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TICKET PRINTING AND ISSUING MACHINE

Filed Dec. 10, 1958

3 Sheets-Sheet 1

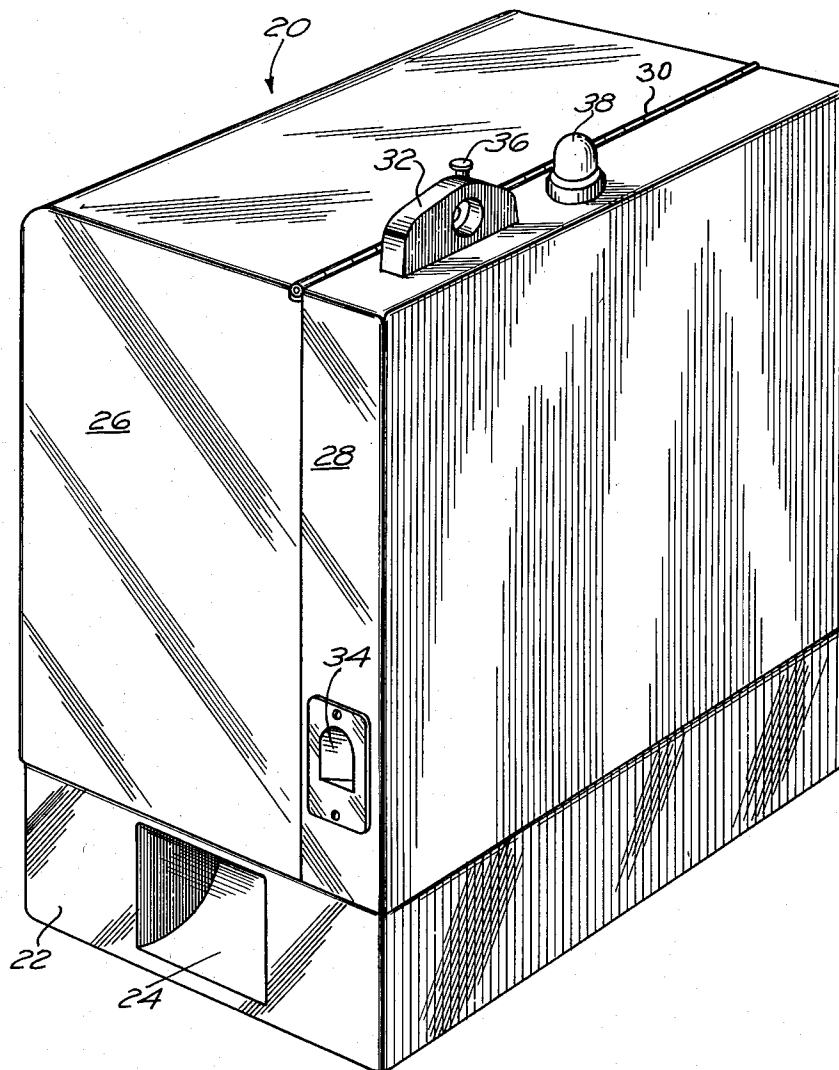


FIG. 1

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3 Sheets-Sheet 2

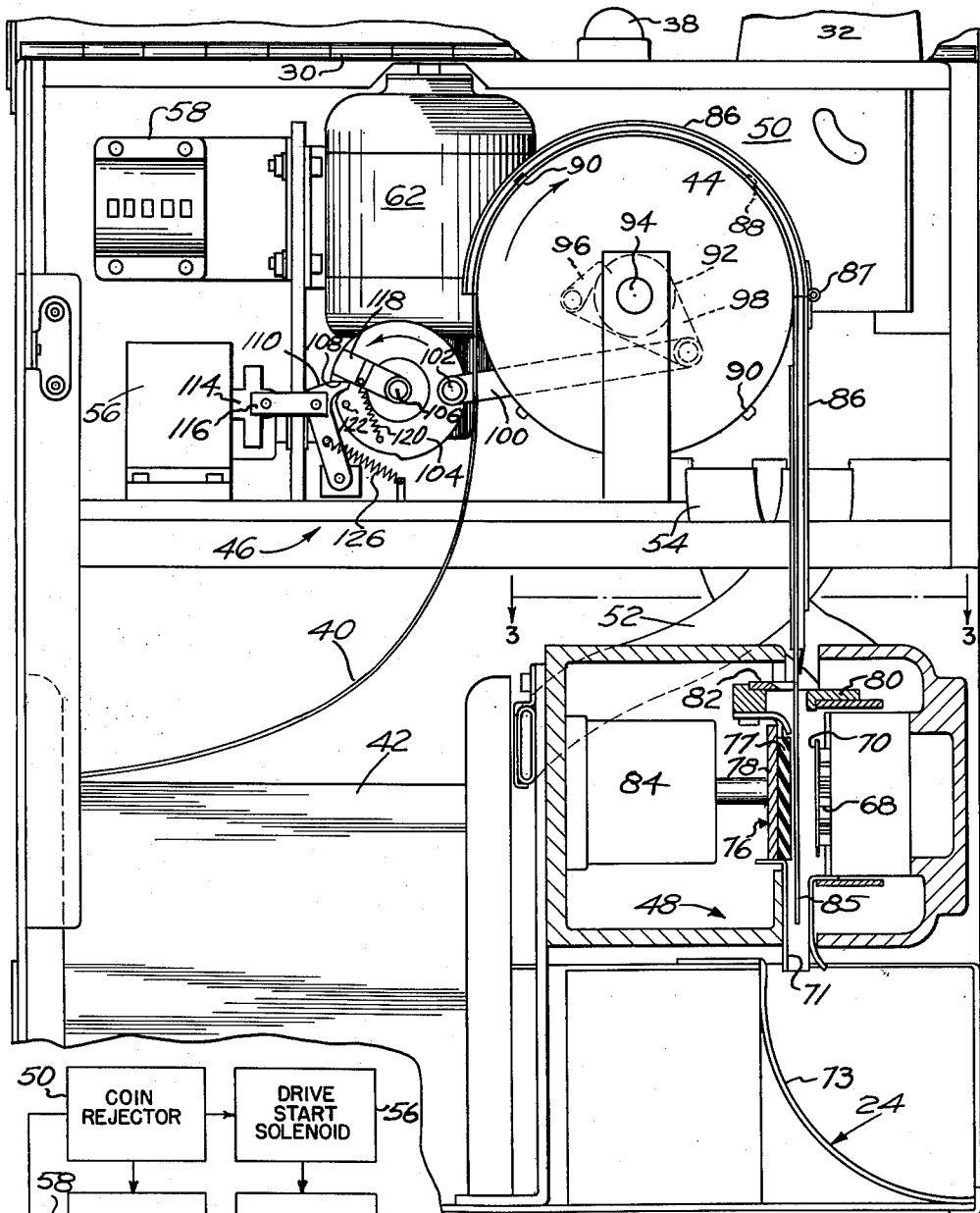


FIG. 2

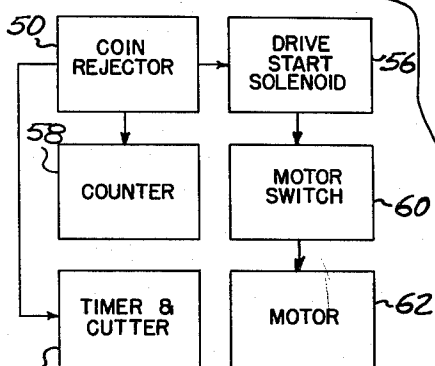


FIG. 6

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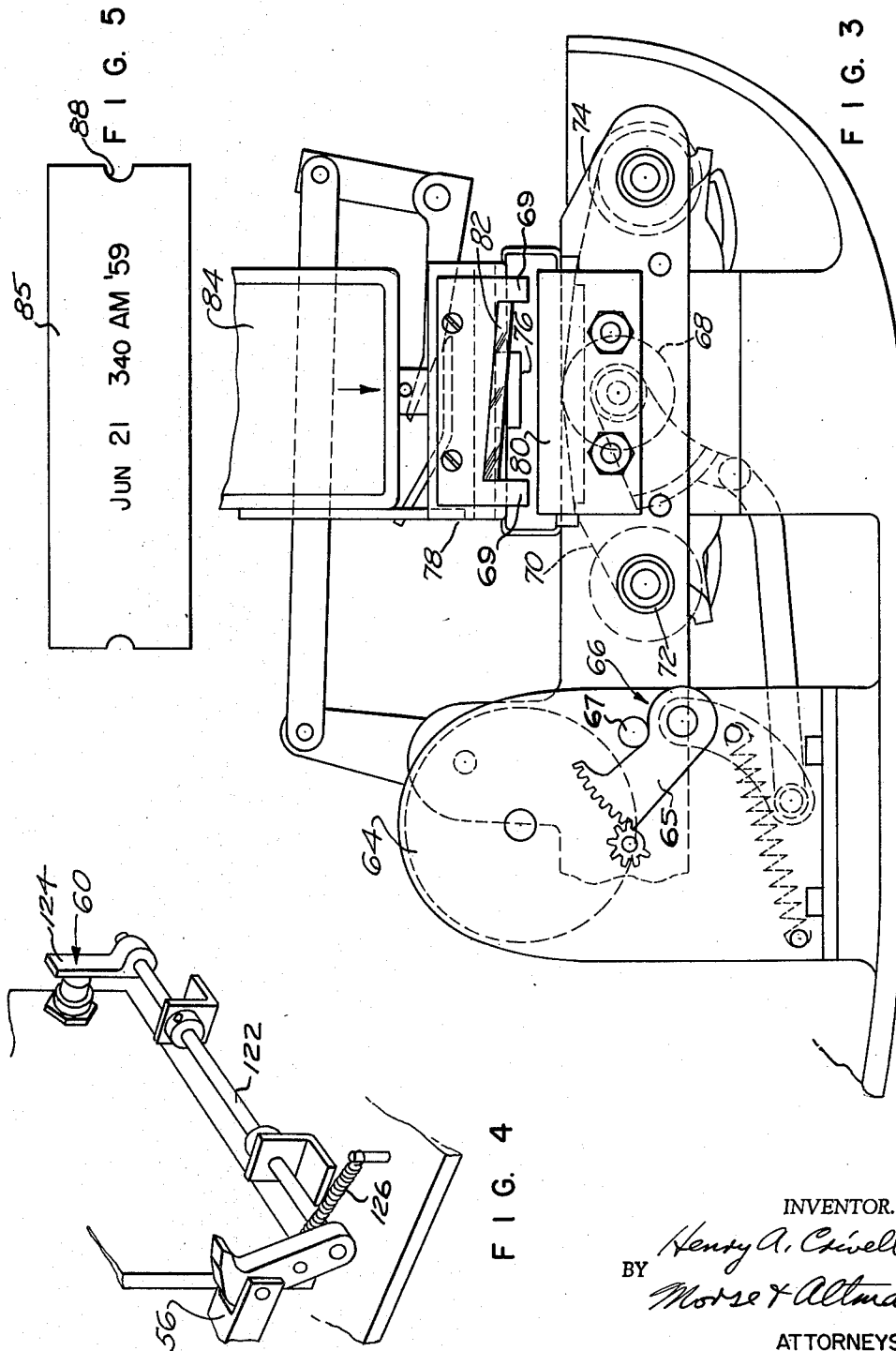
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TICKET PRINTING AND ISSUING MACHINE

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2 Claims. (Cl. 101—66)

The present invention relates to ticket issuing machines and, more particularly, to novel coin operated machines for issuing tickets recording time and date.

