

T. L. KNAPP.
 SAFETY LOOP FOR TYPE WRITING MACHINES.
 APPLICATION FILED FEB. 28, 1914.

1,120,391.

Patented Dec. 8, 1914.

Fig. 1.

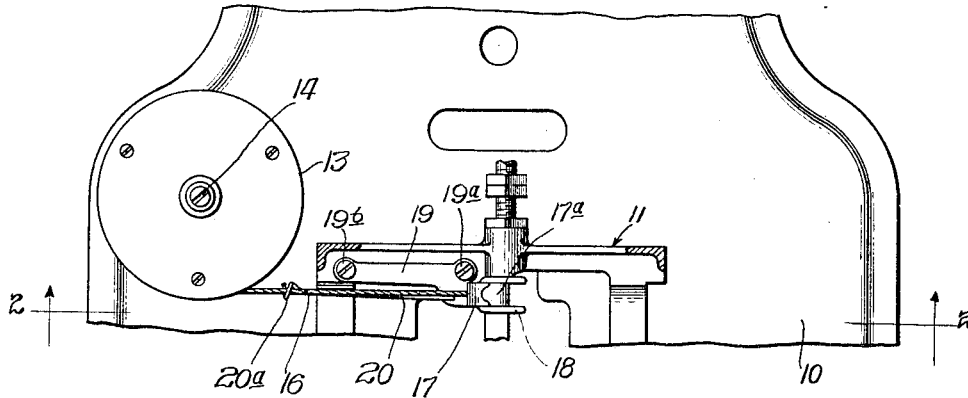


Fig. 2.

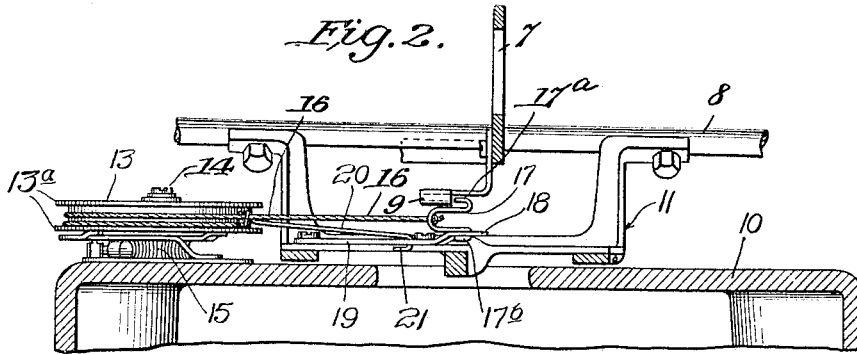
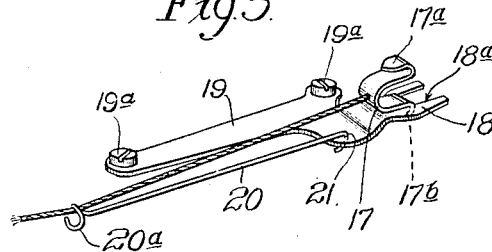


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

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SAFETY-LOOP FOR TYPE-WRITING MACHINES.

1,120,391.

Specification of Letters Patent.

Patented Dec. 8, 1914.

Application filed February 28, 1914. Serial No. 821,635.

To all whom it may concern:

Be it known that I, THERON L. KNAPP, a citizen of the United States, and a resident of Woodstock, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Safety-Loops for Type-Writing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improved safety holding device for the traction cord or strand of a typewriting-machine carriage, and more particularly to a safety loop applicable for use in connection with a carriage-actuating mechanism for typewriting machines of that kind embracing a cord which forms, under normal operating conditions, the connection between the carriage and the spring-actuated barrel upon which the cord is wound and unwound during the movement of the carriage, and in which the end of said cord that is attached to the carriage is provided with retaining means whereby the cord, when disconnected from the carriage, may be connected with a retaining member on the machine shift-frame. Such safety loop is designed to perform its function during the period when the cord is detached from the carriage and the latter is removed from the machine; said safety loop acting in conjunction with the retaining means to prevent the cord from being entirely released and the spring barrel being allowed to rotate without restraint, should the cord be accidentally or inadvertently released from such retaining member.

The features constituting the invention will be clearly understood as I proceed with the description in connection with the drawings, wherein the device is shown as applied to a typewriting machine of the kind known as the "Oliver", although the features constituting the invention may be applied to machines of other kinds.

In the drawings—Figure 1 is a fragmentary top plan view of a portion of an Oliver typewriting machine showing the portions thereof embodying my invention, with parts immediately above removed; Fig. 2 is a view in vertical cross-section, taken on line 2—2 of Fig. 1; Fig. 3 is a detail view in perspec-

tive showing the arrangement of the device constituting my invention.

Referring to the accompanying drawings, only such portions of the machine are shown which are immediately connected with the device embodying my invention, the remaining portions of the machine corresponding in construction and operation with those found in the "Oliver" typewriting machine.

The machine base 10 supports upon its upper surface, and substantially at the central portion, the shift-frame 11, the same comprising a frame adapted to be shifted rearwardly and forwardly for printing upper and lower case letters, and to support the paper carriage 7, which latter is adapted to be moved from left to right upon suitable tracks that are rigidly supported upon the said shift-frame, the rear track 8 being herein shown, (Fig. 2).

