

N° 18,982



A.D. 1914

(Under International Convention.)

Date claimed for Patent under Patents and Designs Act, 1907, being date of first Foreign Application (in the United States), } 19th Jan., 1914

Date of Application (in the United Kingdom), 22nd Aug., 1914

At the expiration of twelve months from the date of the first Foreign Application, the provision of Section 91 (3) (a) of the Patents and Designs Act, 1907, as to inspection of Specification, became operative.

Accepted, 1st Apr., 1915

COMPLETE SPECIFICATION.

Column Stop Mechanism for Typewriting Machines.

I, CHARLES CLARENCE POOLE, Attorney-at-Law, of 795, Lincoln Avenue, City of Winnetka, County of Cook, State of Illinois, United States of America, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

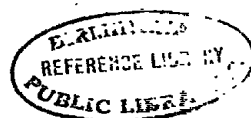
This invention relates to improved column stop mechanism for typewriting machines in which the paper carriage, under the action of its actuating spring, moves longitudinally when released from the control of the usual letter spacing devices to a predetermined point or points at which such longitudinal movement of the carriage is arrested for the purpose of printing a series of items or numbers in one or more vertical lines or columns on the sheet.

The invention is restricted to typewriting machines of the class in which the paper carriage, together with a shift frame upon which the tabulating key lever is mounted, is movable in a transverse direction for the purpose of bringing the paper inserted in the carriage into position for receiving impressions from one of a plurality of types upon each type-bar of the machine. This latter feature is characteristic of typewriting machines of the kind known as the "Oliver" machine, and the invention is herein shown as applied to such a machine. The invention, however, is applicable generally to typewriting machines having this characteristic.

The actuating spring of the paper carriage is normally contained within a barrel in which engages a brake mechanism operated by the column stop or tabulating key lever to prevent undue shock or jar when the longitudinal movement of the carriage is arrested by the action of the column stop devices.

The invention consists in column stop mechanism for typewriting machines of the kind referred to above and having a brake device adapted to engage the barrel containing the spring effecting endwise movement of the paper carriage,

[Price 6d.]



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in which mechanism the brake device is actuated from the tabulating or column stop key lever by means embracing a motion transmitting device mounted on the base frame of the machine at a distance below the said key lever and a vertically arranged link having pivotal connection at its upper end with said key lever and at its lower end with said motion transmitting device, the upper end of said link being movable forwardly and backwardly with the said key lever in the transverse movement of the same with the paper carriage. 5

The invention also consists in the column stop or tabulating mechanism operating the brake mechanism in the manner hereinafter described.

In the accompanying drawings illustrating my invention: 10

Figure 1 is a plan view of the machine frame, with the paper-carriage, type-bars and other parts removed, showing only the parts to which the present invention relates;

Figure 2 is a view in central longitudinal section, showing in side elevation the parts of the machine embodying the invention; 15

Figure 3 is a bottom view of the machine base or frame, showing only the parts connecting the column-stop key-lever with the brake-device on the spring-barrel;

Figure 4 is a view from beneath of the spring-barrel and brake-shoe; 20

Figure 5 is a side view of the parts shown in Figure 4. 20

As shown in said drawings, (Figures 1 and 2) the main frame or base 5 of the typewriting machine, has mounted upon it a shift-frame 4 by which the paper-carriage is immediately supported and which has shifting movement backwardly and forwardly on said base to provide for shifting the platen in such manner as to bring the paper in position for receiving impressions from either of the types upon each type-bar of the machine. The base 5, as shown, consists of a horizontal top-plate 6, provided with depending marginal walls or flanges 7, forming a hollow frame member within which operative parts of the machine are located. 25

The key-levers 3, 3 of the machine are located beneath the horizontal top-plate 6 of the base 5, and the shift-frame 4 is mounted above the top-plate of the base, as in the "Oliver" typewriting machine, as heretofore constructed. Said shift-frame is provided with front and rear horizontal guide-rods 4ⁿ and 8, extending transversely of the machine on which travel the supporting rollers of the carriage. The frame of said carriage embraces a forward longitudinal frame bar 10, which constitutes the rack-bar thereof and is provided on its front edge with rack teeth 11 which are engaged by a gear-pinion 12 mounted on the upper end of an upright escape-wheel shaft 13 mounted on the forward part of the shift-frame. Said escape-wheel shaft 13 forms part of the letter-spacing mechanism and the upper end of said shaft, with the gear-pinion 12 thereon, is adapted to be moved or shifted forwardly and backwardly to bring the gear-pinion into and out of engagement with the rack teeth 11; the upper end of said shaft being held yieldingly at the rearward limit of its movement by a suitably applied spring, according to the construction heretofore used in the "Oliver" machine. 30

