

No. 862,566.

PATENTED AUG. 6, 1907.

T. L. KNAPP & C. O. HARTING.

RIGHT HAND MARGINAL-RELEASE DEVICE FOR TYPE WRITERS.

APPLICATION FILED NOV. 15, 1906.

3 SHEETS—SHEET 1.

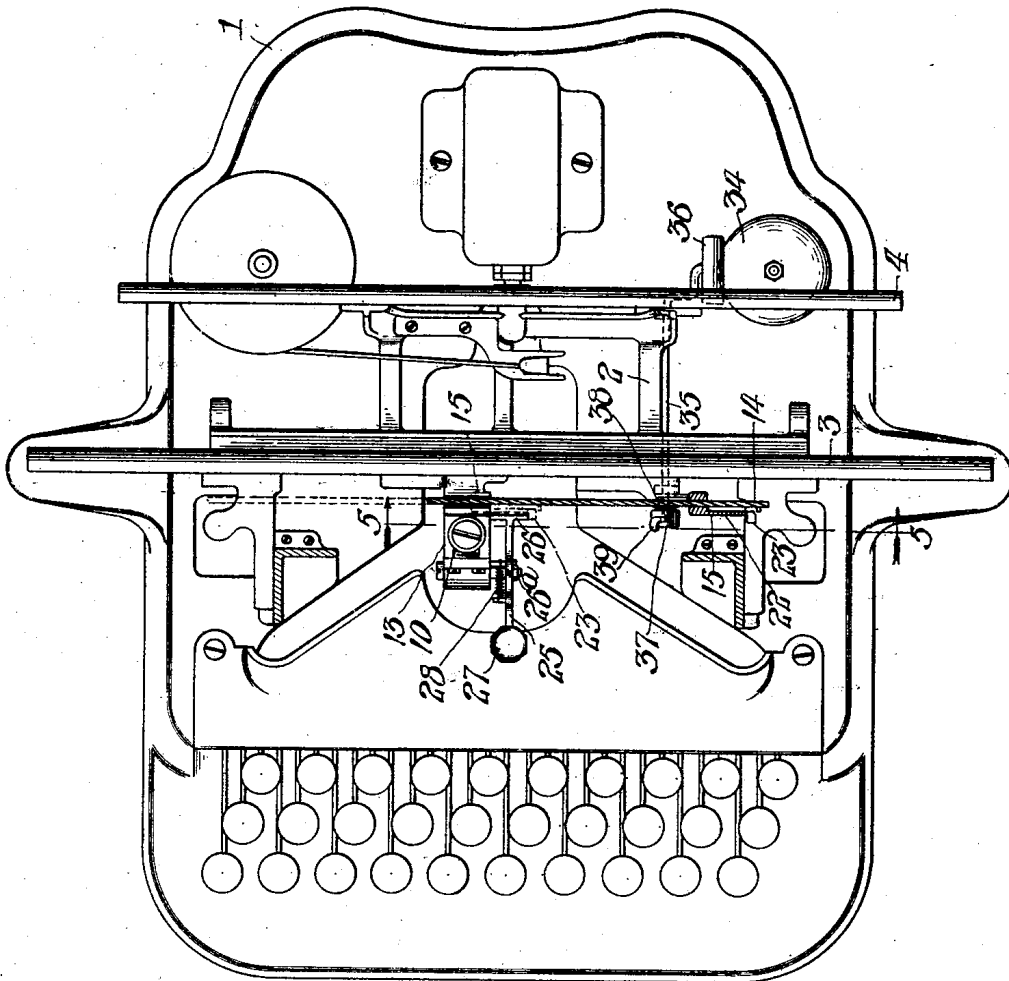


Fig. 1.

