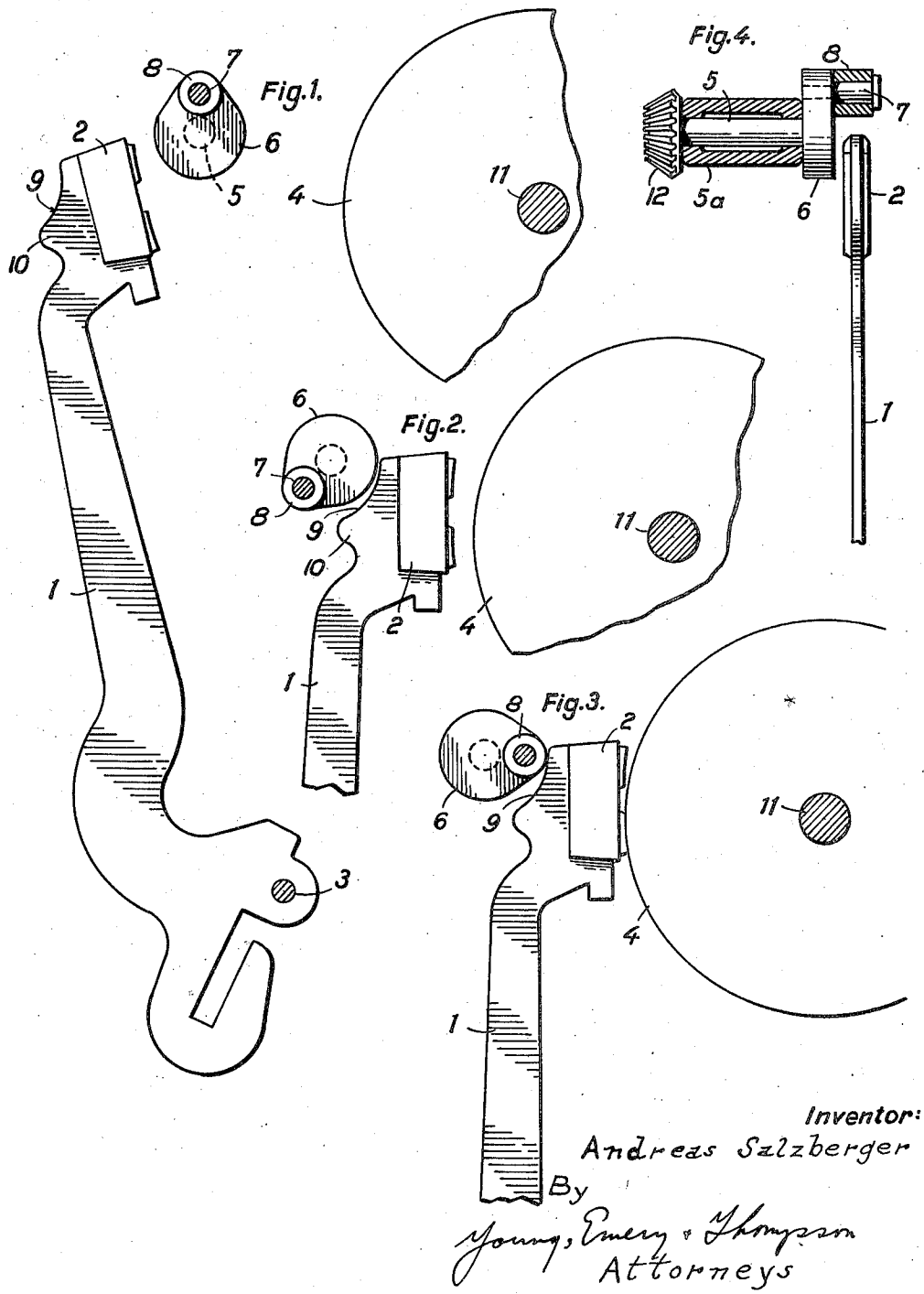
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PRESSING-ON DEVICE FOR TYPE LEVERS

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PRESSING-ON DEVICE FOR TYPE-LEVERS

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This invention relates to typewriting machines of the kind in which power-lifted type-levers are positively engaged by a rotary pressing-on member and are practically noiselessly pressed against the platen. In my U. S. Patent No. 2,059,537 a constructional form of typewriting machine of the above-mentioned kind is described in which the pressing-on member is constituted by a cam engaging rollers mounted in the proximity of the type-head at both sides of the lever. The durable and accurate connection of said rollers with the individual levers is, however, circumstantial, and causes, in connection with the accurate position of the levers, the arising of difficulties, of which one is that the pressing-on member does not exert its action directly above or behind the printing place of the type lever head so that the entire pressing-on power cannot be utilized for producing the print.

Now, more precisely, my invention relates to a certain arrangement and combination of parts by which the above mentioned difficulties or drawbacks are obviated, and I attain the object in view by providing as pressing-on member an eccentrically rotating member which directly engages the type lever head or the type carrier and is preferably designed as a roll, and by arranging this member or roll and the type-lever head relatively to one another in such a manner that said head, in the first part of its forward movement, is moved past the said roll below it, whereafter the type-lever head, towards the end of its path, is pressed on by the pressing-on roll following it. This presents, besides, the further advantage that it is rendered possible to support the pressing-on member at one side only, preferably on the right-hand side, of the typewriting machine frame so as to prevent disturbance of the survey of the written line.

Furthermore, a practically smooth initiation of the pressing-on movement is attained by providing on the type-lever back, for the pressing-on roll, a ramp path permitting gradual running down of said roll, that ramp being designed, preferably, as a circular arc located eccentrically with respect to the center or fulcrum of the pressing-on member.

