Dec. 29, 1925. 1,567,368

O. A. HOKANSON

CARRIAGE BRAKE FOR TYPEWRITERS

Original Filed April 2, 1923 3 Sheets-Sheet 1

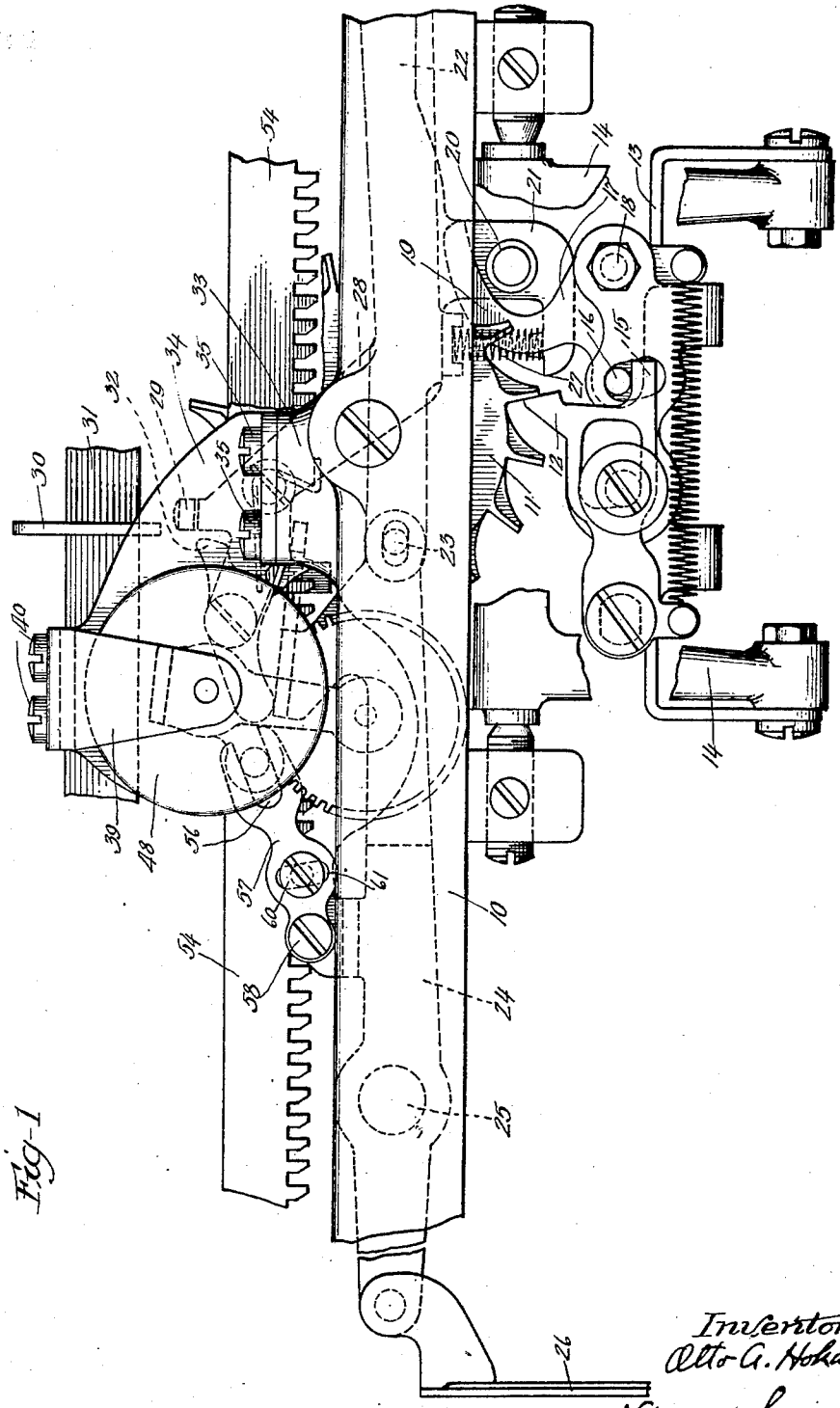


Fig. 1

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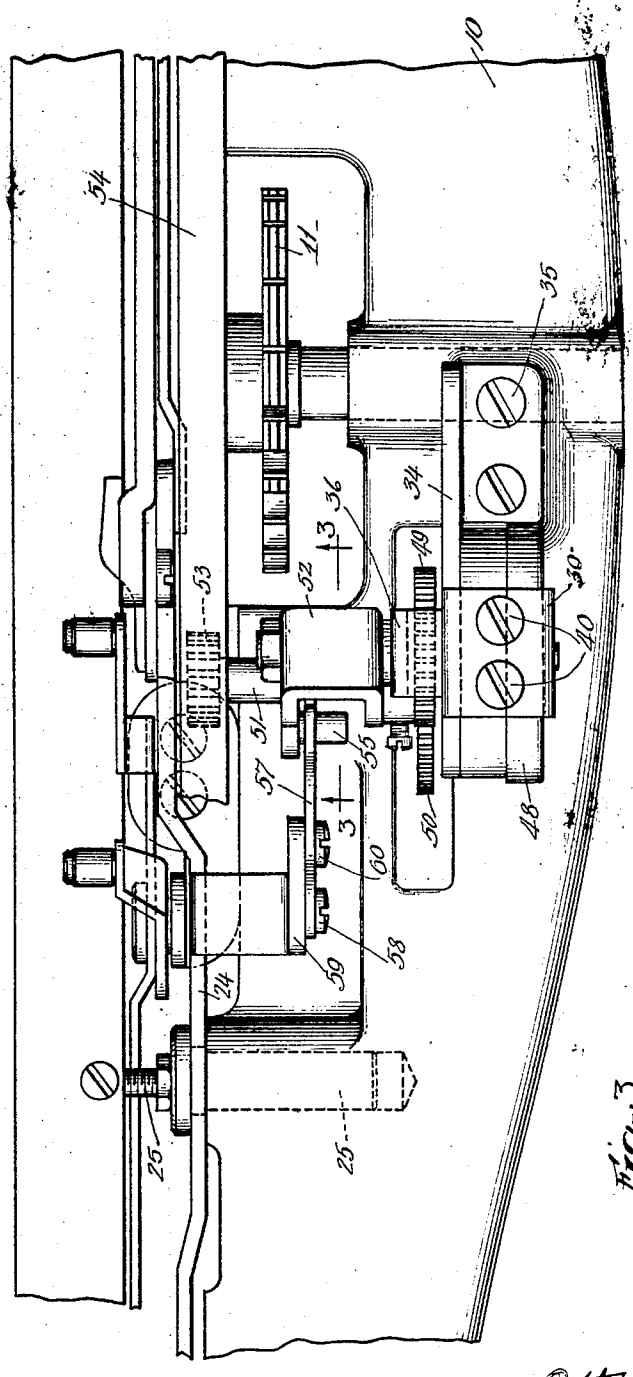