The front frame-member or rack-bar 10 of the paper-carriage is provided with a depending, longitudinal flange 18, provided at its lower edge with a plurality of notches. Mounted on said flange 18 are adjustable stop-members 20. A vertically movable stop-member 21 is attached to the rear end of a vertically swinging lever 22 mounted on the shift-frame. A vertically arranged plate 33 is attached to the forward end of the bracket 17, and said plate is provided with forwardly extending lugs through which is inserted a horizontally arranged pivot-rod 24, forming a journal or bearing for the said lever 22. The lever 22 is provided at its forward or pivoted end with forwardly and upwardly projecting, rigid arms 25 and 26. A horizontal stop-arm 27 is attached to the top surface of the shift-frame and projects forwardly over the rear end of the said lever 22 so as to limit the upward swing of the said lever. 35

A key-lever 28 for operating the column-stop devices, is mounted on the 55

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pivot-rod 24, and projects forward from said bracket. Said key-lever is provided with a stud 29 which projects from the right-hand face thereof in position to engage the under side or lower edge of the forwardly projecting arm 25 on the lever 22. Said key-lever 28 is connected with the upwardly extending arm 26 of the lever 22 by means of a contractile, coiled spring 30 connected at one end with said arm 26 and at its opposite end with a stud 31 affixed to and projecting from the right-hand side of said key-lever. Said spring 30 tends to draw the upper end of the arm 26 forward and to hold the arm 25 in contact with the stud 29 on the key-lever. Said key-lever 28 is provided with a coiled lifting spring 32, which is connected at its lower end with the stud 31 and at its upper end with an arm 33, attached to the bracket 17. The key-lever 28 is held normally in its elevated position by the spring 32, and said key-lever is provided at its rear or pivoted end with an upwardly extending, rigid arm 35, the upper end of which projects upwardly through a longitudinal slot formed in a horizontally arranged connecting bar 36, engaging and projecting forwardly from the upper end of the escape-wheel shaft 13.

In the normal or elevated position of said key-lever 28, the upper end of its arm 35 stands in a position intermediate between the ends of the slot in the connecting bar 36, (Figure 2). When said key-lever 28 is depressed by downward pressure of the finger on its key, the lever 22 and the stop-member 21 thereon are swung or moved with the key-lever, through the action of the spring 30, the distance required to bring the stop-member into the path of the stop-members 20 on the carriage. The upward movement of said lever is arrested by its contact with the stop-arm 27, and, in the further downward movement of said key-lever, the arm 35 thereon will strike the outer end of the slot in the bar 36, when the upper end of the escape-wheel shaft will be drawn or shifted outwardly or forwardly, thereby releasing the pinion 12 from the carriage rack-bar and leaving the carriage free to travel or run toward the left, under the action of the carriage-actuating spring, until its movement is arrested by contact of one of the stops 20 with the stop-member 21. So far as described, the column-stop mechanism is like that heretofore used on said "Oliver" machine.

In order to avoid undue shock or jar when the movement of the carriage is arrested by the action of the column-stop mechanism, means for retarding or controlling the speed of the paper-carriage, when released and allowed to run, as described, is provided as follows:

