E. A. BEARD.

TYPE WRITING MACHINE.

APPLICATION FILED JULY 9, 1914.

1,116,212.

Patented Nov. 3, 1914.

2 SHEETS—SHEET 1.

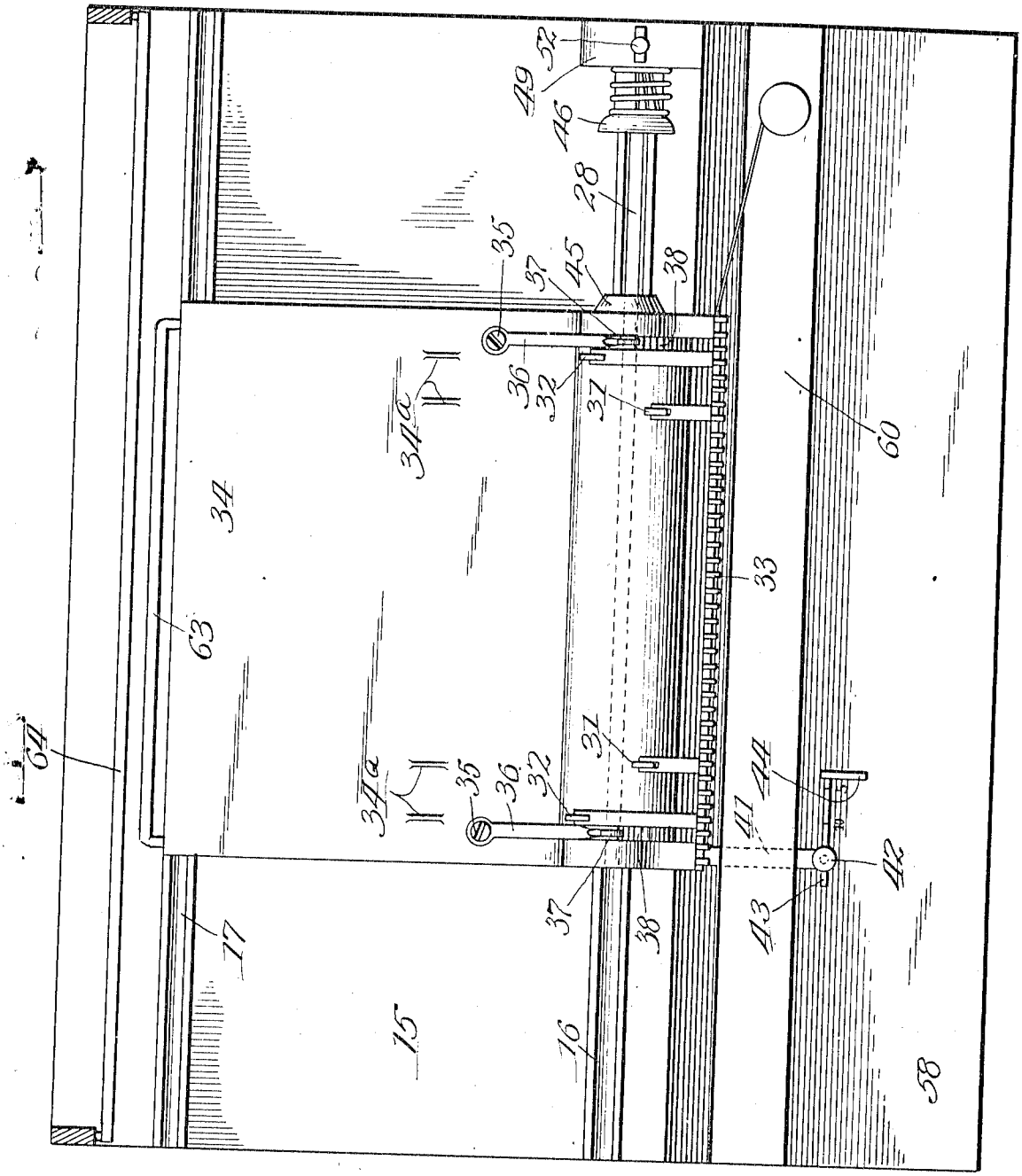


Fig. 1.

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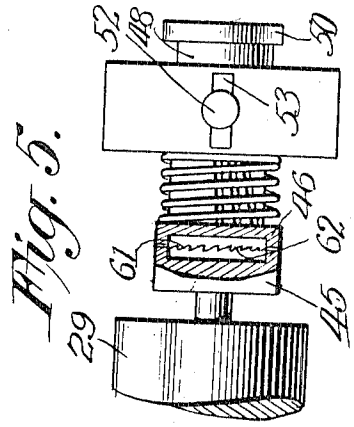


Fig. 5.

