J. S. DUNCAN.

PRINTING CONTROL SYSTEM.

APPLICATION FILED APR. 9, 1913.

1,082,506. Patented Dec. 30, 1913.

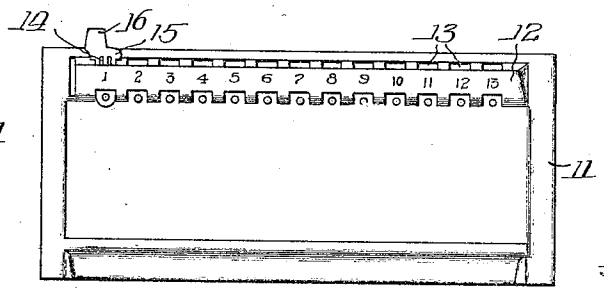


Fig. 1

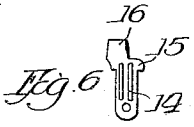


Fig. 6

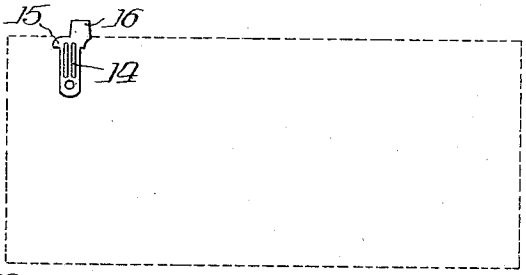


Fig. 2

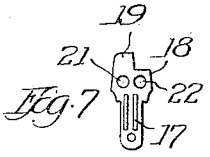


Fig. 7

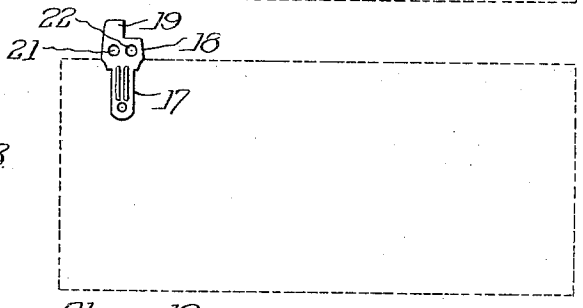


Fig. 3

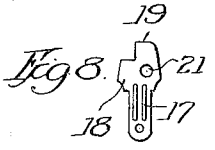


Fig. 8.

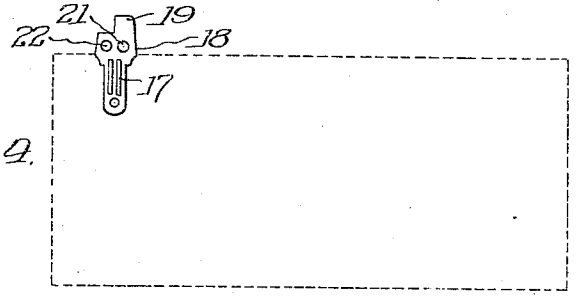


Fig. 4.

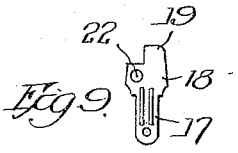


Fig. 9.

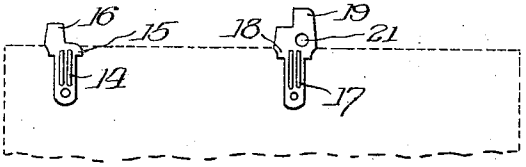


Fig. 5.

Witnesses

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PRINTING-CONTROL SYSTEM.

1,082,506. Specification of Letters Patent. Patented Dec. 30, 1913.

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To all whom it may concern:

Be it known that I, JOSEPH S. DUNCAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illincis, have invented certain new and useful Improvements in Printing-Control Systems, of which the following is a specification.

My present invention relates in general to the art of printing and has more particular reference to a system comprising a plurality of series of units by means of which the printing operations of a printing machine may be controlled.

Printing devices comprising a body or form provided with printing characters adapted to print an address or other suitable matter and also adapted to be stored in accordance with a card-index system, or stacked in a pile, and run through an addressing or other printing machine for taking impressions from the forms are well known to those skilled in the art. In order that only certain ones or certain classes of the printing devices in such a stack or pile will be printed when the entire stack is run through a machine, I have devised a system including a plurality of series of control units adapted to be detachably engaged with the printing devices so that the devices are thereby classified in accordance with the position of a unit or units engaged therewith. In my earlier application, Serial Number 718,614, filed September 5, 1912, I disclosed a printing device having twelve keepers and a reversible tripper or control unit adapted to be varyingly positioned so as to provide for twenty-four classifications. In many instances this number of classifications is insufficient and my present invention aims to provide a control system embodying, as disclosed on the drawings, fifty-two classifications but, it will be obvious as the invention is more fully understood, that my present system is capable of variation to include a greater or less number of classifications than fifty-two as may be found desirable.

In order to facilitate an understanding of my invention, I have disclosed on the accompanying drawings a printing device and a number of control units and it is believed that upon consideration of these drawings in connection with the following description the invention and one of its practical and preferred embodiments will be clearly understood.