The spring-barrel 40 of the machine contains the carriage-actuating spring, and motion is communicated from said spring-barrel to the carriage by a flexible connecting member 41 in a familiar manner. Said spring-barrel 40 is mounted on the upper face of the horizontal top-plate 6 of the machine base, near the rear of said base and at the left-hand side of the same. The spring-barrel is shown as provided with a worm-gear, consisting of a horizontal worm-shaft 42 and gear-wheel 43, by which the tension of the carriage-actuating spring may be adjusted. The gear wheel 43 is located beneath the spring-barrel, and the worm-shaft 43 is mounted in a hub 44, formed on a horizontal plate 45 attached to the plate 6, beneath the spring-barrel. A segmental plate or ring 46, constituting a brake-member, is located horizontally beneath the spring-barrel. Said brake-member 46 is loosely connected at one point with the machine base, through the medium of an upwardly projecting, fixed arm 47 formed on the plate 45 and located at one side of the spring-barrel; the upper end of said arm 47 being inserted in an aperture in the brake-member 46, and being provided with upwardly facing shoulders, below the brake-member, adapted to support the latter at a short distance below the spring-barrel. At the side of the barrel diametrically opposite the arm 47, the plate constituting the brake-member is provided with an arm 48, the outer end of which is arranged horizontally and adjacent to the top-plate of the base. The ends of the segmental plate 46 terminate at diametrically opposite ends of the spring-barrel, and are

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bent upwardly to form two bearing members or brake-shoes 49, 49. The brake-shoes 49, 49, are adapted to move or swing vertically by the swinging of the brake-member, on the upper end of the arm 47 as a bearing or pivot. These parts are so arranged that, by upward pressure on the arm 48, the brake-shoes 49, 49, will be pressed upwardly against the bottom surface of the spring-barrel, so as to afford frictional resistance to the rotation of said barrel under the action of the carriage-actuating spring. 5

The brake-member 46 is operated or actuated, from the column-stop key-lever 28, by means as follows: Mounted within the hollow base 5 of the machine, below the level of the key-levers 3, 3, and therefore at a considerable distance below the horizontal top-plate of the base, is a motion-transmitting lever consisting of a horizontal rock-shaft 50, extending transversely of the machine and provided at its ends with two rigid arms 51 and 52, the outer ends of which are adapted to have vertical swinging movement in the turning of the said rock-shaft. The said rock-shaft is shown as mounted at its ends in two brackets 53 and 54 which are attached to and depend from a fixed frame-bar 55 which extends transversely of the machine beneath the key-levers 3, 3. The lever arm 51 extends forwardly from the rock-shaft 50, and its forward or swinging end is located vertically beneath the column-stop key-lever 28. The lever-arm 52 extends rearwardly from said rock-shaft and its rear end is located beneath the spring-barrel 40. 10 15 20

The forward end of the lever-arm 51 is connected with the said key-lever 28, by means of a vertically arranged link 56, which is pivoted at its upper end to the said key-lever and at its lower end to said lever-arm. Said link serves to transmit movement from the said key-lever 28 to the lever-arm 51, so that when the key-lever is depressed for the purpose of effecting the release of the carriage and the interposition of the movable stop-member in the path of one of the stops on the carriage, the said lever-arm 51 will be depressed and the rearwardly extending lever-arm 52 will be elevated. 25

Attached to the rear end of said rearwardly extending lever-arm 52 is an upright rod 57, which extends upwardly through a hole or guide-aperture 58 (Figure 5), in the top-plate of the machine base, in position for contact of its upper end with the arm 48 on the brake-member 46. It follows from the construction described that, when the lever-arm 52 is elevated by the operation of the column-stop key-lever, the brake-shoes will be lifted and pressed into contact with the spring-barrel, thereby checking or retarding the rotary motion of the same and the endwise movement of the paper-carriage. 30 35

It will be understood that, by reason of the location of the actuating lever-arms 51 and 52 below the key-levers, and near the level of the bottom of the hollow machine base, the link 56 will be of considerable length, and the pivot connecting said link with the lever-arm 51 is at such distance vertically below the key-lever 28, that the forward-and-backward shifting movement of the last named key-lever, with the shift-frame on which it is mounted, will give such slight vertical movement to, or shifting of the position of, the upper end of the said link, as to have substantially no effect on the operation of the brake-mechanism. In other words, by reason of the slight inclination given to the link at the extreme limit of the shifting movement of the shift-frame, the brake-device will operate equally well, whether the shift-frame be at its intermediate position or at either the forward or rear limit of its shifting movement, such as takes place in shifting the platen into position for printing from either one of the three types carried by each type-bar in a machine of this character. 40 45 50

A brake-device for a column-stop or tabulating mechanism, embracing the features of construction hereinbefore described, may be used in connection with carriage-releasing means different from that illustrated, and may be variously modified in practice with regard to its details of construction, without departing from the spirit of my invention, and my invention is not, therefore, limited to the features described and shown, except as pointed out in the appended claims. 55

