Feb. 25, 1930. C. OLIVETTI 1,748,896

MARGIN ADJUSTING DEVICE FOR WRITING MACHINES

Filed May 31, 1927 2 Sheets-Sheet 1

Fig. 2

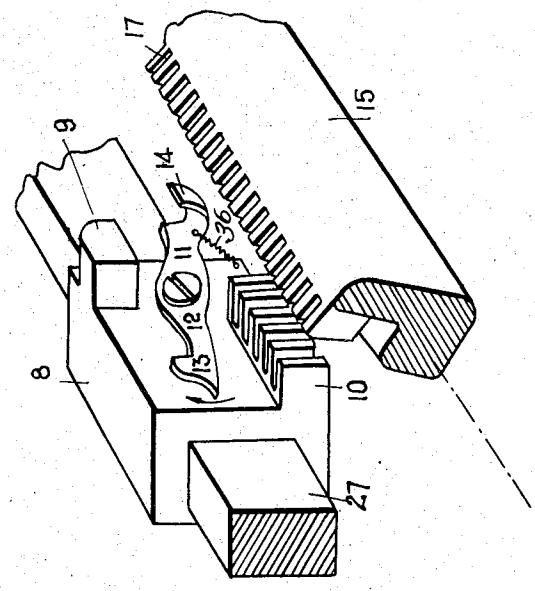
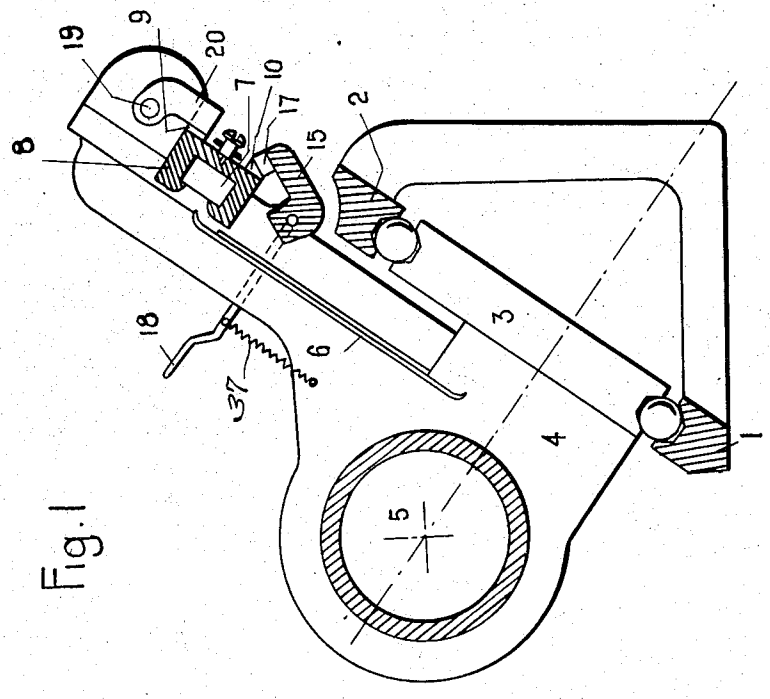


