

- [54] **INSTALLATIONS FOR PRINTING CODES ON ARTICLES**
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- [22] Filed: **Jan. 11, 1972**
- [21] Appl. No.: **216,980**

- [30] **Foreign Application Priority Data**
- | | | |
|---------------|--------------|---------|
| Jan. 11, 1971 | France | 7100620 |
| Dec. 2, 1971 | France | 7143217 |
- [52] **U.S. Cl.**..... **101/91**, 101/110
- [51] **Int. Cl.**..... **B41j 7/20**
- [58] **Field of Search**..... 101/93 C, 91, 95, 101/99, 110

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[57] **ABSTRACT**

A code printer comprising a reading position with a coding keyboard preceded by a feeder magazine for articles to be code-printed, and a printing position followed by a discharging position and a position for stacking the code-printed articles, the printing position incorporating a printing cylinder or drum carrying retractable printing characters, driving means for rotating the printing cylinder, selector means for putting the retractable characters in either a working or an idling position and an electronic control system associated with storage means for receiving coding pulses by activation of appropriate keys on the keyboard and releasing the selector means and driving means for impressing the code on the article.

21 Claims, 13 Drawing Figures

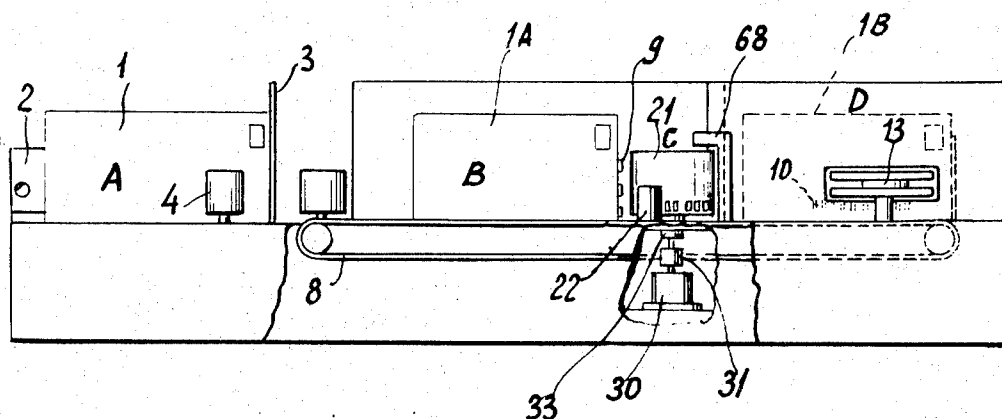


FIG. 1

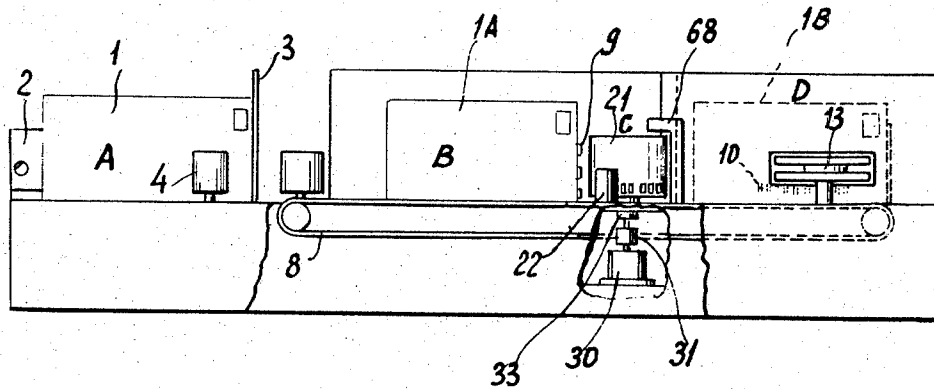
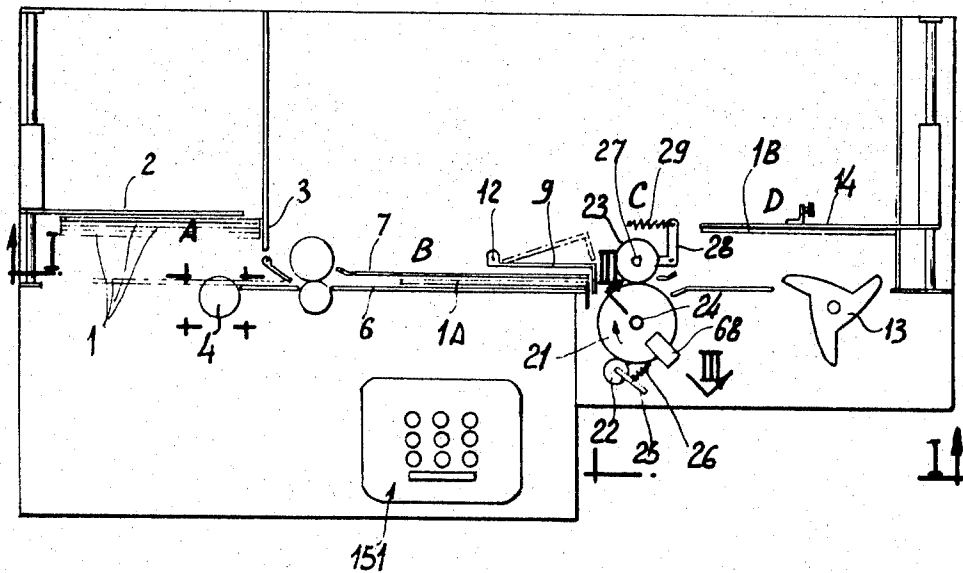