To the left and rear of the shift-frame, is mounted the spring barrel 13, comprising a flat cylindrical drum provided with upper and lower flanges 13^a, 13^b. The spring barrel is rotatably mounted in horizontal position upon the top of the machine base by means of an upright pivot bolt 14. The barrel is shown as provided with a gear wheel 15, forming part of the tension controlling mechanism for the actuating spring (not shown), which is contained within the barrel. The rotative movement of the spring barrel is transmitted to the carriage by means of a flexible connecting member or cord 16 fastened to the spring barrel and wrapped around the drum portion thereof a suitable number of times, to allow the cord to be wound and unwound thereon as the carriage moves in a direction toward and away from the spring barrel. The free end of the cord 16 is provided with a hooked connecting member 17 adapted for engagement with a depending projection or catch 9 secured to the side plate at the right-hand end of the carriage 7. Said connecting member 17 consists, as shown, of a U-shaped piece of metal (Fig. 3) the ends of which are bent back upon themselves so as to form an upper hook 17^a and a lower hook 17^b. The upper hook 17^a normally engages the projection or catch 9 of the carriage, and the lower hook is located in a position to engage a keeper 18 on the shift-frame. This keeper extends transversely to the path of the carriage and is provided with arms

forming a notch 18^a adapted to receive the lower hook 17^b of the connecting member 17. The keeper is formed integral with a plate 19 which is offset downwardly and rearwardly from the keeper and rigidly secured to the shift-frame by means of screws 19^a, 19^a. The keeper 18 is so positioned, in its relation to the path of movement of the carriage, as not to engage the hooked connecting member 17 during the normal movement of the carriage from left to right, or, in other words, it is not in use while the machine is in operation. When the carriage is moved to the left, beyond its normal path of movement, in the act of removing said carriage from the machine, the lower hook 17^b is engaged by the keeper 18, the upper hook 17^a being simultaneously disconnected from the catch 9 of the carriage.

In case the free end of the cord 16 should be released from the keeper by accident or through inadvertence on the part of the operator, the spring barrel would be instantly free to rotate, accompanied by the unwinding of the spring and the disarrangement of the cord upon the spring barrel. Such a condition gives rise to considerable inconvenience in that the spring must be again adjusted to the proper tension and the cord properly replaced upon the spring barrel. In order to eliminate the possibility of such an accident occurring and to obviate the resulting loss of time and trouble in readjusting the parts, I provide a part 20, designated as a safety loop, adapted to act, in case the hooked connecting member 17 is released from the keeper 18, to engage the said connecting member and thereby prevent farther movement of the cord and the spring barrel. The safety loop 20 consists of a straight member, preferably in the form of a stiff rod or wire, loosely connected at its right-hand end with the plate 19 and at its left-hand end with the cord. Said member is preferably provided at its inner end with a hooked extremity 20^a which engages an aperture 21 in the plate 19, although other connecting means may be employed. From the plate the member extends substantially parallel with the cord 16 and in the direction of the spring barrel. At its left-hand end said member is provided with an open eye or loop 20^b adapted to engage the cord intermediate of the keeper and the spring barrel. The said loop is so formed as to permit the same to be easily engaged with and disengaged from the cord, and is of a size sufficiently small to prevent the hooked connecting member 17 from passing there-through. The loose connection between the safety member and the plate permits the same to conform to the lateral movements of the cord, and said safety member is so light as not to interfere with the proper action of the cord or spring barrel.

The safety loop device described is of great advantage in securing the proper operation and maintenance of the machine by preventing the escape of the free end of the cord, which in its absence is liable to frequently occur. The release or escape of the cord results in shock to the spring barrel, spring and adjusting mechanism, resulting in injurious strain, if not actual breakage. In addition to preventing such accidental release, the device described insures a constant tension in the spring barrel and hence an unvarying condition of operation of the machine, by eliminating the difficulty experienced in readjusting or restoring the parts to their original condition, as is necessary whenever the release of the cord occurs.

The features of my invention may be variously modified as regards the details of construction without departing from the spirit of the invention, and for that reason I do not wish to be limited to the structure herein described and shown, except in so far as specifically pointed out in the claims.

I claim as my invention:

1. In a typewriting machine, the combination of a paper carriage, a spring barrel, a keeper, a flexible connecting member on said spring barrel, adapted for detachable connection with the carriage or with the said keeper, and a safety member provided with a loop through which said flexible connecting member freely passes, and which is adapted to engage and retain said flexible member in case the same becomes detached from said keeper.

2. In a typewriting machine, the combination of a paper carriage, a spring barrel, a keeper, a flexible connecting member on said spring barrel, provided with a hooked member adapted for detachable connection either with the carriage or with the keeper, and a safety member comprising a wire flexibly connected with the keeper and provided with an open loop for engagement with said flexible connecting member.

3. In a typewriting machine, the combination of a base-frame, a shift frame, a paper carriage movable on said shift frame, a keeper attached to said shift frame, a spring barrel mounted on the base-frame, a flexible connecting member on said spring barrel, provided with a hooked member adapted for detachable connection either with the carriage or with the keeper, and a safety member loosely connected at one end with the shift frame and engaging the said connecting member intermediate the keeper and the spring barrel.

4. In a typewriting machine, the combination of a base-frame, a shift frame, a paper carriage movable on said shift frame, a keeper attached to the shift frame, a spring barrel mounted on the base-frame, a flexible

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connecting member on said spring barrel,
provided with a hooked member adapted for
detachable connection either with the car-
riage or with the said keeper, and a safety
5 member comprising a wire loosely connected
at one end with said keeper and provided
at its opposite end with an open loop for
engagement with said flexible connecting
member.

In testimony, that I claim the foregoing 10
as my invention I affix my signature in the
presence of two witnesses, this 24th day of
February, A. D. 1914.

THERON L. KNAPP.

Witnesses:

BART C. YOUNG,
HAROLD W. FRAME.

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