Fig. 1



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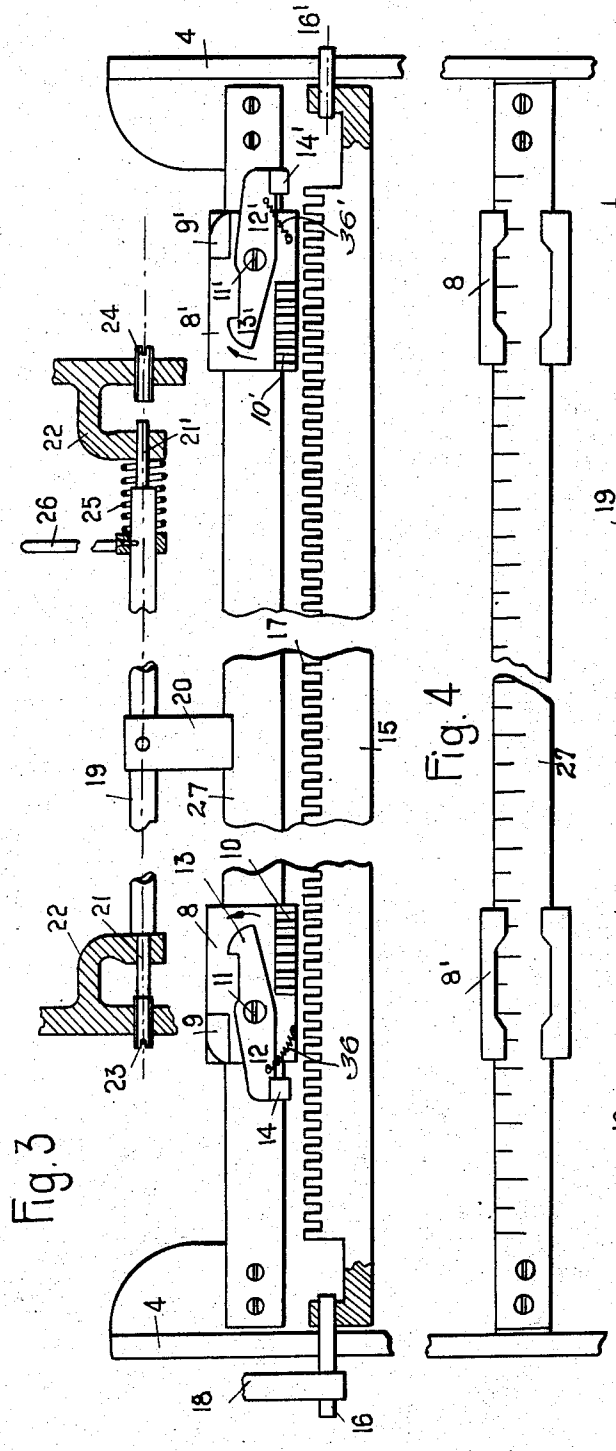


Fig. 3

Fig. 4

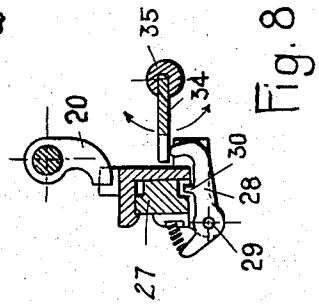


Fig. 8

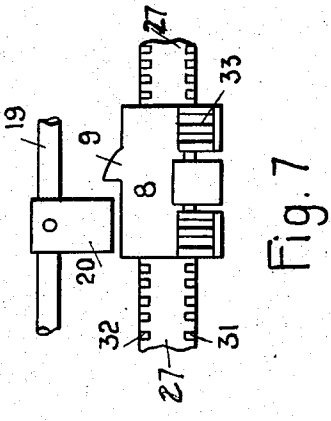


Fig. 7

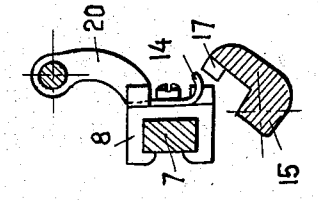


Fig. 6

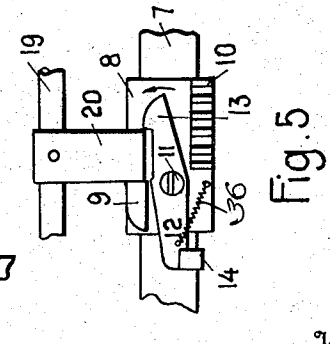


Fig. 5

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MARGIN-ADJUSTING DEVICE FOR WRITING MACHINES

Application filed May 31, 1927, Serial No. 195,541, and in Italy January 12, 1927.

Writing machines with open front paper carriage have the drawback that the margin-adjusting device is mounted behind the carriage in an inconvenient position, and necessitating turning the paper over so as to see how to adjust the device.

The present invention consists in a combination which enables the margin adjusting device to be set and fixed by displacing the carriage as a whole, while a control lever is operated.

Two embodiments of the subject of the invention are illustrated by way of example in the accompanying drawings.

Figure 1 represents a section through the carriage, Figure 2 is a diagram of the whole device. Figures 3 and 4 are longitudinal views of the guide on which the margin attachment is mounted. Figures 5 and 6 are an elevation and section respectively of a margin-adjusting device in position ready for shifting. Figures 7 and 8 are an elevation and section respectively of a modification of the margin-adjusting device embodying the invention.