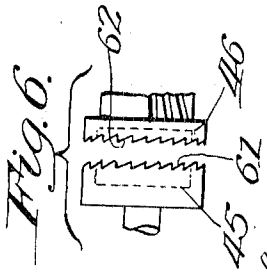


Fig. 6.

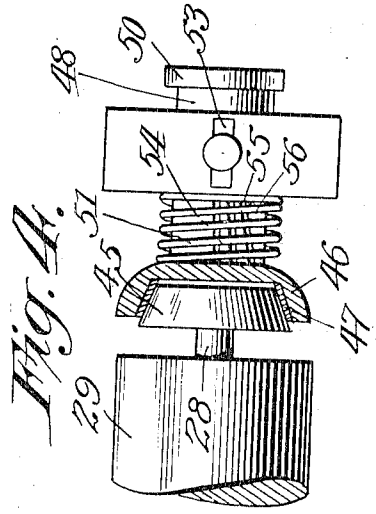


Fig. 4.

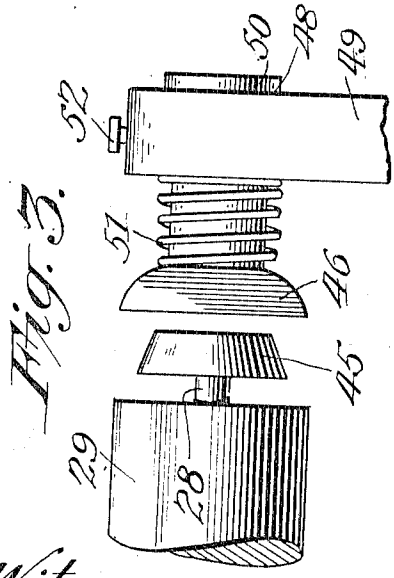


Fig. 3.

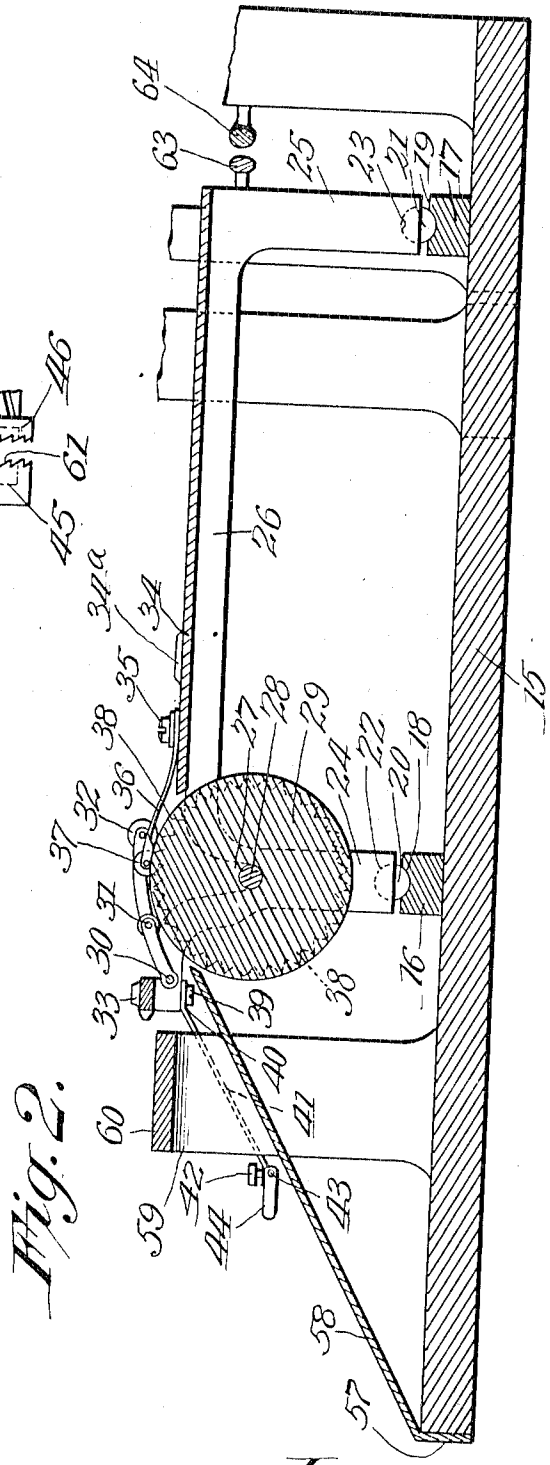


Fig. 2.

