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(54) **Thermal obliterator with encoder to the printing roll**

(57) The thermal obliterator provides that the motion of the ticket inside the machine is manual with an encoder (5), axially connected to a printing roller (3), that starts and synchronizes the printing with the ticket pulling out.

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Description

[0001] In the field of the obliterators used in the parking areas or on public means or to obliterate tickets or similar are known machines in which, by inserting the ticket in the slot machine, the sensors placed inside the machine start an electric motor. This electric motor puts in rotation rubber rollers for the taking and the moving of the introduced ticket, so to lead it to the printing roller of the thermal head. Coming to the roll of the thermal head, recognized and placed under the same, the introduced ticket is obliterated. Following the ticket is brought in exit from the obliterator by the electric motor and by the same rollers which have moved it to the thermal head. The electric motor and the rollers used to take and move the ticket to the printing head and to bring it in exit have costs that weigh onto the total cost of the obliterator. Moreover, the system to move the ticket with rollers is often cause of jamming of the obliterator. The invention consists of a new obliterator, able to avoid the above cited drawbacks, arranges without electric motor for ticket moving and moving rollers of the ticket inside the obliterator. The invented obliterator, instead of motor of dragging of the ticket and rollers, is equipped with an encoder applied to the printing roller. In the invented obliterator the ticket is manually inserted inside the machine until the mechanical end of stroke. At this step a sensor starts the printing device, lowering the printing head onto the ticket and causing a mechanical vibration on the ticket perceivable to the user and a sound signal. At the beginning of the manual pulling out of the ticket, the encoder, placed onto the printing roller, starts and synchronizes the printing with the dragging speed of the ticket. At the complete pulling out of the ticket, other sensors, placed at the slot entrance of the ticket, give the signal for the lifting of the head, put the machine ready for a new obliteration. The moving steps of the ticket inside the machine are consequently manual with the encoder that starts and synchronizes the printing when begins the pulling out of the ticket. So it is obtained, further to the obviously economic advantage given to arrange a machine with less number of parts and so with less production costs, a bigger speed of use. This permits to discharge the possible queue in front of the obliterator more quickly in comparison with the obliterators known in the art. Further, being not the machine equipped with rollers to bring the ticket under the printing head and to pull out the same from the obliterator, the invented machine is then unlikely subject to jamming. The introduced ticket, in fact, can not be jammed between the moving rollers to the printing head as can happen in the known obliterators. These and other advantages reach with the invented machine are better showed to the following detailed description of a preferred embodiment but not exclusive, together with the enclosed drawings of sheets 1, 2 and 3 that show, in a merely indicative way, the invented obliterator. In details in sheet 1 figure 1 is perspective view of the invention. Figure 2 is perspective view of the obliterator without the

outside supporting and containment parts. In sheet 2 figure 3 is exploded view of the main parts of the machine. In sheet 3 figure 4 is longitudinal section view of the invented obliterator in step of no working. Figure 5 is longitudinal section view of the invented obliterator in step of working with the ticket inserted inside the machine. The thermal obliterator consists of an obliterator body 1 and is equipped with sensors 2 onto the slot of ticket fitting up. Placed over the printing roller 3 is present a further sensor 4 to detect the introduced ticket. The printing roller is axially connected with an encoder 5. Further, a thermal head 6 is present connected to a lifting device 7 with start by a card 8. The lifting device 7 comprises an electric motor 9 and a cam 10 acting onto an outline 11, obtained engraving central inside part of the lifting device 7, in turn connected with elastic connection means 12 that permit the moving in comparison with the machine structure. The outline 11 into which runs the cam 10 during the rotation is equipped with a tooth 13. By a fastener 14 the lifting device 7 is connected to the support parts 15 of the thermal head 6. The electric motor 9, the sensors 2 and 4, the encoder 5 and the thermal head 6 are connected to the card 8 with electric cables and with connection in use for this mechanisms. In working step the obliterator provides that the thermal head 6 was lifted. This position is driven to the cam 10. Introducing the ticket to be obliterated, the sensor 4, placed near the mechanical end of stroke of the ticket, is started. The pulse generated to the sensor 4 is received and processed to the card 8. The activation of the sensor 4, by the action of the card 8, starts the electric motor 9. The rotation of the electric motor 9 is transmitted with known connection means to the cam 10. The rotation of the cam 10 inside the outline 11 determines the lowering of the lifting device 7 onto the ticket together with the thermal head 6. Going on in its moving inside the outline 11 the cam 10 meets the tooth 13. The moving discontinuity of the cam 10 determined to the tooth 13 generates a vibration that is felt to the user of the obliterator that keeps the ticket by a hand; in this step is also activated the sound signal. Pulling out the ticket, the user starts the encoder 5. The electric pulse generated to the encoder 5 reaches the card 8 that starts the thermal head 6. The encoder transforms in electric pulses the extraction speed of the ticket and its position. These pulses are read and processed to the card 8 that synchronizes the printing speed of the thermal head 6 with the pulling out speed of the ticket. Completely pulled out the ticket the sensors 2, connected to the card 8, give the electrical signal to start again the electric motor 9. Going on in the rotation the electric motor 9 brings the cam 10 to move inside the outline 11, determining the lifting of the thermal head 6 by the fastener 14 of the lifting device 7. The obliterator so returns in the beginning position, ready for a new obliteration.