FIG. 2



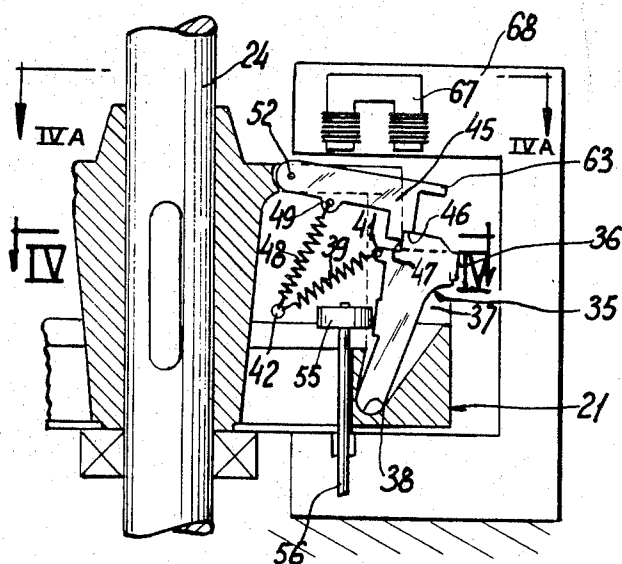


FIG 3

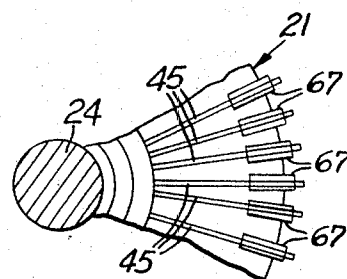


FIG. 4A

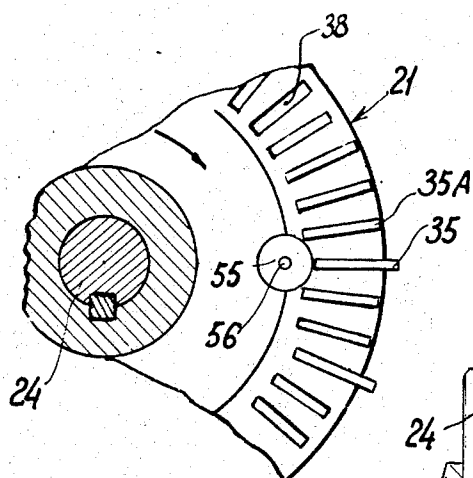


FIG. 4

FIG. 5

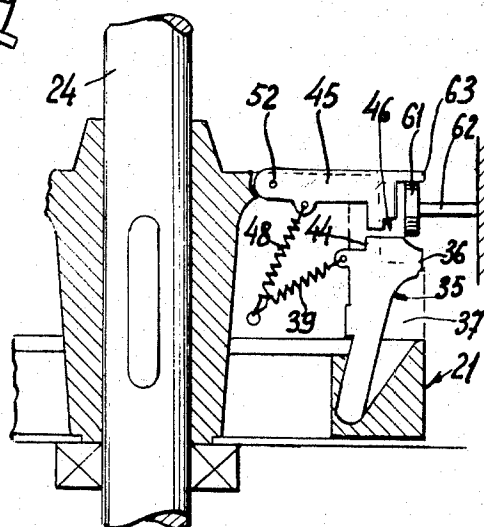
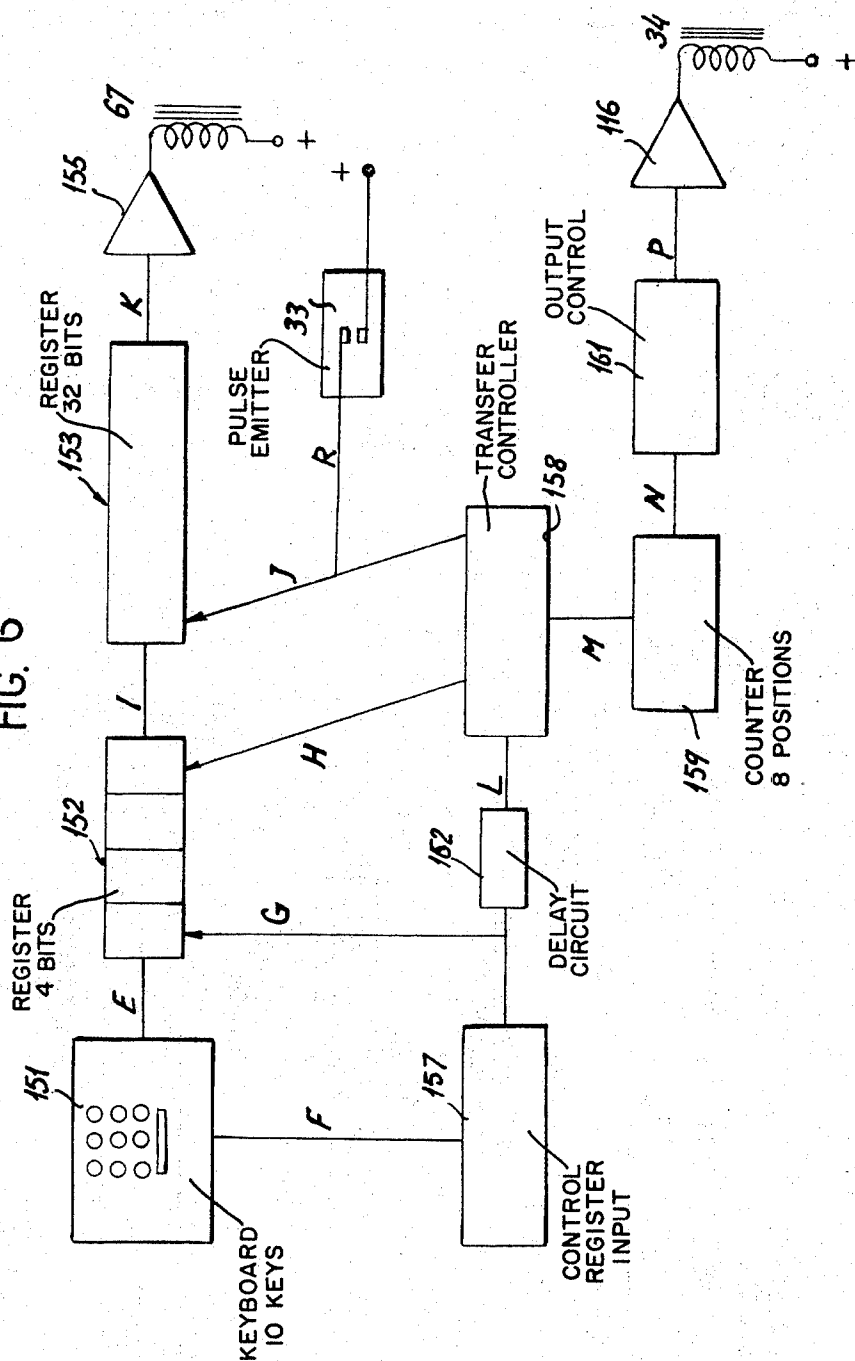


FIG. 6



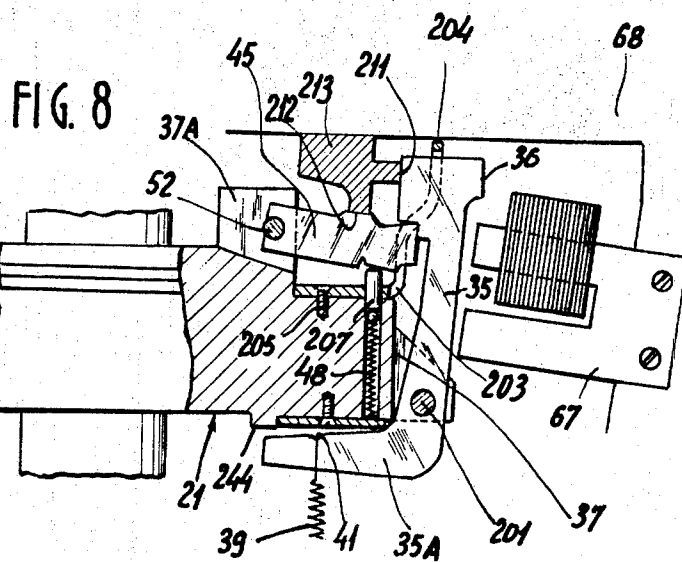
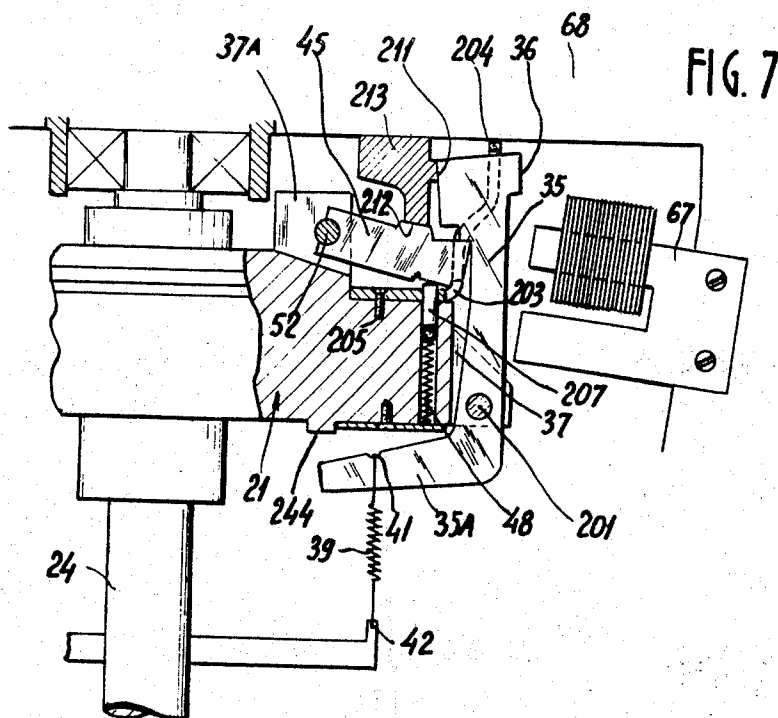