Referring to the drawings—Figure 1 is a plan view of a printing device with one control unit engaged therewith; Fig. 2 is a similar view, the printing device being indicated only diagrammatically and the control unit being reversed relatively to its position in Fig. 1. Fig. 3 is a similar view showing a control unit of another series; Fig. 4 is a similar view showing the control unit disclosed in Fig. 3 in reversed position; Fig. 5 is a similar view showing a control unit of each of two series engaged with the printing device; Fig. 6 is a detail view of the control unit illustrated in Figs. 1 and 2; Fig. 7 is a similar view of the control unit illustrated in Figs. 3 and 4; and, Figs. 8 and 9 are similar views of special control units the purpose of which will be later described.

On the drawings and referring particularly to Fig. 1 reference character 11 designates a printing device preferably formed from a sheet of metal upon which an address or other printed matter may be stamped up, the device shown for the purposes of illustration being of the general character and construction disclosed in my prior Patent No. 1,015,758, granted January 23, 1912. The device as shown has an elevated portion 12 provided with alined openings in its upper and lower walls to form keeper slots 13 adapted to receive the stems of the various control units included in my present invention.

Printing devices of this general character are, in practice, fed consecutively through an addressing or other printing machine which comprises two or more series of adjustable controllers adapted to be located in any predetermined position adjacent the path of travel of the printing devices so that they may be engaged and actuated by control units mounted in predetermined positions on the devices. Actuation of a controller by a control unit on a printing device will, through suitable mechanism, set into operation the printing mechanism to effect an impression from the printing device which actuated the controller. Obviously no impression will be taken from those printing devices on which the control units are not positioned to engage and actuate a

controller. Since the control units are arranged on the printing devices according to a predetermined classification, it will be manifest that as the devices are run through the machine an impression will be taken from each device of a certain class, the class to be printed being determined by the position of the controllers on the machine.

By reference to Fig. 1 it will be observed that the printing device 11 is provided with thirteen keeper slots 13. Each slot is adapted to receive and retain any one of the control units of my present system. The control units, as shown in Figs. 1, 2 and 6 and at the left in Fig. 5, comprise a stem 14, a head 15 and an operative portion 16 projecting above the head and at one side of the longitudinal axis of the unit. When the unit is engaged in keeper slot number one, for instance, in the position shown in Fig. 1 the operative portion 16 extends beyond the periphery of the printing device in position to engage and actuate a controller on the printing machine positioned in the path of travel of the operative portion as the printing device is fed through the machine. All printing devices carrying a control unit arranged in this position will be printed while the devices having units arranged in other positions will be passed idly through the machine. All printing devices carrying a control unit in the position shown in Fig. 1 therefore, may be said to be in one class.

By reversing the control unit on the printing device so that it assumes the position shown in Fig. 2 another classification is provided. Since there are thirteen keeper slots in the embodiment illustrated and, since each control unit of this class may be arranged in two positions in each slot, it will be obvious that twenty-six classifications may be effected by control units of the character shown in Fig. 6.

In order to provide for twenty-six additional classes, I employ another series of units of the character shown in Figs. 3 4 and 7. Each of the units of this series comprises a stem 17 similar to the stem 14 of the series above described, a head 18 and an operative portion 19 extending beyond the head 18 and at one side of the longitudinal axis of the stem 17. It will be observed that the heads 18 of this series of units extend beyond the periphery of the printing device substantially the same distance as do the operative portions 16 of the other series of units, while the operative portions 19 extend beyond the operative portions 16. The units of the two series may, therefore, be appropriately designated the short units and the long units. The long units are capable of being reversed on the printing device similarly to the short units, thereby disposing the operative portions 19 of the units in two operative positions for each keeper slot and, accordingly, providing for twenty-six different classifications in connection with the thirteen slots on the printing device.

In order to prevent the controllers adapted to be actuated by the operative portion 16 of the short units, from being operated by the projecting heads 18 of the long units, I have provided these heads with perforations 21 and 22 through which the controllers may pass. Of course, there is no possibility of the short units accidentally operating the controllers adapted to be actuated by the long units, since the extremities of the operative portions of the short units do not extend beyond the printing device sufficiently to contact with the long unit controllers. It will be manifest, therefore, that I have provided a system of control embodying two series of control units, the units of each series being adapted to actuate their own controllers and the units of each series being constructed so that they are incapable of operating the controllers adapted to be actuated by the units of the other series.