In the carriage represented in Figure 1 the margin devices are mounted in alignment with the plate supporting the paper, but they may be arranged in any other position and even behind the carriage, without altering the character of the invention.

The carriage, the essential portions of which are shown in section, is of the ball-bearing type, but the invention is applicable to any kind of carriage. In the embodiment shown, two guides (1) and (2), are integral with the frame of the machine, and the member (3) of the carriage is adapted to slide between them by means of a set of balls or rollers. On the ends of the carriage are arranged the two cheeks (4) (see Figures 1 and 3) carrying the journals of the platen (5) and the plate (6) on which the paper rests. In order to make the drawing clearer, all the details of the carriage not pertaining to the present invention have been omitted.

Attached to the cheeks of the carriage and lying parallel with the platen is a graduated bar (7), on which the margin devices slide. These devices are two in number, one on the right and one on the left (see Figures 3 and 4) consisting of two metal blocks (8) and (8′) provided with a recess through which the bar (7) can slide. In the figure the recess is rectangular in shape.

To facilitate comprehension of the drawings, the corresponding parts of both margin devices are indicated by the same reference numerals, those of the left-hand device being distinguished by a prime.

The blocks (8)—(8′) are provided, on the side opposite the platen, with two projections, of which that marked (9)—(9′) is solid, whilst the other, (10)—(10′) is provided with milled slots of a width corresponding to the space between two characters of the typescript. The blocks carry pivots (11)—(11′) for levers (12)—(12′), terminating at one end in latches (13)—(13′) and at the other end in lugs (14)—(14′) projecting beyond the plane of the lever. Springs (36) (36′) act on the levers (12)—(12′) and tend to turn them on the pivots in the direction indicated by the arrows in Figures 2, 3, and 5, so that the latches (13) (13′) are held towards the position occupied by the block (20), which will be described later.

It should be noted that in Figure 3, the various parts, being intended to be viewed from below and behind, are inverted so that the parts which are on the left when the machine is viewed in the ordinary way are situated on the right, and vice versa. Hence the margin device 8 is really the right hand one, and vice versa.

Parallel with the bar (7) is another bar (15) extending along the carriage and made to rock on two pivots (16)—(16′) (Figure 3) on the cheeks (4) of the carriage itself.

One side of the bar 15 is provided with teeth (17) forming a kind of rack having a pitch equal to the space between two characters of the typescript. The pivots (16) supporting the bar (15) are in such a position that when the bar is rotated thereon through a certain angle, the teeth (17) enter the gaps between the teeth (10) of the margin device, thus securing the latter in its position for

the time being. It should be noted that in Figure 1 the rack (17) is shown in engagement with the teeth (10) whilst in Figures 2 and 3 the two sets of teeth are disengaged and in the freed position.

The bar 15 is subjected to the action of a spring (37) which tends to keep the teeth (10) and (17) engaged, and at the end of said bar is a lever (18) (Figure 1) for tilting the bar.

When the rack (17) is set to engage the teeth (10) and lock the margin device, the outward portion of said rack (17) presses on the oblique lug (14) of the lever (12) (Figures 2 and 6) and causes it to swing, overcoming the action of the spring in the opposite direction to that of the arrow so that the latch 13 withdraws accordingly.

Mounted parallel with the carriage guides and the roller is a bar 19, provided about midway, which corresponds to the center-line of the machine, with a small block 20.

The bar 19 is provided at the two ends with journals 21, mounted in two bearings or brackets (22) (Figure 3) attached to the frame of the machine, and enabling the bar 19 to slide longitudinally for a short distance which is limited by two set screws 23—24 fitted into the frame of the machine. A spring 25 keeps the bar ordinarily in contact with the screw 23. The block 20 is therefore capable of two movements, one of rotation on the axis of the bar 19 on which it is mounted, and the other one of displacement parallel thereto. It should be noted that this latter movement is very slight and is less than the space between two characters of the typescript.

When the machine is writing, the rack (17) is in engagement with the toothed blocks (10)—(10′) of the margin devices, which are therefore locked on the bar (7), and the terminal latches (13)—(13′) of the levers (12)—(12′) are retracted and depressed by the action of the upper part of the rack (17) on the oblique lugs (14)—(14′) respectively of said levers. The levers (12)—(12′) are then in such a position that they cannot touch the small block 20 at any point.