FIG. 9

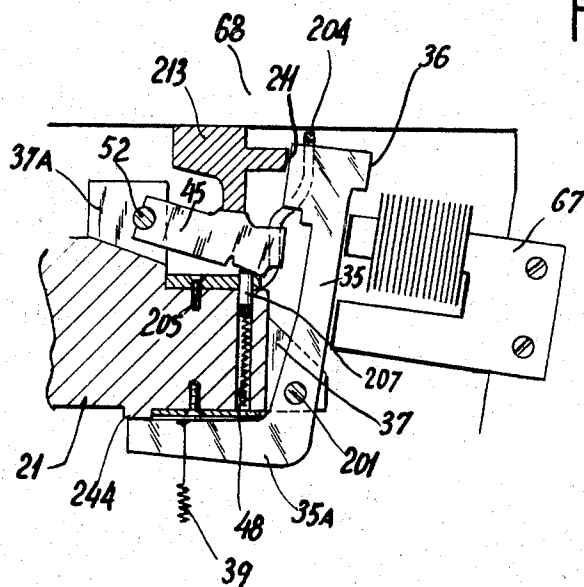


FIG. 11

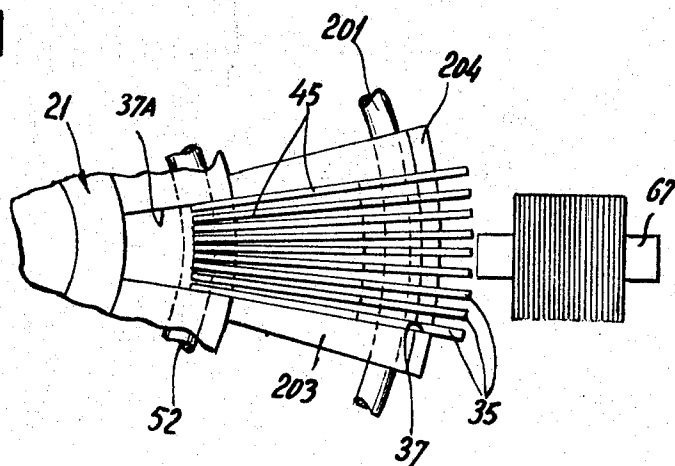
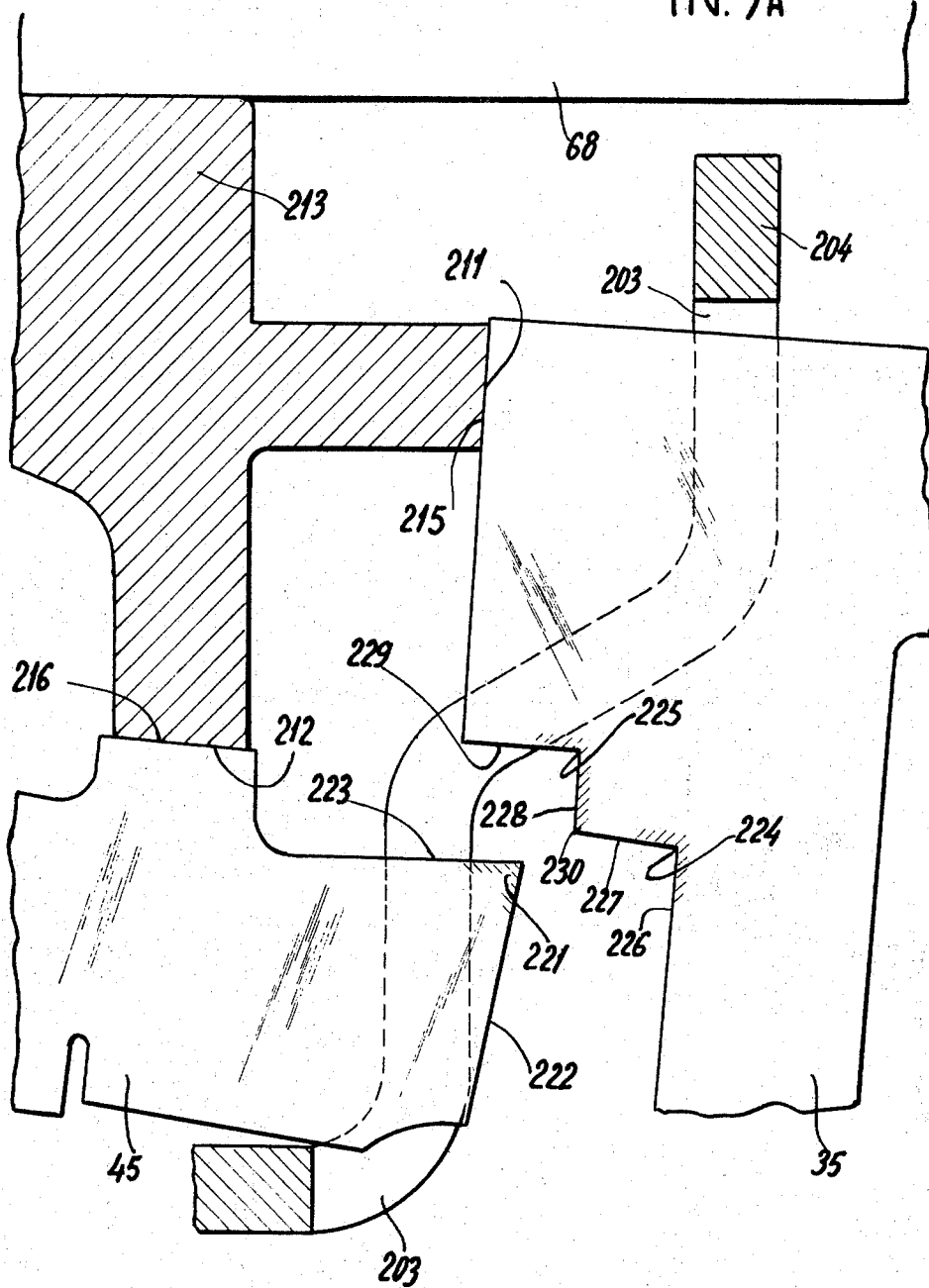