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UNITED STATES PATENT OFFICE.

EDWARD A. BEARD, OF ROCKVILLE, MARYLAND.

TYPE-WRITING MACHINE.

1,116,212. Specification of Letters Patent. Patented Nov. 3, 1914.

Application filed July 9, 1914. Serial No. 850,061.

To all whom it may concern:

Be it known that I, EDWARD A. BEARD, a citizen of the United States, having a legal residence in the State of Maryland, and residing at Rockville, in said State, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to typewriters, having special reference to a machine with a novel frame and the details thereof.

An object of the invention is to provide a machine of this character with an improved paper feed, the construction of the machine admitting the introduction of the paper into the front thereof.

Another object of the invention is to provide and position the operative parts of a typewriting machine in proximity to each other to make possible the use of mechanical elements of the simplest order to insure the speed of the operation of the machine.

A further object of the invention is to provide a paper carriage of such a structure as to admit the paper being carried in substantially the same line of direction throughout its course through the machine so that the writing upon the same will at all times be in full view of the operator and notations may be made thereon without the operation of any part of the machine.

A still further object of the invention is to provide an improved mechanism whereby the line spacing is effected automatically with each reciprocation of the paper carriage to the right position of the machine whereby the distance between the lines of writing on the paper can be regulated by the operator.

In the following description and claims and in the accompanying drawings, which show a preferred embodiment of my invention other objects and advantages will be disclosed and pointed out: and it will be understood that changes in the structure and operation of this machine may be made within the scope of the claims without departing from the description hereinafter brought out.

In the drawing: Figure 1 is a top plan view of a portion of the improved typewriter showing the novel features thereof. Fig. 2 is a transverse central section of the same. Fig. 3 is a side elevation of the line spacing mechanism in a disengaged position. Fig. 4 is a top plan view of the same partly in section and in an engaged position. Fig. 5 is a top plan view of another form of line spacing mechanism in an engaged position. Fig. 6 is a detail of the clutch members shown in Fig. 5 in a disengaged position.

Referring now specifically to the drawings: The machine comprises a base 15 which is preferably of rectangular formation and composed of sheet steel and which is provided upon its upper face intermediately thereof and near the rear edge with longitudinally disposed tracks 16 and 17. The tracks 16 and 17 are provided upon their upper faces with longitudinal grooves 18 and 19 in which are disposed suitable roller bearings 20 and 21 which engage in grooves 22 and 23 formed in the upper edges of the legs 24 and 25 on which is supported the paper carriage. The paper carriage comprises bars 26 which are laterally disposed across the opposite ends of the carriage and are supported upon the upper extremities of the legs 24 and 25. The forward extremities of the bars 26 are provided with vertically disposed slots 27 which are adapted to receive the opposite ends of a shaft 28 upon which is mounted the platen 29 over which the paper is passed. In the forward ends of the bars 26 is disposed longitudinally a rod 30 supporting intermediately thereon a pair of short clips 31 and at its extremities a second pair of clips 32 which are of greater length than the clips 31. The bars 26 support across their extreme forward ends a rack bar 33 the engaging teeth of which extend upwardly and forwardly for the purpose of engaging the escapement mechanism.

For the purpose of supporting the paper in a horizontal position in full view of the operator after it passes over the platen 29 a metallic plate 34 is positioned longitudinally across the bars 26 and secured thereon in any suitable manner. The forward edge of the plate 34 is slightly beveled to conform to the cylindrical contour of the platen 29 for the purpose of closely fitting against the same for the more positive guidance of the paper thereover. To the plate 34 near its forward opposite edges by means of the thumb screws 35 are secured the detent springs 36 carrying the rollers 37 adapted to operate in the notched wheels 38, all in the customary manner to hold the platen in a straight line against accidental displace-

ment during the operation of the letter spacing mechanism.

The plate 34 carries the raised flanges 34ª at the opposite intermediate forward edges thereof for the purpose of straightening the paper should it be passing through the machine crookedly and for the purpose of keeping the paper from passing through the machine in any way other than the straight way.

Upon the paper carriage at the front thereof by means of the thumb screw 39 the flange 40 of the bar 41 is secured. The bar 41 is provided at its forward extremity with a graduated rod 43 which slides in the end of the bar 41 and is secured in its different positions by the thumb screw 42. The bar 43 carries the flange 44 which flange comprises the paper edge gage.

