V. B. ROUILLOT.

TYPE WRITING MACHINE.

APPLICATION FILED JUNE 6, 1914.

1,166,635.

Patented Jan. 4, 1916.

2 SHEETS—SHEET 1.

FIG. 2.

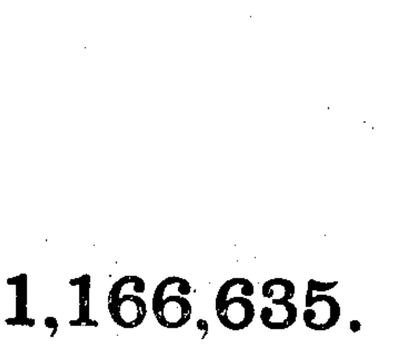

FIG. 1.

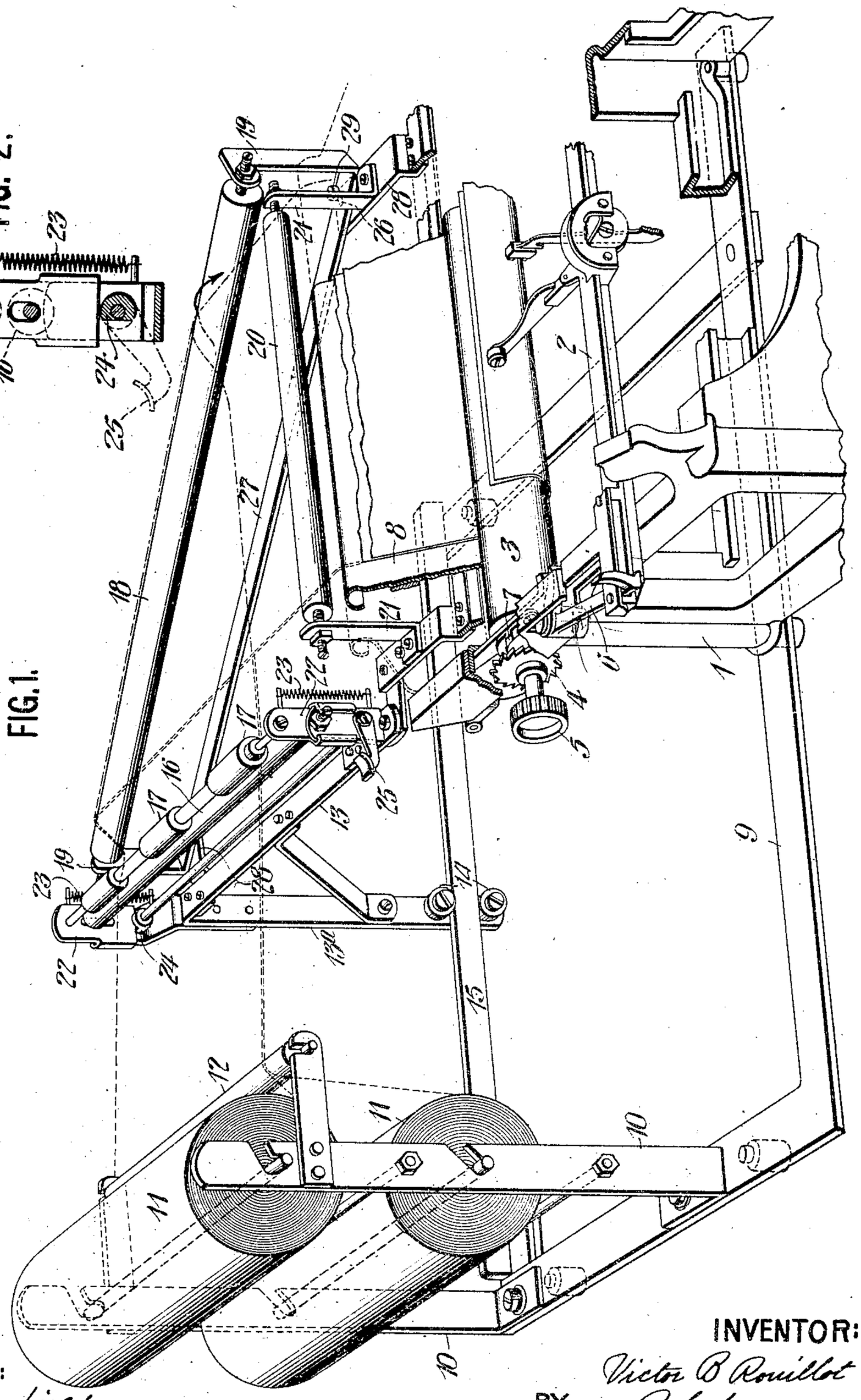

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FIG. 3.