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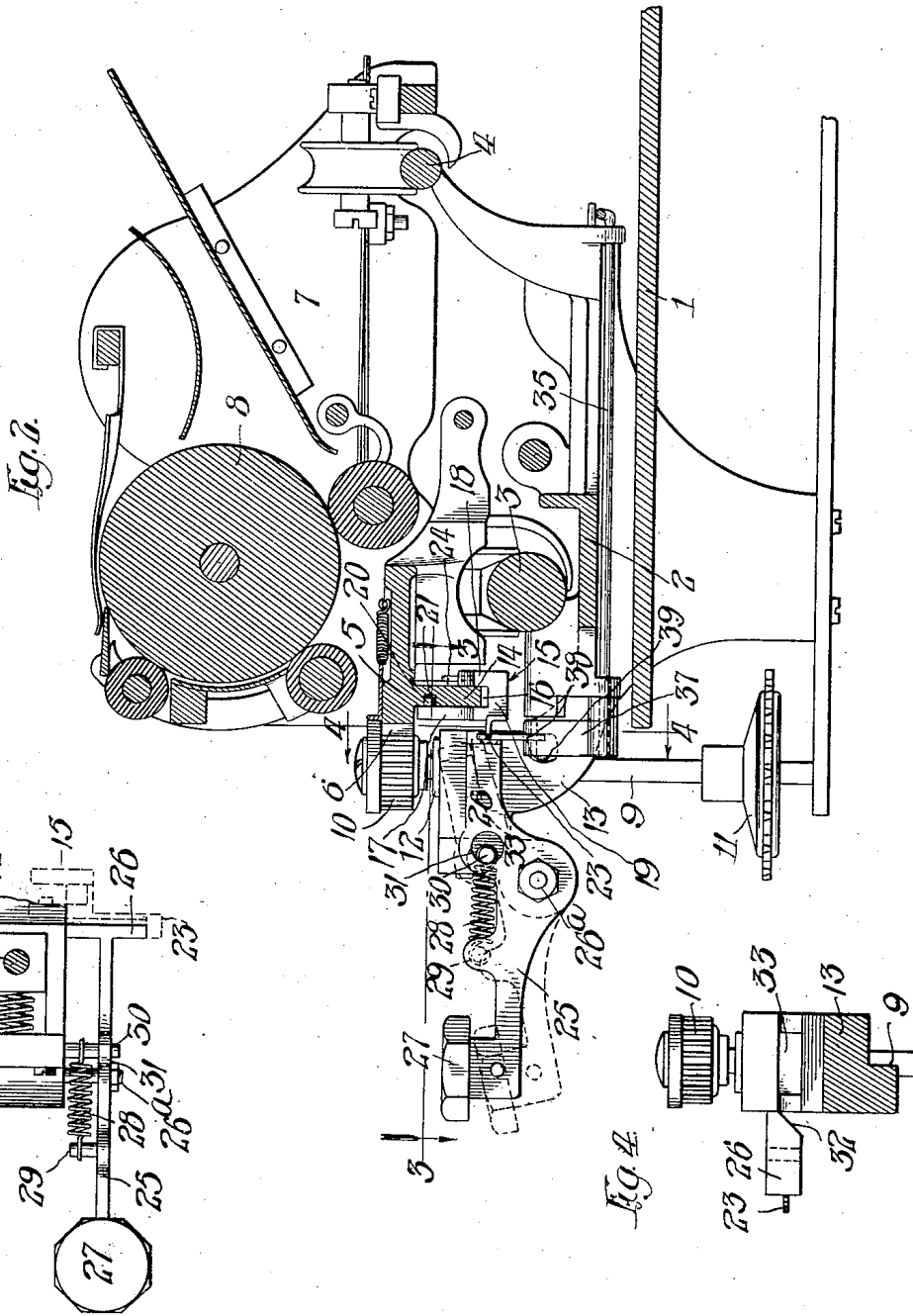
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