Fig-2

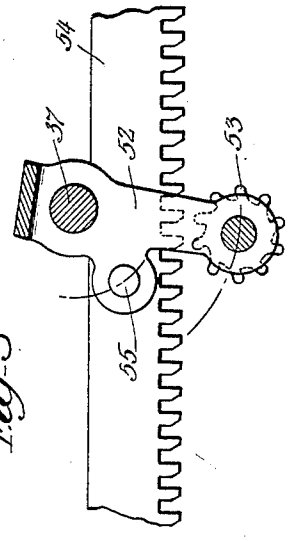


Fig-3

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Fig-4

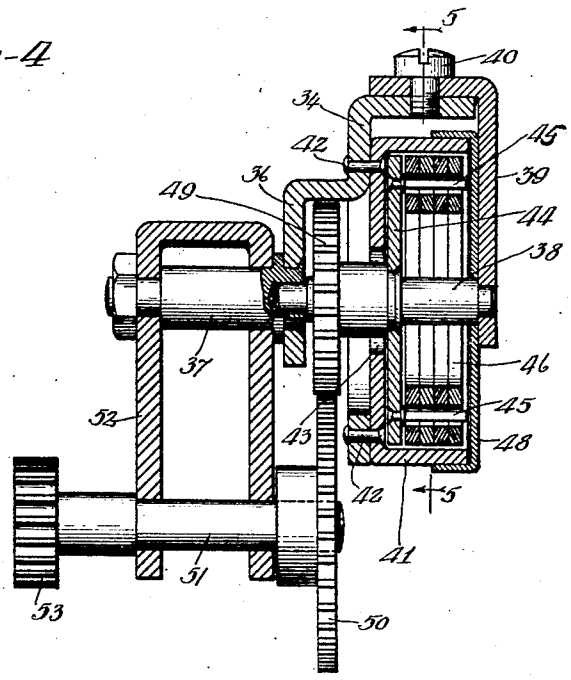
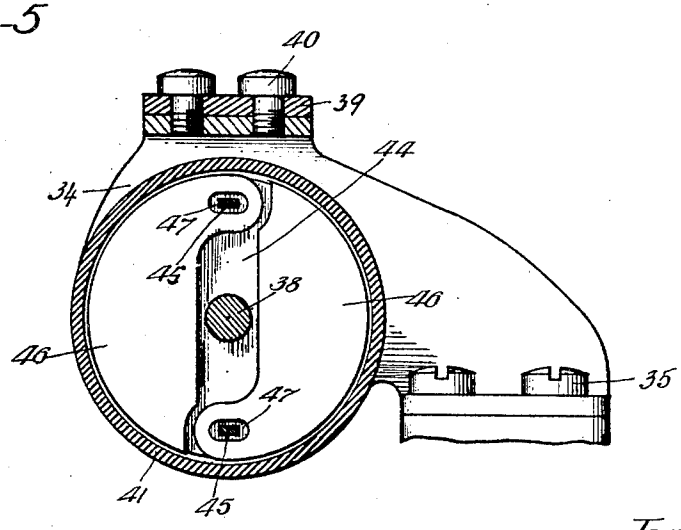


Fig-5



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Patented Dec. 29, 1925. 1,567,368

UNITED STATES PATENT OFFICE.

OTTO A. HOKANSON, OF WOODSTOCK, ILLINOIS, ASSIGNOR TO WOODSTOCK TYPEWRITER COMPANY, OF WOODSTOCK, ILLINOIS, A CORPORATION OF ILLINOIS.

CARRIAGE BRAKE FOR TYPEWRITERS.

Application filed April 2, 1923, Serial No. 629,272. Renewed May 25, 1925.

To all whom it may concern:

Be it known that I, OTTO A. HOKANSON, a citizen of the United States, residing at Woodstock, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Carriage Brakes for Typewriters, of which the following is a specification.

This invention relates to braking mechanism for controlling the travel of a typewriter carriage and is especially useful in connection with tabulating mechanism.

The invention has for its object the provision of such a device which shall be positive and uniform in its operation which is simple and economical to manufacture, and which shall be of improved construction.

The invention is exemplified in the combination and arrangement of parts shown in the accompanying drawings and described in the following specification and it is more particularly pointed out in the appended claims.

In the drawings—

Fig. 1 is a rear elevation of a portion of a typewriter, with parts broken away;

Fig. 2 is a top plan view of the mechanism shown in Fig. 1;

Fig. 3 is a fragmentary sectional view substantially on line 3—3 of Fig. 2;

Fig. 4 is a vertical section showing the construction of the brake proper; and

Fig. 5 is a vertical section substantially on line 5—5 of Fig. 4.

Tabulating mechanism for typewriters as commonly constructed provides means for releasing the carriage to permit it to travel distances determined by the position of the tabulator stops. The carriage is usually actuated by spring mechanism and where relatively long travel is permitted the carriage gains considerable momentum before it reaches the end of the travel so that when the movement is stopped the impact may give rise to considerable jar or shock. In the present invention the braking mechanism for the carriage is provided in which the braking action is proportional to the speed so that excessive speed and momentum are avoided.