FIG. 9A



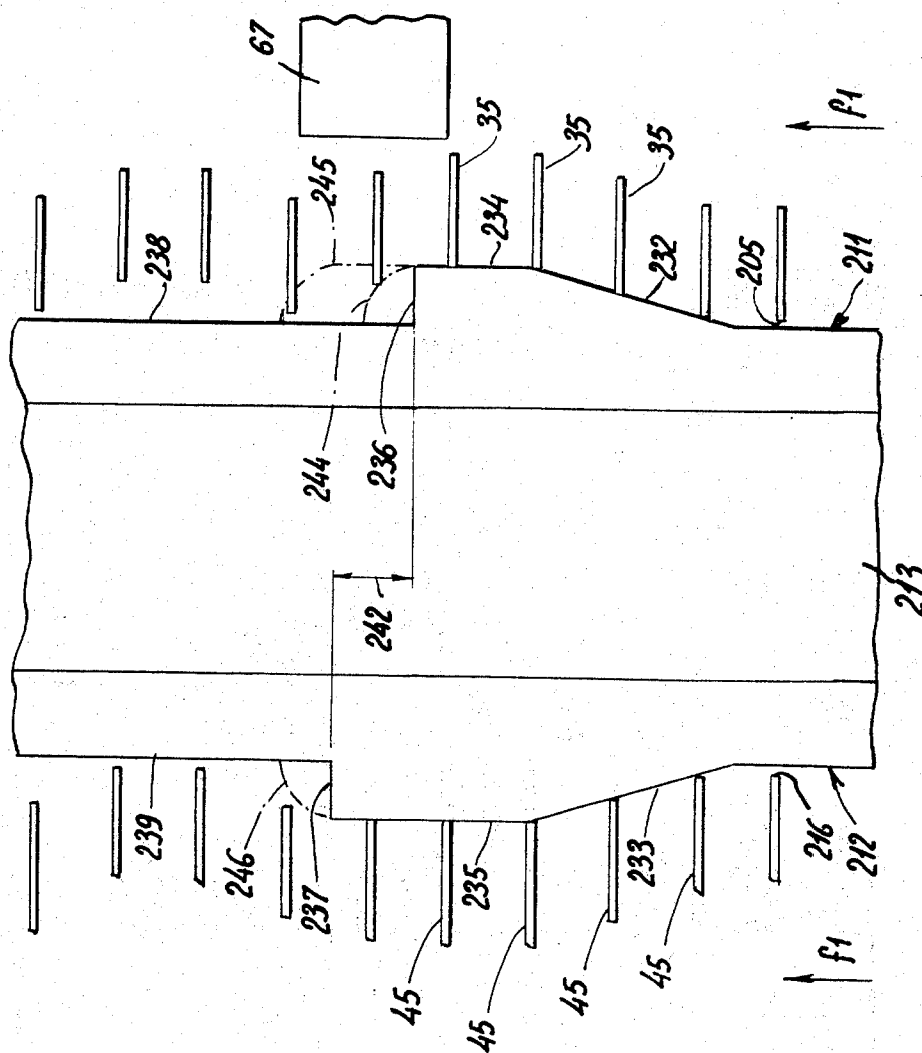


FIG 10

INSTALLATIONS FOR PRINTING CODES ON ARTICLES

The invention relates to code printers, in particular for character codes to be printed on articles such as documents, letters, parcels or the like.

In known apparatus of this kind, the printing elements are grouped in banks which are forcibly pressed against the article to be code-printed. Experience has now shown that, to ensure a simultaneous and uniform impression of all the printing characters on the article to be printed, a considerable mechanical force must be applied, necessitating the employment of bulky and expensive means; if the applied pressure is insufficient, the resulting impression is of poor quality.

An object of the invention is to provide a code printer free from the aforesaid disadvantages of conventional appliances of this kind.

The code printer in accordance with the present invention comprises a reading position with a coding keyboard suitably preceded by a feeder magazine for the articles to be code-printed, and a printing position suitably followed in series by a discharging position and a position for stacking the code-printed articles, the printing position incorporating a printing cylinder or drum carrying retractable printing characters on its peripheral surface selectively movable between a working or printing position in which the characters project from the surface of the said cylinder and an idling or inactive position in which the said characters project less from the surface of the said cylinder, means for inking the said printing characters, a back-up roller held elastically against the impression cylinder, driving means for rotating the said printing cylinder, selector means for putting the printing cylinder in either the working or the idling position, and an electronic control system linked with the said keyboard, selector means and driving means and suitably associated with storage means for receiving coding pulses by the successive activation of appropriate keys on the said keyboard in accordance with the address of each article brought into the reading position and releasing the selector means and driving means for impressing the said code on the article passing between the printing cylinder and the back-up roller.

With the help of this apparatus coded impressions of excellent quality can be made on the said articles clearly recording the positions of the code characters reciprocally and relatively to the guiding edges of the said articles since the entire printing pressure is applied simultaneously to each printing character in succession and the passage of the article between the printing cylinder and the back-up roller is regulated entirely by the latter so that the intervals between the successive printed characters are rigorously maintained identical with the spacing of the said characters on the said printing cylinder in such a manner that the said intervals are maintained with a high degree of precision. Moreover, such an installation can be constructed in a highly simple and economical fashion.

The nature of the invention will be better appreciated from the following description and the attached drawings showing a number of exemplary non-restrictive forms of embodiment of a code printer according to the invention.

In these drawings:

FIG. 1 shows diagrammatically the front elevation of a first form of embodiment of such an installation;

FIG. 2 is a plan view corresponding with FIG. 1;

FIG. 3 is, on a larger scale, a partial section along the line III—III in FIG. 2;

FIG. 4 is a section along the line IV—IV in FIG. 3;

FIG. 4A is a fragmentary sectional view taken along the line IVA—IVA of FIG. 3;

FIG. 5 is a similar section to FIG. 3 but in a different plane;

FIG. 6 is a diagram of the electronic control system of the installation;

FIG. 7 shows in radial section an alternative embodiment of the printing position, with the printing elements in the idling position;

FIG. 8 is a similar view to FIG. 7 but in which the printing element visible is in its working position;

FIG. 9 is again a similar view but in which the printing elements are in their positions immediately preceding selection;

FIG. 9A shows on a larger scale a detail of FIG. 9;

FIG. 10 is an expanded view also on a larger scale of the actuating cams of the printing and interlocking elements; and

FIG. 11 is a plan view of FIG. 7.

The apparatus for printing a character code on letters shown diagrammatically as a whole in FIG. 1 and 2 comprises a feeder unit A, a reading unit B, a printing unit C for the code 10, and a letter-discharging and stacking unit D. The invention is particularly related to the printing unit C, so that the feeder unit A, reading unit B, and the discharging and stacking unit D, can be of any suitable conventional type. The letter feeder 1, for instance, comprises a pusher 2, a holder plate 3 and a drum 4 feeding forward the letter which is at the front of the stack.

The reading unit B exemplarily comprises two vertical guide plates 6, 7 extending longitudinally above the upper run of an endless driving belt 8 which extends further into the printing unit C and the delivery and stacking unit D. A stop 9, pivotably movable on a vertical spindle 12 temporarily holds back each letter, e.g. as shown at 1A, in the reading unit B, where the front guide plate 6, at least, is transparent. In the example shown, the delivery and stacker unit D incorporates a turntable 13 on a vertical spindle, which sorts and stacks the coded letters, as at 1B against an elastically-yielding stacking plate 14. Although the apparatus can be used for printing any character code on articles such as letters, it is particularly advantageous for printing an address code or postage amount on mailed articles. To facilitate this use, an operator (not shown) will typically view a particular article through the guide plate 6 in the reading unit B and determine an appropriate code for the particular article. The operator can then cause this code to be printed by the printing unit C on the particular article prior to stacking by the unit D.

The printing unit C essentially consists of a printing cylinder 21, an inking roller 22 and a back-up roller 23. The shaft 24 (see also FIG. 3 and 4) of the printing cylinder 21 is set vertically and is rotated in single turns by a step-down geared electric motor 30 (FIG. 1) through a gear train 31 (not shown in detail) of any suitable conventional type. The inking roller 22 rotates freely on one end of a rocker arm 25 and is elastically held against the printing cylinder 21 by a spring 26. The back-up roller 23 is freely rotatable on a spindle 27 car-

ried on a rocking lever 28 and elastically pressed by a spring 29 against the printing cylinder 21 along a vertical generating line thereof located in the vertical plane of advance of the letters 1A to be coded.

