated machines for relooping runs in stockings and other knitted fabrics.

The invention relates more particularly, to an electrically driven relooping machine which is controlled by means of a foot operated starting rheostat and generates impulses of compressed air which are utilized to actuate the holder of the relooping tool, the flow of air being controlled in such a way that the needle is stopped instantaneously as soon as the current is cut off even though the motor continues to run.

An object of this invention is to provide a machine with mechanical arrangements whereby the needle may be stopped instantaneously, thus avoiding flaws showing in the article being relooped.

An advantage of the invention is that the above mentioned arrangement is independent of the kind of electric current supplied to the machine.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawing, forming part of this application, and in which like numerals are used to designate like parts throughout the same,

Fig. 1 is a view of a machine showing the foot controller,

Fig. 2 is a plan view of the bottom of a machine, the bottom cover having been removed,

Fig. 3 is a vertical section, partly in elevation, taken along the line 3—3 in Fig. 2, showing details of the air controlling arrangement,

Fig. 4 is a side elevation of a pneumatically-operated relooping tool.

The machine consists of a stand 1 having a cylindrical chamber 2, a piston 4 fixed to a connecting rod 5, and moved up and down by means of a stud or knob 6 placed on the hub of the pulley 8 at a point which is eccentric with respect to the shaft.

The cylindrical chamber 2 carries a fitting 3 extending outside the stand, and which may be connected by a flexible pipe 3a to the handle 3b of a relooping needle 3c, said needle being operated in known manner by the air impulses generated by the air pump in the machine. A pneumatically-operated relooping needle is shown in Patent No. 2,186,603 to B. H. Gostkowski dated January 9, 1940.

The machine may be started and controlled by means of the foot controller 9, which may be connected by a Bowden wire 10 to the starting rheostat lever 11.

Lever 11 which is pivotally mounted at 11a is

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connected at one end to a spring 12. Secured to stand 1 is a strong leaf spring 13 carrying a shutter 14 which is aligned with the opening in a bored fitting 15 which is in communication by means of a duct 16 with the interior of chamber 2. The shutter 14 when pressed against fitting 15 under the action of spring 13 prevents efflux of air through the fitting. The outing end of leaf spring 13 is formed with an obliquely directed flange 17 which is engaged by lever 11 when the current is cut off and the lever 11 is retracted by spring 12.

In order to insure an instantaneous stopping of the needle as soon as the current is cut off and while the motor continues running, it is known to provide the cylindrical chamber with means to effect an immediate communication between the chamber and the outside air. It is known to obtain this object by means of a relay, through which the exciting current of the motor flows.

As long as the current flows through the electromagnet, the relay armature will be drawn, and a shutter will close a fitting, but as soon as the current is cut off, the armature is released and the shutter will move away from the fitting, thus allowing the air to escape through the fitting. Apparatus of this type is disclosed, for example, in Patent No. 1,897,452 to M. Vitoux dated February 14, 1933.

According to the invention the same object is obtained in a more reasonable and simple way, and independently of the kind of current used, by mechanical means. Thus, when the current is cut off, the arm of the starting rheostat jumps back under the action of the powerful spring 12, engaging flange 17 and pressing down the spring 13 which carries shutter 14. The shutter thus moves away from the fitting 15, allowing the air to escape through the fitting with the result that the piston in the looping tool handle stops instantaneously even though the machine may continue to run for a while.

Having now described my invention, what I claim as new and want to secure by Letters Patent is:

1. A machine for operating relooping tools, comprising in combination, a pneumatically operated relooping tool, a base containing an air pump, an air pipe connecting said pump with said tool, a rod connected with the piston of said pump, a pulley mounted on said base and reciprocating said rod, an electric motor for rotating said pulley, a starting rheostat controlling said motor, a movable lever arm regulating said

rheostat, a shutter adapted to cover a duct leading from said chamber to the outside air, a blade spring carrying said shutter, said lever arm influencing the position of said blade spring.

2. A machine for operating relooping tools, comprising in combination, a pneumatically operated relooping tool, a base containing an air pump, an air pipe connecting said pump with said tool, a rod connected with the piston of said pump, a pulley mounted on said base and reciprocating said rod, an electric motor for rotating said pulley, a starting rheostat controlling said motor, a movable lever arm regulating said rheostat, a shutter adapted to cover a duct leading from said chamber to the outside air, a blade

spring carrying said shutter, said blade spring being provided with an inclined extension at its free end projecting laterally downwardly for cooperation with the said lever arm.

AAGE ANDREAS JUUL SCHOU.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,897,452	Vitoux	Feb. 14, 1933
2,186,603	Gostkowski	Jan. 9, 1940