

Nov. 13, 1962

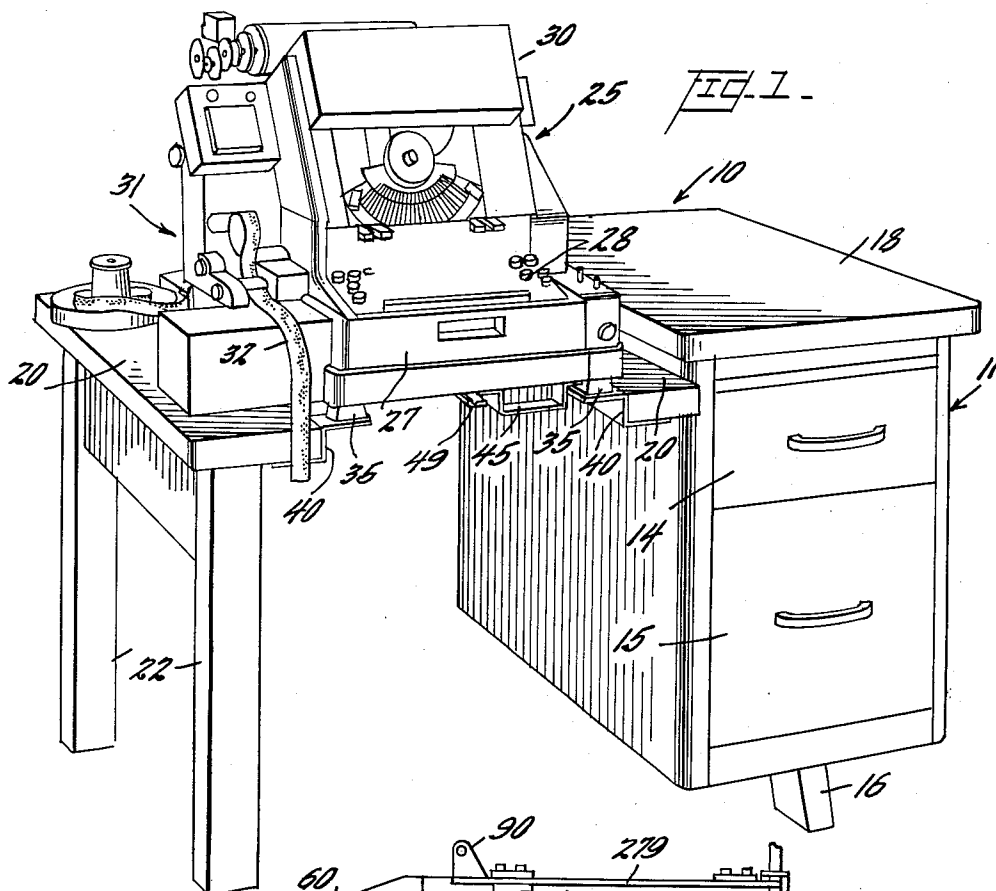
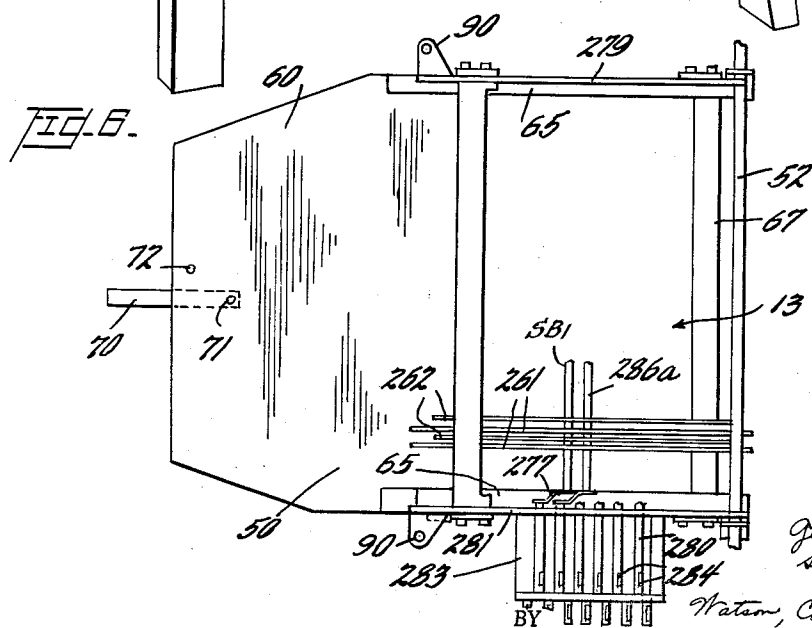
G. J. H. SAUSELE

