Feb. 6, 1940. H. P. ELLIOTT 2,189,104

RECORD PRINTING PLATE FOR ADDRESSING MACHINES

Original Filed April 18, 1936 2 Sheets-Sheet 1

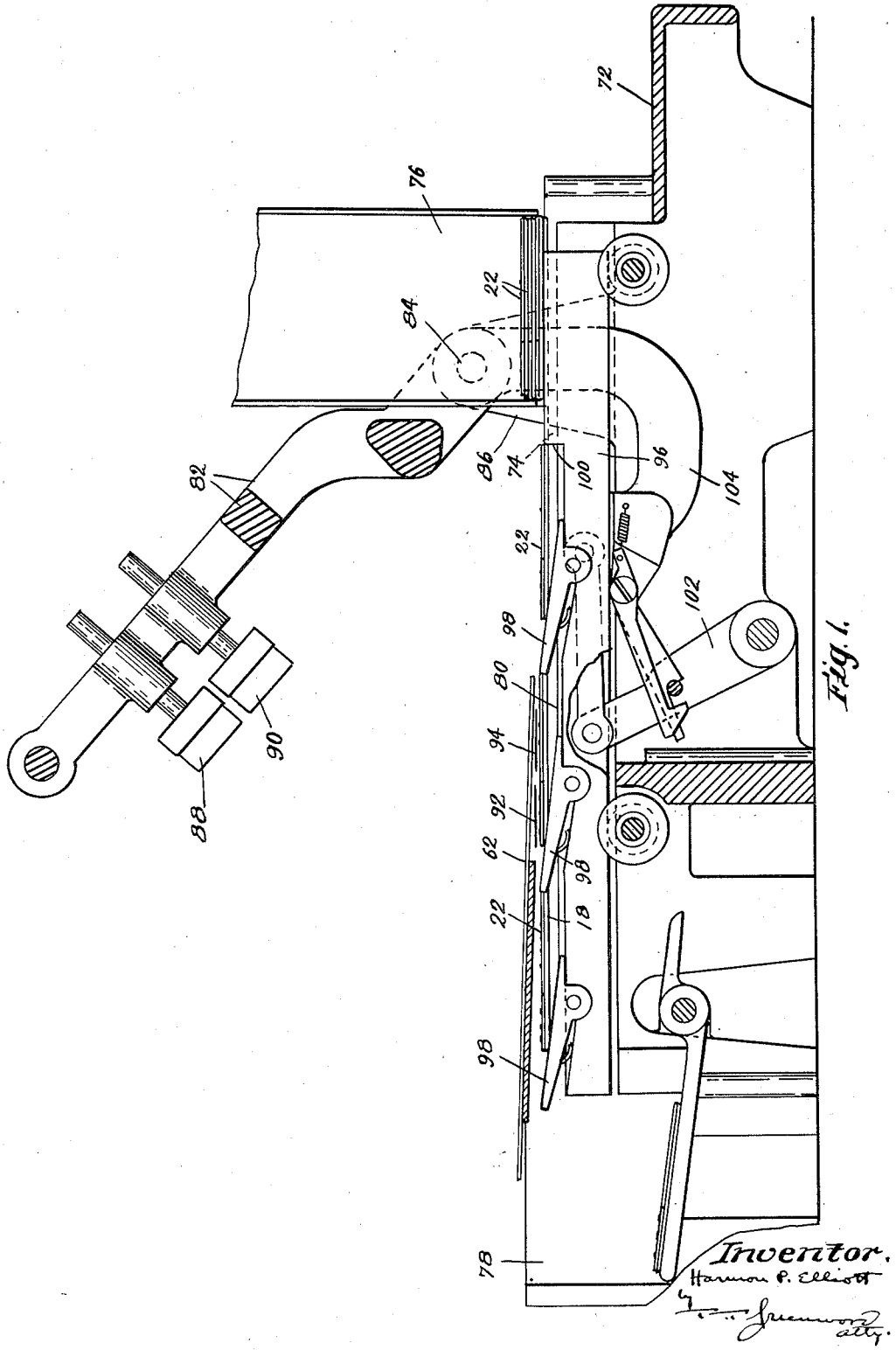


Fig. 1.

