

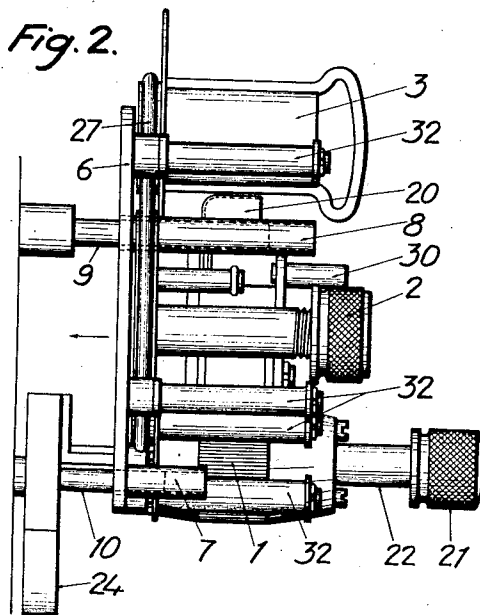
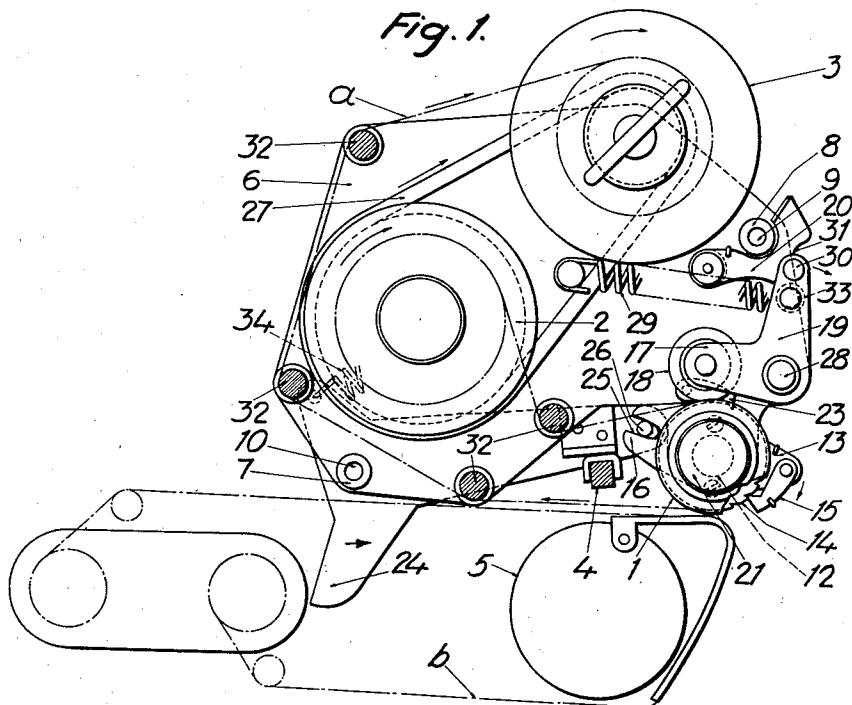
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CASH REGISTER

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CASH REGISTER

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The present invention relates to a device in cash registers of the kind, in which a strip of paper, by means of a feed roll, is adapted, when being fed, to be unwound from one roll and be wound up on another roll, and, when being fed between a swingable printing hammer and a type wheel, when the printing hammer is swung in one direction, to be provided with printing. In such cash registers it has always been difficult, after the strip of paper having been fully printed or fully stamped, to replace the same by a new strip, because in such a case it is necessary to detach and, respectively, insert the wind-up and wind-off rolls directly from and in the machine, respectively. During this time it has not been possible, either, to use the register. The chief object of the present invention is now to overcome the said drawback, due to which the rolls receiving the strip of paper as well as the feed roll in the device according to the invention are provided on a plate or the like, which serves as a supporting member for the abovementioned rolls and which is provided with guide sleeves or the like extending in a plane, about perpendicular to the plane of the plate, and which are adapted to be pushed over pins or the like rigidly connected with the frame of the cash register. On account hereof it will thus be possible, by removing the supporting plate, with a simple manual operation to take out all rolls and, if there is ready an already prepared supporting plate with rolls, by just as simple a manual operation quickly to insert a new strip of paper.

An embodiment of the invention is illustrated in the accompanying drawing, in which

Figures 1 and 2 show the device when viewed from two sides, perpendicular to each other.

Referring to the drawing *a* indicates the strip of paper and *b* the ink ribbon, which ribbon, by means of a feed mechanism, only roughly shown in the drawing, may be given a stepwise feed movement. Numeral 1 indicates the feed roll for the paper strip, the superficies of the said roll being grooved, and 2, 3 indicate the wind off and wind up rolls, respectively, the latter being in driving connection with each other by means of an endless screw drawspring 27. The paper strip is meant to be fed, in the direction indicated by arrows in the drawing, between a swingable printing hammer 4 and a shiftable type wheel 5. 32 indicates guide pins for guiding the paper strip. The printing hammer 4, by means of a spring 34, tends to be pressed against the type wheel 5, but a cam disc, an arm or the like, which is not shown in the drawing and which is

adapted to cooperate with one arm 24 of the type hammer, tends, when printing shall not take place, to press the lastmentioned arm in the direction indicated by an arrow, so that the printing hammer will assume its position shown in the drawing.