A part of the periphery of the printing cylinder 21 carries a number, suitably 32, of printing levers, as shown at 35, each consisting of metal stampings, of the shape shown in FIG. 3, in particular, a rectangular type bar 36 carrying a code character. This bar pivots within a radial slot 37 in the printing cylinder 21, on the rounded bottom 38 of the said slot under the influence of a helical extension spring 39 one end of which is attached at 41 to the said type bar and at 42 to the printing cylinder.

Each printing lever, such as 35, can selectively be moved into two positions: a printing position as shown in FIG. 3 and 4, in which it projects outside the surface of the printing cylinder 21, and an idle position in which it projects less or preferably is retracted within the slot 37 as shown in FIG. 5.

Each printing lever 35 is held in the printing position against the force of the spring 39, by a latch 45 having a notch 46 engaging with a shoulder 47 on the upper part of the printing lever 35. The latch 45 is held against the printing lever 35 by a helical extension spring 48 one end of which is attached at 49 to the said latch and the other at 42 to the printing cylinder 21. The latch 45 is pivotally mounted on a pin 52 in the upper part of the radial slot 37 in the printing cylinder.

An ejection roller 55 on a fixed vertical spindle 56 is arranged tangentially to the circle described by the tails of the printing levers 35 in the printing position, so that during rotation of the printing cylinder 21, any printing lever not in the working position is immediately moved into that position by the passage of the roller 55 (see FIG. 3 and 4).

A retraction or cancelling roller 61 for the latches 45 is carried on a fixed horizontal spindle 62 in advance of the ejection roller 55 in the direction of rotation of the printing cylinder 21. This cancelling roller 61 is so positioned that it can raise every successive tail 63, forming an outward extension of the latch 45, passing it, from the locked active position in the printing roller shown in FIG. 3 into the idling position shown in FIG. 5, allowing the corresponding printing lever to retract into the body of the printing cylinder 21.

Finally, an electromagnetic selector 67 on a fixed support 68 forms a magnetic circuit in the form of an inverted "U", the ends of the two arms of which are directed radially with reference to the printing cylinder 21, over the latches 45 and for the length of their extent. Should the pole pieces of the electromagnet happen to influence a number of such latches simultaneously, this does not matter, by virtue of the arrangement adopted, as will presently be seen, as well as the fact that it is so dimensioned and located with reference to the latches that when any latch is in the raised position as shown in FIG. 5, and passes under this electromagnet, it will reliably be attracted thereby against the force of the spring 48, while when it passes under the electromagnet in the lower position shown in FIG. 3, it is too far away from the pole-pieces of the electromagnet to be attracted thereby.

To operate a coding cycle, the printing lever 35 are in the first instance all retracted before passing under the electromagnet 67 into their sunk position (if not already there) by the action of their return springs 39,

following rising of the corresponding latch 45 when it passes over the cancelling roller 61 (FIG. 5). It is now necessary to project and to keep projected only the printing levers carrying the type bars 36 of the code characters to be printed. For this, it becomes necessary to project in succession each of the printing rollers concerned. Despite appearances, the preceding operation consisting of retracting all the printing levers was not useless, since it had the effect of raising all the locking bolts 45 so that any one of them could be brought under the influence of the electromagnet 67 when required, as will presently be explained.

If the printing lever 35 at present under the electromagnet 67 as shown in FIG. 3 and 4 has to remain projected for printing the required code character, the electromagnet 67 does not receive any exciting pulse while the said lever is passing under it so that, while the lever is being held projected by the roller 55, the latch 45 can descend by the action of the spring 48, since the electromagnet is not energised, and the printing lever remains locked in the projected position. When the printing lever 35 has passed the selecting position under the electromagnet 67, even should the latter be meanwhile energised by the passage of the next printing lever, e.g. 35A, into contact with the roller 55 (FIG. 4), it will remain inactive with reference to the latch 45 of the printing lever 35, since that locking bolt 45 is in the lowered position and consequently already too far removed to be raised by the action of the electromagnet, even if it had been exactly underneath the pole pieces of the latter. Hence, as before, when it has moved away, it can no longer be raised; thus, the corresponding printing lever is reliably maintained in the working position.

On the contrary, for every printing lever requiring to be held inactive, i.e. retracted and thus incapable of impressing a character on the letter to be coded, the electromagnet 67 receives an energizing pulse and holds the latch 45 raised, thus allowing the spring 39 to retract the corresponding printing lever 35 as soon as that lever has passed the roller 55. This latter lever must, of course, be of very small diameter, as represented in FIG. 4.

The whole printing assembly is controlled by an electronic system such as shown diagrammatically in the exemplary embodiment according to FIG. 6, according to the manipulation of a board 151 typically having 10 keys with coded outputs (see also FIG. 2). As already explained earlier, it is assumed that in the example described, the printing cylinder has 32 type bars for keying the 32 positions of a code 10 (see FIG. 1). Each key on the board 151 operates a four-bit code (of the 60 combinations possible with such a code). To record the 32 positions of the code, it is thus possible to operate eight keys in succession on the board. On striking a key, the code of this key will be recorded on the four parallel conductors E and on a fifth conductor F will be recorded a signal indicating that a key has been depressed. Numeral 152 indicates a store of four memory units which, when receiving an instruction from a conductor G, stores the code received on the four parallel conductors E. Further, when this store receives a pulse train from the conductor H, it transmits, by a conductor I in series, the four elementary instructions which it is holding.

Numeral 153 indicates an input and output store in series of equal or greater capacity than 32 bits; when

this store receives from the conductor J a train of control pulses, the elementary instructions it is holding serially in its 32 cells are displaced by one cell to the right, and furthermore, the information held on the conductor I in serial input form is stored in the memory of the first cell. Finally, the information in the last cell towards the right is permanently transferred to a conductor K.

Numerals 155 and 116 indicate power amplifiers capable of operating the electromagnets 67 and 34 respectively when low-level instructions are applied to their inputs. The electromagnet 34 is incorporated in the coupling link 31 (FIG. 1) and serves to activate it. Numeral 157 indicates a control circuit for loading the store, the purpose of which is to transmit an instruction G to the store 152 for recording the input data when receiving the verifying signal from the keyboard through the conductor F. Numeral 158 indicates a transmission control circuit for supplying the stores 152 and 153 with a train of four shift pulses on receiving a retarded signal G at its input L. Numeral 159 indicates an eight-position counter which on receiving at its input M the last pulse of a train of eight emits a single pulse through the conductor N. Numeral 161 indicates an extract instruction control circuit intended, upon receiving a pulse from the conductor N, to signal the amplifier 116 through the conductor P by a pulse of appropriate duration to engage the coupling 31 controlled by the electromagnet 34. Numeral 162 indicates a delay circuit retarding a pulse passing through it by a few microseconds. Finally, numeral 33 indicates a pulse emitter actuated by the shaft of the cylinder 21 carrying the printing elements (see also FIG. 1). This emitter supplies a pulse each time the cylinder rotates through an angle representing one step of the printing element.

The functioning of the system is as follows. Assuming that at the start all memory stores are at zero, the depression of a key on the board initiates through the loading control circuit of store 157 the recording of the input data supplied by the four paths E, in the memory 152; whereafter, after a certain delay imposed by the delay circuit 162, these data are transferred from the store 152 to the store 153 by the action of the four shift pulses simultaneously applied to these two stores by the transmission control circuit 158; at the same time, the counter 159 records one unit. Nothing more happens until a second key on the board is depressed; when this takes place, a second four-bit character is recorded in the same manner in store 153, the data previously recorded therein having been shifted through four cell spaces to the right; the counter 159 having now recorded two units.