3,063,538

TYPOGRAPHIC COMPOSING APPARATUS

Filed Oct. 3, 1960

3 Sheets-Sheet 1



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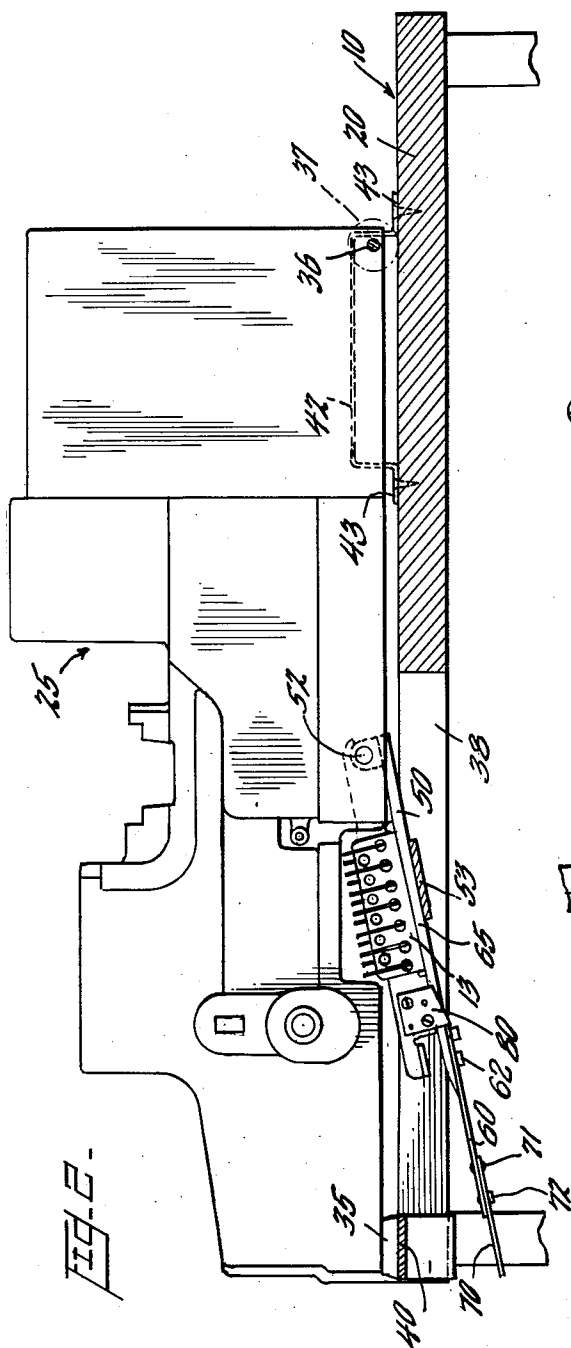
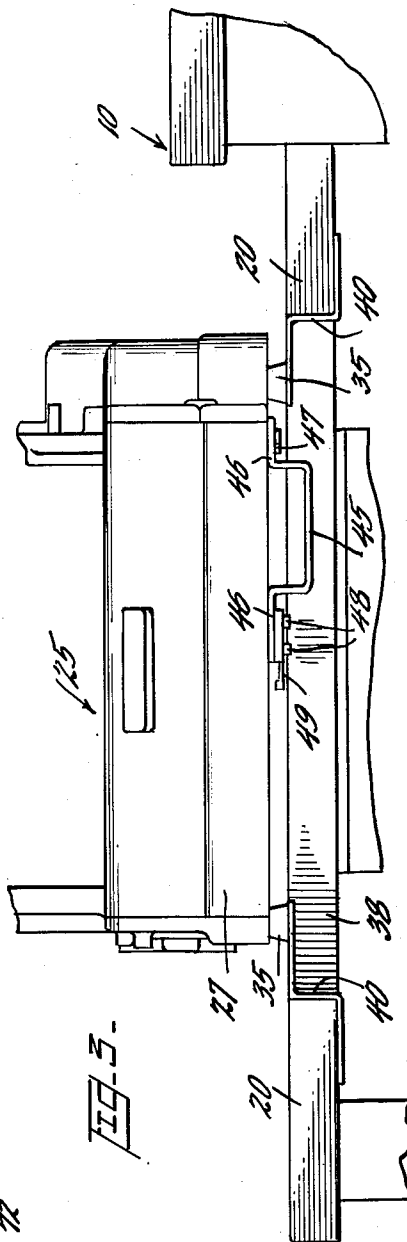
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3 Sheets-Sheet 2