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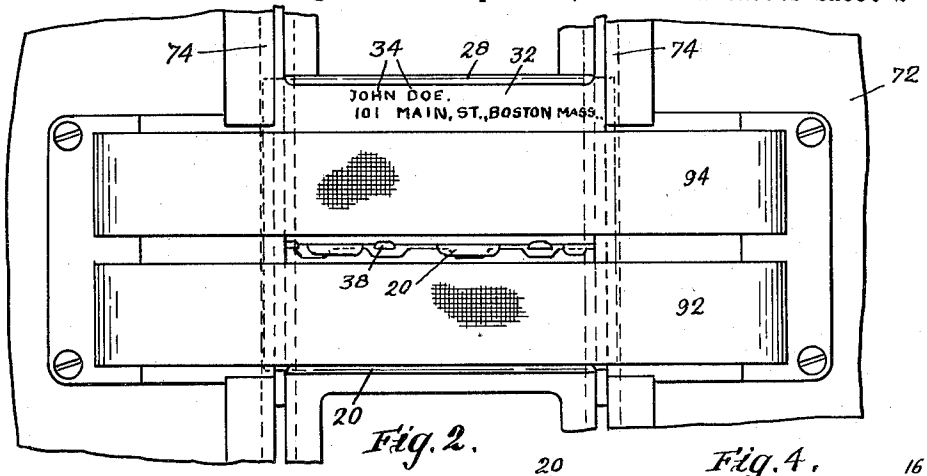


Fig. 2.



Fig. 4.

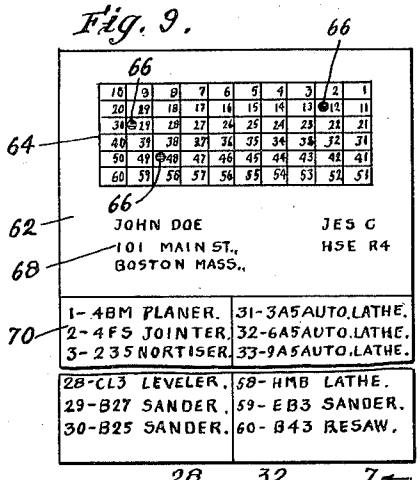


Fig. 9.

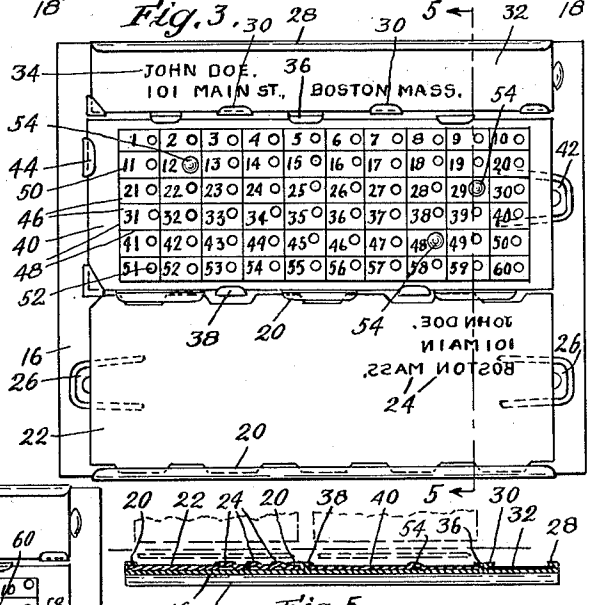


Fig. 3.

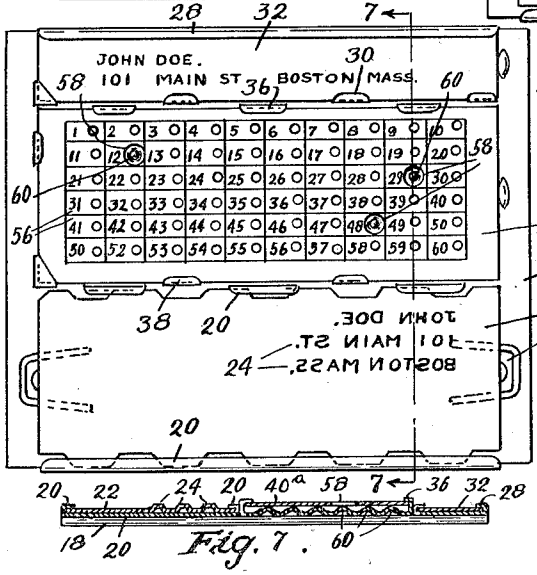


Fig. 7.

Fig. 5.