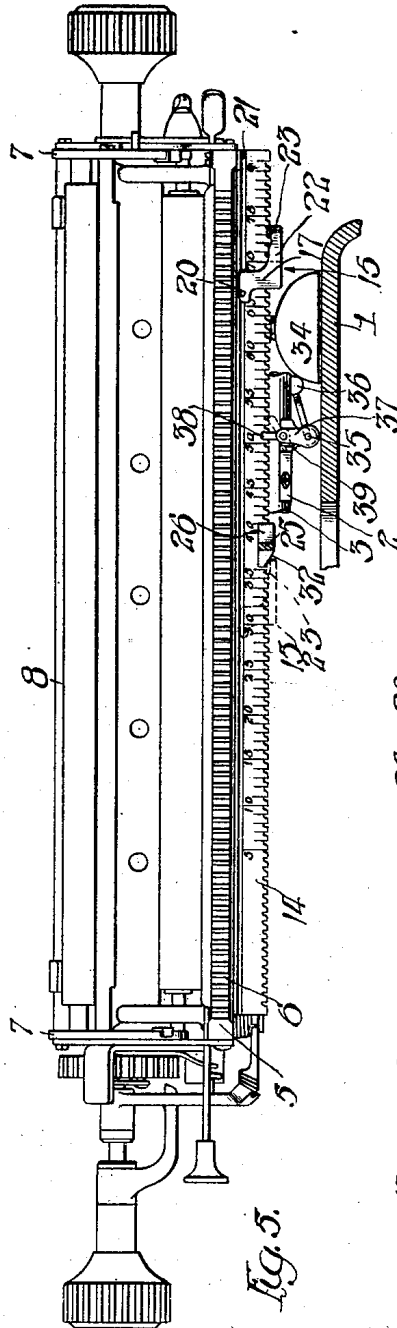


Fig. 5.

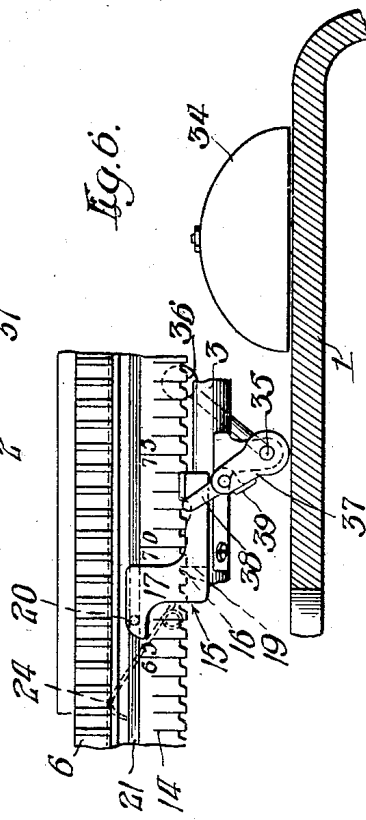


Fig. 6.

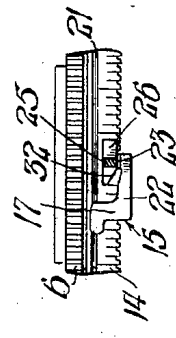


Fig. 7.

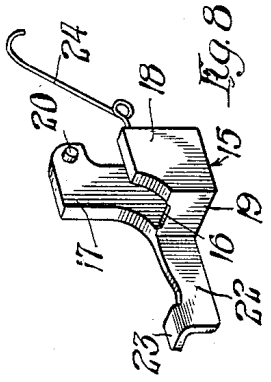


Fig. 8.

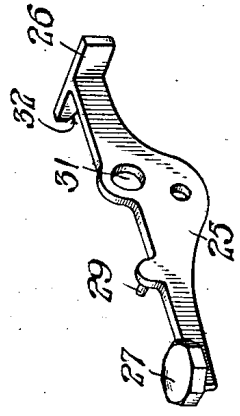


Fig. 9.

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# UNITED STATES PATENT OFFICE.

THERON L. KNAPP AND CLAYTON C. HARTING, OF WOODSTOCK, ILLINOIS, ASSIGNORS TO THE OLIVER TYPEWRITER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## RIGHT-HAND MARGINAL RELEASE DEVICE FOR TYPE-WRITERS.

No. 862,566.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed November 15, 1906. Serial No. 343,521.

*To all whom it may concern:*

Be it known that we, THERON L. KNAPP and CLAYTON C. HARTING, citizens of the United States, both of Woodstock, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Right-Hand Marginal Release Devices for Type-Writers; and we 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 improvements in typewriting machines and more especially to an improved right hand marginal stop mechanism.