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FIG. 7-

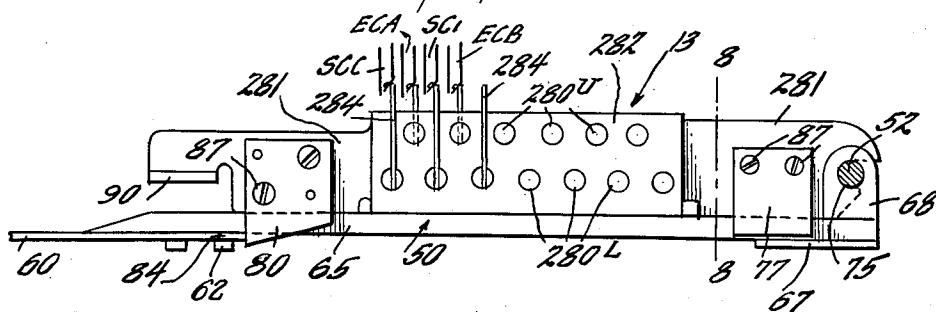


FIG. 8-

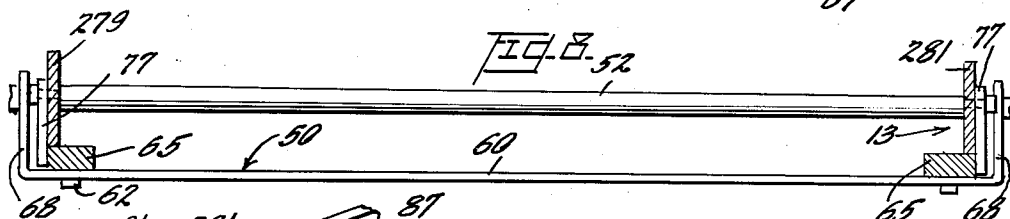


FIG. 9-

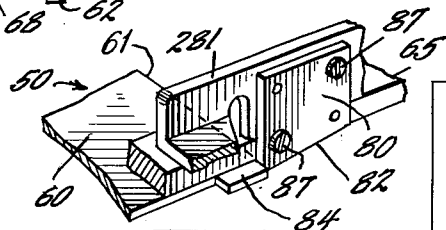


FIG. 4-

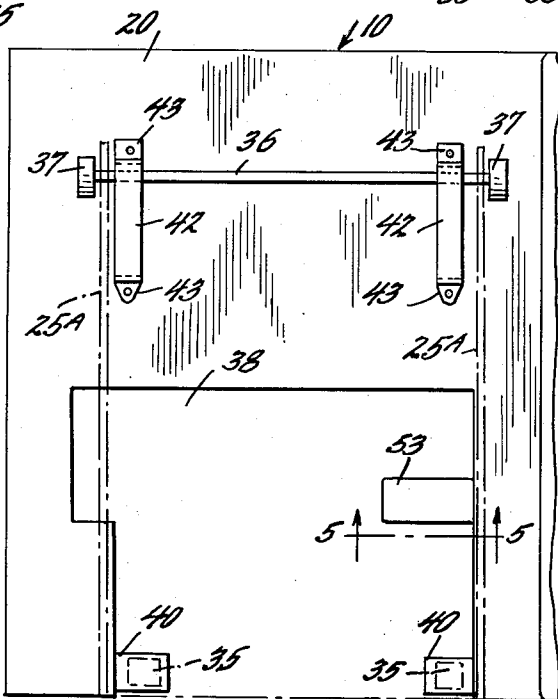
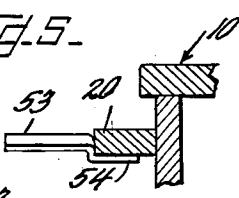
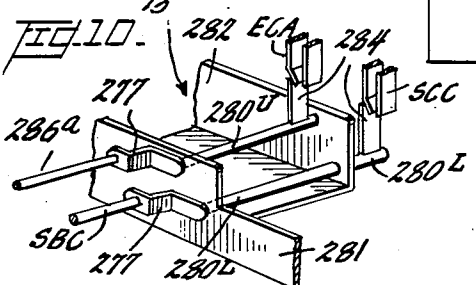