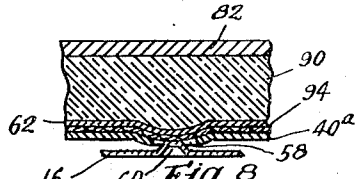


Fig. 6. Fig. 8.

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UNITED STATES PATENT OFFICE

2,189,104

RECORD PRINTING PLATE FOR ADDRESSING MACHINES

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Original application April 18, 1936, Serial No. 75,118. Divided and this application March 22, 1938, Serial No. 197,386

14 Claims. (Cl. 101—57)

This invention relates to printing machines and particularly to addressing machines wherein the address characters of the separate addresses are borne by a series of printing devices that are advanced successively into and out of a printing position. This application is a division of my copending application Serial No. 75,118, filed April 18, 1936.

In my copending application Serial No. 69,803, filed March 20, 1936, I have disclosed and claimed broadly a machine operative upon a series of printing devices to record on record sheets the addresses borne by the printing devices together with selected items of statistical information pertinent to the addresses. The mechanism of said application has address recording means and a plurality of statistical item recording means capable of forming indicia, as indentations, or perforations, in the record sheet in positions denoting predetermined items of information. The printing devices of said application, specifically are stencils having means such as perforations located in predetermined regions of said stencil indicating selected statistical items and operative to control the recording operation of the item recording means corresponding to the perforated regions.

It is an object of the present invention to provide for the recording of addresses and selected statistical items by the use of a printing device having metal-type address characters and specifically a printing device comprising a metal frame having a part provided with metal type characters that form the address and another part provided with means for effecting the recording of desired statistical items concurrently, or at some other time, if desired, with the recording of the address.

A further object of the invention is the provision of a printing device having address printing and statistical item printing means, the printing device having a part provided with address-forming metal type characters and another part adapted to receive a series of item indicating projections capable of forming an impression on a record sheet, the position of said item forming members denoting the nature of the item represented thereby.

A further object is the provision of a printing machine capable of operating upon a succession of printing devices arranged as above described for recording the addresses borne thereby and also for recording indicia corresponding in position on the record sheet with the item indicating means of the devices.

A yet further object is generally to improve the construction and extend the use of printing machines and printing devices.

Fig. 1 is a sectional view through the transverse middle of a printing machine forming a part of the present invention.

Fig. 2 is a detailed plan view of the printing bed of Fig. 1.

Fig. 3 is a plan view of one form of printing device cooperating with the machine of Fig. 1.

Fig. 4 is an end view of the printing device of Fig. 3.

Fig. 5 is a section taken along line 5—5 of Fig. 3 and illustrating the manner in which the printing device operates to record an item of statistical information.

Fig. 6 is a plan view of a modified form of printing device.

Fig. 7 is a sectional view taken along line 7—7 of Fig. 6.

Fig. 8 is a detail illustrating the manner in which the printing device of Fig. 6 operates to record an item of statistical information.

Fig. 9 is a plan view of an address and statistical item receiving sheet adapted to cooperate with the printing devices of Figs. 3 and 6.

The metal printing device forming a part of the present invention, in that modification illustrated in Fig. 3, comprises a generally rectangular flat metal plate 16 forming the frame of the device and having on the under face thereof adjacent the opposite side edges a pair of parallel ribs 18, see Fig. 4, which are adapted to be located in the grooves of a track formed or provided in the bed of the printing machine to guide the device for straight line movement into and out of printing position.

At the lower part of the face of the plate there are provided two lines of confronting channel forming members 20 having parts overlying and spaced above the face of the metal plate 16 and cooperating therewith to form opposed channels adapted slidably to receive a flat address bearing metal plate 22 which rests upon the flat face of the frame plate 16 and has its front and rear edges located in said channels. Said plate is suitably embossed to form type characters 24 that upstand from the top face of the plate. Said plate is positioned removably in the channels and is retained in place by spring supported ears 26 which confront the opposite ends of the plate.

The upper or back edge of the frame plate 16 is formed with a long channel member 28 and the intermediate portion of the plate is formed with a series of short channel members 30 within which channel members 28 and 30 a paper card 32

or the equivalent bearing the easily readable address 34 of the printing plate 22 is located removably.

Between the address bearing card 32 and the address printing plate 22 the frame plate is formed with confronting channel members 36 and 38 in which a statistical plate 40 is removably retained by means including the spring urged catch 42 confronting one side edge of the plate and abutments 44 confronting the other side edge of the plate.