The several features of our invention are herein shown as applied to a typewriting machine of the kind known as the "Oliver", but some of the features of the invention may be adapted for application to other types of machines.

The invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

In the accompanying drawings:—Figure 1 is a plan view of the base-frame and carriage shift-frame of an "Oliver" typewriting machine with the paper-carriage removed, showing the type-bar supporting standards and the rack-bar of the paper-carriage in horizontal section. Fig. 2 is a section on a larger scale, taken transversely through the paper-carriage, shift-frame and adjacent parts of the base-frame of the typewriting machine, showing in side elevation the parts concerned in arresting the movement of the carriage toward the left and in the operation of the alarm bell. Fig. 3 is a detail horizontal section, taken on line 3—3 of Fig. 2. Fig. 4 is a detail section, taken on line 4—4 of Fig. 2. Fig. 5 is a view showing the paper-carriage and bell-operating devices in front elevation with parts of the base-frame of the machine and of the devices for arresting the movement of the carriage as seen in section, taken on line 5—5 of Fig. 1. Fig. 6 is an enlarged detail view showing part of the rack-bar of the paper-carriage together with devices on the said rack-bar and frame of the machine forming the bell-operating mechanism. Fig. 7 is a detail view of a part of the rack-bar of the carriage with the right hand margin stop thereon and the inner end of the stop-lever mounted on the frame. Fig. 8 is a perspective view of the right hand margin stop on the paper-carriage, detached from the rack-bar thereof. Fig. 9 is a perspective view of the lever forming part of the right hand margin stop mechanism.

As shown in said drawings, 1 indicates the base-frame of the machine, and 2 the shift-frame which is mounted above said base-frame and on which the carriage rests and has endwise or letter-space movement. Said shift frame has backward and forward sliding shifting movement on the base-frame in order to bring the platen, carried by the carriage, in position to receive an impression from either one of three types, as common in machines of this class. On the forward and rear parts of the shift-frame are mounted horizontal and transverse guide-rods 3 and 4 on which rest and roll the supporting or guide-rollers of the paper-carriage.

5 indicates the front longitudinal frame member of the carriage, which constitutes the rack-bar thereof, and on the front edge of which are formed ratchet-teeth 6 which are engaged by the devices for controlling the endwise movement of the carriage under the action of the carriage actuating spring. Said frame-bar 5 is attached at its ends to the end-plates 7, 7 of the carriage between which is mounted the platen 8.

9 indicates a vertical escape-wheel shaft located near the center of the machine and mounted on the front of the shift-frame 2. Said shaft 9 is provided at its upper end with a gear-pinion 10 adapted to engage the teeth on the rack-bar 5 of the carriage. Said shaft carries at its lower end an escape-wheel 11 which forms part of the escapement mechanism operated by the universal-bar of the machine, through which the endwise or letter-space movement of the carriage under the action of the carriage actuating spring is controlled. The upper end of said shaft 9 is movable toward and from the carriage frame member 5, and has bearing in a block 12 mounted to slide backwardly and forwardly in a guide-bracket 13 on the shift-frame.

Referring now to the construction of the right-hand margin stop mechanism by which the movement of the carriage toward the left is arrested when the end of a line of printing is reached, the longitudinal frame bar 5 of the carriage is provided with a depending, longitudinal flange 14 preferably extending the entire length thereof. On the right hand end of said flange 14 is movably secured a sliding stop-member 15 which is adapted to be adjusted longitudinally of the said flange by engagement of a tooth 16 thereon with either one of a series of notches formed on the lower edge of said flange 14. Said stop-member consists generally of a block which is notched to receive the lower edge of the flange 14; said stop-member, in the particular form thereof shown in the drawings, embracing outer and inner parallel, vertical plates 17 and 18, which rest against the outer and inner faces of the flange 14,