According to the invention the rolls 1, 2 and 3 are provided on a plate 6, which is equipped with guide sleeves 7, 8. The latter extend in a plane, which is about perpendicular to the plane of the plate, and are adapted to be pushed over pins 9, 10 (Figure 2) rigidly united with the frame 11 of the register. By means of locking members provided on a cover plate, not shown in the drawing, and adapted to cooperate with the pins 9, 10, the plate 6 is lockable in its inserted terminal position. In order that the feed roll 1 in the device according to the invention shall be given a stepwise rotation in the direction indicated by an arrow there is swingably provided on the shaft 12 of the said roll a two armed lever, one arm of which 13 carries a spring-actuated, swingable hook 15, which is adapted to cooperate with teeth 14 on the feed roll in such a manner that when the arm 13 is swung in the indicated arrow direction it takes the feed roll along. The other arm 16 of the said lever, on the other hand, is provided with a recess 25, into which extends a pin 26 secured to the printing hammer. Thus, during the relatively slow swinging of the printing hammer from its operative printing position into its inoperative position or rest position there is a turning of the feed roll and a feed of the paper strip.

In order to prevent the paper strip *a* from sliding when the feed roll 1 is rotated there is, on the supporting plate 6, by means of a pin 28, swingably mounted a two-armed lever, one arm 17 of which carries a roll 18, preferably made of caoutchouc, a screw drawspring 29 being united with the other arm 19 of said lever, the said screw drawspring holding the roll 18 yieldingly pressed against the paper strip passing over the feed roll 1. To facilitate the insertion of the paper strip between the lastmentioned rolls the arm 19 is provided with a pin 30, serving as a finger grip, by means of which the said arm can be swung in the direction indicated by an arrow. During such operation the roll 18 is brought out of contact with the feed roll 1 and a swingable spring-actuated arm 20, which is provided with a recess 31, is automatically brought into blocking position and blocks the arm 19 in its swung-out position, during which operation the pin 33, which serves as a member of attachment for one end of

the spring 29, rests against the recess 31. Without difficulty the paper strip *a* may now be inserted between the rolls 1 and 18 and after this having been done the arm 19 is released, the roll 18 being returned to the initial position by the spring 29.

In order to facilitate the application of the plate 6 in the machine or apparatus, the feed roll 1 is provided with an axial extended portion 22 having a finger grip 21 and, moreover, there is a pawl 23 cooperating with the teeth 14 and preventing rotation of the roll 1 in a direction opposite to the direction of feed. Thus, it is impossible to rotate the feed roll 1 in more directions than one. Therefore, when applying the plate 6 in the apparatus it is necessary only to turn the finger grip 21 to a little extent, by which, on one hand, the paper strip is stretched, and, on the other hand the arm 16 is taken along, on account of the friction between the teeth 14 and the feed hook 15, to its initial position shown in the drawing. When, therefore, the guide sleeves 7, 8 of the plate 6 are pushed over the pins 9, 10 and the printing hammer 4 assumes its position shown in the drawing, the recess 25 assumes a position responding to the pin 26.

As is clear from the above it is therefore, possible, quickly and with a simple manual operation, to remove from the apparatus the plate 6 with its fully printed paper strip and to insert another plate 6 provided with a new paper strip. Moreover, the advantage is obtained of all the parts required for feeding the paper strip, except the two lever arms 13, 16, being independent of the other movable parts of the apparatus and not, as has heretofore been the case, taking part more or less in the movements, which complicates the construction and, moreover, causes a certain and unnecessary resistance when operating the machine. Further, as is clear from the above, it has been well provided for the quick and easy removal and also the application of the paper strip *a*.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a cash register having a machine frame and permanently mounted on said frame, a swingable printing hammer, a type wheel, and an inking mechanism, the combination with a carrier plate and means to detachably secure said carrier plate in a definite position on said frame, of a paper tape feeding device mounted on said plate and comprising winding and unwinding spools for the tape, a feed roller, means for guiding the tape between said printing hammer and type wheel, a pawl and ratchet mechanism to stepwise rotate said feed roller, and actuating means for said pawl and ratchet mechanism, said actuating means being operatively connected to said printing hammer when said carrier plate and paper tape feeding device are in place on said frame.

2. A device, as claimed in claim 1, in which said means for securing said plate to said frame comprises a plurality of guide pins and corresponding guide sleeves mounted on said plate and frame, respectively, and projecting at right angles to the plane of the plate.

3. A device, as claimed in claim 1, in which said printing hammer carries on its free end a pin and said actuating means consists of a two-armed lever carrying on one arm the driving pawl for said feed roller, the second arm being provided with a slot to be engaged by said pin on said printing hammer.

4. A device, as claimed in claim 1, in which said feed roller is provided on one hand with an axial extended position formed as a finger grip and on the other hand with a blocking device preventing rotation of the roller in a direction opposite to the direction of feed.

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