Mounted upon the extremity of the shaft 28 is a beveled roller 45 the reduced portion of which extends outwardly and is adapted to be engaged by a concave clutch 46 provided upon its inner surface with a strip of leather 47 or like material for the purpose of producing a frictional engagement between the roller 45 and the clutch 46. The clutch 46 is carried upon the extremity of a plunger 48 which is slidably mounted in the upper end of a standard 49 and is prevented from being displaced therefrom by a flange 50 which is annularly formed upon the opposite extremity of the plunger 48. For the purpose of normally holding the plunger 48 in an extended position a coil spring 51 is mounted about the plunger 48, the opposite ends of which are impinged against the clutch member 46 and the face of the standard 49. For the purpose of imparting a partial rotation to the plunger 48 a set screw 52 is adjustably mounted in the laterally disposed slot 53 formed in the upper face of the standard 49, the set screw 52 extending downwardly to the plunger 48 engaging the same in one of a plurality of diagonally disposed grooves 54, 55 or 56 in the face of the plunger 48 according to the position of the set-screw 52 in the slot 53. The standard 49 is supported on the base plate 15 in direct alinement with the track 16 to effect the proper registration of the roller 45 and the clutch 46.

The base 15 carries upon its front edge a depending flange 57 which forms a part of the diagonally disposed feed plate 58 which extends backwardly and upwardly from the flange 57 to a point in proximity to the platen 29. The plate 58 extends the entire length of the base 15 and is secured to the same. Plate 58 is provided upon its upper edge with a beveled portion for the purpose of closely fitting against the outer surface of the platen 29 to provide a positive guiding means for the conveyance of the paper on to the platen 29 beneath the clips 31 and 32.

The base plate 15 supports intermediately of its opposite ends the vertically disposed standards 59 which support at their upper extremities bar 60. The bar 60 is used for the purpose of supporting the upper operative mechanism of the machine.

Upon the rear of the paper carriage is mounted in a suitable manner the bar 63 which reciprocates adjacent the bar 64 which is solidly mounted in a suitable manner with the base of the machine. Bars 63 and 64 are for the purpose of carrying mechanism not shown or claimed in this application.

In Fig. 6 the members 61 and 62 represent a tooth clutch mechanism for the line spacing already set out.

The operation of the machine is as follows: The operator inserts a sheet of paper backwardly into the machine upon the diagonally disposed feed plate 58 and against the edge gage member 44 if desired and places the same against the platen 29 which by its curvature directs the forward edge of the paper against the clips 31 and 32 to impinge the paper upon the upper face of the platen 29. When the paper is in this position and the machine is actuated by the escapement (not shown) the carriage is reciprocated the length of the base 15 upon the roller bearings 18 and 19 which engage in the upper faces of the tracks 16 and 17. This standard 49 being positioned upon the right end of the base 15 and carrying the line spacing mechanism thereon, the platen 29 is caused to partially rotate and to feed the paper forwardly a distance controlled by the positioning of the set-screw 52 in one of the grooves 54, 55 or 56. As is shown in the drawings the grooves 54, 55 and 56 are disposed upon the plunger 48 at different angles to effect different degrees of rotation corresponding to the distance desired, one space two spaces or three spaces, between the lines of writing upon the paper disposed upon the platen 29.

The operation of the line spacing mechanism is as follows: When the paper carriage is actuated to travel to the right of the machine the conical roller 45 which is keyed to the shaft 28 which rigidly supports the platen 29 engages in the clutch member 46 and is impinged against the friction packing 47 and as the paper carriage is further actuated to the extreme right position of the machine the clutch member 46 is forced toward the standard 49 contracting the spring 51 and causing the plunger 48 to slide backwardly engaging the set-screw 52 in one of the grooves 54, 55 or 56 and thus causing a partial forward rotation of the clutch 46 revolves the roller 45 and carries the platen 29 through the same angle of rotation. This line spacing is effected at each reciprocation of the paper carriage to the right position of the machine and feeds

the paper backwardly of the machine on to the horizontally disposed plate 34. Owing to the horizontal position of the plate 34 the paper is kept in a horizontal position throughout the operation of the machine so that the operator is enabled to read or to check the writing disposed upon the pape after it has passed over the revoluble platen 29.

What I claim as new is:

1. In a typewriting machine, the combination with a revoluble platen, of a carriage therefor and paper feed mechanism comprising a flat plate disposed in front of said carriage to guide the paper upwardly and rearwardly to said platen.

2. In a typewriting machine, the combination with a revoluble platen, of a carriage therefor, a paper feed mechanism comprising an upwardly and rearwardly extending flat plate disposed in front of said platen and a flat plate horizontally disposed to receive the paper after passing over said platen.