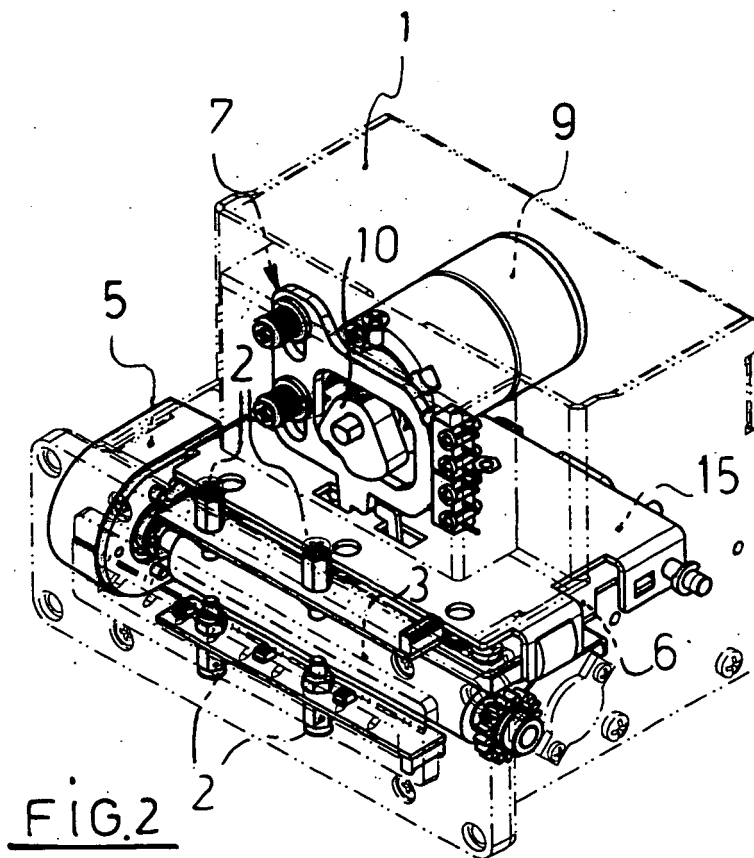
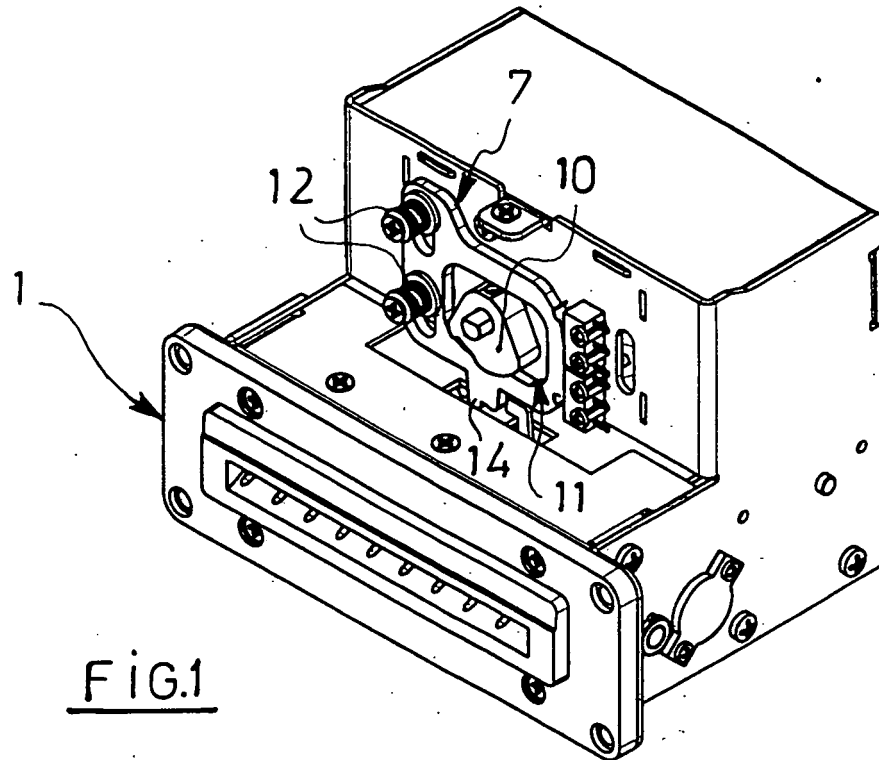
Claims