FIG. 5-



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TYPOGRAPHIC COMPOSING APPARATUS

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Filed Oct. 3, 1960, Ser. No. 60,194

3 Claims. (Cl. 197—20)

This invention, in its broad aspects, relates to writing machines, whether used for producing typewritten copy, photographic composition, or other intelligence conveying material. More particularly, it has to do with code selector devices which function in an automatic or semi-automatic machine of this general class, not only to set up coded indicia in a signal storing device such as a punched tape, but also to establish the carriage escapement increments appropriate to the width of each character to be transcribed.

In the Blodgett Patents 2,700,421; 2,700,445; 2,700,446; and 2,700,447, there are disclosed inscribing and transcribing machines designated respectively as recorders and reproducers. Also, in the co-pending United States application of the present applicant, Serial No. 686,233, filed September 25, 1957, a somewhat similar recorder or key-boarding unit is described which is adapted to be employed in connection with a photo-typesetter machine which may be operated automatically by means of a punched tape prepared in the recorder unit.

All the machines to which reference has been made embody mechanism which has been described as a code selector, and has been designated by the general reference character "13" in said patents and said application.

Perhaps the best disclosure of the construction, operation and association of this mechanism may be found in the Blodgett Patent 2,700,447, in columns 6, 22, 23 and 24, with reference to FIGURES 2, 2a, 3, 3a, 29-32, and 63-66 of the drawings of that patent.

The code selector device in its proportional letter spacing function is adapted to selectively energize, or prepare for energizing, any of a plurality of electromagnets referred to as escapement magnets, either individually or in any combination appropriate to the unit value or point size of the width of the character to be imprinted, whether upper case or lower case.

Now it is obvious that different type characters are of different widths ranging perhaps from that of lower case "i" to that of upper case "W"; and for a font of a given type face, these proportions are of course fixed. And for a uniform variation in type size (as for example as may be obtained in the typesetter machine of my above mentioned application, by a suitable adjustment of the optical system of the typesetter machine or by the substitution of master discs) the proper multiple of escapement increments may be obtained as by means of the proportional gearing depicted in FIGURE 33 of that application.

However, in order to accommodate changes in ratio of point size of characters within a font as may be required in the particular design of certain type-faces, different selections of the escapement actuation must be accomplished and this requires either a complete re-design of the code selectors of the machines, or some ready means of substitution of code selectors one for another.

The present invention, therefore, has for its principal object the provision of means for easily and quickly effecting such a substitution of code selectors in either the keyboard or recorder machine or the reproducer or type-setter machine.

In its preferred embodiments, the invention contemplates the provision in recorder units and reproducer units of readily interchangeable code selector assemblies; and for this purpose each interchangeable assembly is

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equipped with means affording a quick detachable connection with the machine, including guiding and gauging means for accurately and properly positioning the actuating and actuated elements of the assembly with respect to the associated permanent elements in the main machine, and latching means for securing the assembly in position.

Further objects of the invention include the provision of novel supporting means for either type of machine to which the code selector may be applied, such means comprising a table or desk modified to enable the interchangeable code selectors to be readily applied to and removed from the bottom portion of the machine, to permit easy tilting and bodily movement of the machine for accessibility of internal mechanism, and to afford convenient storage space for code selector assemblies for several different type faces which may be in current demand for any given composing establishment.

Other objects and features of novelty will be apparent from the following specification when read in connection with the accompanying drawings in which certain embodiments of the invention are illustrated by way of example.

In the drawings:

FIGURE 1 is a view in perspective of an installation comprising a photo-typesetter device embodying the principles of the invention, the device being mounted upon a novel desk or stand modified for the accommodation of the interchangeable code selector mechanisms;

FIGURE 2 is a vertical sectional view taken on a fore and aft plane with the principal portions of the type-setter unit shown in side elevation;

FIGURE 3 is a fragmentary view in front elevation showing the lower portions of the unit in association with the supporting portion of the stand;

FIGURE 4 is a partial plan view of the supporting stand with the unit removed;

FIGURE 5 is a fragmentary view in vertical section taken on line 5—5 of FIGURE 4;

FIGURE 6 is a plan view of the selector slide lift tray with a code selector applied thereto in operational position;

FIGURE 7 is a view of the same assembly in side elevation;

FIGURE 8 is a transverse vertical sectional view taken on line 8—8 of FIGURE 7;

FIGURE 9 is a fragmentary view in perspective of certain guiding and latching features, portions being shown in section; and

FIGURE 10 is a fragmentary perspective view showing the cooperative relationship between certain of the code and escapement contacts and the corresponding actuators in the detachable code selector.