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Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

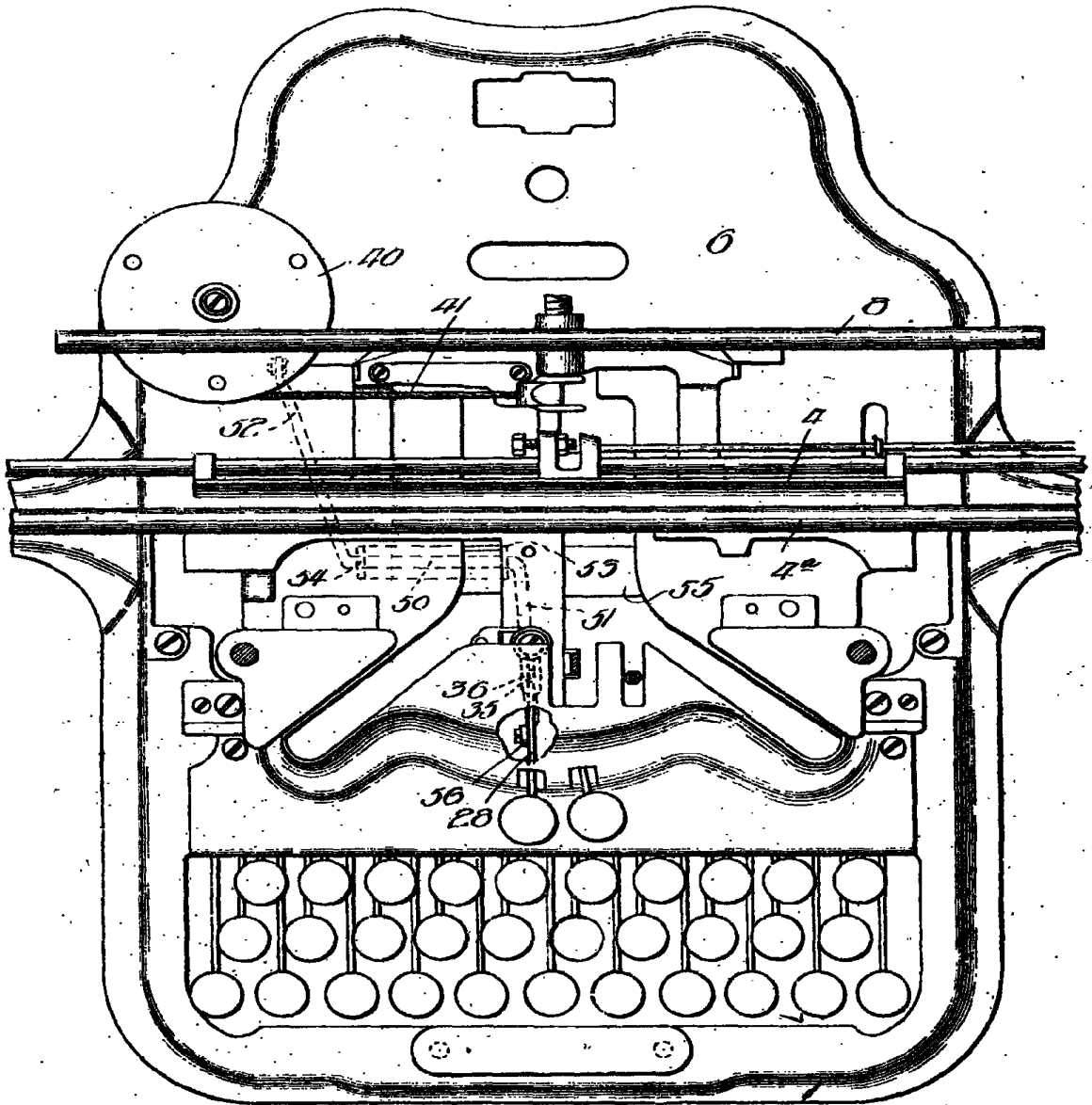
1. A column stop mechanism for typewriting machines of the kind referred
5 to and having a brake device adapted to engage the barrel containing the spring effecting endwise movement of the paper carriage and in which mechanism the brake device is actuated from the tabulating or column stop key lever by means embracing a motion transmitting device mounted on the base frame of the machine at a distance below the said key lever and a vertically arranged link
10 having pivotal connection at its upper end with said key lever and at its lower end with said motion transmitting device, the upper end of said link being movable forwardly and backwardly with the said key lever in the transverse movement of the same with the paper carriage.