The same sequence takes place for seven keyings of the board 151. On depressing the eighth key, the store 153 of 32 bits is completely filled and the counter 159 transmits a short pulse through its output N, which activates the discharge controller 161 and activates the coupling of the printing cylinder 21 for one revolution; through a mechanical cam linkage (not shown in the drawing), the start of the rotation of the cylinder 21 causes the movable stop 9 (FIG. 1 and 2) to retract. The pulses generated by the emitter 33 during one rotation of the printing cylinder 21 are transmitted to the input of the store 153, producing release of the data held therein to the output K thereof, synchronously with the passage of the printing elements or type bars

36 under the locating electromagnet 67. These binary data are amplified in amplifier 155 and used to locate the printing elements by means of the electromagnet 67.

The thirty-two elements are thus now positioned in series; printing of the code 10 on the article or letter 1B (FIG. 1) takes place, and the cylinder stops automatically after having made one revolution, in such a manner that the pulses from the emitter 33 are automatically interrupted; the electronic system is now ready to record new data for coding the next following letter.

In a variant of this first form of embodiment, the same system of printing levers 35 and latches 45 carried on the cylinder 21 is retained but in order to allow of individual selection of successive characters, instead of selection by bits, the roller 55 is arranged in a fixed position in advance of the selector unit 68; this roller has the purpose of setting all the printing levers 35 in position in front of the selector. The selector unit comprises an array of electromagnets similar to the electromagnet 67, each of which can, in this embodiment, act on any latch 45 even if the latter is in the lower position, in order to separate it from the associated printing lever 35 and release the latter. In this variant, the retracting roller 61 shown in FIG. 5 is dispensed with.

To explain the functioning of this system, assume that six electromagnets have been provided, each able to actuate any one of the six adjoining latches 45 on the printing cylinder 21 as shown in FIG. 4A. To effect the selection, the cylinder 21 is arrested in a first position in which the six electromagnets are selectively energized according to the code of the first character to be recorded, and the corresponding six latches 45 are selected; the latches corresponding with the non-energized electromagnets remain unlocked. Finally, the cylinder 21 is turned through an angle corresponding to six times the pitch or spacing of the printing levers 35 and the operation then repeated as requisite.

These operations are repeated in succession until all the latches 45 are consequently all the printing levers 35 have been correctly set for all the characters to be printed; after which, the printing of the code can be initiated.

This mode of recording character by character can be used by preference instead of recording bit by bit to obviate having to store the whole code before proceeding with electromechanical selection or to allow of a higher printing speed and reduce waiting time between keying the code and finishing the printing on the letter.

Actually, the speed of the drum need no longer be matched to the selection rate serially bit by bit, since selection is made while the drum is stopped. Consequently the drum can be run at a higher speed, which reduces the time of printing on the letter.

FIG. 7 to 11 show a variant form of printing cylinder, the principal component whereof is derived from the form of embodiment shown in FIG. 3 to 5 and the same reference numbers have been retained for the corresponding elements. There is consequently again a rotating vertical shaft 24, printing cylinder 21, type bars 36 each carried on a printing lever 35 and latches 45, the printing levers 35 and latches 45 being assembled in the same radial plane, pivoting on two axes 201 and 52, respectively or in two circular arcs. These are housed in two slots 37, 37A of the printing cylinder 21 and are guided near their ends in the radial gaps 203 of a comb

or rake 204 attached on the cylinder 21 for instance by screws 205.

This form of embodiment differs essentially from the preceding, as shown in FIG. 3 to 5, in that the electromagnet 67 acts on the printing levers 35 instead of on the latches 45, and the spring 48 for retracting each latch 45 in a compression spring acting on the latch through a tappet 207 instead of being an extension spring. Also the attachment point 41 of the return spring of the printing lever 35 is located on an extension elbow 35A of such lever, instead of directly thereon, and the arrangement of the beak of the latch is different. Moreover the control elements coacting with the selector electromagnet 67, instead of being rollers consist of two annular cams 211, 212, formed on the same cam disc 213 fitted on the supports 68 of the electromagnet 67. These cams work over two tracks 215, 216 (see FIG. 9A) on the printing lever 35 and on the latch 45 respectively. The purpose of these cams is to turn the printing lever 35 and the latch 45 on their respective pivots 201 and 52 against the force of their return springs 39 and 48 respectively.

The printing lever 35 and the latch 45 interlock mutually in two fixed positions as shown in FIGS. 7 and 8, by means of respectively a beak 221 (FIG. 9A) on the latch 45, formed with two faces 222, 223, and two latches 224, 225, on the printing lever 35, one with two faces 226, 227 and the other with two faces 228, 229. The two faces 227, 228 together form a beak 230. The faces 226, 228 on the end of the printing lever 35, and the face 223 on the end of the latch 45, may be defined as side faces, while the faces 227, 229 on the lever 35 and the face 222 on the latch may be termed end faces.

FIG. 10 shows details of the cam profiles 211 and 212; they comprise, respectively, a slightly sloped rising part, 232 and 233, a flat 234 and 235, an abrupt downward section 236 and 237 and a recessed part 238 and 239. The printing levers 35 and the latches 45 move together with reference to the two fixed cams in the direction of the arrows f_1 . The steep faces 236 and 237 are reciprocally staggered by the distance 242 in such a direction that the printing lever 35 drops before the corresponding latch 45.

The electromagnet 67 (FIG. 7 - 10) is offset slightly from the outside of the path described by the printing levers 35 while the printing cylinder 21 is rotating, the said levers thus being pushed outwards by the flat 234 of the cam 211. In addition, this electromagnet is practically opposite the steep cam faces 236, 237 of the two cams. To prevent the printing levers 35 coming in contact with the pole pieces of the electromagnets 67, the extension elbows 35A of these levers are arranged to make contact with a limit stop 244 (FIG. 7) fitted on the printing cylinder 21.

The functioning of this arrangement is as follows: While the printing drum 21 is stopped, each couple comprising a printing lever 35 and a latch 45 may independently of the others be brought into either one of its possible steady positions, as shown in FIG. 7 and 8 respectively. If the printing drum 21 is rotated in the direction of the arrow f_1 in FIG. 10, each successive printing lever 35 and latch 45 is influenced by the ramps or cam faces 232 and 233; whatever their initial positions, they are separated from each other and brought into the positions shown in FIG. 9 - 9A where they reach the cam-profile flats 234 and 235 of the two cams; the continuing rotation successively brings each

printing lever 35 facing the drop 236, so that the corresponding latch 45 is still held by the flat 235 on the cam 212.

From this point in the cycle, two cases may occur. In the first case the electromagnet is not energized while the particular printing lever 35 in question is passing through the field of influence of this electromagnet. This lever will consequently drop against the recessed part 238 of the cam profile which, in fact, it will not completely reach since its face 226 (FIG. 9A) will come to rest on the face 222 of the corresponding latch 45, as shown in FIG. 7. The face 228 of the printing lever 35 overlaps the possible motion path of the beak 221 on the latch 45 before the latter has begun to drop along the slope 237 of the cam 212. The beak 221 of the latch thus engages the notch 224 of the printing lever. The linkage of the printing lever and its latch is thus locked in the idle position shown in FIG. 7. More precisely, FIG. 10 shows at 244 the motion path of the face 215 of the printing lever 35 relatively to the cam 211 and it will be seen that this face will make contact with the recessed portion 238 of the cam before the latch 45 has reached the steep slope 237 of the cam 212.

