G. A. SEIB.

TYPE WRITING MACHINE.

APPLICATION FILED APR. 22, 1910.

962,591.

Patented June 28, 1910.

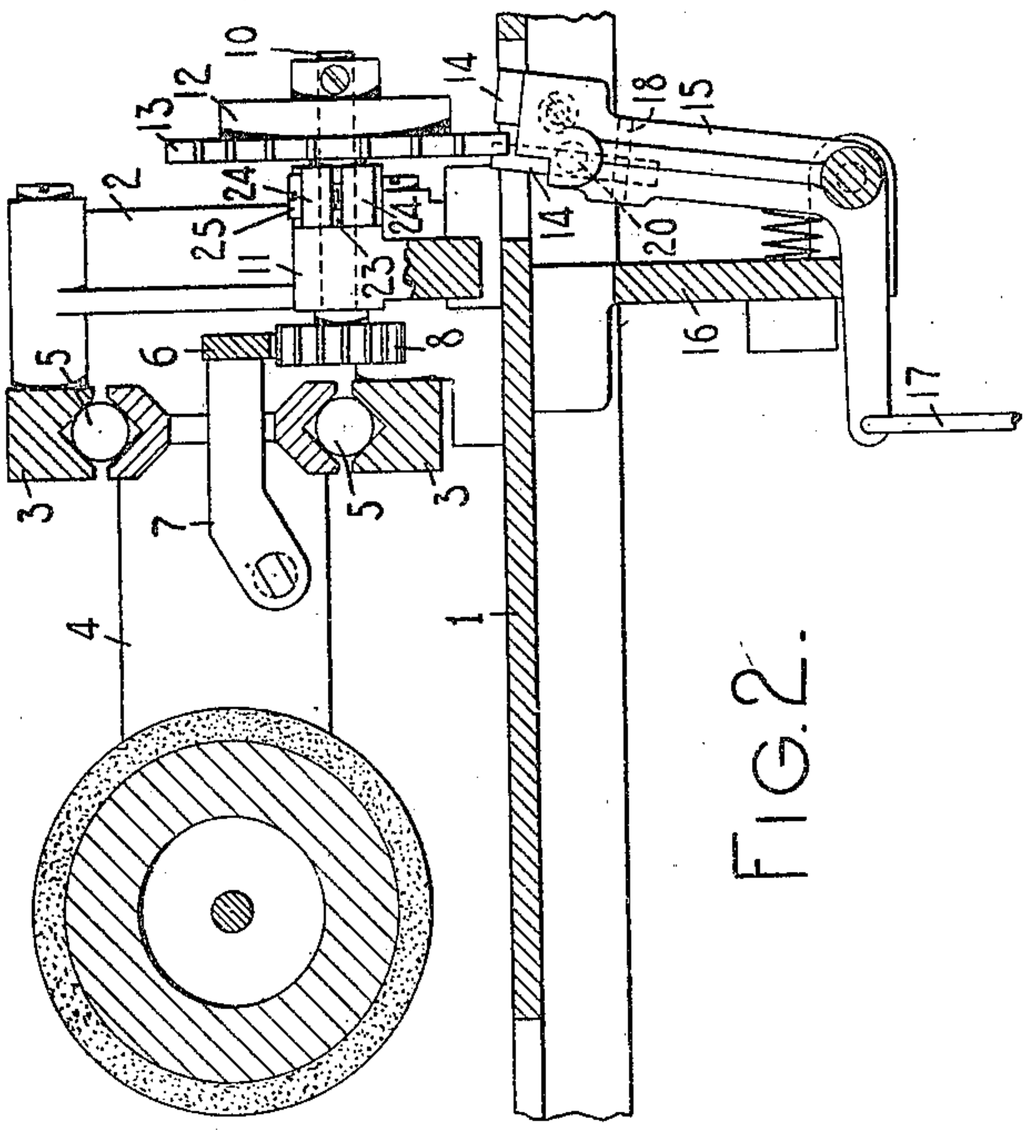

FIG. 2.