and are joined at their lower margins by a transverse connecting part 19, on the upper edge of which is formed the tooth 16. The outer or forward plate 17 is provided at its upper part with a rearwardly or inwardly extending stud 20, adapted for engagement with a longitudinal groove 21 formed in the front face of the flange 14, said stud 20 being located to the left of the tooth 16. The stop member is provided with a rigid arm 22 which extends towards the right from the tooth 16 and is provided at its right hand end with a forwardly projecting, horizontal stop lug 23. A spring-arm 24 is attached to the inner plate 18 of the stop-member, said spring-arm extending upwardly from the stop-member with its free end in position to bear against the under surface of the bar 5 at the rear of the flange 14, and at a point to the left of the stud 20. Such spring-arm 24 presses at its free end upwardly against the lower surface of the bar 5, in such manner as to tend to turn or rotate the stop-member about the stud 20, which is engaged with the groove 21 in the flange 14, and to thereby swing or carry the tooth 16 into engagement with the notches on the lower edge of said flange. Said tooth is thus yieldingly held in engagement with one of said notches. By pressing downwardly on the right hand end of the arm 22 the stop member will be swung on the stud 20 so as to disengage the said tooth from any notch with which it may be engaged, and the stop-member may be then moved along the frame to a desired position thereon, when, by releasing the downward pressure on the said arm, the tooth, under the action of the spring-arm 24, will rise into engagement with another one of said notches and thus lock the stop-member from shifting or moving on the flange.

The stop-lug 23 on the carriage stop-member is adapted for contact with a stop-member 26 mounted on the shift-frame and located normally in the path of said lug 23, but which is adapted to be swung upwardly to permit the said stop-lug 23 to pass beneath it, and thus permit the carriage to move toward the left beyond the point determined by the adjusted position of the stop-member on the carriage and which determines the width of the right hand margin on the paper. The stop-member 26 has the form of a transverse bar attached rigidly to the inner end of a lever 25 which is mounted at the right hand side of the forwardly projecting bracket 13, on the shift-frame, by means of a pivot stud 26<sup>a</sup>. The lever 25 extends in a direction from front to rear of the machine or in right angles to the path of movement of the carriage and is provided at its forward end with a key 27 by which it may be manipulated. The key-lever 25 and the stop-member 26 thereon have vertical or oscillatory movement limited by suitable stops and said key-lever is held by a spring normally in position with its outer end elevated, and its inner end, with the stop-member 26 thereon, depressed. In the construction illustrated, a coiled spring 28 is connected at one end with a stud 29 projecting from the left hand face of the lever 25 forward of and above the pivot of said lever and at its opposite end to a stud 30 attached to the bracket 13 and projecting toward the right from said bracket. Said stud 30 is shown as also forming a stop to limit the swinging movement of the key-lever 25, it being, for

this purpose, extended through a hole 31 formed in said lever, the hole being of such size as to afford the desired extent of movement in the lever. When it is desired to permit the carriage to pass beyond its normal range of movement toward the left, so as to extend the line of printing to a greater or less extent over the right hand blank space or margin of the paper, the key-lever 25 is depressed by downward pressure on the key 27, with the result that the stop-member 26 is lifted out of the path of the stop-lug 23, and the latter is permitted to pass beneath the said stop-member.

In order to permit the carriage to move freely backward after the lug 23 has been allowed to pass the stop-member 26 in the movement of the carriage toward the left, as described, said stop-member 26 is provided at its left hand end with a beveled surface 32 located in the path of the lug 23 and with which the said lug 23 is adapted to come in contact in the movement of the carriage toward the right, with the effect of lifting the said stop-member 26 automatically against the action of the spring 28. The beveled construction of the stop-member 26 also facilitates the insertion of the carriage into the machine; the lug 23 lifting the said stop-member 26 when it reaches the same so as to pass beneath it unimpeded, in the manner clearly seen in Fig. 4.

In order that the stop-member 26 shall be held firmly and rigidly against movement toward the left when the stop-lug 23 strikes said stop-member 26 in the movement of the carriage toward the left, the bracket 13 on the shift-frame is extended rearwardly so as to bring its rear, vertical face about in line with the rear face of the said stop-member 26, and said bracket is provided in its said rear face with a horizontal notch 33, (Fig. 4), located in such position that the lug 23 may freely pass through the same in the movement of the carriage. The left-hand end of the stop-member 26 is, moreover, so arranged that it will bear against the right hand side of the bracket 13, above the notch 33, when said stop-member is in its normal position, as clearly seen in Fig. 4. As a result of this construction, the strain brought upon the stop-member by contact of the lug 23 therewith, is, by the contact of said stop-member 26 with the bracket 13, transmitted to the latter, and any movement of said stop-member 26 toward the left under the impact of the lug 23 is thereby prevented.