It may often be desirable to classify one printing device in two or more classes so that an impression will be effected from this device whenever the machine is set to print the devices in any one of these classes. One printing device may, therefore, be provided with two or more control units of the same or of different series. For purpose of illustration, assume that the unit shown in Fig. 1 is positioned to indicate class one and in Fig. 2 is positioned to indicate class two. This unit may be positioned with the operative portion disposed to the left or to the right in each one of the thirteen keeper slots, thereby providing for classes one to twenty-six, inclusive. The unit shown in Fig. 3 is, therefore, positioned to indicate class twenty-seven; in Fig. 4 it is positioned to indicate class twenty-eight and it may be variously positioned to indicate classes twenty-seven to fifty-two, inclusive. Should it be desirable to classify a printing device in classes one and twenty-five, for instance, one control unit would be positioned as shown in Fig. 1 and another would be positioned on the same device in slot number 13 with the operative portion projecting toward the left. If it should be desirable to classify this device in classes one and fifty-one, the short unit in slot 13 would be replaced by a long unit having its operative portion extending toward the left. It is believed that it will be clear from these illustrations how the units of the various series may be positioned to indicate any class or classes from one to fifty-two. Let us assume, however, that it is desirable to classify a printing device in classes one and twenty-eight. Class one would be indicated by a short unit positioned as shown in Fig. 1, while class twenty-eight would nor-

mally be indicated by a long unit positioned in slot one with its operative portion extending toward the right as shown in Fig. 4. Since each of the keeper slots is adapted to receive and retain but one unit at a time, it will be manifest that the classification of a device in classes one and twenty-eight would require an especially constructed unit. To provide for such an emergency, I have devised a special unit, as shown in Fig. 8, comprising a stem 17, a head 18 and an operative portion 19 substantially like that shown in Figs. 3, 4 and 7, except for the fact that the aperture 22 is omitted, so that this portion of the head is adapted to actuate a controller normally actuated by a unit of the short series. This single unit may, therefore, be employed to designate both classes one and twenty-eight, for instance, and, when a device equipped with this unit is fed through the machine, the device will print in class one and will also print in class twenty-eight.

One other condition may arise which the ordinary control units are incapable of meeting, viz., where the classification of a device is such that one operative portion must be disposed directly above another; for instance, suppose it be desirable to classify a printing device in classes one and twenty-seven. Unless a specially constructed unit be employed such a combination could only be effected by positioning both a long and a short unit in slot number 1. To meet this situation I have devised a specially constructed unit such as is shown in Fig. 9, this unit being simply the ordinary unit of the long series with the aperture 21 omitted, so that the head 18 directly beneath the operative portion 19 also acts as an operative portion in the short series.

It will be obvious from the foregoing that my system is designed to provide for fifty-two classifications, the ordinary long and short units of the respective series being employed except in particular instances which require the use of a unit such as is shown in Fig. 8 or in Fig. 9. The operative portions of the various units may be provided with index characters, if desired, so that these units may also perform the function of visual index tabs. For all ordinary work a classification embodying fifty-two classes will be found sufficient but, if it should be desirable to extend the classification beyond fifty-two, this result may be readily accomplished by providing a third series of units having the operative portions thereof arranged to extend beyond the extremities of the operative portions 19 of the longer series illustrated on the drawings.

It is believed that the principle of my invention and one practical manner of carrying the same into effect will be understood without further description and it will be obvious that the structural details disclosed may be varied within considerable limits without departing from the spirit of the invention or sacrificing any of the material advantages thereof.

I claim—

1. A printing control system, comprising a plurality of series of control units, each unit being adapted to be detachably engaged with a printing device and having an operative portion arranged to extend beyond the periphery of the printing device, the units of each series being distinguished from the units of the other series by a difference in the distance of the operative portions thereof from the periphery of the printing device.

2. A printing control system, comprising a plurality of series of reversible units, each unit being adapted to be detachably engaged with a printing device and having an operative portion arranged to extend beyond the periphery of the printing device, said operative portion being adapted to be disposed in different operative positions upon reversal of the unit on the printing device, the operative portions of the units of each series being spaced from the edge of the printing device a different distance than the operative portions of the units of the other series.

3. A printing control system, comprising a plurality of series of control units, each unit being adapted to be detachably engaged with a printing device and having an operative portion adapted to extend beyond the periphery of the printing device, each unit of one series being provided with a perforation disposed substantially the same distance beyond the periphery of the printing device as the operative portions of the units of another series.

4. A printing control system, comprising a series of long control units and a series of short control units, all of said units being adapted to be detachably engaged with a printing device and having operative portions adapted to extend beyond the periphery of the printing device, said long control units being each provided with a perforation disposed in alinement with the operative portions of the short control units.

5. A printing control system, comprising a plurality of series of control units, each unit being adapted to be detachably engaged with a printing device and having an operative portion adapted to extend beyond the periphery of the printing device, each unit of one series being provided with a perforation between the operative portion of the unit and the periphery of the printing device.

6. A printing control system, comprising a series of control units adapted to be de-

tachably engaged with a printing device, each unit having an operative portion arranged to assume different operative positions upon reversal of the unite on the printing device and being provided with a perforation disposed between said operative portion and the periphery of the printing device.

7. A printing control system, comprising a series of control units adapted to be detachably engaged with a printing device, one or more of said units having an operative portion arranged to extend beyond the periphery of the printing device and also having a perforation disposed beneath and at one side of said operative portion.

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