1. Thermal obliterators with encoder to the printing roll
characterized in that the moving steps of the ticket
inside the machine are manual with an encoder (5),
axially connected to a printing roller (3), that starts
and synchronizes the printing with the pulling out of
the ticket. 5
2. Thermal obliterators with encoder to the printing roll,
as to the previous claim, **characterized in that** inside
the obliterators body (1) sensors (2) are provided
placed near the slot of ticket fitting up and a sensor
(4) is placed over the printing roller (3) to detect the
introduced ticket. 10 15
3. Thermal obliterators with encoder to the printing roll,
as to the previous claims, **characterized in that** a
thermal head (6) is connected to a lifting device (7)
with start by a card (8). 20
4. Thermal obliterators with encoder to the printing roll,
as to the previous claims, **characterized in that** the
lifting device (7) is equipped with an electric motor
(9) and a cam (10) acting onto an outline (11), ob-
tained engraving the inside central part of the lifting
device (7), in turn connected with elastic connection
means (12) that permit the moving of the lifting device
(7) in comparison with the structure of the machine. 25 30
5. Thermal obliterators with encoder to the printing roll,
as to the previous claims, **characterized in that** the
outline (11) into which moves the cam (10) during
the rotation is equipped with a tooth (13) to generate
a vibration felt to the user of the obliterators that keeps
the ticket by a hand. 35
6. Thermal obliterators with encoder to the printing roll,
as to the previous claims, **characterized in that** the
lifting device (7) is equipped with a fastener (14) con-
nected to the support parts (15) of the thermal head
(6). 40