The primary object of the present invention is to provide an unusually simple and compact ticket machine comprising as cooperating components: stamp means, in novel association with the remaining components, for recording time on a ticket therewithin and severing it from remaining portions of a strip of tickets for ejection from the machine; and drive means, of novel design and in novel association with the remaining components, for advancing the strip of tickets into the stamp means automatically. More specifically, the stamp means operates at the beginning of a coin actuated cycle upon a ticket previously positioned therewithin and the drive means advances a succeeding ticket into the stamp means in an unusually simple manner.

Other objects of the present invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the apparatus possessing a construction, combination of elements and arrangements of parts, which are exemplified in the following detailed disclosure, and the scope of which will be indicated in the appended claims.

For a fuller understanding of the nature and objects of the present invention, reference should be had to the following detailed description, taken in connection with the accompanying drawings wherein:

Figure 1 is a perspective view of a preferred assembled embodiment of the present invention;

Fig. 2 is a side view of the illustrated apparatus, with the housing broken away;

Fig. 3 is a sectional view of Fig. 2, taken substantially along the line 3—3;

Fig. 4 is a perspective view of a component of the illustrated apparatus.

Fig. 5 is a plan view of a ticket of the type issued by the illustrated apparatus; and

Fig. 6 is a block diagram of the electrical system of the illustrated apparatus.