The stop-lug 23 is adapted to operate an alarm bell mechanism for indicating to the operator when the end of a line of writing is reached. Said alarm bell mechanism, as shown in the drawings, is made as follows: 34 indicates the alarm bell which is mounted on the base-frame of the machine adjacent to the rear of the shift-frame. 35 is a rock-shaft mounted on the shift-frame and extending from front to rear of the machine. Said rock-shaft is provided at its rear end with an arm carrying a bell-hammer 36. At its forward end the rock-shaft is provided with a rigidly attached crank-arm 37 which rises from the crank-shaft and is provided at its upper end with a pivoted dog 38 which swings on an axis parallel with that of the rock-shaft. The upper or free end of the dog 38 is adapted to swing in the same vertical plane with the stop-lug 23 on the stop-member 15 and stands normally in the path of movement of said lug 23. The dog 38 is free to swing on its pivotal con-

nection with the crank-arm 37 in a direction toward the right, but its movement relatively to said crank-arm toward the left is limited by a stop-arm 39 which is rigidly attached to said dog and is adapted for contact with said crank-arm in such manner as to limit the swinging movement of the dog toward the left, when the dog is in position to constitute an extension or prolongation of the said crank-arm. Said crank-arm 37 normally stands in an upright position at which time the hammer 36 is adjacent to the bell, as clearly seen in Fig. 5. When, in the movement of the carriage towards the left, the lug 23 comes in contact with the dog 38, said dog and the crank-arm are swung toward the left, as seen in Fig. 6, thereby lifting the hammer 36. When the lug 23 passes the dog 38, the dog and arm 37 are released and are allowed to move toward the right, the hammer falling against the bell by its weight or gravity. In the return movement of the carriage toward the right, the lug 23 will come in contact with the pivoted dog 38 and swing the latter toward the right, as shown in dotted lines in Fig. 5, so as to pass over said dog without moving the crank-arm or bell-hammer.

The making of the movable stop-member 26 of the shift-frame of horizontally elongated form, or in the form of a horizontally elongated cross-piece on the inner end of the key-lever 25, and making said stop-member 26 vertically movable to permit the stop-lug 23 on the carriage to pass beneath it, in connection with the construction by which the bracket 13 is provided with the notch 33 in its rear face and the left hand end of the stop-member 26 is beveled on its lower surface and is adapted for contact, above said beveled surface, with a part of said bracket 13 above said notch, has the advantage that the said lug 23 in its movement toward the right may easily lift said stop-member 26 by contact with the said beveled surface of the latter, while at the same time said stop-member, by its contact with the right hand end face of the bracket above said notch 33, is held from movement towards the left upon the impact of the lug 23 against the same and all strain is taken from the pivot of the key-lever 25 at the time of such impact. The provision of the arm 22 on the stop-member 15 extending toward the right from the body of said stop-member and carrying the stop-lug 23 at its right hand end, has the advantage of enabling the said stop-member to be easily and conveniently manipulated by the fingers for the purpose of adjusting the same on the flange 14, it being obvious that the right hand end of said arm 22 and the stop-lug 23 thereon is in position to be easily grasped by the fingers for the purpose of depressing the same to disengage the stop-member 15 from the notched flange 14 and for shifting the stop-member endwise on said flange. Moreover, said stop-lug 23 is located on said arm 22 at or about the level of the notches or teeth on the lower edge of the flange 14. This construction has the advantage that, when the stop-lug strikes the stop-member 26, the strain produced by the impact is exerted in the horizontal plane of said teeth or notches and, therefore, has little or no tendency to throw the stop-member 26, as a whole, into an inclined position, in a manner tending to force the stud 20 downwardly against the bottom of the groove 21, in said flange 14. By the construction described,

therefore, liability of rapid wear and injury to the parts, which would result from the stud 20 being frequently and forcibly brought against the bottom of the groove 21, is largely avoided.