The plate 40 conveniently is made of metal, similar to the plate 22. The plate 40 is formed or provided with a plurality of spaces 46 arranged in horizontal and vertical rows by intersecting lines 48 which can be printed or otherwise formed on the plate and the spaces preferably are consecutively numbered by numerals 50. Each space also has a circular or other mark 52 for indicating the position of the statistical item recording member 54. In the present instance this recording member 54 is a projection embossed in the plate 40 and upstanding thereabove in the plane of the tops of the address printing characters 24 and is intended to record a dot on the record sheet.

The presence of a projection effects the operation of the printing machine to record a mark on the record sheet in a position corresponding to the position of the projection. The position of the mark on the record sheet indicates the nature of the statistical item which can be ascertained, if not known or remembered, by reference to a previously prepared code which can be printed on the record sheet. As herein shown spaces 12, 29 and 48 have projections 54. Hence indicia corresponding only to such projections will be recorded. The projections 54 are formed in the plate in a suitable manner and by suitable mechanism not important to the present invention.

In the modification illustrated in Fig. 6 the frame plate 16 is constructed as illustrated in Fig. 3, and has the address printing plate 22 and also the readable address bearing card 32. The frame plate also has a statistical item record controlling plate 40*a* retained in place like the plate 40 of Fig. 3 and having the spaces 56 corresponding to the spaces 46 of Fig. 3. The plate 40*a*, however, instead of having projections is adapted to receive perforations 58 in selected spaces, as the spaces 12, 29 and 48. The frame plate 16 under each of the spaces 56 is provided with a printing projection 60 but only the projections under perforations 58 are exposed for printing. The plate 40*a* is made stiff enough so that it is not flexed by the printing pressure thereon to make a mark on the record sheet in register with those perforations which it conceals but yet is sufficiently flexible to bend under the printing pressure to permit an exposed projection 60 to pass through the perforation 58 and make a mark on the record sheet. The plate 40*a*, for instance, can be a paper sheet of suitable thickness, such as cardboard or bristol board or a thinner metal sheet.

The record sheet adapted for cooperation with the printing devices of Figs. 3 and 6, can be a paper sheet 62, Fig. 9, having a printed or otherwise marked section 64 corresponding to the similar sections of the plates 40 and 40*a* but with the squares thereof numbered in the opposite direction. That is to say, if the numbers of the horizontal columns of the printing devices run from left to right the numbers in the record sheet run from right to left since the face of the record sheet confronts the printing face of the printing device.

The item printing means 54, or 58, is adapted to make marks 66 on the section 64 in the squares corresponding to the squares of the printing devices in which the projections appear. The record sheet 62 also has a space for the address 68 recorded by the plates 22 and also can have a code table 70 wherein the statistical items corresponding to the various sections of the part 64 are set forth so that when the section No. 29, for instance, bears a mark the reader of the record card will see that this No. 29 refers to a B–27 sander.

The printing machine adapted for cooperation with the above described printing devices, is illustrated in Figs. 1 and 2, and comprises a frame 72 having means providing a pair of parallel grooves 74 in which the ribs 18 of the printing devices can slide, thereby to guide successive lowermost printing devices to pass in a straight line from a vertical holder 76 through a printing position and into a discharge passage 78.

A printing device, when in printing position, is located above and upon a solid bed 80 by which the printing device is supported to withstand the necessary pressure applied to it for recording the address and selected items of statistical information.

The printing machine herein illustrated is manually operated although for the purposes of the present invention it is not important whether the machine is manually operated or is operated by power, this general type of machine being common in the art.

The machine includes a vertically movable stamper arm 82 fixed to a horizontal shaft 84 journalled in suitable brackets 86. The stamper arm carries a pair of resilient impression pads 88 and 90 movable downwardly with the stamper arm and cooperating respectively with the address printing plate 22 and with the statistical item plate 40 or 40*a* to press a record sheet 62 and ink ribbons 92 and 94 which overlie said plates into pressure contact. The operation thus records on the record sheet 62 an impression of the address characters 24 and an impression of the item printing projections 54 or 60 of the printing plates. The manner in which these impression pads operate to record the address and the item marks is illustrated in Figs. 5 and 7.