In the second case the electromagnet 67 is energized. When the printing lever 35 enters the influencing field of the electromagnet, it is attracted by the latter in such a manner that it is temporarily held off the cam 211 and does not follow the motion path 244 previously indicated but a longer path 245. The latch 245 has consequently dropped down the steep face 237 along the motion path 246 (FIG. 10) before the printing lever 35 has approached the recessed part 238 of the cam profile 211. The beak 221 of the latch 45 thus comes opposite the face 228 (FIG. 9A) of the printing lever and holds the latter in its working position according to FIG. 8. Of course, the electromagnet 67 must be powerful enough to overcome the force of the return spring 39 of the printing lever drawing it into the retracted position.

It is consequently sufficient to control the current to energize the selector electromagnet 67 every time that a printing lever is to be brought into the working position. The magnetic force must be applied at latest when the printing lever reaches the steep face 236 of the cam, and maintained until the beak 221 of the latch while moving under the influence of the drop face 237, intersects the motion path of the face 228 of the printing lever 35. At that instant, the following printing lever 35 has not yet reached the drop face 236 and it will be possible to select it in sequence by applying (or omitting to cut off) the current; or alternatively, to omit to select this lever.

In order to ensure correct functioning and control of the successive and independent selection of all the printing levers 35 following each other on the periphery of the cylinder, it is essential that the spacing interval 242 should be at least somewhat longer than the drop distance of the levers 35, i.e. the distance traversed by the moving cylinder 21 during the time required by the lever 35 to move by the action of its return spring 39 from the position determined by the flat portion 234 of the cam profile to the position in which the beak 230 overlaps the motion path of the beak 221. In addition, it is necessary for the sum of the distance 242 and the drop of the latch 45, i.e. the distance traversed by the moving cylinder 21 during the time re-

quired by the latch 45 to drop by the action of its return spring 48 from its position determined by the flat part 235 of the cam profile to the position where the beak 221 intersects the motion path of the beak 230, to be slightly greater than the spacing distance between the printing levers 35. Finally the size of the pole-pieces of the electromagnet 67 must be sufficient for the magnetic attraction applied to the levers 35 when they are at least at the level of the peak 234 of the cam profile 211, slightly to exceed the force of the spring 39, over a distance between slightly before attaining the drop 236 and beyond or nearly at the drop 237; maximum reliability will be ensured if this influencing region of magnetic attraction extends to a distance from the drop 237 equal to or slightly greater than the dropping distance of the latch 45. There is no objection if this influencing region slightly overlaps these fixed limits, in either direction.

It is to be understood that this invention is not restricted to the forms of embodiment herein described and represented; modifications may be introduced, depending on the contemplated use of the installation, without thereby transgressing the scope of the invention. For instance the different elements of the different forms of embodiment herein described may be differently assembled, while embodying combinations of means in every case remaining within the scope of the following claims.

I claim:

1. An installation for printing codes in particular character codes on articles such as documents, letters, parcels, postal packages, or the like, comprising a reading unit including a coding keyboard and preceded by a feeder unit for the articles to be coded, and a printing unit communicating with the reading unit and followed by a unit for discharging and stacking the coded articles, the printing unit comprising a printing cylinder carrying retractable printing elements distributed on its surface, said printing elements movable by selector means between an active position facilitating printing and an inactive position inhibiting printing, means for inking said printing elements, a supporting element such as a backup roller elastically held against the printing cylinder, power means for rotating the printing cylinder through successive rotations, and an electronic system linked with said keyboard, said selector means and said driving means, and including means for storing a code formed by successively depressing the appropriate keys on the board and means for activating the said selector and power means for making an impression of the said code on articles passed between the said printing cylinder and the said supporting element.

2. An installation in accordance with claim 1 further comprising pulse transmitter means responsive to the rotation of the printing cylinder for emitting and transmitting to the electronic system a single electric pulse for each step of the said printing cylinder for timing the action of the selector means.

3. An installation in accordance with claim 1, in which the reading unit includes means responsive to operation of the keyboard for presenting the article to be coded to the printing unit.

4. An installation in accordance with claim 1 in which the selector means includes electromagnet means for retaining the printing elements in one of the active and inactive positions during at least a portion of the rotation of the cylinder.

5. An installation in accordance with claim 4, in which the electromagnet means comprises a single electromagnet for successively and selectively retaining each of the printing elements in one of the active and inactive positions.

6. An installation in accordance with claim 4, in which the electromagnet means comprises a plurality of electromagnets arranged side-by-side at the spacing of the printing elements and acting simultaneously and selectively on printing elements grouped in numbers of printing elements equal to the number of selecting electromagnets.

7. An installation in accordance with claim 4 wherein the printing unit further comprises a plurality of locking means for respectively holding each printing element in one of its active and inactive positions during at least a portion of the rotary motion of the printing cylinder.

8. An installation in accordance with claim 7 wherein the printing unit further comprises biasing means for elastically holding each printing element towards its inactive position, a particular one of the locking means movable from an inactive to an active position for holding an associated one of the printing elements in its active position before a particular period corresponding to the associated selective energizing of the electromagnet means, and means for rendering the particular locking means inoperable during at least a portion of the particular period.

9. An installation in accordance with claim 7, in which each printing element is elastically held towards one of its active and inactive positions and a particular one of the locking means has characteristics for releasing an associated one of the printing elements not later than during the particular period corresponding to the associated selective energizing of the electromagnet means and characteristics for becoming operative before the termination of the particular period.

10. An installation in accordance with claim 7, in which each of the locking means includes a locking latch pivotally mounted on the printing cylinder and cooperating with the respective printing elements.

11. An installation in accordance with claim 1, wherein the printing cylinder defines a plurality of radial slots and the printing unit further comprises a printing lever pivotally mounted in each of the radial slots and carrying one of the printing elements.

12. An installation for printing codes and particular character codes on articles, comprising:

a reading unit including a coding keyboard and preceded by a feeder unit for the articles to be coded; a printing unit communicating with a reading unit followed by a unit for discharging and stacking the coded articles, the reading unit comprising a printing cylinder carrying retractable printing elements distributed on its surface; selector means for moving said printing elements between an active position facilitating printing and an inactive position inhibiting printing; means for inking said printing elements; a supporting element elastically held against the printing cylinder; power means for rotating the printing cylinder; an electronic system linked with said keyboard, said selector means, and said driving means, and including means for storing a code formed by successively depressing the appropriate keys on the board

and further including means for activating the said selector and power means for making an impression of the code on the articles passed between the printing cylinder and the supporting element;
 electromagnet means included in the selector means 5 for retaining the printing elements in one of the active and inactive positions during at least a portion of the rotation of the printing cylinder;
 locking means included in the printing unit for holding each printing element in one of its active and 10 inactive positions during at least a portion of the motion of the printing cylinder; wherein
 each printing element is elastically constrained toward its inactive position and the locking means includes a group of latches respectively associated 15 with the printing elements and carried on the printing cylinder, the said group of latches each having characteristics for locking one of the printing elements in one of its positions before passing opposite the selector electromagnet means within range of which the said locking system is made inoperative by cancelling means the effect whereof ceases 20 before the retaining action of the said electromagnet means ceases, the said cancelling means comprising a first element placed in the motion path of the latches, and said printing element movable to its active position previous to passing in range of the electromagnet means by a second element placed in the motion path of the printing elements 25 during rotation of the printing cylinder.