Bearing in mind the general positioning of the code selector in the lower portions of the recorder or reproducer units of the general character described, and the more particular novel purpose of the present invention in providing a drop-bottom ramp or lift for quick removal and replacement of the selectors, let us proceed to a consideration of the cooperating supporting installation which makes such provisions possible.

In FIGURES 1-5 of the drawings there is illustrated supporting furniture which in this illustrated embodiment takes the form of the table or desk 10 which preferably includes one pedestal portion 11 which may contain the drawers 14 and 15, the latter being well adapted to contain the supply of code selectors not in immediate use. This pedestal portion may be supported upon the floor surface as by means of the foot 16.

The drawer or cabinet pedestal 11 is preferably surmounted by a flat table surface 18 for general utility.

Adjoining the pedestal portion 11 is the table or platform which has been given the general designation 20.

The table is secured at one side to the pedestal portion 11 of the desk 10 and supported at the opposite side by a pair of legs 22.

The platform or table element 20 is modified in a number of particulars, which will be described presently, in order to adapt it peculiarly to the support of the recording or reproducing machine designated generally by the reference numeral 25. For purposes of illustration, the photo-typesetter device, which is one of the principal features of the applicant's co-pending application Serial No. 686,233, has been selected. However, a very similar desk can be used to support the companion recorder or keyboard machine in which the tape and the typewritten copy of the composition are prepared. Both of these machines employ the code selector devices and the co-operating modifications of the furniture are in large part suitable for accommodating either the keyboard or the photographic unit.

The prominent features of the photo-typesetter unit 25 will be recognized in FIGURE 1 of the drawings, including the base frame 27, the keyboard 28, the superstructure 30, the tape punching and reading mechanism suggested at 31, and the coded tape itself indicated at 32.

At the lower forward corners of the base frame 27 are disposed the feet 35 and at the lower rear edge of the machine 25 there is mounted an axle 36 which is supported upon a pair of wheels 37 which are adapted to roll upon the rearward portion of the supporting platform or table 20.

As revealed more particularly in FIGURE 4 of the drawings, the platform or table 20 is cut away for the greater portion of its forward half to leave a gap 38 under the forward portion of the machine 25. In order to support the forward feet 35 of the machine, two Z brackets 40 are provided, the lower flanges of which are secured to the under surface of the margins of the gap or opening in the table 20, the upper flange projecting inwardly to underlie the legs 35 as clearly shown in FIGURE 3 of the drawings.

In order to obtain ready access to the underside of the machine 25, it may be pulled forwardly upon the table 20 and then tilted upwardly so that the rear portion of the machine can rest upon the table top as for inspection or servicing. In order to guide the rear roller support 36, 37 the retaining brackets 42 are provided, these brackets embracing the axle 36 and having foot flanges 43 adapted to be screwed to the rear portion of the table top 20. As shown in FIGURE 4, the brackets 42 lie just inwardly of the side frame members 25A of the machine 25.

For the purpose of rolling the machine forwardly and then tilting it, a handle or grip member 45 is provided, this member having flared wing flanges 46 adapted to be secured to the bottom of the base frame 27 as by means of the fastening elements 47 and 48. The elements 48 are also employed in securing a retainer element 49, the purpose and function of which will be described presently.

FIGURES 2, 6 and 7 reveal very clearly the structure of the elements which comprise the principal novel feature of the present invention, namely, the removable and interchangeable code selector assembly 13 and the novel selector slide lift 50, the latter being pivotally suspended at its rearward portion upon the cross bar 52 which comprises an integral element of the mechanism of the machine 25, the slide lift 50 being in the form of a tray which is adapted to be dropped from a horizontal position beneath the machine to the inclined position indicated in FIGURE 2 of the drawings. The slide lift tray 50 is limited in its downward movement by the bracket 53 which is also shown to advantage in FIGURES 4 and 5 of the drawings, this bracket having a flange 54 secured to the underside of the margins of the opening 38 in the table 20.