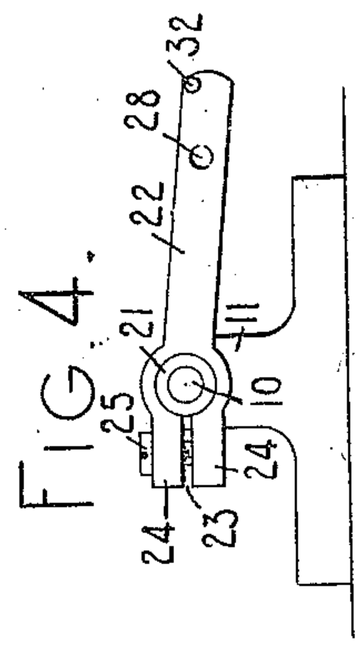

FIG. 4.

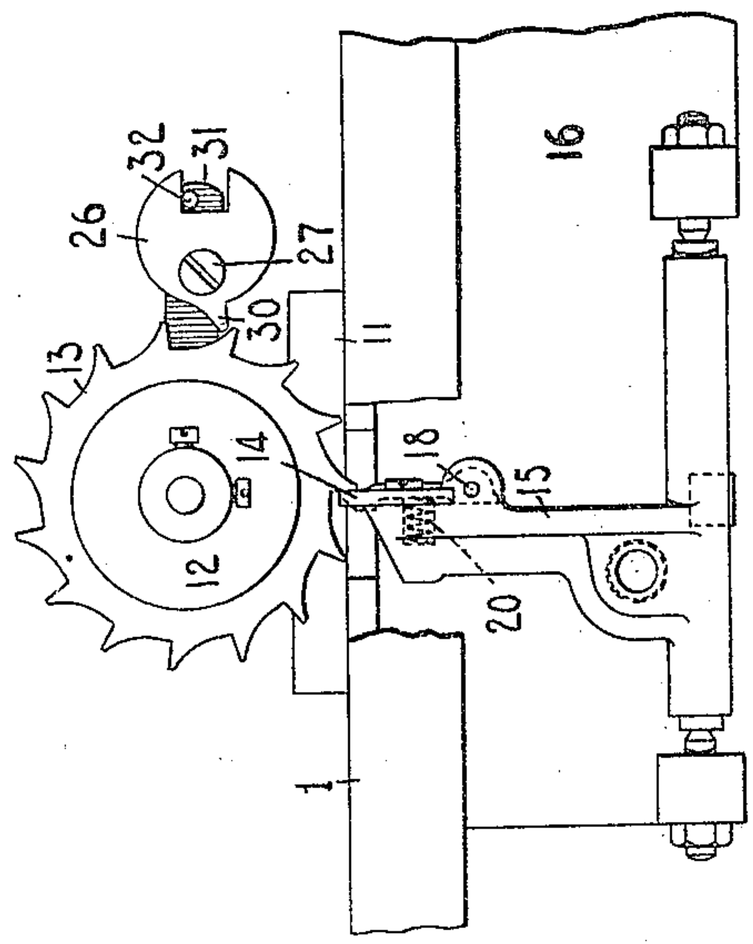

FIG. 1.

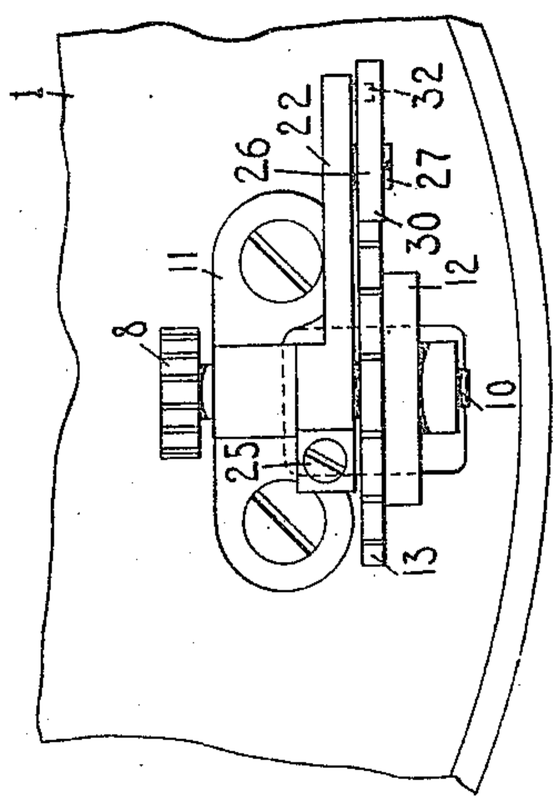

FIG. 3.

