the belt 26 being held in contact with the sprocket wheel 126 by two pairs of rollers 141. Thence the belt 26 is fed around sprocket wheel 124 of which the teeth 127 engage the pin belt perforations 85, the belt being held in contact with sprocket wheel 124 by a pair of rollers 142. From sprocket wheel 124 the belt is fed through the reading area Z—Z' (see Fig. 6) where it is guided by a slotted member 143 and supported by the plates 144 which are secured to bent-over portions of the side plates 98 (see Fig. 4) to form a slotted platform upon which the belt 26 is supported in order to be sensed by the fingers of the Braille reader, the slotted portion of the platform permitting the protruding pins 25 to pass uninterrupted. The belt 26 is then fed over sprocket wheel 125 of which teeth 127 engage pin belt perforations 85, the belt 26 being held against the sprocket wheel 125 by a roller 145 mounted on a shaft 146 supported by a pair of arms 147 which are pivotally mounted on the studs 148. The arms 147 are connected to tension springs 149 which are fastened to studs 150 in the side plates 98 so that the roller 145 exerts sufficient pressure against the sprocket wheel 125 to reset the pins 25 in the pin belt 26 as the belt passes between these rollers in a manner similar to that shown in Fig. 11 with reference to rollers 139 and 140. The pin belt 26 is then fed to sprocket wheel 126, thereby completing its route of travel.

The sprocket wheel 126, rigidly secured to shaft 117, moves intermittently in the manner previously described, and is positioned on its shaft so that during the first idle period (54 to 174 degrees of rotation of shaft 44), each of three pins 25 in the first column of a group 27 in the pin belt 26 lies under its respective armature end 94a. During this time the magnets 86 are energized (at 100 degrees of rotation of shaft 44, which is a measure of the machine cycle) according to the closing of contacts on spring blades 66 and 67 resulting from pins 61 penetrating perforations in the record tape 20 at sensing station 23. After the magnets 86 are deenergized (at 160 degrees of machine cycle), the pin belt 26 is advanced rapidly (from 174 to 198 degrees) until the second idle period (from 198 to 318 degrees) of sprocket wheel 126 is reached when each of three pins 25 in the second column of a group 27 in the pin belt 26 lies under its respective armature end 94a. During this time, the magnets 86 again are energized (at 242 degrees) according to the closing of contacts on spring blades 66 and 67 resulting from pins 61 penetrating perforations in the record tape 20 at the sensing station 23.

The record tape 20 is held idle, the pins 61 penetrating perforations in the tape, during the entire period mentioned immediately preceding (i. e., from 54 degrees to 318 degrees of rotation of shaft 44). By means of the three cams 87 and their cooperating sets of contacts on the blades 89, 90, and 91 any or all of six perforations in the tape 20 can be sensed by the pins 61 to energize the magnets 86 through the contacts on the spring blades 66 and 67 so that the first three perforations in a line of six in the tape 20 may cause three pins 25 comprising the first column of a group 27 in the pin belt 26 to be set at one time and the second three perforations of the line of six in the tape 20 and three pins 25 comprising the second column of a group 27 in the pin belt 26 to be set at another time.

During the rotation of the shaft 44 from 318 degrees to 360 degrees (zero), the pin belt 26 only is advanced until at 30 degrees both the pin belt 26 and the record tape 20 are advanced so that a new group of pins on the former is presented to the pin setting mechanism and a new line of perforations on the latter is presented to the sensing station as the shaft 44 rotates in a position of 54 degrees. Pins 25 set up in the pin belt are so maintained until they travel past the roller 145 where they are reset or restored to normal.

The electrical circuits of the invention can be understood by reference to Fig. 3. Direct current for energizing magnets 86, all relays, and the clutch magnet 32 is obtained from a half wave rectifier 151 which charges a condenser 152 preloaded by a resistor 153 fed from the 115-volt 60-cycle supply represented by conductors 154 and 155. As previously mentioned, the driving motor 29 is regulated for speed by the rheostat 31 and the initial circuits are completed by closing contacts 156 and 157 of the switch 30.

When switch 30 is closed, a circuit is completed from line conductor 154 through switch 30, contacts 156, through relay coil 158, through half wave rectifier 151 to line conductor 155, thereby energizing the relay 158 and causing its normally open contacts 159 and 160 to become closed. The closing of contacts 159 causes current to flow from line conductor 154 through rheostat 31, through driving motor 29 to line conductor 155, thereby causing the motor 29 to operate.

A circuit is also established by closing of switch 30 from line conductor 154 through switch 30, contacts 157, relay coil 161 and clutch magnet 32 (in parallel), rectifier 151, line conductor 155 to energize clutch magnet 32 and relay 161, thereby closing its contacts 162 and 163. Clutch magnet 32 causes clutch 36 to couple the shafts 35 and 37 together.

A circuit control cam 164 is attached to shaft 41 in such a way as to close contacts 165 from 280 to 115 degrees (through 360 degrees) of the machine cycle.

When switch 30 is opened at any time between zero and 280 degrees of the machine cycle, operation will continue until 354 degrees, after which the inertia of the moving parts will cause operation to continue further up to 360 degrees when clutch 36 will decouple shafts 35 and 37 unless clutch magnet 32 is energized. The controlling circuits are as follows:

(1) Driving motor will remain energized by way of closed contacts 159 since relay 158 remains energized by the circuit—line conductor 154, contacts 162, contacts 160, relay coil 158, rectifier 151, line conductor 155.

(2) Clutch magnet 32 and relay 161 will remain energized by the circuit—line conductor 154, contacts 163, contacts 165, clutch magnet 32 and relay coil 161 (in parallel), rectifier 151, line conductor 155.

(3) At 115 degrees of the machine cycle, cam 164 opens contacts 165 deenergizing clutch magnet 32 and relay coil 161; contacts 162 and 163 will open. Clutch 36 will be conditioned to decouple shafts 35 and 37 when clutch magnet 32 releases. (Note: When switch 30 is opened after 115 degrees up to 279 degrees, contacts 157 will produce same result as contacts 165.)

(4) At 115 degrees when contacts 162 open, the current through relay coil 158 will be maintained by the circuit—line conductor 154, contacts 79 (closed from 68 to 354 degrees of machine cycle), contacts 160, relay coil 158, rectifier 151, line conductor 155.