The invention is illustrated diagrammatically and by way of example on the accompanying drawing on which

Fig. 1 is a side view of the members concerned, the type-lever being assumed to be just about to arrive in its uppermost position and the pressing-on roll being in its appertaining position.

Fig. 2 shows the same parts in another position relatively to one another, the type-lever having nearly arrived at the platen and its lower half being omitted.

Fig. 3 shows the type-lever and the pressing-on roll again in another position relatively to one another and to the platen.

Fig. 4 is a front-view of the uppermost parts of each of Figs. 1–3, partly in section.

On the drawing, 1 denotes the type-lever, the shape of which is the usual one; 2 denotes its type-head which is moved positively on the pivot 3 in the direction of the platen 4 by a power-drive (not shown). A shaft 5 is supported in a bearing 5a fixed in any suitable manner to the machine frame and located above the levers 1 parallel to the platen 4. This shaft 5 is likewise positively driven by a power drive and is at its frontal end, in front of the writing place, provided with a disk 6 to which is attached a small roll 8 on an eccentrically arranged pin 7.

The movements of the lever 1 and of the roll 8 are so determined with respect to one another that, as appears from the three positions shown in Figs. 1, 2 and 3, the type-lever head can move past the raised roll (Fig. 1); this latter then follows the type-lever head (Fig. 2) shortly before the printing operation takes place and presses it finally with only low speed, but powerfully, against the platen.

As has already been mentioned, the shape of the type-lever 1 is practically the usual one. Behind the head 2, on the back of the lever 1, a projection 10 is provided as generally known in combination with manually operated typewriting machines, said projection extending in the direction of the head 2 in the form of a concave curve 9, which is engaged by the roll 8 when being moved from the position of Fig. 2 into the position of Fig. 3. The roll 8 contacts with the curved portion 9 shortly prior to the type-lever head 2 contacting with the platen 4, and on its further movement the roll presses the head 2 against the platen with gradually increasing force. The curve 9 has preferably a circular form and is in the position shown in Fig. 3 somewhat eccentric with respect to the axis of the shaft 5.

The type-lever is gradually lifted as shown in my U. S. Patent mentioned above by means of an eccentric (not shown) until it gets into the range of action of the roll 8 (Fig. 2); the position of said eccentric relatively to the position of the type lever is such that the eccentric is in its dead-centre position when the type-lever head comes in contact with the platen. Thus, counter to the known manually driven or power-driven lever

typewriting machines, the roll 8 engages the slowly arriving type-lever and presses it against the platen practically noiselessly and with increasing force.

The strength of the impression can be adjusted as desired by varying the distance between the platen axle 11 and the shaft 5, but it is also possible to provide for certain steps in the strength of the impression when shifting to the upper or lower row of letters by varying the position of the pin 7 so as to let the roll 8 contact with the head 2 at a little higher or deeper point.

In order to obtain a satisfactory operation of the pressing-on device as above described, the manner of supporting this device on one side only as in Fig. 4 is perfectly sufficient. In this example the shaft 5 is rotated by the intermediary of a bevel-wheel 12, but it is as well possible to employ screw-wheels, especially of a noise-dampening material, so as to obtain also at this place of the mechanism a practically noiseless transmission.

Figure 4 clearly illustrates the free passage for the type-lever head 2 below the roll 8.

An important feature of the arrangement shown and described is that the written line is not covered by members of any kind; it is for this purpose that the support 5a for the shaft 5 is arranged preferably on that side of the machine where the platen starts. This is in most cases the right-hand side of the machine. Only with certain foreign languages, such as Persian, Arabian etc., the drive must be arranged on the left-hand side.

The entire device is not only excellently simple, but owing to the fact, that the members which run upon one another, viz., the roll 8 and the concave portion 9 of the projection 10, can be hardened in the most simple manner, the durability of the device is particularly great. The distance between said portion 9 and the printing face of the type can be accurately attained by grinding the portion 9 with the aid of a gauge, and beyond this it is further possible to provide for several distances of different width between the said portion 9 and the said printing face, corresponding to different printing faces of the type characters.

I claim:—

1. A mechanism for obtaining noise-dampened imprints of the type-levers of a power-driven typewriting machine comprising, in combination with the power-driven type-levers, a paper-roller or platen against which said levers are pressed and means adapted to take hold of the type-lever just being actuated at the end of its stroke and to press it against said roller or platen, said means rotating continuously during the entire type-lever movement and comprising an eccentrically rotating member so arranged relatively to said type-lever and so timed with respect to the lifting movement of the latter that the type-lever head may pass beneath said member against the platen and be engaged by said member thereafter and pressed against the platen.

2. A mechanism as specified in claim 1, in which a rotating shaft, and a disc are provided, said rotating member being constituted by a roller eccentrically arranged on the disc and the latter being mounted at the end of said shaft.

3. A mechanism as specified in claim 1, in which the type-lever is provided with a curved portion which is engaged by said rotating member, said curved portion being so designed that the type-lever is pressed against the platen practically noiselessly and with increasing force.

4. A mechanism as specified in claim 1, in which a rotating shaft, and a disc are provided, said rotating member being constituted by a roller eccentrically arranged on the disc and the latter being mounted at the end of said shaft, and the type-lever is provided with a curved portion which is engaged by said rotating member, said curved portion having the form of a circle which in the position, in which the type-lever head is in contact with the platen, is somewhat eccentric with respect to the axis of said shaft.

5. A mechanism as specified in claim 1, in which a rotating shaft, a supporting member for the shaft, and a disc are provided, said rotating member being constituted by a roller eccentrically arranged on the disc and the latter being mounted at one end of said shaft, and the supporting member being provided only at one side of the machine.

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