3. In a typewriting machine having a body portion, a base, a paper guide way in one plane, a revoluble platen and a plate to receive the paper after passing over said platen to hold the paper in view of the operator.

4. In a typewriting machine having a paper feed mechanism comprising a paper carriage, a guide way extending the entire breadth of the machine from the base thereof at the front upwardly and backwardly in juxtaposition to the platen in all its reciprocatory positions of the machine, a revoluble platen on said carriage and a plate adapted to reciprocate longitudinally with said platen for the purpose of supporting the paper after passing over said platen.

5. A typewriting machine having a paper feed mechanism, comprising a guide plate diagonally disposed at the lowermost part of said machine at the front edge thereof and extended backwardly and upwardly in juxtaposition to the platen of said machine, a revoluble platen and a carriage therefor, and means for keeping the paper after it is fed over the platen in a horizontal position.

6. A typewriting machine having a paper feed mechanism comprising a guide plate in one plane, a paper carriage and a revoluble platen positioned backwardly of said guide plate on said paper carriage and a plate to support the paper in a horizontal position after passing over said platen.

7. In a typewriting machine having a base, a paper carriage adapted to ride longitudinally on said base, a revoluble platen mounted on said carriage and a paper feed mechanism comprising a flat guide way at the front of said platen, a paper edge gage securely fastened to said carriage and extending above said guide way to reciprocate with said paper carriage.

8. In a typewriting machine having a base, a paper carriage adapted to ride longitudinally thereon, a revoluble platen mounted on said carriage and a paper feed system comprising a flat guide plate, a paper edge gage securely fastened to said paper carriage free to reciprocate above said guide plate and a receiving plate to receive the paper after passing over said platen.

9. In a typewriting machine having a body portion, a paper carriage adapted to reciprocate longitudinally in said body portion, a revoluble platen mounted on said paper carriage and means secured to said paper carriage extending forwardly and downwardly to keep the paper in alinement as it passes into the machine, said means comprising a flange mounted at the end of a slidable rod, said rod being carried by an arm rigid with the paper carriage.

10. In a typewriting machine having a frame, a paper carriage adapted to reciprocate longitudinally in said frame, a revoluble platen on said carriage, a flat receiving plate and raised flanges integral therewith on the upper surface of said plate to keep the paper in alinement after passing over said platen.

11. In a typewriting machine having a base, longitudinal tracks on said base, a paper carriage mounted on said tracks, a revoluble platen at the front of said carriage and a paper edge gage securely mounted to and extended forwardly of said paper carriage, said edge gage comprising a flange carried at the end of a slidable mounted rod, said rod being carried by an arm carried by said paper carriage, said flange being adapted to engage and to regulate the paper and keep it in alinement as it is fed into the machine.

12. In a typewriting machine having a body portion, a base, a paper guide way in one plane at the front of said machine extended from said base and being secured thereto at the front, a revoluble platen in said body portion and a carriage therefor, a plate adapted to reciprocate longitudinally with said platen for the purpose of supporting the paper after it passes over said platen and a line spacing mechanism at the right end of said base for engagement at times with said platen.

13. A typewriting machine comprising a frame, a carriage mounted in said frame to reciprocate longitudinally therein, a shaft journaled at the forward extremity of said carriage, a platen intermediately disposed about said shaft, a frictional roller rigidly carried upon one extremity of said shaft and a revoluble plunger disposed on said frame carrying a frictional clutch member against which said friction roller is adapted

to impinge at times, said revoluble plunger adapted to impart at times partial rotations to said roller.

14. A typewriting machine having a paper carriage, a friction roller disposed at one end of said carriage connected to a platen on said carriage and a bumper disposed at one end of said machine to arrest the motion of said carriage, said bumper comprising a standard vertically mounted on said machine, a plunger laterally and reciprocally mounted in said standard, diagonally disposed grooves formed in the face of the said plunger, a spring disposed about said plunger between the side of said standard and the extremity of said plunger, a concave friction clutch for engaging said friction roller at times and a set-screw adjustably positioned in the extremity of said standard for the purpose of engaging in said grooves formed in the face of the said plunger.

15. In a typewriting machine having a base, longitudinal tracks disposed on said base, a paper carriage adapted to reciprocate on said tracks, a revoluble platen mounted on said paper carriage the combination of a line spacing mechanism positioned at the right end of said base comprising a revolubly and reciprocally mounted plunger adapted to engage the said platen at times for the purpose of producing a partial rotation of said platen.

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PAUL E. ALSH.