In the drawings, the numeral 10 designates a portion of the framework of the typewriter having an escapement wheel 11 journaled thereon controlled by a pair of escapement dogs, one of which is shown at 12 in the drawings. The dogs 12 are mounted on a plate 13 supported by rocker arms 14 to move back and forth across the plane of the escapement wheel 11 to produce a step-by-step movement of the carriage during writing operation. The holding dog 12 is provided with a lug 15 engaged by a pin 16 on a member 17 pivoted at 18 to the supporting plate 13. The pivoted member 17 has a cam member 19 which overlies a roller 20 mounted on an arm 21 carried by a pivoted bar 22. The bar 22 is pivotally connected at 23 to a lever 24 fulcrumed at 25 on the frame 10. A link 26 connects the lever 24 with a tabulator key lever, not shown. The arm 21 carries a spring 27 which supports a pivoted bar 28 having an abutment finger 29 for engaging tabulator stops 30 on the stop bar 31. When the tabulator key is depressed the pivoted member 17 is given a counterclockwise movement, as viewed in Fig. 1, so that the dog 12 is pressed downwardly out of contact with the teeth of the escapement wheel 11, thus freeing the platen carriage for tabulator movement in the manner familiar to those skilled in the art. At the same time the depression of the tabulator key lifts the abutment 29 into the path of the tabulator stops 30 so that the carriage is arrested when a stop strikes the abutment 29. If the operation of the tabulator key should cause the abutment 29 to engage the lower edge of the stop the spring 27 will be compressed so that as soon as the carriage begins to move the abutment 29 will be raised by the expansion of the spring into the path of the next stop. A pivoted dog 32 is carried by the bar 28 and prevents rebound of the carriage. The mechanism thus far described is well known in the art and is that employed on the present "Woodstock" typewriter.

The frame member 10 carries a support 33 to which a bracket 34 is secured by screws 35. A tongue 36 is cut from the bracket 34 and bent outwardly, as shown in Fig. 4, and carries a stud 37 riveted or otherwise secured thereto. A shaft 38 has one end journaled in an opening in the stud 37 and has its other end journaled in a plate 39 attached to the top of the bracket 34 by screws 40. A cylindrical casing 41 is secured to the bracket 34 by rivets 42 and has an opening 43 through which the shaft 38

extends into the casing 41. A circular plate 44 is fixed to the shaft 38 and rotates therewith within the casing 41. The plate 44 carries a pair of pins 45 on which are loosely mounted brake shoes 46 having openings 47 therein to engage the pins 45. A cover 48 retains the brake shoes 46 within the casing and is held in place by the plate 39. It will be apparent that rotation of the shaft 38 in a counterclockwise direction, as viewed in Fig. 5, will move the brake shoes 46 outwardly by centrifugal force until they engage the inner face of the casing 41. Friction between the shoes and casing will tend to turn the shoes outwardly about their pins 45 and thus increase the braking action.

The plates are loosely mounted on the pins 45 and if desired one or more of the pairs of plates may be reversed in their positions so that the plates will trail behind the pins during rotation instead of being pushed ahead of the pins. When a reversal of this kind is made the operation of the plates will be the same as would take place if the shaft 38 were rotated in a clockwise direction, as seen in Fig. 5. With a movement of this kind the braking action would depend upon the centrifugal force and will not be augmented by the friction acting to jam the plate against the casing. It will be apparent that by varying the number of plates arranged to be drawn behind the pins the braking action may be reduced to suit different conditions and carriages of different weights. The same brake may be used for different lengths of carriages by simply arranging the brake plates to give the requisite amount of retarding action.

The shaft 38 is driven by a pinion 49 secured thereto which meshes with a gear 50 secured to a shaft 51 journaled in a bracket 52, the bracket being pivoted on the stud shaft 37. The shaft 51 carries a pinion 53 in the plane of the platen carriage rack bar 54. A pin 55 is mounted on the bracket 52 and engages a slot 56 between the bifurcations of a forked arm 57. The arm 57 is pivotally mounted at 58 on a bracket 59 carried by the lever 24. A screw 60 passes through a slot 61 in the arm 57 and is threaded into the bracket 59 to hold the arm 57 in various positions of adjustment about its pivotal support 58. Movement of the tabulator key lever will raise the arm 57 and swing the bracket 52 about its pivot 37 to bring the pinion 53 into engagement with the teeth of the rack bar 54. The arm 57 is adjusted about its pivotal support 58 to such a position that the pinion 53 will mesh with the teeth of the bar 54 prior to the release of the escapement wheel so that when the carriage is freed from control of the escapement mechanism it will have driving connection with the brake shaft 38. It is not necessary that the teeth of the pinion 53 bottom in the spaces between the rack bar teeth, but it is only necessary to secure a driving action between the rack bar teeth and the pinion. It will be apparent that an increase in the speed of the platen carriage will increase the rate of rotation of the shaft 38, thus increasing the centrifugal action on the brake shoes 46 and consequently the resistance of the brake. In practice it has been found that the mechanism secures a practically uniform speed of the carriage brake irrespective of the distance of travel and the braking mechanism can be adjusted by changing the position of the brake shoes 46 to secure the desired speed for any particular machine.