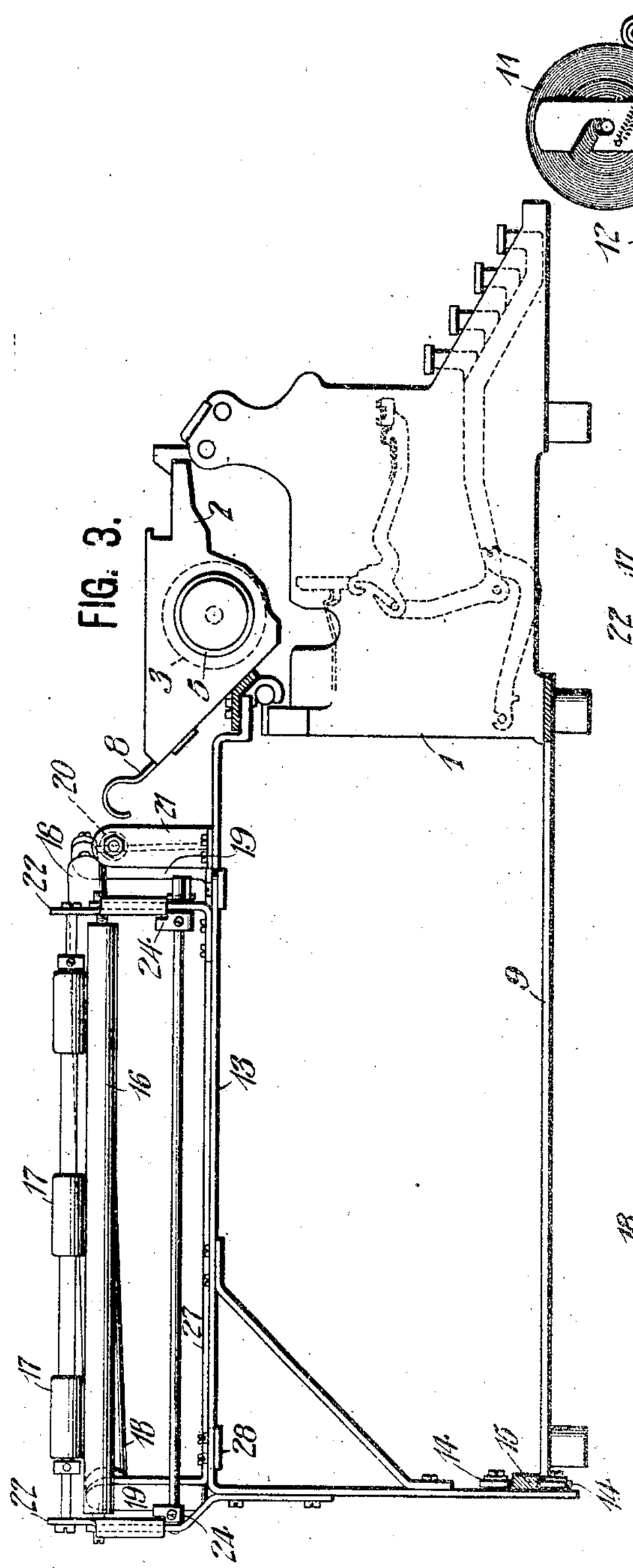
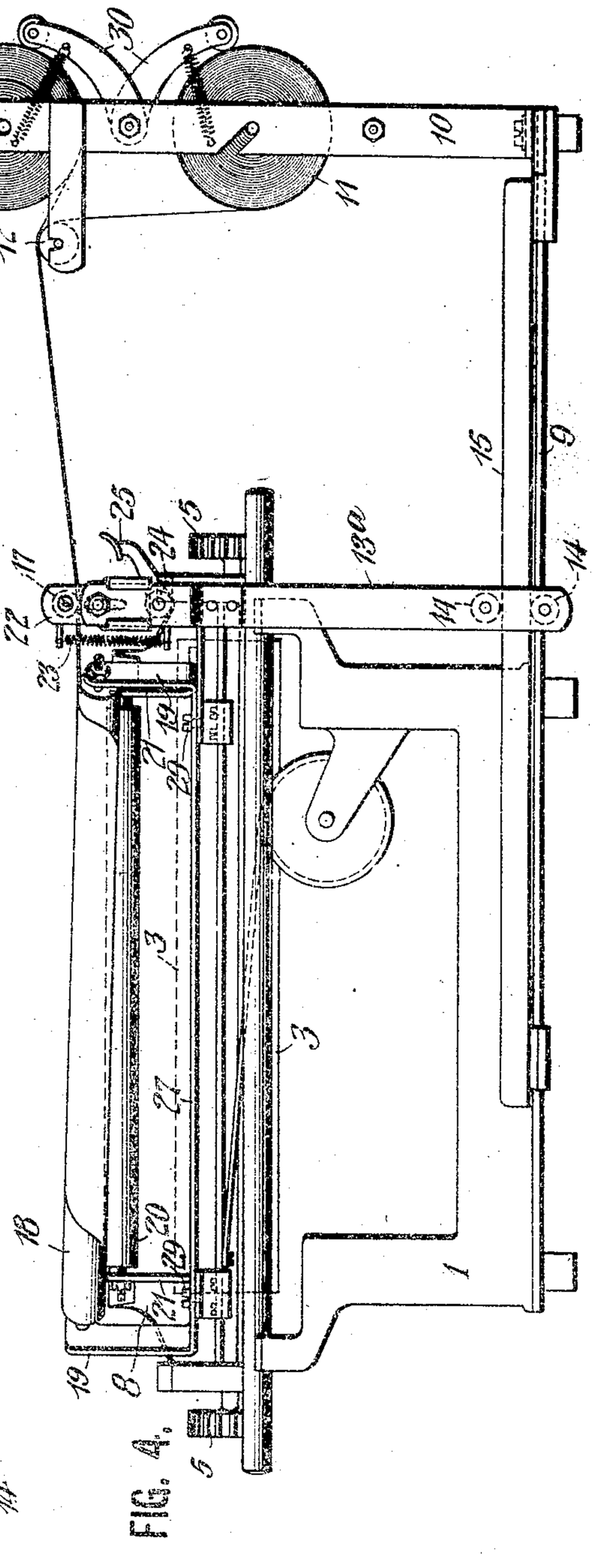