The running of the carriage is restricted by the fact that the block (8′) of the left margin device (seen on the right in Figure 3) which, as will be evident, remains fixed in relation to the remainder of the carriage, strikes against the block (20) by means of its projection (9′).

When the carriage, which as in all writing-machines is impelled from right to left by a powerful spring, reaches the point where 9 strikes against the block 20, the action of the spring 25 is overcome and the bar 19 is pushed until the end of the journal 21′ strikes against the screw 24 which stops the displacement of the bar and at the same time brings the carriage to a standstill.

The slight longitudinal movement of the bar (19) acting through the lever (26) on suitable mechanism, which need not be described, since it forms no part of the present invention, stops the movement of the keys of the machine, so that when the carriage reaches a point fixed by the position of the margin device (9), not only is the carriage itself stopped, but also the movement of the keys and the impresison of any further letters.

If, however, the bar (19) be now swung on its journals by means of the corresponding lever through such an angle that the block (20) clears the margin device and no longer touches the block (9), the bar (19) will return to its normal position, under the influence of the spring 25, so that the end of the right hand journal (21) comes in contact with the fixed screw 23. When this is accomplished the movement of the mechanism blocking the key action is reversed, and the machine can continue to be worked and the typist can finish the interrupted word and begin a new line.

When the end of the line is reached, the carriage is moved to the right by hand. To enable this return movement to be accomplished without the small block (9) striking against the block (20), all that is needed is to shape the said small block (Figures 3 and 5) so that it presents an oblique surface in such a way that during the return movement this slides on the block 20 and thereby causes the journals of the bar 19 to pivot sufficiently to provide a clearance.

The carriage continues to move towards the right until the block 20 strikes against the small block 9′ of the left hand margin device, which will stop the carriage in the position set for the head of the line.

Thus as described the margin devices whilst limiting the running of the carriage nevertheless allow the margin to be passed and the carriage to move right to the end if necessary.

If it be desired to write any character to the left of the margin set for the head of the line the carriage may also be moved beyond the margin device on the right in the same manner and by the same means as described in connection with the device on the left hand.

The method of shifting and locking the margin-adjusting device will now be described.

For this operation, the bar (15) is swung through a certain angle by acting on the lever (18), so that the rack (17) is disengaged from the toothed blocks (10)—(10′) of the two margin devices. This movement frees the oblique lugs 14—14′ of the levers 12—12′ from the pressure of the rack 17 and enables the levers to pivot in the direction of the arrow under the action of their springs, so

that the latches (13)—(13′) move towards the block 20 (position shown in Figure 3).

It is desirable that this hand-operated movement which turns the bar (15) should (if necessary) clear the carriage from the escapement wheel, without which the movement of the carriage forward or backward cannot take place.

To adjust the left-hand margin device, all that is needed is to push the carriage towards the left. The block 20, acting on the inclined surface presented, as can be seen from the drawings, by the end of the lever (12) on the side of the latch (13), causes the lever to turn on the pivot (11), and is thus able to pass over the latch itself and come into contact with the block 9.

As soon as the block 20 has passed over the latch 13, the latter swings back and thus engages the block 20 between the latch and the block 9, the space between them being sufficient to accommodate the block 20 with a little free play. Since the block 20, as has been seen, is able to slide longitudinally only for a very short distance together with the bar 19 to which it is attached, the margin device will be held by the block 20 during any movement of the carriage towards the right or left, and therefore fixed in relation to the carriage and the graduated bar (7) integral therewith, and on which the margin device (8) can then be moved into the desired position. To lock the left margin device when this position has been reached all that is needed is to allow the bar (15) to swing until the rack (17) engages with the teeth (10) thereby locking the margin on the graduated guide and at the same time releasing the block 20 from the action of the latch (13), which as has been seen, is depressed by the same movement.

The movement of the carriage will thus be limited, to the desired extent, by means of the left-hand margin device, but will be unrestricted towards the right. The device on the right can be dealt with in the same manner in order to set and lock it in the desired position.