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UNITED STATES PATENT OFFICE.

GEORGE A. SEIB, OF ILION, NEW YORK, ASSIGNOR TO THE MONARCH TYPEWRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

962,591. Specification of Letters Patent. Patented June 28, 1910.

Application filed April 22, 1910. Serial No. 556,987.

To all whom it may concern:

Be it known that I, GEORGE A. SEIB, citizen of the United States, and resident of Ilion, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to typewriting machines and more particularly to the carriage feed mechanism of such machines.

The object of the invention is to provide an improved construction and mounting of the check pawl for preventing backward rotation of the carriage escapement wheel.

Typewriting machines are equipped with different styles of types and the distance through which the carriage is allowed to step at each printing operation is varied, depending upon the style of type employed. The commonest typewriter type is called "pica" and when this type is used 10 letters are written to the linear inch. Another style of type is called "Elite" and when it is used 12 letters are written to the inch. Another style is called "medium Roman" and this is a larger type than either of the others and requires a longer spacing than either of them. In most typewriting machines the carriage is fed by a spring drum and it is controlled by an escapement wheel geared to a feed rack on the carriage. The differences in spacing are brought about by changing the spacing on the feed rack and feed pinion and by varying the number of teeth in the escapement wheel. In order to coöperate conveniently with the feed dogs, for any given make of typewriting machine, the escapement wheels are all made of the same diameter but with different numbers of teeth. In the Monarch machine, for example, to which machine my invention is here shown applied, the escapement wheel is sometimes made with 18 teeth, sometimes with 15 and sometimes with 13, depending upon the style of type employed. As the escapement wheels have their teeth thus differently spaced, the check pawls of different machines come at a different angular distance from the feed dogs.

The principal object of my invention is to provide a convenient means for adjusting the check pawl circumferentially of the wheel so that it can be set for proper coöperation with a wheel of any given number of teeth. By this device the check pawl construction is identical in all machines but it is differently adjusted for different escapement wheels.

To the above and other ends my invention consists in certain features of construction and combinations and arrangements of parts, all of which will be fully set forth herein and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a fragmentary back view of part of a Monarch typewriter with my invention applied thereto. Fig. 2 is a fore and aft vertical sectional view. Fig. 3 is a top view; and Fig. 4 is a rear view of part of the invention, other parts being omitted.

The drawings show the top plate 1, standards 2, stationary rails 3 and paper carriage 4 of the Monarch typewriter, said carriage running on the rails 3 by means of rollers 5. The carriage is drawn to the left by the usual spring drum and strap, which parts, however, are not shown, and it is equipped with the usual feed rack 6 mounted on pivoted arm 7 and engaging a feed pinion 8. Said pinion is mounted on or formed integral with the forward end of a shaft 10 which is journaled in a bracket 11 mounted on the top plate 1 and comprising a barrel-like part in which the shaft 10 is mounted. Said shaft has mounted on its rear end the usual pawl box 12 containing a pawl that meshes with a ratchet wheel formed on the escapement wheel 13, said escapement and ratchet wheels being rotatably mounted on the shaft 10 and controlled by feed dogs 14 mounted on the dog rocker 15, which is pivoted to a bracket 16 depending from the top plate 1 and operated by a link 17 connected with the universal bar of the machine. The construction thus far described is, as here shown, identical with the ordinary Monarch construction.

When the carriage is pulled back to the right the shaft 10 and pawl-box 12 can turn independently of the escapement wheel; but the friction of the parts would carry the wheel backward until one tooth thereof was arrested by the feed dog. Moreover, the forward feed dog, which is the one normally engaged with the wheel, is a stepping dog pivoted at 18 and pressed toward the right in Fig. 1 by means of a spring 20, so that even if the feed rack 6 is merely lifted out of the pinion 8 this spring tends to turn the

wheel 13 backward. If the wheel is allowed to turn backward under either of these conditions, it increases the amount of lost motion to be taken up when the carriage is let go of and restored to the control of the escapement, and there are also certain conditions well understood in the art, under which this can result in certain inequalities in the left-hand margin of the writing. For these reasons it is desirable to provide a check pawl to prevent the backward turning of the escapement wheel.