2. Column stop or tabulating mechanism operating brake mechanism sub-
15 stantially as hereinbefore described with reference to the accompanying drawings.

Dated this 21st day of August, 1914.

MARKS & CLERK.

Fig 1.



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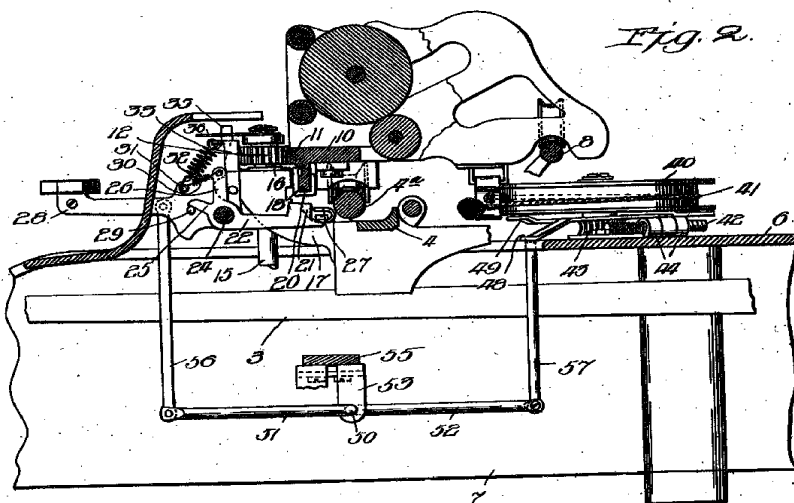


Fig. 2.

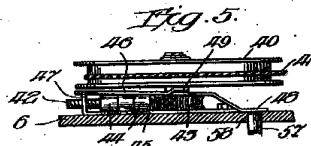


Fig. 5.

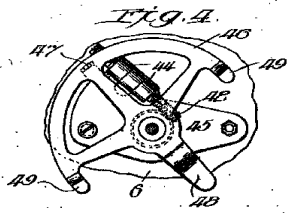


Fig. 4.

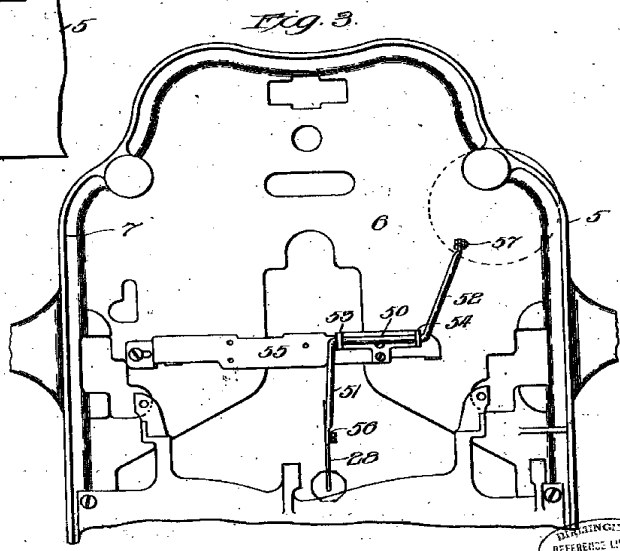


Fig. 3.