FIG. 4.



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TYPE-WRITING MACHINE.

1,166,635. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed June 6, 1914. Serial No. 843,333.

To all whom it may concern:

Be it known that I, VICTOR B. ROUILLOT, a citizen of the United States, residing in Haddonfield, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to the class of type-writing machines in which writing is done upon a web or webs led from a roll or rolls of paper, and in which the heavy rolls are supported upon a stationary frame, instead of being connected to the letter-feeding carriage of the typewriter to travel therewith.

One of the objects of the invention is to provide a new and desirable arrangment of the rolls or spools, and means for leading the web or webs to the platen on the typewriter carriage.

I mount the web back of the typewriting machine, and preferably at the left-hand side thereof, with the axis of the roll horizontal and extending from front to rear. The web leads from this roll to a diagonal turning bar over which the web turns to go forwardly to the typewriter platen. This diagonal turning bar is connected to travel with the typewriter carriage, and itself is mounted upon a support which runs upon a track. The entire device is very compact and easily manipulated. One or more additional rolls may be mounted above or below the first roll, and the web led up or down therefrom to join the web running from the first roll, so that all of the webs pass and turn over the turning bar and run to the typewriter platen as though they were a single web.

As the carriage travels to and fro, there is liable to occur a slack in the web between the spool and the diagonal turning bar, this slack occurring when the carriage is running in letter-feeding direction, and is especially noticeable when the carriage has completed the line of writing. In order to counteract the tendency of the slack or sag in the web to cause the same to slip edgewise backwardly along the turning bar, there is provided gripping means upon a supplemental carriage, whereby the web is held against such edgewise creeping; said gripping means being provided between the spool or spools and the diagonal turning bar. This effect is produced by means of parallel rolls pressed together to form the grippers between which the web passes on the way to the turning bar, these gripper rolls being parallel with the spool or roll of paper from which the paper feeds.