In the modification illustrated in Fig. 6 the pressure exerted by the pad 90 on the plate 56 of Fig. 6 causes said plate to be pressed downwardly around a projection so that the projection passes through the perforation 58 and is pressed into printing contact with the record sheet 62 as shown in Fig. 8.

The successive printing devices are advanced by a reciprocating frame 96 having longitudinally spaced plurality of pairs of spring urged dogs 98 which are engageable with the trailing edges of the successive printing devices to advance them during a forward stroke of the frame. The rearmost printing device is removed from the holder 76 and advanced by having its trailing edge engaged with shoulders 100 of the frame 96. The reciprocation of the frame is of suitable amplitude to move each pair of dogs rearwardly from engagement with the trailing edge of the next rearmost printing device. The frame is reciprocated by means including a reciprocating arm 102 having a link connection with an

arm 104 carried by the shaft 84 and reciprocated conjointly with the stamper arm 82. The machine as described is more or less common in the art.

I claim:

1. A printing device for recording an address and statistical item indicia, said printing device comprising a frame having address printing characters and means providing a statistical item area adapted to receive printing characters in different predetermined zones thereof, and raised printing characters located in said area.

2. A printing device for recording an address and statistical item indicia, said printing device comprising a frame having address printing characters and means providing a statistical item area adapted to receive printing characters in different predetermined zones thereof, and raised printing characters located in said area, the spacing between the printing characters of contiguous zones being greater than the spacing between successive letters of the address.

3. A printing device for recording an address and statistical item indicia, said printing device comprising a frame having address printing characters and indicia mark formers located in positions on said device that determine the nature of the statistical item represented thereby.

4. A printing device for recording an address and statistical item indicia, comprising a frame having means providing address characters, a statistical item printing plate carried by and having a detachable connection with said frame, said plate having a printing area adapted to receive printing characters in predetermined zones thereof denoting predetermined statistical items, and raised printing characters located in selected zones of the printing face of said plate.

5. A printing device for recording an address and statstical item indicia, said printing device comprising a metal printing frame, an address bearing plate carried detachably on one face of said frame and having raised address printing characters, and a statistical item indicia printing plate carried detachably by said frame on the same face as said address bearing plate and having raised projections in selected item indicating zones thereof corresponding to predetermined statistical items.

6. A printing device for recording an address and statistical item indicia, said printing device comprising a metal printing frame, an address bearing plate carried detachably on one face of said frame and having raised address printing characters, a statistical item indicia printing plate carried detachably by said frame on the same face as said address bearing plate and having raised projections in pre-selected item indicating zones thereof corresponding to predetermined statistical items, and an address-receiving plate carried by said frame on the same face with said other plates.

7. A printing device for recording an address and statistical item indicia comprising a metal frame plate having on one portion of a face thereof means providing address forming characters and on another portion of said face a plurality of indicia printing projections, and a plate carried by said frame overlying said projections and having perforation receiving zones aligned with said projections of said frame, any selected zones being adapted to receive perforations which expose the projections thereunder for printing.

8. A printing device for recording an address and statistical item indicia comprising a frame having means providing address forming characters, a plate carried by said frame on the same face with said address forming characters, said plate having a plurality of perforation receiving zones, said frame having a corresponding plurality of statistical printing projections located under and aligned with said zones, selected ones of said projections adapted to be exposed for printing by perforations in selected zones of said plate.

9. A printing device for recording an address and statistical item indicia, comprising a frame plate having identical raised printing characters disposed in locations the positions of which denote the nature of the statistical item corresponding thereto, and raised address printing characters.

10. A printing device for recording an address and statistical item indicia, comprising a frame plate having identical raised printing characters disposed in locations the positions of which denote the nature of the statistical item corresponding thereto, raised address printing characters, and shielding means for said first named printing characters having means to expose selected characters.

11. In a printing machine, a printing device having address printing characters and statistical item printing characters disposed in positions which denote the nature of the statistical items corresponding thereto, means for directly printing the address of the device, and means for directly printing an impression of statistical item printing characters of the device.

12. A printing device for recording an address and statistical item data, said printing device comprising a frame having address printing characters and means providing a statistical item area and raised statistical item printing characters located in said area.

13. A printing device for recording an address and statistical item data, comprising a frame having address printing characters and means providing a statistical item area and statistical item printing characters located in said area.

14. A printing device for recording an address and statistical item data, said device comprising a frame having address printing characters, means providing a statistical item area and statistical item printing characters located in selected predetermined zones in said area.

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