I claim:—

1. The combination with a platen carriage rack, of an escapement wheel for controlling said rack, a platen carriage brake, means for connecting said brake with said rack independently of said escapement wheel and while said rack is in operative connection with said escapement wheel, a dog for controlling said escapement wheel, and means for releasing said escapement wheel from said dog subsequent to connection of said brake with said rack.

2. In combination, a hollow brake drum, a friction member arranged within said drum, a rotary member within said drum, and means for connecting said friction member with said rotary member in either one of two positions to produce different frictional actions when said rotary member is driven, said frictional member comprising a thin plate having similar flat opposite side faces to permit ready reversal thereof.

3. The combination with a brake drum, of a rotary member arranged within said drum, a plurality of flat friction shoes, arranged side by side within said drum, and means for connecting said friction shoes to said rotary member to permit any one of said shoes to be disposed in either one of two positions to produce different resistances when said rotary member is driven.

4. The combination with a brake drum, of a rotary member arranged within said drum, a friction shoe, and means for pivotally connecting said friction shoe with said rotary member in either one of two positions so that said shoe will be moved outwardly into frictional engagement with said drum by the centrifugal force produced by the rotation of said rotary member, the contact between said shoe and drum occurring in front of said pivotal connection in one position of said drum and behind said pivotal connection in the other position thereof, said shoe being symmetrical relative to a plane transverse to the axis of said drum to permit ready reversal of said shoe.

5. The combination with a brake drum, of a rotary member positioned within said

drum and having a pin mounted thereon, and an elongated brake shoe having an opening adjacent one end thereof for engaging said pin, said member being symmetrical relative to a plane normal to the said pin.

6. A carriage brake for typewriters comprising a drum having a rotary shaft therein, a pair of pins connected with said shaft and spaced outwardly therefrom, and counterpart brake shoes having openings therein for engaging said pins, each of said pins being of sufficient length to receive a plurality of said shoes.

7. A carriage brake for typewriters comprising a drum, a plurality of friction members arranged on a common pivot within said drum, and means operable by a typewriter carriage for rotating said brake shoes, said brake shoes being movable into varying relation with one another and with said drum to produce different degrees of frictional resistance to rotation.

8. A carriage brake for typewriters comprising a hollow drum, a plurality of pairs of friction plates positioned within said drum, a rotary member within said drum, means for connecting said plates with said member, said plates being movable into different positions to produce different resistance to rotation of said member, and means for releasably connecting said rotary member with a platen carriage to produce a braking action on said carriage.

9. In combination, a typewriter frame member, an escapement wheel journaled on said frame member, a bracket mounted on said frame member and having a brake drum carried thereby, a rotary member within said drum, planetary gearing for driving said rotary member, and means for shifting said planetary gearing about the axis of said rotary member to move said gearing into operative relation with the platen carriage.

10. In a typewriter, a platen carriage rack, an escapement wheel for controlling said rack, a dog for controlling said escapement wheel, tabulator mechanism for releasing said wheel from said dog, a carriage brake drum, centrifugal friction plates within said drum, a shaft for rotating said plates, a bracket arm pivoted to move about the axis of said shaft, gearing carried by said bracket arm for driving said shaft, a tabulator lever, and means for connecting said bracket arm with said tabulator lever to bring said gearing into operative engagement with said rack when said tabulator lever is operated.

11. The combination with a carriage rack bar, of escapement mechanism for controlling said rack bar, tabulator mechanism for releasing said escapement mechanism, a carriage brake, gearing for connecting said carriage brake with said rack bar, and a device for shifting said gearing into operative relation with said rack bar when said tabulator mechanism is actuated to release said escapement mechanism, said device being adjustable to regulate the time in which said gearing is engaged with said rack relative to the release of said escapement mechanism.

In testimony whereof I have signed my name to this specification on this 30th day of March A. D. 1923.

OTTO A. HOKANSON.