For the purpose of appropriately identifying the nature and functions of the code selector 13, which is of course more specifically and fully described in the Blodgett

Patent 2,700,447, reference characters similar to the ones employed in that patent (see FIGURE 29) will be used. FIGURES 6, 7 and 10 reveal the code selector most clearly.

The code selector 13 comprises essentially the side frame members 279 and 281, these members being connected forwardly by the cross bar or front guide comb 265 and the rear guide comb 266, these comb members being provided with slots to properly support the series of selectively actuatable slides 261 and 262. There is a slide element for each character on the keyboard and for each depression of a key the corresponding slide is moved within the comb members 265 and 266. By virtue of a plurality of camming projections on the margins of slots provided in the slides 261 and 262, certain transversely extending bails are raised and lowered selectively depending upon the coded arrangement of the cams in any given slide. There are two series of cams embodied in each slide, and there are six cam positions in one series and seven cam positions in the other, in this particular type of machine; one cam position for each of two series of six and seven cross bails. In FIGURES 6 and 10 of the drawings there is illustrated but one bail for each of the two series, the first bail in line in the lower series being designated SBC and serving to actuate a common contact related to the punching of the tape in accordance with a seven position binary code representative of the identification of the characters to be printed. In the upper tier of bails the first bail is designated 286a and this is one of the series of six bails which are associated with the actuation of the escapement mechanism in order to insure the proper width to be allowed for each character.

Continuing with particular reference to FIGURES 6, 7 and 10, it will be seen that the ends of the bails SBC and 286A are connected with the Z-shaped crank elements 277, the lower crank elements being carried by the bail shaft 280L and the upper crank elements being fixed to the upper bail shaft 280U. Upon the ends of the respective shafts are fixed the upstanding contact actuating elements 284 which are disposed, when the code selector is in operative position, in close functional contact with the leaf switches SCC, SC1 . . . and ECA, ECB . . . these switch contacts being representative of the respective series of seven punch control contacts and six escapement magnet control contacts. It will be seen that the shafts 280L and 280U are rotatably mounted in openings formed in the side frame member 281 and the extension or outboard frame part 282, the actuators 284 of the respective series being disposed upon opposite sides of the outward frame plate 282 and, of course, in direct alignment with the series of switches carried by the lower portion of the machine.

It will be understood that for various designs of type faces, whether lower case or upper case, the character widths within the font design may vary in their relationship one to the other, some letters possibly being of the same width as corresponding letters in another face design, others being wider and others being narrower. This means that the various coded cams provided in the slides 261 and 262 must be selected to satisfy these requirements. Thus, the present invention provides substitutable or interchangeable code selector assemblies, each constructed in accordance with a desired face design, and provision is of course made in the present novel assembly for the storing, ready accessibility, and quick substitution of code selector assemblies for switching from one type face to another in producing copy by means of the photo-typesetter.

Now it is obvious that in order to effect such a substitution, means must be provided for very accurately and precisely positioning the code selectors within the bottom portion of the machine with respect to both to the placement of the operative ends of the slides 261 and 262 with regard to the cam actuators of the machine and the place-

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ment of the contact actuating elements 284 in proper relationship to the contacts SCC . . . and ECA . . . which they actuate. The means for fitting the code selector 13 to the slide lift 50 to insure this precise positioning will now be described.

The tray-like slide lift 50 comprises the sheet metal forward pan-like portion 60 which terminates with a rear edge 61 and is secured as by means of the screws 62 to the side bars 65. The rear ends of the side bars 65 are connected by means of the cross element 67 and upwardly extending ears 68 are provided at each rear corner, these ears having openings to receive the cross shaft 52 of the machine upon which the selector tray or lift is pivoted.

The forward portion of the pan 60 is provided with a latch member 70 which is pivoted at 71 and limited by a stop element 72. The latch 70 is adapted to be swung over the keeper element 49 best shown in FIGURES 1 and 3 of the drawings. It is quite apparent how the tray may be unlatched by swinging the latch bar 70 and then swung downwardly about the shaft 52 until it rests against the stop bracket 53 carried by the desk or table frame.

The code selector unit 13 is of a width approximating that of the major portion of the tray or lift 50 and the side frame bars 279 and 281 are adapted to ride upon the side bars 65 of the lift 50. The remote ends of the side bars 279 and 281 of the selector are notched out as at 75 to receive the pivot bar 52, and depending from the outer surfaces of the rear portions of the side bars 279 and 281 are the guide plates 77 which embrace and ride against the edges of the side bars 65 of the lift tray 50.

