Aug. 3, 1943. R. S. CZACHORSKI 2,325,666

SIGNALING DEVICE

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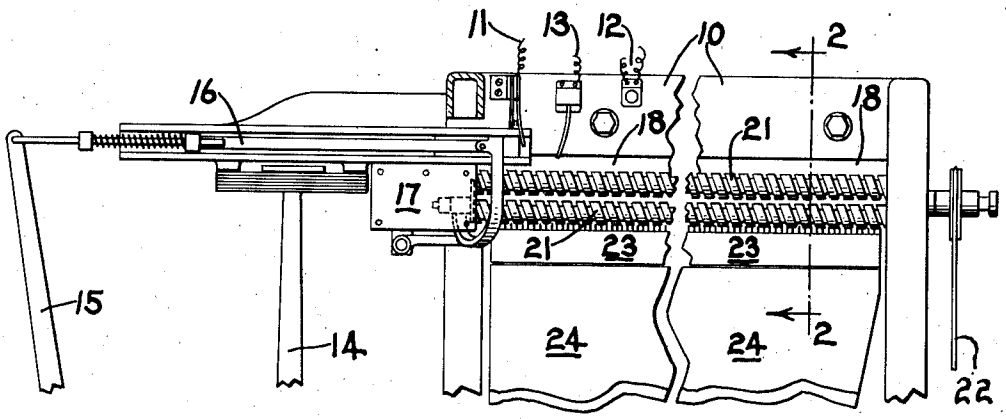


Fig. 1.

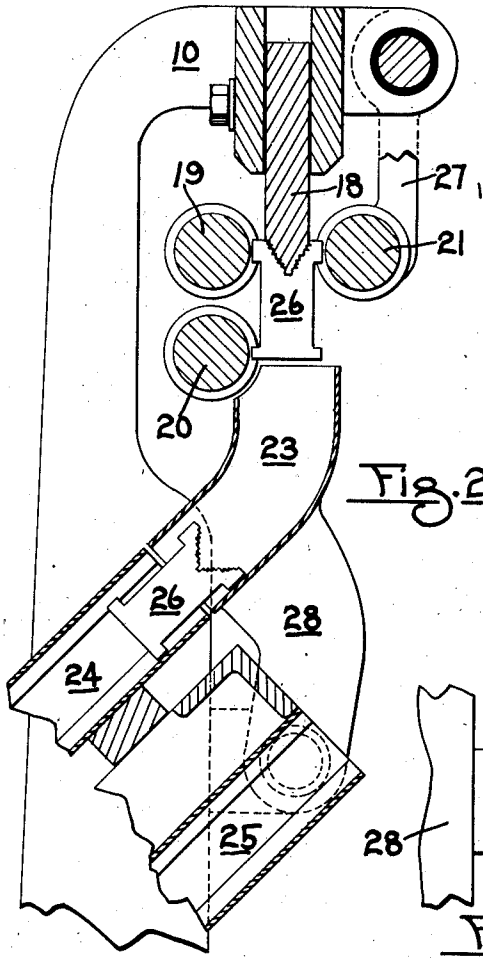
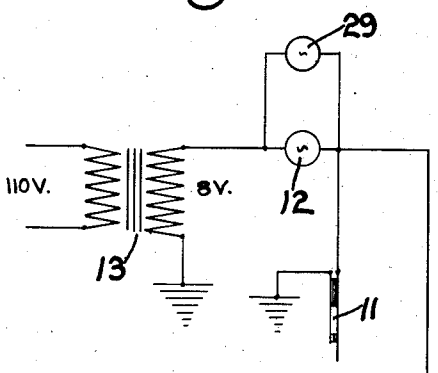


Fig. 2.



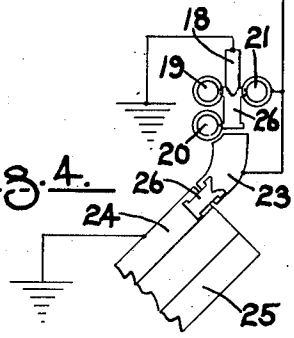


Fig. 4.

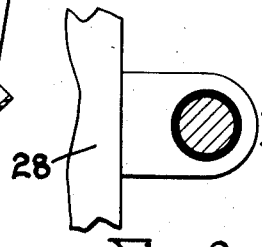


Fig. 3.

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SIGNALING DEVICE

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2 Claims. (Cl. 199—43)

The present invention relates to a signaling device and more particularly to an electrically operated distributor signal for typographical machines of the slug casting and line composing type. The signaling device herein illustrated and described is in the nature of an improvement over the distributor signal shown and described in United States Letters Patent No. 2,138,785, issued November 29, 1938.

Machines of the character above indicated are provided with two or more series of a plurality of spaced parallelly disposed and downwardly-forwardly inclined magazines, each magazine being adapted to receive and retain a number of matrices of a like font or type face which may be subsequently selectively and singly released by the operator of the machine in the casting of composed lines of type.

The several series of magazines each contain matrices of like type character and are disposed in inclined vertical parallelism each to the other, each series of magazines being shiftable upwardly or downwardly by the operator in instances wherein it is desired to change the character of a composed line.

Matrices released from the magazines of any given series in composing a line of type must all be returned to their respective magazines before such series of magazines are shifted to another series containing a different class of matrices since any shift prior to the return of the several matrices to their respective magazines results either in injury to the matrices, causes them to fall into the wrong magazine or a line of cast type of differing character results.

The visual electrically operated signal of the above noted patent indicates when there are matrices in the distributor box of the machine and when there are any matrices on the distributor bar but such signal fails to indicate instances wherein matrices, because of damage or otherwise, become stuck in the chute leading to its magazine.

