

Title (en)
ELECTRONICALLY CONTROLLED PRINTING MECHANISM

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Application
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Abstract (en)
[origin: EP0018311A1] 1. Electronically controlled printing mechanism of modular design for either manually or mechanically fed papers, characterized by the following components : a) a basic module consisting of a desk (3), two friction rollers (6) for feeding the paper, a toothed belt (7) which drives them and which is driven by a large wheel (8) via a pinion (9) by means of an electric motor (10), counter rollers (12) for pressing the paper against the two friction rollers (6), a light barrier (14) arranged at one end of the paper track (4) for generating a pulse to start the feeding of the paper when the paper is fed manually from this end, and a second light barrier (15) for generating pulses for the print and control timing which are triggered when the toothed wheel rim of the large wheel (8) passes through the light barrier (15) so that one pulse per column of a needle character and/or per bit of the magnetic type can be picked up at the toothed wheel rim of the gear wheel (8) for the paper transport, and that the number of teeth on the large wheel (8) is selected such that one tooth corresponds to one column of a needle character or to one bit of the magnetic type, respectively ; b) a supplementary module to enable conversion from the longitudinal type to the transverse type process, consisting of a threaded spindle (16) mounted vertically in relation to the paper feeding device for moving a carriage carrying the printing heads (1 and 13, respectively) along the spindle, a rod (17) for guiding this carriage, a large wheel (18) which drives the threaded spindle (16) via a pinion (19) and via an electric motor (20), and a light barrier (21) for generating pulses for the print and control timing which is effected by means of pulses which are triggered when the toothed wheel rim of the large wheel (18) passes through the light barrier (21), with the number of teeth on the large wheel (18) in combination with the pitch of the threaded spindle (16) being selected such that, as in the case of the basic module according to a), one tooth corresponds to one column of a needle character or to one bit of the magnetic type, respectively ; c) a supplementary module consisting of a printing head (13) mounted on the desk (3) for machine-readable type and/or an electronically controlled printing head (1) arranged above the desk (3) for visually-readable type with a ribbon cartridge (2) and a motor, with the printing head (1) for visually-readable type being swivable through 90 degrees at the carriage for conversion from the longitudinal type to the transverse type process, and the control leads for the motors (10, 20) and the light barriers (15, 21) being exchangeable to enable use of the same print program ; d) a supplementary module for mechanical paper feed from the other end of the paper track (4) opposite the light barrier (14), consisting of a third friction roller (6), a wedge member (11) serving as one longitudinal side of the paper feed channel (5), a rocker (22) mounted longitudinally along the other side of the channel, with a brake shoe (26) pressable against the wedge member (11) to clamp the paper, and with a counter roller (23), with the rocker (22), when caused to swivel by an actuating magnet (24), pressing the counter roller (23) against the friction roller (6) to activate the paper feed from this end of the paper track and moving the brake shoe (26) away from the wedge member (11) so that the paper is freely movable through the feeding channel (5), and a pulse-controlled cutting device (30-35) provided at the opposite end of the paper track (4) adjacent to the light barrier (14) ; e) a supplementary module located adjacent to the supplementary module according to d) for generating pulses for proper form synchronization, consisting of a light rod (27) and a phototransistor (28) which scans form sheets provided with control apertures and provides corresponding synchronization pulses.

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