13. An installation for printing codes and particular character codes on articles, comprising:

a reading unit including a coding keyboard and preceded by a feeder unit for the particles to be coded;
 a printing unit communicating with a reading unit followed by a unit for discharging and stacking the coded articles, the reading unit comprising a printing cylinder carrying retractable printing elements distributed on its surface;
 selector means for moving said printing elements between an active position facilitating printing and an inactive position inhibiting printing;
 means for inking said printing elements;
 a supporting element elastically held against the printing cylinder;
 power means for rotating the printing cylinder;
 an electronic system linked with said keyboard, said selector means, and said driving means, and including means for storing a code formed by successively depressing the appropriate keys on the board and further including means for activating the said selector and power means for making an impression of the code on the articles passed between the printing cylinder and the supporting element;
 electromagnet means included in the selector means 55 for retaining the printing elements in one of the active and inactive positions during at least a portion of the rotation of the printing cylinder;
 the printing cylinder defining a plurality of radial slots and each printing element carried on a printing lever pivotal in one of the radial slots, said selector means comprising not less than one electromagnet each selectively actuable to influence the printing elements while passing through a range of action of the said electromagnet during the rotation of the printing cylinder, each such printing element being elastically biased toward one of its ac-

tive and inactive positions and being held in the other of its active and inactive positions by a locking system during that part of the motion of the printing cylinder in which the printing element moves from its position under said electromagnet immediately after passing in front of the backup roller, the said locking system being formed on a bank of latches respectively associated with corresponding printing elements and likewise carried on the printing cylinder, each latch consisting of a lever pivoting in a radial slot on the printing cylinder and elastically constrained toward the locking position of the printing lever in the active position, while said electromagnet constrains it toward its release position, said latch itself biased in each of its two positions against the printing lever, whether the said printing lever is in its active position, or in its inactive position.

14. An installation for printing codes and particular character codes on articles, comprising:

a reading unit including a coding keyboard and preceded by a feeder unit for the articles to be coded;
 a printing unit communicating with a reading unit followed by a unit for discharging and stacking the coded articles, the reading unit comprising a printing cylinder carrying retractable printing elements distributed on its surface;
 selector means for moving said printing elements between an active position facilitating printing and an inactive position inhibiting printing;
 means for inking said printing elements;
 a supporting element elastically held against the printing cylinder;
 power means for rotating the printing cylinder;
 an electronic system linked with said keyboard, said selector means, and said driving means, and including means for storing a code formed by successively depressing the appropriate keys on the board and further including means for activating the said selector and power means for making an impression of the code on the articles passed between the printing cylinder and the supporting element;
 electromagnet means included in the selector means for retaining the printing elements in one of the active and inactive positions during at least a portion of the rotation of the printing cylinder;
 locking means included in the printing unit for holding each printing element in one of its active and inactive positions during at least a portion of the motion of the printing cylinder; wherein
 each printing element is elastically constrained towards its inactive position, and the locking system consists of a bank of latches respectively associated with the corresponding printing elements and pivotal from a release position on the said printing cylinder to lock each printing element in its active position before passing in front of the electromagnet means within range of which the said locking system is rendered inoperative by a cancelling means the action whereof is interrupted before termination of the active period of the said electromagnet means, the said cancelling means consisting of a fixed element moving the said latch into its release position not later than during the active period of said electromagnet means, and the force of the electromagnet means and its distance from the motion path of the latches during rotation of the

printing cylinder being such as to retain these latches in their release position to permit the movement of the associated printing lever to the inactive position.

15. An installation for printing codes and particular character codes on articles, comprising:
 a reading unit including a coding keyboard and preceded by a feeder unit for the articles to be coded;
 a printing unit communicating with a reading unit followed by a unit for discharging and stacking the coded articles, the reading unit comprising a printing cylinder carrying retractable printing elements distributed on its surface;
 selector means for moving said printing elements between an active position facilitating printing and an inactive position inhibiting printing;
 means for inking said printing elements;
 a supporting element elastically held against the printing cylinder;
 power means for rotating the printing cylinder;
 an electronic system linked with said keyboard, said selector means, and said driving means, and including means for storing a code formed by successively depressing the appropriate keys on the board and further including means for activating the said selector and power means for making an impression of the code on the articles passed between the printing cylinder and the supporting element;
 electromagnet means included in the selector means for retaining the printing elements in one of the active and inactive positions during at least a portion of the rotation of the printing cylinder;
 locking means included in the printing unit for holding each printing element in one of its active and inactive positions during at least a portion of the motion of the printing cylinder;
 means for controlling the printing elements and locking means in accordance with a preset operating cycle, the said control means consisting of a first cam suitably returning the printing elements situated immediately in advance of a range of action of the electromagnet means into their active position, and holding these printing elements until they have entered the said range of action, and a second cam returning the locking elements of the same printing elements into their inactive positions and holding them until the said printing elements have passed beyond the position in which they cease to be influenced by the action of the first cam, and before the printing elements have passed out of the range of action of the electromagnet means.

16. An installation in accordance with claim 15, in which each of the two cams has a rising section followed by a flat section ending in an abrupt step, at least one of these steps on the cam profiles being located inside the range of action of the electromagnet and being shifted with reference to each other in the general direction of motion of the device comprising the printing levers and the latches.

17. An installation in accordance with claim 15, in which each printing element and its associated locking latch comprise two substantially perpendicular levels each having a side face and an end face and each pivotally fitted in radial slots on the printing cylinder on two axes at right angles to the axis of said cylinder, and the said pivoting levers are biased by elastic restoring means in a direction tending to move the side face of

one of the levers towards the end face of the other of the levers.

18. In combination for printing a code on articles such as letters:

a supporting structure;
 a coding keyboard mounted on the supporting structure and operable to produce signals corresponding to a particular code for a particular one of the articles;
 a printing cylinder mounted on the supporting structure and rotatable to provide surface contact with the particular letter;
 a plurality of printing elements each associated with a particular character and mounted on the surface of the printing cylinder, each of the printing elements pivotal between an extended position to facilitate printing of the associated character on the particular article and a retracted position to inhibit printing of the associated character on the particular article;
 selector means selectively actuatable to facilitate placement of each of the printing elements in one of the extended and retracted positions;
 controller means responsive to the signals from the keyboard and providing signals for selectively rotating the printing cylinder and selectively actuating the selector means in accordance with the particular code to print the particular code on the particular article; and
 memory means included in the controller means to store at least a portion of the particular code prior to the printing thereof on the particular article.

19. The combination recited in claim 18 further comprising:

a plurality of locking members respectively associated with the particular elements and mounted on the printing cylinder, each of the locking members pivotal between a release position and a locking position corresponding to the extended position of the associated printing element; and
 at least one electromagnet included in the selector means, mounted on the supporting structure, and energizable in accordance with the signals from the controller means to move one of the locking members and the printing elements.

20. The combination recited in claim 19 further comprising:

biasing means mounted on the printing cylinder and biasing the printing elements toward the retracted position and the locking members toward the locking position;
 first camming means for forcing the locking members against the force of the biasing means to the release position during a first period of time;
 second camming means for forcing the printing elements against the force of the biasing means to the extended position during a second period of time terminating after the first period of time;
 the electromagnet energizable during a third period of time beginning prior to the termination of the first period of time to maintain the locking member in the release position until after the termination of the second period of time; whereby
 the printing element is moved by the biasing means to the retracted position.

21. The combination recited in claim 19 further comprising:

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biasing means mounted on the printing cylinder and
biasing a particular one of the printing elements to-
ward the locking position and the associated print-
ing element toward the retracted position;
first camming means for forcing the particular locking 5
member against the force of the biasing means to
the release position during a first period of time;
second camming means for forcing the associated
printing element against the force of the biasing
means to the extended position during a second pe- 10
riod of time terminating prior to the first period of

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time;
the electromagnet energizable during a third period
of time beginning prior to the termination of the
second period of time to maintain the printing ele-
ment in the extended position after termination of
the first period of time; whereby
the locking member is moved by the biasing means
to the locking position to maintain the printing ele-
ment in the extended position.

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