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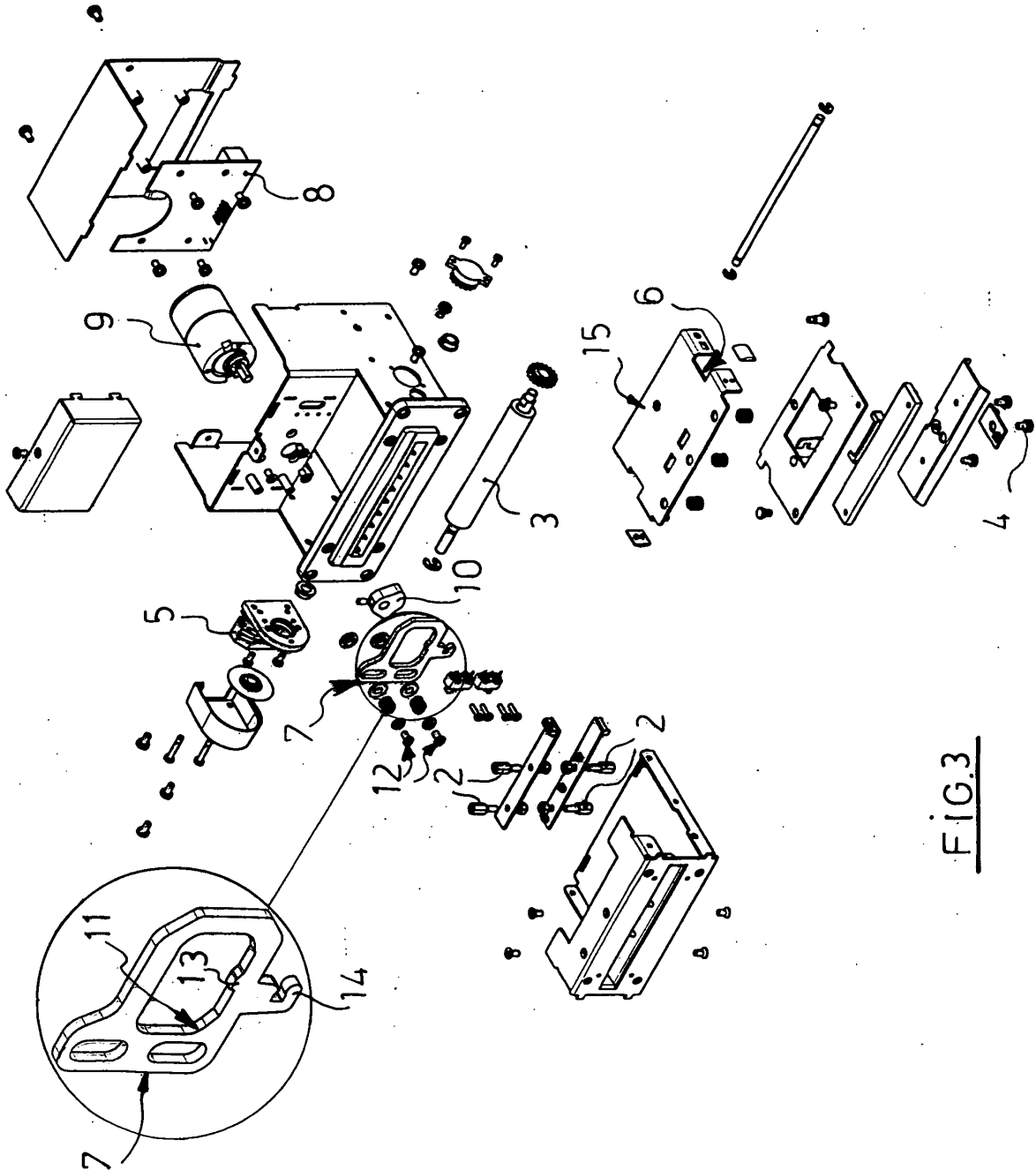