As will be best understood by referring to Figs. 3 and 4, the rear barrel-like part of the bracket 11 is turned down to form a sort of tube or barrel 21 of a diameter less than that of the main body of the bracket. On this barrel there is mounted an arm 22 which is split by a saw cut 23 forming two ears 24 which are connected by means of a screw 25. The construction is such that the arm 22 can be put onto the barrel 21 and tightened thereon by tightening the screw 25. A check-pawl 26 is pivoted to the arm 22 on a screw 27 (Fig. 1) threaded into a hole 28 (Fig. 4). As here shown this pawl consists of a disk through which the screw 27 passes eccentrically and said disk is formed with a nose or tooth 30 which is adapted to be moved into the path of one of the teeth of the escapement wheel. The pawl also has a cut-out 31 through which a stop pin 32 projects from the arm 22 to limit the motion of the pawl in both directions. The disk-like formation of the pawl gives it a preponderance of weight to the right of the pivot as seen in Fig. 1, and holds it in its normal position shown in said figure. When the escapement is operated and the wheel 13 is turned in the forward direction, the oncoming tooth of the escapement wheel drives the tooth 30 out of its way and said tooth immediately drops back to normal position by gravity. In case the carriage is drawn to the right or the rack 6 is lifted out of the pinion 8, the pawl prevents any backward rotation of the wheel; at least it prevents any rotation of sufficient extent to cause any harm. It will be noted that the arm 22 can be almost instantly adjusted by turning it about the barrel 21 and that it can be quickly secured in adjusted position by tightening the screw 25. This pawl can be almost instantly arranged in proper relation to the escapement wheel whether that wheel has 13 teeth or 15 or 18, or any other number.

As shown in Fig. 3 the barrel 21 extends a short distance to the rear of the arm 22 so as to leave a suitable clearance between the arm and the escapement wheel and for a similar purpose a washer may be placed on the screw 27 between the arm and the pawl 26.

Various changes can be made in the detail of construction and arrangement without departing from my invention.

What I claim as new and desire to secure by Letters Patent, is:—

1. In a typewriting machine, the combination with a carriage, and an escapement comprising an escapement wheel, a check pawl for preventing backward rotation of said escapement wheel, and a mounting for said check pawl adjustable about the axis of the wheel.

2. In a typewriting machine, the combination with a carriage, and an escapement comprising an escapement wheel, a check pawl for preventing backward rotation of said escapement wheel, and an arm on which said check pawl is mounted, said arm being mounted on and adjustable circumferentially about the support for the escapement wheel.

3. In a typewriting machine, the combination of a carriage, a feed rack, a feed pinion, an escapement wheel, a shaft for said opinion and wheel, a bracket in which said shaft is mounted, an arm mounted on said bracket and adjustable around the bracket, and a check pawl for the escapement wheel mounted on said arm.

4. In a typewriting machine, the combination of a carriage, a feed rack, a feed pinion, an escapement wheel, a shaft for said wheel and pinion, a bracket having a barrel-like or tubular part, the shaft being journaled in said bracket and tubular part, an arm mounted on the outside of said tubular part and adjustable about it, and a check pawl carried by said arm.

5. In a typewriting machine, the combination of a carriage, a feed rack, a feed pinion, an escapement wheel, a shaft for said wheel and pinion, a bracket in which said shaft is journaled, said bracket having a tubular part, a split arm mounted on said tubular part and provided with means for tightening it, and a check pawl for the escapement wheel mounted on said arm.

6. In a typewriting machine, the combination of a carriage, and an escapement comprising an escapement wheel, a check pawl mounted for adjustment about the axis of said escapement wheel as a center, said check pawl consisting of a pivoted and weighted disk having a nose for engagement with the escapement wheel and provided with means for limiting its motion about its pivot in both directions.

signed at Ilion, in the county of Herkimer, and State of New York, this 20th day of April A. D. 1910.

GEORGE A. SEIB.

Witnesses:

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