The operation of line-feeding usually occurs when the carriage has completed the writing of one line, that is, when it is at the left-hand side of the machine, and at this time the web is slack so that no undue tension is placed upon the parts in order to advance the web around the platen. At the conclusion of the ensuing return stroke of the carriage to begin a new line, the web becomes taut, and a slight additional portion of the web is pulled off from the spool. The operation of turning the platen while the web is slack, and pulling the web off the spool after the line-space operation is completed, presents advantages, as the feeding of the web around the platen is made more certain and accurate. The slack web yields easily to the line-feeding mechanism. Moreover, the web is still gripped by the platen and its feed rolls, and also by the turning bar and by the aforesaid gripper rolls at the time that it is necessary to pull a fresh portion of web off of the spool. Thus the passage of the web from the roll through the typewriter may be certain and positive, without liability of faulty action.

The gripper rolls, together with the turning bar, are, as stated, mounted upon a frame that is connected to the carriage, said frame being at the rear of the carriage so that the gripper rolls face the web rolls and are substantially parallel therewith, and the frame is adapted to roll upon a track provided therefor.

Other features and advantages will appear hereinafter.

In the accompanying drawings, Figure 1 is a front perspective elevation of a typewriting machine showing the angular arrangement of spools therewith to supply webs to the platen, gripping means for the webs, and angular directing means therefor. Fig. 2 is an enlarged detail elevation of a gripper releasing device. Fig. 3 is a side elevation of a typewriting machine, with web gripping and guiding means, being in cross section on the line x—x of Fig. 1, thus leaving out the spools and their support. Fig. 4 is a rear elevation of the entire machine including the spools and supports.

The invention is illustrated as applied to an Underwood typewriting machine comprising a frame 1, carriage 2 having a platen 3 with the line-space wheel 4 and finger-piece 5, the line-space wheel as usual being actuated by a line-space lever 6 operating pawl 7. The carriage is provided with a paper table 8 of the usual character.

The typewriter frame may be provided with an auxiliary frame or base, as 9, which may be rectangular in form and extends out at one side of frame 1 and to the rear thereof.

Placed at one side of the machine frame 1 and for convenience mounted upon the base 9 is a spool or roll support which may comprise the standards 10, spaced apart and adapted for rotatably mounting therein one or more spools or rolls 11. When a number of rolls 11 are employed, they are mounted one above another as shown, and an assembling bar, as 12, is supported in advance of the upper roll to support the web from that upper roll and from such lower roll or rolls as may be employed, the assembled webs extending from said assembling bar to the typewriting machine at the rear of the carriage in parallelism with the platen.

The carriage has a rearward frame extension 13 with a support 13ª, adapted as by means of rollers 14 to travel upon a track or rail 15 at the rear of the machine frame 1, which rail may form the rear bar of the base frame 9; said frame extension 13 carrying gripper rolls as 16, 17 which may be opposite the assembling bar 12 to receive between them the web or webs therefrom, said web or webs at the opposite side of the gripper rolls 16, 17 passing around a turning bar or roll 18 which is mounted in bearings 19 in frame extension 13 in diagonal relation to both the platen 3 and gripper rolls 16, 17, said web or webs after leaving the bar or roll 18 passing forwardly over the paper table 8 to the introductory side of the platen. A bar or roll 20 may be provided to receive the web or webs from the oblique bar 18 in their path to the platen, said bar or roll 20 being located for the purpose in parallelism with the platen and supported as by bearings 21 in the vicinity of the paper table.

Under the arrangement of web-supporting and guiding means indicated, the web or webs in their passage from the roll or rolls to the platen are folded once diagonally, the web or webs being supported at that fold and their angle of direction changed to cause them to pass thence in a direction at right-angles to their former direction and forward to and around the platen.

Thus the carriage with the gripper rolls and oblique or diagonal angle-changing bar or roll comprises a unit whose movement to the right, as in the carriage return for starting a new line of writing, thereby draws a quota of web material from the roll or rolls in extent equal to the distance traveled by the carriage to the right. Each letter-space movement of the carriage to the left slackens the web or webs accordingly, between the rolls 16, 17 and the spools, but does not create any slackness of the web material between the gripper rolls and the diagonal bar 18 or between said diagonal bar and the platen, because the gripper rolls exercise pressure upon the web or webs between them at that point. But when the line of letter-feeding movement has been completed and the line-space lever is operated for rotating the platen to line-space it preparatory to again returning the carriage, then in said line-spacing act or in the direct manually operated advance of the platen for line-spacing the slack material of the web or webs lying between the gripper rolls and roll or rolls is drawn upon and feeds between the gripper rolls to satisfy the line-spacing requirement.