We claim as our invention:—

1. The combination with a carriage provided with a longitudinally adjustable stop-member having a forwardly projecting stop-lug, a key-lever arranged at right angles to the path of the carriage and provided at its rear end with a horizontal stop-member having bodily vertical movement, and which is horizontally elongated in the direction of movement of the carriage and provided with a beveled surface at its left-hand end for engagement with the said lug, and a spring applied to hold said stop-member yieldingly in the path of said stop-lug. 70
2. The combination with a carriage provided with a longitudinally adjustable stop-member having a forwardly projecting stop-lug, a key-lever provided with a vertically movable stop-member which is horizontally elongated in the direction of movement of the carriage, a spring applied to hold the said stop-member yieldingly in the path of said stop-lug, and a bracket to which said key-lever is pivoted and which is provided on its right hand face with a vertical surface in position for contact with the left-hand end of said stop-member when the latter is in the path of said lug. 75
3. In combination with a carriage provided with a longitudinally adjustable stop-member having a stop-lug, a key-lever provided with a stop-member which is horizontally elongated in the direction of movement of the carriage and which is provided with a beveled surface at its left-hand end for engagement with said stop-lug, a spring applied to hold said stop-member yieldingly with its said inclined surface in the path of said stop-lug, and a bracket to which said key-lever is pivoted and which is provided on its right-hand face with a vertical surface in position for contact with the left-hand end of said stop-member when the latter is in the path of said lug. 80
4. The combination with a carriage provided with a longitudinally adjustable stop-member having a forwardly projecting stop-lug, a key-lever provided with a stop-member which is horizontally elongated in the direction of movement of the carriage and provided with a downwardly facing beveled surface at its left-hand end for engagement with the stop-lug, a spring applied to hold said stop-member yieldingly with its said inclined surface in the path of said stop-lug, and a bracket to which said key-lever is pivoted and which is provided on its inner face with a horizontal notch for the passage of said stop-lug and with a vertical surface above said notch adapted for contact with the upper part of the left-hand end of said stop-member when the latter is in the path of said lug. 85
5. The combination with a carriage provided with a longitudinal frame-member having a depending longitudinal flange notched at its lower edge and pivoted with a longitudinal groove, of a stop-member provided with a tooth to engage the notches of said flange with a stud located at the right of said tooth and adapted to engage the groove in the flange, with a spring-arm acting on said bar in a manner to hold the tooth in engagement with the notches of the flange and with an arm extending to the right from said tooth and provided with a horizontal stop-lug located substantially at the level of the notched lower edge of said flange, and a movable stop-member on the machine frame, located in the path of said stop-lug. 90
6. The combination with a shift-frame provided with a forwardly extending central bracket, of a carriage moving endwise on said shift-frame, a stop-member which is longitudinally adjustable on the carriage and is provided with an arm which extends horizontally therefrom toward the right and having on the right hand end of said arm a forwardly projecting stop-lug, a key-lever pivoted to said standard and having at its inner end a stop-member which is horizontally elongated in the direction of movement of the carriage, and a spring applied to hold the said stop-member normally in the path of said stop-lug. 95

140

7. The combination with a shift-frame provided with a forwardly extending central bracket, of a carriage moving endwise on said shift-frame, and which is longitudinally adjustable on the carriage and is provided with an arm  
 5 which extends horizontally toward the right and having on the right-hand end of said arm a forwardly projecting stop-lug, a key-lever pivoted to said bracket and having at its inner end a stop-member which is horizontally elongated in the direction of movement of the carriage and is  
 10 provided at its left-hand end with an inclined surface located in the path of the said stop-lug, and a spring ap-

plied to hold the said stop-member normally in the path of said stop-lug.

In testimony, that we claim the foregoing as our invention we affix our signatures in the presence of two witnesses, this 5th day of November A. D. 1906. 15

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 CLAYTON C. HARTING.

Witnesses:

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 E. WINDMUELLER.