FIG.3

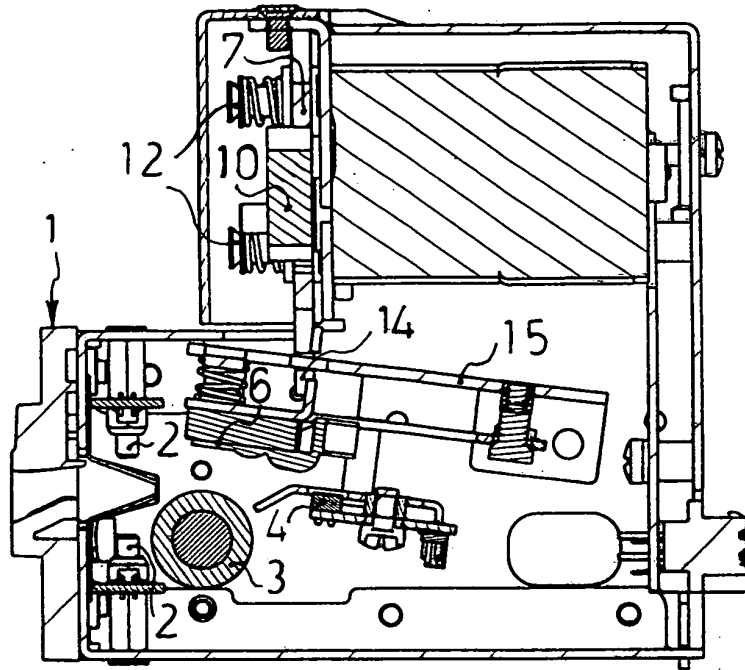


FIG. 4

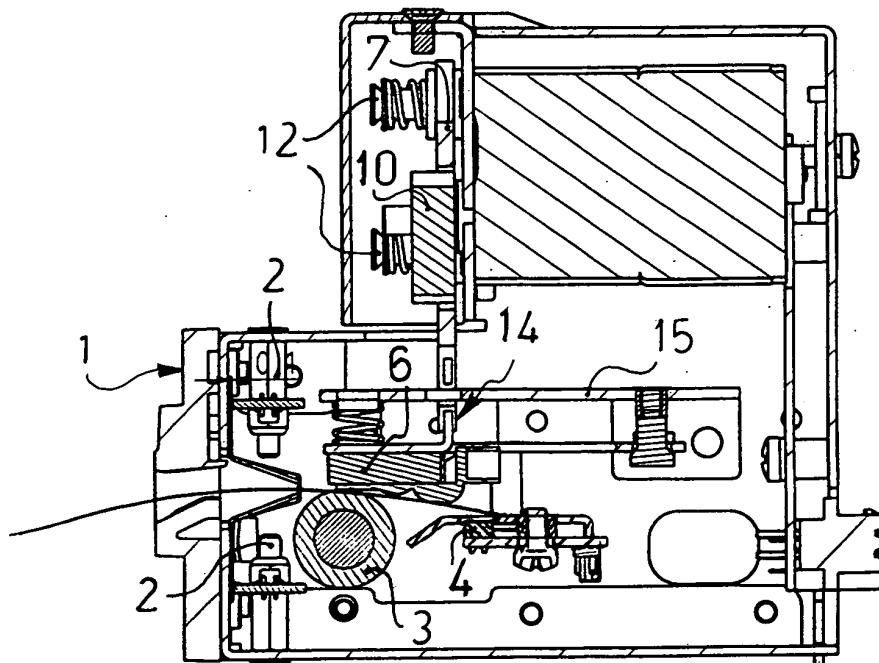


FIG. 5



EUROPEAN SEARCH REPORT

Application Number
EP 09 42 5087

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 95/28689 A1 (IS ITALSERVICE ELECTRONIC EQUI [IT]; CHIERUZZI ROBERTO [IT]; TEGHESI A) 26 October 1995 (1995-10-26)	1-3,6	INV. G07B11/03 G07B11/11
A	* page 5, line 1 - page 7, line 22 * * figures 1,2,5,6 *	4,5	
A	----- FR 2 338 798 A1 (SIGNAUX ENTR ELECTRIQUES [FR]) 19 August 1977 (1977-08-19) * page 4, line 11 - page 5, line 14 * * figure 2 *	1	
A	----- FR 2 540 654 A1 (CROUZET SA [FR]) 10 August 1984 (1984-08-10) * page 4, line 13 - page 5, line 6 * * figures *	1	
A	----- EP 0 261 761 A2 (INT TOTALIZATOR SYSTEMS INC [US]) 30 March 1988 (1988-03-30) * column 6, line 21 - column 8, line 51 * * figures 1-3,8-11 *	1	
A	----- EP 0 249 212 A2 (CASIO COMPUTER CO LTD [JP]) 16 December 1987 (1987-12-16) * column 6, line 34 - column 7, line 19 * * column 17, line 22 - column 18, line 26 * * figures 1-3 *	1	TECHNICAL FIELDS SEARCHED (IPC) G07B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 18 May 2010	Examiner Paraf, Edouard
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.92 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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