The gripper rolls 16, 17 are adapted to be separated as for purposes of introducing a web or webs therebetween, the separating means here shown comprising movable bearing members 22 for the upper rolls 17, with springs 23 normally holding said bearing members in a lowered position with the rolls 17 pressing against the roll 16 and a cam 24 with finger-piece 25 to elevate the bearings 22 and thus separate said gripper rolls.

The bar 18 which serves to direct the webs, changing their parallel movement with the platen to direct movement toward the platen, may, as stated, be in the form of a roller, and is shown as journaled in bearings 19, being adjustable by means of said bearings in order to regulate the angle at which said bar is set relatively to the platen. The means of adjustment here shown consist of slots 26 formed in a bar 27 which connects the bearings 19, the bar 27 being shown as comprising a strip lying horizontally beneath the bar 18 with its ends turned up to form the bearings 19, said bar 27 being supported by brackets 28 mounted respectively upon the carriage frame 1 and the extension frame 13, screws 29 placed in said brackets 28 engaging the slots 26 and permitting the adjustment aforesaid.

The bar 18 is shown as inclined upwardly to a slight extent toward its forward end, thereby providing an uphill surface for the web or webs passed over said bar to counteract any tendency of said web or webs, while being drawn around the platen, from slipping edgewise along said bar. It will be appreciated that even though a web be taut, and under tension at opposite ends, yet when drawn over the oblique or diagonal

bar, the plane of the moving web being even at both gripping ends and at the intermediary-angle-changing device, the tendency exists under normal conditions for the web to slide to a certain extent edgewise toward the apex of the triangle formed by the forward gripping device and the angle-changing member. This tendency which is checked at the gripping rolls aforesaid, is further corrected through the slight elevation of the bar 18 in the direction of that triangular apex, as is evident, and thereby the web or webs are caused to feed accurately to the platen, in their passage passing over the guide bar 20, which for the purpose represents the forward gripping device in the relative arrangement with the diagonal directing bar 18, because from said guide bar 20 the web or webs feed directly to the platen.

Spring fingers 30, or other usual means, may bear upon the rolls or spools to restrain the webs from unwinding excepting as and when drawn therefrom in the operation of the machine.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a web-feeding device for typewriting machines, the combination with a stationary roll holder, of a platen, a carriage therefor movable at an angle to said roll holder, angle-changing means upon said carriage to direct a web from said roll holder transversely to said platen, and means to keep the web taut behind the platen in the movement of the carriage.

2. The combination with a typewriting machine having a revoluble platen and a carriage therefor, of a stationary roll holder to supply a web at an angle to said platen, angular means upon said carriage to direct the web in line-spacing direction to said platen, and means preventing slackening of the web between said directing means and the platen in the letter-feeding movement of the carriage.

3. The combination with a typewriting machine having a carriage and a revoluble platen, of a stationary roll holder supporting a roll at right angles to said platen, the path of the direction of the web from said roll lying behind the carriage, means supported by said carriage to turn the web into line-spacing direction relatively with the platen and enabling carriage movement away from said roll holder to draw a web supply from the roll, and means to keep the web taut in its line-spacing direction during the letter-feeding movement of the carriage.

4. The combination with a typewriting machine having a carriage and a revoluble platen, of a stationary roll support arranged at right angles with the carriage to supply a web in a direction lengthwise of the carriage, a gripping device upon the carriage to receive the web from said support, and means also upon the carriage to change the angle of the web and direct it in line-spacing direction toward the platen.

5. In a typewriting machine having a movable carriage with a revoluble platen and a stationary web supply therefor at an angle thereto, web gripping means upon said carriage, and means upon said carriage changing the angle of direction of the web to supply it in line-spacing direction to said platen: said web gripping means arranged at the intake side of said carriage between said direction changing means and said supply.

6. In a typewriting machine having a movable carriage and a revoluble platen, the combination of a stationary web supply therefor at an angle to said carriage, web-gripping means upon said carriage, and means between said web-gripping means and platen to change the angle of direction of the web to guide it in line-spacing direction to said platen.