Adjacent the forward ends of the interchangeable code selectors 13 are secured the guide plates 80. These guide plates 80 not only closely and accurately embrace the side bars 65 of the tray member 50 but are provided with means for latching or securing the selectors in position firmly against the bar 52. For this purpose the bottom edges 82 of the plates 80 are beveled or inclined so that during the rearward or installing movement they ride up upon the projecting ledge afforded by the plates 84, these plates being preferably made integrally with the rear corner portions of the part 60 of the tray, which is secured to the side bars 65 as by means of the screws 62. When the selector arrives at its proper rearward position the guide plates 80 clear the ledge 84 and drop down behind it so that for the removal of the plates the forward end of the code selector must be lifted slightly. To insure absolute precision in the lateral positioning of the selector assemblies 13 upon the tray or lift 50 the plates 77 and 80 may be shimmed if necessary before tightening the securing elements 87.

The operation of the novel provisions of the present invention will be readily apparent. When the composing of the text (whether on a recorder or keyboard machine, or on the photo-typesetter machine or other species of reproducer) requires a shift-over from one type face to another, the operator merely releases the latch 70 from the keeper 49 and lowers the code selector lift tray 50 until it rests upon the stop bracket 53 and occupies the position shown in FIGURE 2. Then the forward end of the code selector unit 13 is lifted slightly so that the locking plate 80 can clear the ledge 84. A convenient means for grasping the front edge of the reproducer are the outwardly extending flanges 90 on the side bars 279 and 281.

The lowering of the lift tray with its supported selector unit, of course, releases the operator blades 284 from the proximity of the switch contacts and the forward operating ends of the slides 261 and 262 pass from the vicinity of the keyboard cam actuating devices.

Then the selector is drawn forwardly with the guide plates 77 and 80 embracing the side bars or rails 65 of the tray until the selector unit is clear of the machine.

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Then the unit is interchanged with another which may have been stored in the drawer 15. In inserting the unit the guide plates 77 and 80 again embrace the guide rails 65 of the tray as the selector is moved rearwardly, until the notch 75 encounters the cross bar 52 and the latch or locking plate 80 drops behind the retaining ledge 84. Thus, the device is accurately supported so that the upward pivotal movement of the lift or tray about the bar 52 will cause the operative portions of the selector to arrive in the vicinity of their cooperating elements in the machine proper. The latch 70 is then of course moved over to engage the keeper 49. These provisions are thus seen to expedite the operation of the typesetting or other reproducing procedure when a variety of type faces are to be used. The changeover may be very readily effected by the operator from a sitting position.

It is understood that various changes and modifications may be made in the embodiment illustrated and described herein without departing from the scope of the invention as defined by the following claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A composing machine of the type adapted to set up, or to be operated by, a code member such as a perforated tape or the like, said composing machine including character selecting means, a movable carriage for the reception of the composition, a code actuated character width determining escapement means for said carriage, a code selector assembly adapted to be actuated by said character selecting means to govern the escapement increments appropriate to a given type face design, and means affording a quick-detachable connection between said code selector assembly and the machine proper for the substitution of other interchangeable code selector assemblies appropriate to different type face designs, said quick detachable connection comprising a tray adapted to support a code selector assembly during application, operation, and removal; means movably connecting said tray to said machine for carrying said code selector assembly to and from precise positioning within the confines of the machine proper and with respect to the associated operative parts in the machine including the character selecting means and the escapement means; and means for precisely positioning said assembly upon said tray, said last named means comprising gauging means which include laterally disposed longitudinal guide bars on the tray and cooperating projections on the assembly for insuring proper lateral positioning, and an abutment means and a latching device for determining the fore and aft positioning of the assembly.

2. The composing machine as set forth in claim 1 in which said assembly is adapted to be slid rearwardly upon said tray with said projections in gauging contact with said guide bars, and said latching device comprising laterally projecting portions on the tray and lugs with inclined lower surfaces adapted to slide over said projecting portions and drop behind them at the time the assembly encounters said abutment means.

3. The composing machine as set forth in claim 2 wherein the rear edge of said tray is pivoted to a horizontal cross shaft on the machine proper, and the assembly is provided with side pieces having rearwardly opening notches therein adapted to engage said shaft as said abutment means.

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