The entire combination described affords a means of carrying into effect the method devised for enabling the margin devices to be freed at will, displacing them in relation to the carriage and locking them in the desired position. This combination enables the limits fixed by the margin-adjusting devices to be passed when necessary either at the beginning or end of a line.

The said method may also be carried out by other means, such, for example, as represented in Figures 7 and 8, in which for simplicity only one such device is shown. In this case the graduated bar 27 on which the margin devices slide is provided with teeth on both sides of the face and the margin device (8) is locked therewith by the small pawl (28) pivoting at the point 29 on the margin device itself and pushed upwards by the action of a spring so that its teeth (30) engage in those teeth of the rack 31. The block (8) of the margin device is provided with teeth (33).

Parallel with the graduated bar is another rack 34 adapted to swing on its shaft 35, of the same length as the carriage and capable of being turned up or down, as indicated by the arrow, by means of a control lever attached to one of its ends.

The rack 34 is mounted in the frame of the machine and not on the carriage, and its supports enable it to swing round the shaft 35, but not to slide longitudinally. By turning the rack 34 downward on the shaft 35, it will engage the teeth 33 of the block 8 of the margin stop, which can then no longer move longitudinally, whilst at the same time the rack 34 acts on the end of the pawl 28 which it depresses and releases the tooth 30 from the rack.

The carriage can then slide whilst the block 8 remains locked and able to take up the desired position on the guide 27. As soon as the rack 34 has returned into the position shown in the drawing, the pawl 28 turns upwards, the tooth 30 reengages in the rack 31, and the margin device is locked in position on the guide.

Assuming the described margin device to be the one situated on the right hand, that on the left hand will be of similar, but reversed, construction.

This arrangement will produce the same results as the former, although of different construction.

The essential and distinguishing feature of this invention is that by means of a longitudinal bar parallel with the path of the carriage, the margin-adjusting devices may at will be locked on the carriage or left free to slide on their guide. Moreover, whilst free to slide on the carriage they may remain fixed in relation to the frame of the machine, so that by moving the carriage they may be shifted into the desired position substantially as described.

In the first embodiment of the margin-devices described, that is, according to Figures 1 to 6, they may serve as tabulator stops, so as to stop the machine in successive fixed positions. In such a case it will suffice to provide the graduated bar (7) with a right-hand margin device (8), determining the beginning of the line, and a plurality of margin devices (8′) on the left hand. The setting in the desired positions will be effected separately, beginning with the last one on the left. The friction between the block of the margin device and the bar on which it slides, and which if necessary may be increased by means of a pressure spring, will be sufficient to prevent the margin devices already in position from shifting when they are disengaged from

the rack (17) for the purpose of setting the others.

It should be noted that the described mechanical arrangements may be inverted, and that the block (20) may be supported by the carriage, whilst the guide (7) carrying the margin devices and the rack (17) may be mounted on the frame of the machine, without departing from the scope of the invention, since the relative movement of the various parts remains unaffected. In fact the carriage by moving it, shifts the margin devices into the desired positions by the action of the block 20.

The said inversion may also be effected in the embodiment shown in Figures 7 and 8, in which the block (20) and the rack (34) will be supported by the carriage, whilst the guide (27) with the margin devices will be fixed on the frame of the machine.

What I claim is:—

1. In a writing machine comprising a frame and a carriage, the combination of a guide on the carriage, a margin-adjusting device slidably mounted on said guide, a rack on said device, a rack on the carriage alongside said device, means for moving the rack on said carriage into engagement and disengagement with or from the rack on said device, an abutment on said device, a stop on said frame in the path of said abutment, a biased displaceable catch on said device adapted to engage said stop, and an abutment on said catch adapted to be engaged by the rack on said carriage and thereby to displace said catch.

2. In a writing machine comprising a frame, and a carriage, the combination of a guide on the carriage, a margin-adjusting device slidably mounted on said guide, a rack on said device, a rack on the carriage alongside said device, means for moving the rack on said carriage into engagement and disengagement with or from the rack on said device, an abutment on said device, a stop on said frame in the path of said abutment, a spring-biased pivoted latch having a hook on one arm adapted to engage said stop and a lug on the other arm in the path of movement of the rack on said carriage.

In testimony whereof I have hereunto set my hand.

CAMILLO OLIVETTI.