7. The combination with a typewriting machine having a revoluble platen and a carriage therefor, of a stationary roll holder to supply a web at an angle to said platen, angular means upon said carriage to direct the web in line-spacing direction to said platen, and web-gripping means between said angular directing means and roll holder to facilitate the operation of drawing web material from the holder in a return movement of the carriage preparatory to the beginning of a new line of writing.

8. In a typewriting machine having a carriage and a revoluble platen, a stationary web supply therefor at an angle to said carriage, and web-gripping means upon said carriage whereby in the movement of said carriage away from said holder a quota of web material is drawn from said holder, said gripping means confining slack web material between the carriage and the holder in the opposite or letter-feeding movement of the carriage, the slack portion of the web supplying the line-spacing requirements of the platen.

9. In a typewriting machine having a movable carriage and a revoluble platen, a frame extending at one side of and to the rear of said carriage, a roll holder mounted on said frame and supporting a web roll at an angle to said carriage, a rear frame extension upon said carriage, gripper rolls upon said extension facing said web rolls, and an angle bar to receive web from said gripper rolls, to direct said web in line-spacing direction to the platen, the carriage drawing web supply from said web roll in its return

movement to the beginning of a line, and said gripper rolls keeping said web taut behind the carriage and allowing it to become slack between them and the web rolls in the movement of the carriage in letter-feeding direction.

10. In a typewriting machine having a movable carriage and a revoluble platen, a frame extending at one side of and to the rear of said carriage, a roll holder mounted on said frame and supporting a web roll at an angle to said carriage, a rear frame extension upon said carriage, a track upon said extension, a roller upon said extension to travel along said track, gripper rolls upon said extension facing said web rolls, and an angle bar to receive web from said gripper rolls to direct said web in line-spacing direction to the platen, the carriage drawing web supply from said web roll in its return movement to the beginning of a line, and said gripper rolls keeping said web taut behind the carriage and allowing it to become slack between them and the web rolls in the movement of the carriage in letter-feeding direction.

11. In a typewriting machine having a movable carriage and a revoluble platen, and a stationary web supply therefor at an angle thereto, the combination of releasable web-gripping means upon said carriage, and means upon said carriage changing the angle of direction of the web to supply it in line-spacing direction to said platen; said web-gripping means arranged at the intake side of the carriage, between the angle-changing means and the supply.

12. In a typewriting machine having a movable carriage and a revoluble platen, the combination of a stationary web supply arranged at an angle to said carriage, and an angle-changing bar between the roll holder and the platen to direct the web in line-spacing direction to the platen, said angle-changing bar being inclined slightly downward from the end near the platen to the end remote from the platen.

13. In a typewriting machine having a movable carriage and a revoluble platen, the combination of a stationary web supply arranged at an angle to said carriage, and an angle-changing bar between the roll holder and the platen to direct the web in line-spacing direction to the platen, said angle-changing bar toward its forward end being slightly displaced at its outer end, to give the bar an inclination, for the purpose specified.

14. In a typewriting machine having a movable carriage and a revoluble platen, the combination of a stationary roll holder at one side of the machine to supply a web endwise relatively to the platen, a gripping device upon the carriage to receive the web, and a bar arranged diagonally relatively to the platen to change the direction of the web to guide it in line-spacing direction to the platen, said diagonal bar being upwardly inclined toward its forward end to prevent an edgewise slipping tendency of the web thereon.

15. In a typewriting machine having a movable carriage and a revoluble platen, the combination of a stationary roll holder arranged at an angle to said carriage, an adjustable angle-changing bar to receive a web and direct it in line-spacing direction to the platen, and web-gripping means between said bar and roll holder.

16. In a typewriting machine having a movable carriage and a revoluble platen, the combination of a stationary roll holder arranged at one side of the machine, a plurality of rolls mounted in said holder one above another, an assembling bar supported in advance of the upper roll to receive webs from the upper and lower rolls, an angle-changing bar upon the carriage to receive said assembled webs and direct them in line-spacing direction toward the platen, and an auxiliary carriage upon which said bars are supported.

17. In a typewriting machine, the combination of a movable carriage and a revoluble platen, of a stationary roll holder arranged at one side of the machine, a plurality of rolls mounted in superposed relation upon said holder, an assembling bar supported in advance of the upper roll, releasable gripping rolls carried by the carriage in advance of said assembling bar to receive assembled webs therefrom, and an angle-changing bar upon said carriage to receive webs from said gripping rolls and direct them in line-spacing direction to the platen.

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