The apparatus illustrated in Fig. 1 comprises a housing 20, which mounts and encloses the operating components to be described below. Housing 20 includes: a base 22 that is provided with a mouth 24 through which tickets are ejected; a hood 26 that primarily envelops the operating components; and a closure 28 that is pivoted on hood 26 at 30 for movement between an open position at which the interior of housing 20 is accessible and a closed position at which the interior of housing 20 is inaccessible. Enclosure 28 is provided with a coin slot 32, a coin return aperture 34, a coin return control 36 and a warning light 38 that indicates when the supply of tickets 40 is dangerously low.

Strip of tickets 40 is advanced from a zig-zag supply 42 around a metering drum 44, which is part of a drive unit 46, and into a timer and cutter stamping unit 48. Operation is initiated by insertion of a coin through coin slot 32 into a coin rejector 50. The coin, if acceptable,

2

it initiates the cycle illustrated in Fig. 6 and is transmitted through a path 52 into a locked strong box (not shown). The coin, if unacceptable, is transmitted through a path 54 to coin return slot 34 (Fig. 1.) The cycle of Fig. 6 involves the actuation of a drive start solenoid 56, a counter 58, a motor switch 60 and a drive motor 62, in a manner to be described below.

Stamping unit 48 as shown in Figs. 2 and 3, includes a clock 64, a linkage 66 that is intermittently actuated by clock 64 and a printing head 68 that is incrementally rotated by linkage 66. Operatively contiguous with printing head 68 is an inked ribbon 70, which extends between two rolls 72 and 74. Linkage 66 returns to a home position with gear 65 in abutment against pin 67 at predetermined intervals. Mounted above printing head 68 is a stationary blade 80. Cooperating with printing head 68 and stationary blade 80 is a reciprocable platen 76, having a forward resilient pressure surface 77, and a rearward mount 78, and a blade 82 movable therewith. The operation of pressure surface 77 and blade 82 is such that when solenoid 84 is actuated, pressure surface 77 presses a ticket 85 of strip 40 against ribbon 70 and printing head 68 for the purpose of receiving a record of date and time, and blade 82 coacts with blade 80 to sever ticket 85 from the remainder of strip 40. Blade 82 is located between a pair of fingers 69, 69 that bear against blade 80 before blade 82 moves completely into cutting position. When solenoid 84 is de-actuated, pressure surface 77 and blade 82 are withdrawn from contiguity with printing head 68 and blade 80, respectively. In consequence, ticket 85 drops under gravity through a chute 71 onto an ejector surface 73. Ejector surface is accessible for removal from housing 26 through mouth 24.

A succeeding ticket 85 is fed into stamping unit 48 from metering drum 44 as follows. As indicated above, strip 40 of tickets extends around metering drum 44 and into stamping unit 48. It will be observed that the region into which strip 40 extends lies in a plane that is substantially tangential to metering drum 44. Strip 40 is directed into this region by a guide 86, which extends through an arc in adjacency with metering drum 44 and through a straight path tangential to this arc and coplanar with the region between pressure surface 77 and tape 70. For convenience, the straight portion of guide 86 is hinged at 87 to the arcuate portion of guide 86 in order to permit strip 40 to be threaded through guide 86 and into stamping unit 48. Strip 40 is provided with metering holes 88 into which pins 90 extend from metering drum 44. Metering drum 44 is rotated through a predetermined arc each time a coin is accepted by coin rejector 50. This rotation is effected by: a ratchet 92 that is affixed to drum 44 and that rotates therewith about its journal 94; and a pawl 96. Pawl 96 is biased by a spring (not shown) for rotation in a clockwise direction (as seen in Fig. 2) on a plate 98, which is rotatable about journal 94. Plate 98 is rocked by a link 100 that is actuated in the following manner.