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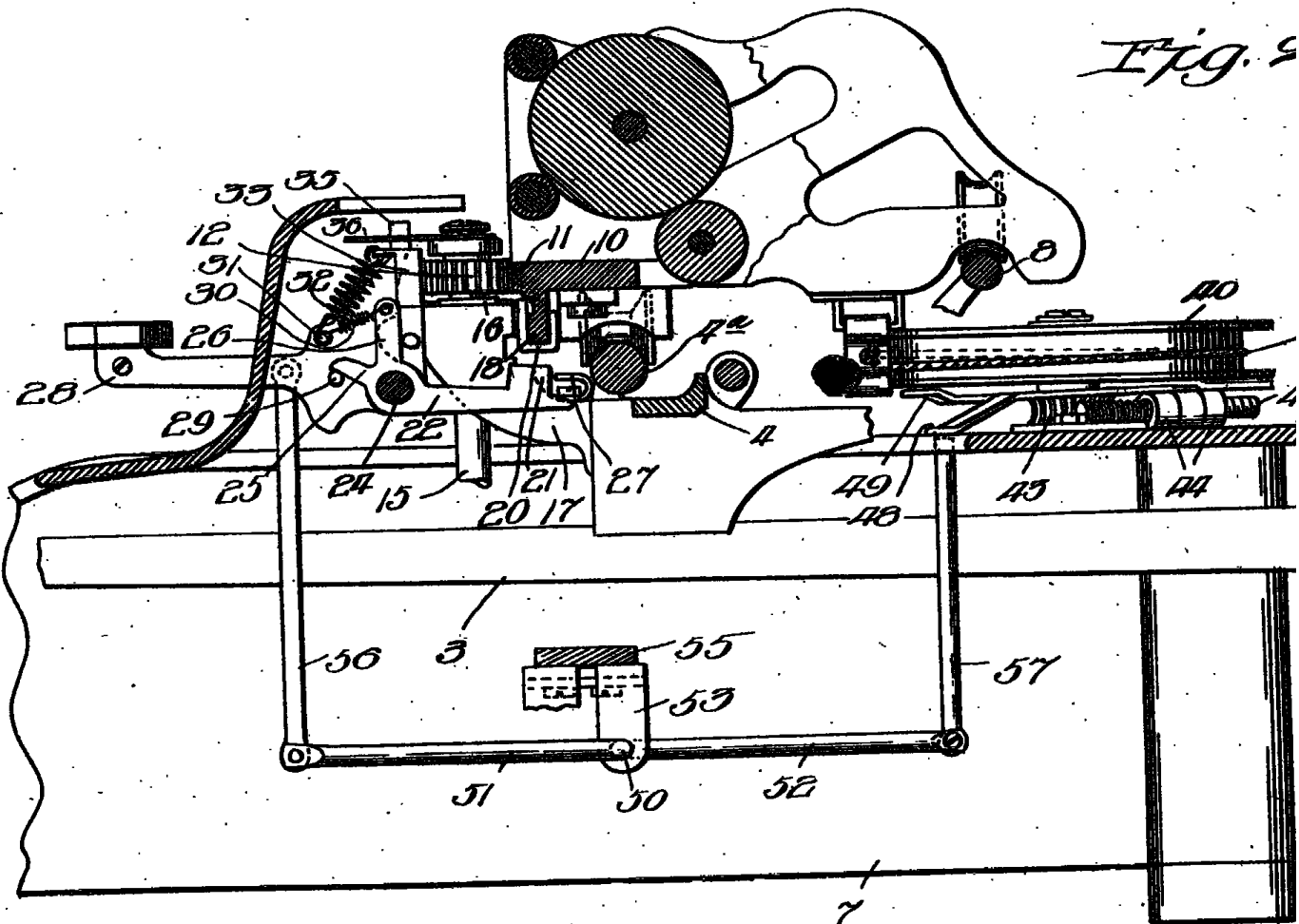


Fig. 3

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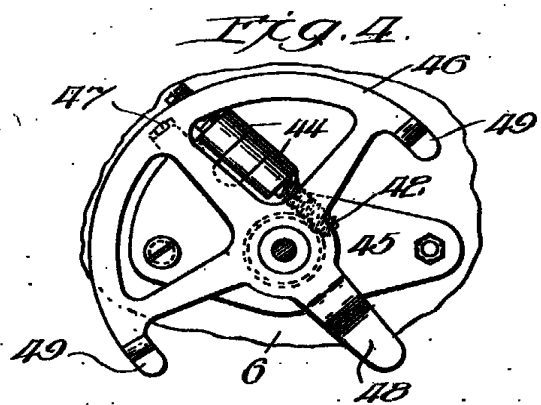


Fig. 4

2.