Thus in instances wherein a matrix becomes so stuck in its chute, subsequent like matrices released from the distributor bar will eventually pile up behind the stuck matrix whereupon with the shifting of one series of magazines to another, injury to the machine frequently results which injuries generally require considerable time to repair.

Thus, the primary object of the instant invention is to provide an electrically operated signal, here shown as visible, which indicates to the operator of the machine that all of the matrices previously used in composing a line of cast type have been returned to their respective magazines.

An illustrative embodiment of the invention is shown in the accompanying drawing, wherein—

Figure 1 is a fragmentary front elevational view of a typical typographical machine, particularly showing the upper frame portion thereof, matrix shifter lever, matrix elevating lever, matrix distributing box, matrix distributing bar, matrix distributing screws, power operated means for driving the screws, etc.;

Figure 2 is an enlarged sectional view thereof on line 2—2 of Figure 1;

Figure 3 is a fragmentary vertical sectional view of the lower portion of that part of the machine shown in Figure 2; and

Figure 4 is a wiring diagram of the electrically operated signal for indicating to the operator of the machine that all of the matrices previously used in composing a line of cast type have been returned to their respective magazines.

Referring then to the drawing, wherein like parts of the typographical machine and its signaling device there shown are each designated by the same numerals in the several views, the upper frame portion of the machine generally designated 10 is provided with an electric switch 11 connected with a suitable source of electric energy, an electric incandescent light bulb 12 within an electric circuit and a transformer 13 interposed between the switch 11 and the 110 volt circuit.

The machine is further provided with a conventional matrix lifting lever 14 for elevating a plurality of matrices after they have been used in composing a cast line of type, matrix shifter lever 15 and its matrix shifter bar 16, matrix distributor box 17, matrix distributor bar 18, matrix distributing screws 19, 20, 21 and power operated means 22 for operating the matrix distributing screws.

A plurality of matrix distributing chutes 23 are disposed below the distributor bar 18 in spaced relation thereto and each chute leads to a given matrix receiving and releasably retaining matrix magazine 24 or 25, depending upon which series of magazines are in operative shifted position whereby matrices 26 automatically released from the distributor bar 18 above their proper chute, drop thereinto and slide into their respective magazines.

The matrix distributing screws 19, 20 are not insulated but are grounded to the frame of the machine whereas the screw 21 is suspended from

its bracket 27 carrying electric energy and is thus insulated as indicated in Figure 2.

The several magazines 24, 25 are likewise not insulated and are grounded to the machine whereas the several chutes 23 supported on brackets 28 carry electric energy and are insulated as indicated in Figure 3.

The machine is preferably provided with two incandescent electric light bulbs 12, 29 within the circuit as indicated in the electric wiring diagram shown in Figure 4, the former being visible to the operator seated in front of the machine whereas the latter is visible at the rear of the machine in instances wherein the rearward portion of the machine is being inspected or is being repaired.

Thus in instances wherein a set of matrices 26 have been elevated by the matrix lifting lever 14 after they have been used in composing a cast line of type and after they have been shifted into the distributor box 17 by the matrix shifter lever 15 and its shifter bar 16, the switch 11 remains closed to light the bulbs 12, 29 as in the above noted patent, indicating to the operator that matrices are in the distributor box 17 and therefore unsafe to shift from one series of magazines to another series.

After the shifter bar 16 moves the matrices from the distributor box 17 onto the matrix distributor bar 18, the switch 11 is opened by the shifter bar 16 as shown in Figure 1 but the electric circuit remains closed by the matrices 26 on the distributor bar 18 which form a switch between the uninsulated screws 19, 20 and the insulated screw 21. Thus the light bulbs 12, 29 remain lit until the matrices are released from the distributor bar 18 and fall into their respective chutes 23, again indicating to the operator when he may shift from one series of magazines to another series.

When, however, one or more matrices 26 become stuck between a chute 23 and its magazine 24 or 25, because of damage or injury to a given matrix, the electric circuit is closed since such stuck matrix forms a switch and again the light bulbs 12, 29 are lit indicating to the operator of the machine that he may not safely shift from one series of magazines to another series.

Although a visible electric signaling device is herein illustrated and described, it will be understood that the same may be audible, such as an electrical bell within the circuit or the circuit might be tied into the circuit which operates the machine to break such circuit and cause the machine to fail to operate should any matrix be stuck in its chute and before the same has been delivered to its proper magazine.

It will thus be seen that the electrically operated distributing signal herein shown and described is a marked improvement over the signaling device illustrated and described in the above identified patent, and while but one specific embodiment of the invention has been herein shown and described, it will be understood that certain details of the construction shown may be altered or omitted without departing from the spirit of the invention as the same is defined by the following claims.

I claim:

1. A typographical machine having a plurality of magazines each adapted to receive matrices of like character, a matrix distributor comprising a distributor box for receiving matrix lines, a matrix receiving chute disposed above each magazine in electrically insulated relation with respect to its magazine, a distributor bar for distributing the matrices to their proper magazines, a member movable from a normal position to a position for advancing the matrices from the distributor box to the distributor bar, a signal, and controlling circuits therefor, one of said circuits having a switch therein normally maintained in open position by said matrix advancing member but adapted to close upon movement of said member from normal position and during the matrix advancing operation of said member, another of said circuits being connected to the several chutes and normally open but rendered closed by a matrix when in contact with a magazine and its chute.

2. A typographical machine having a plurality of magazines each adapted to receive matrices of like character, a matrix receiving chute disposed above each magazine in electrically insulated relation with respect to its magazine, a distributor bar disposed above the chutes for distributing matrices to their proper chute, and a signal and controlling circuit therefor connected in parallel with a source of electric energy and connected also to the several chutes, said circuit being normally open but rendered closed by a matrix when in contact with a magazine and its chute.

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