Link 100 is pivoted at 102 to a metering cam 104. Metering cam 104 is journaled at 106 for rotation and response to motor 62. Normally, metering cam 104 assumes a rotational position that is determined by a notch 108 into which a pawl 110 projects, pawl 110 being pivoted at 112 and being connected to the core 114 of solenoid 56 by a link 116. When solenoid 56 is energized pawl 110 is pivoted in a counter clockwise direction out of engagement with notch 108. Thereupon pawl 110 is prevented from re-entering notch 108 by a latch 118 that is pivoted about journal 106 and that initially abuts against pawl 110. Latch 118 is biased by a spring 120, one end of which is connected to a latch, and the other end of which is connected to metering cam 104. Counter-clockwise movement of latch 118 with respect

3

to metering cam 104 is limited by a pin 122. As shown in Fig. 4, pawl 110 is mounted pivotally on a shaft 122 upon which also is mounted a finger 124. Finger 125 actuates switch 60 and energizes motor 62 when pawl 110 has been disengaged from notch 108. In consequence, when motor 62 is energized, metering cam 104 rotates in a counter clockwise direction carrying with it latch 118 in abutment against pin 122. Under the bias of a spring 126, pawl 110 follows cam 104 and re-enters notch 108 when cam 104 has rotated through a single cycle. As cam 110 re-enters notch 108, latch 118 is removed from pin 122 against the bias of spring 120. Now, a new ticket has been positioned within stamping unit 48 and the machine is in condition for further operation.

In operation, a coin inserted into slot 32 when passing through coin rejector 50 operates counter 58 and stamping unit 48. In consequence, a ticket 85 which has been marked with time and date, drops under gravity onto surface 73 so that it may be withdrawn through mouth 24 by an operator. Next, drive start solenoid 56 operates to withdraw pawl 110 from notch 108 and to permit latch 118 to move into abutment against pin 122. Then, motor switch 60 is energized by finger 69 in order to energize motor 62 and to cause cam 104 to rotate through a complete cycle. Finally, rotation of cam 104 through such a cycle is transmitted through link 100 to plate 98 and then through pawl 96 to ratchet 92. The dimensions are such that in consequence of one cycle of cam 104, metering drum 44 rotates through an arc equal in length to one-fourth of its circumference. One fourth of the circumference of drum 44 is equal to the length of a ticket 85. Thus a rotation of drum 44 through 90° positions a new ticket 85 within stamping unit 48.

Since certain changes may be made in the foregoing description without departing from the scope of the present invention, it is intended that the foregoing specification is to be taken in an illustrative and not in a limiting sense.

What is claimed is:

1. A ticket issuing machine comprising a housing metering drum means mounted for rotation within said housing, stamping means including a printing head, an inked tape in association therewith, a pressure platen movable with respect thereto, a stationary blade and a moving blade coacting therewith and movable with said pressure platen, said stamping means defining a path through which a strip of tickets is fed from said drum, said path lying in a plane that is tangential to the circumference of said metering drum means, said housing providing an opening adjacent to said stamping means through which a ticket may be removed from within

4

said housing, ratchet means constrained for rotation with said metering drum means, mounting plate means journaled about the axis of said drum means, pawl means pivoted with respect to said mounting plate means for coaction with said ratchet means, metering cam means rotatable about a first axis, said metering cam means providing a notch latch means rotatable about a second axis, pin means on said metering cam means, resilient means connected between said latch means and said metering cam means, said resilient means tending to draw said latch means into abutment against said pin means, said latch means covering a notch in said metering cam means when said latch means is in abutment against said pin means, pawl means pivoted in said housing to follow said metering cam means, said pawl means being in mesh with said notch when said machine is deactuated, drive means for said metering cam means, switch means for removing said pawl means from said notch in order to permit said latch means to cover said notch and for energizing said drive means to permit said metering cam means to rotate through one cycle, and link means connecting said metering cam to said drum.

2. A ticket issuing machine comprising a base, a metering means journaled on said base at a first axis for advancing a strip of tickets from a supply, ratchet means journaled at said first axis for movement with said metering means, mounting means journaled at said first axis for movement independently of said metering means and said ratchet means, first pawl means journaled on said mounting means at a second axis for coaction with said ratchet means, cam means journaled on said base at a third axis, said cam means providing a circumferential profile having a notch, latch means journaled on said said cam means at a fourth axis, stop means on said cam means and resilient means for biasing said latch means toward said stop means, said latch means covering said notch when said latch means is in abutment against said stop means, link means connecting said cam means to said mounting means, pawl means journaled on said base at a fifth axis, resilient means for biasing said pawl means into engagement with said profile and said notch therein, said pawl means being prevented from engaging said notch when said latch means covers said notch, and solenoid means for withdrawing said pawl means from engagement with said profile, said pawl means being in abutting relation to said latch means when in engagement with said profile and being out of abutting relation to said latch means when withdrawn from engagement with said profile.

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