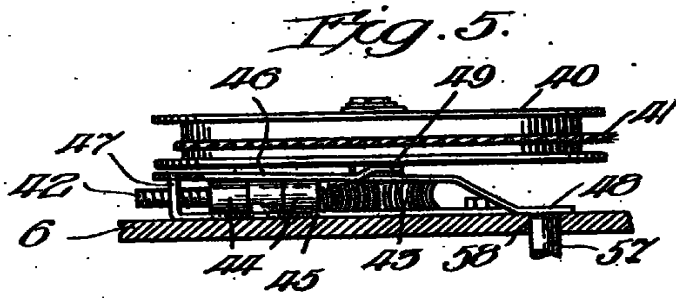
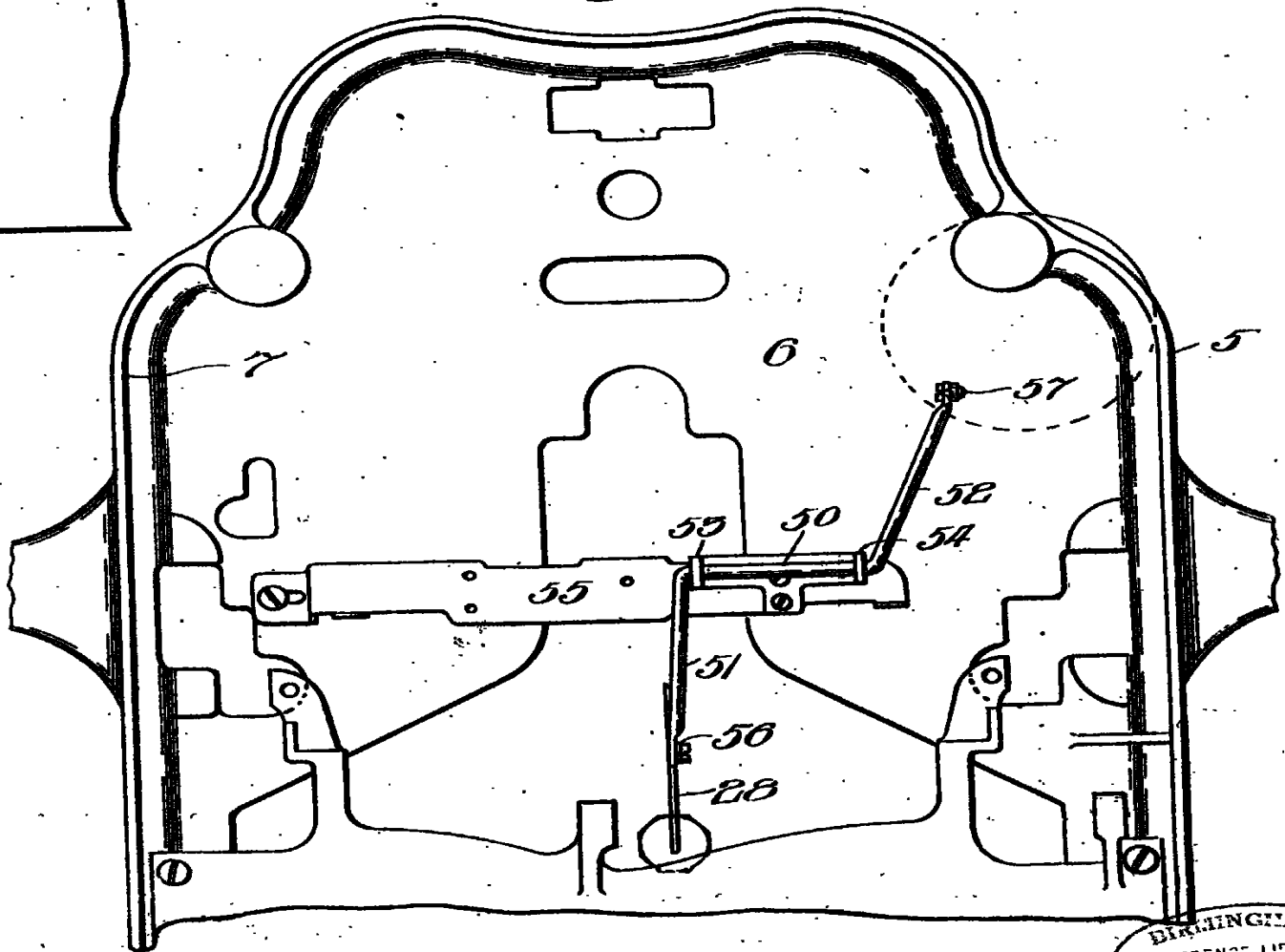


Fig. 3.



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