M. J. HOFFMAN.

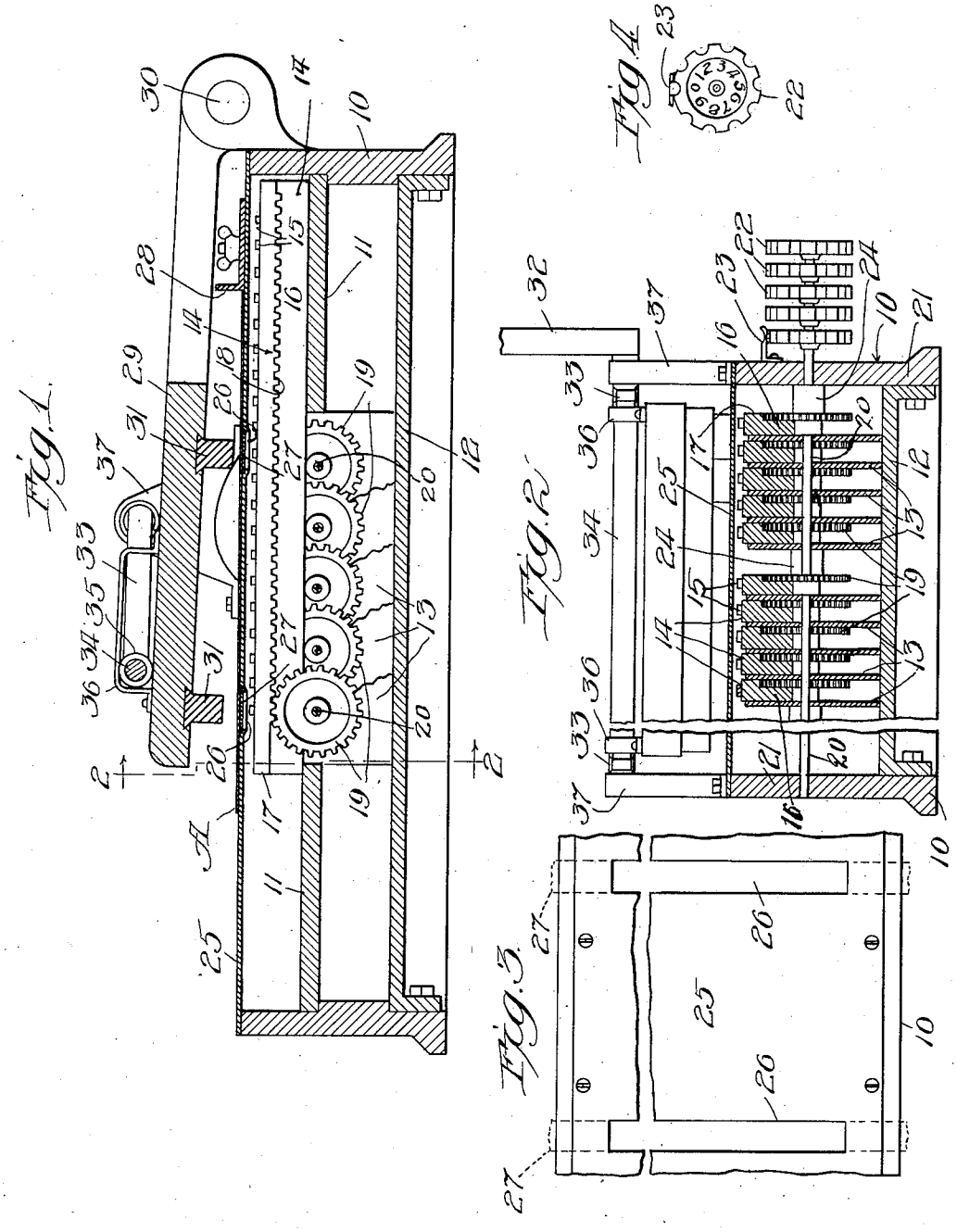
COUPON TICKET PRINTING MACHINE.

APPLICATION FILED JULY 2, 1917.

1,251,887.

Patented Jan. 1, 1918.

2 SHEETS—SHEET 1.



Witness:
Harry S. Gaither

Inventor:
Morris J. Hoffman
by Charles O. Skeweg
Atty

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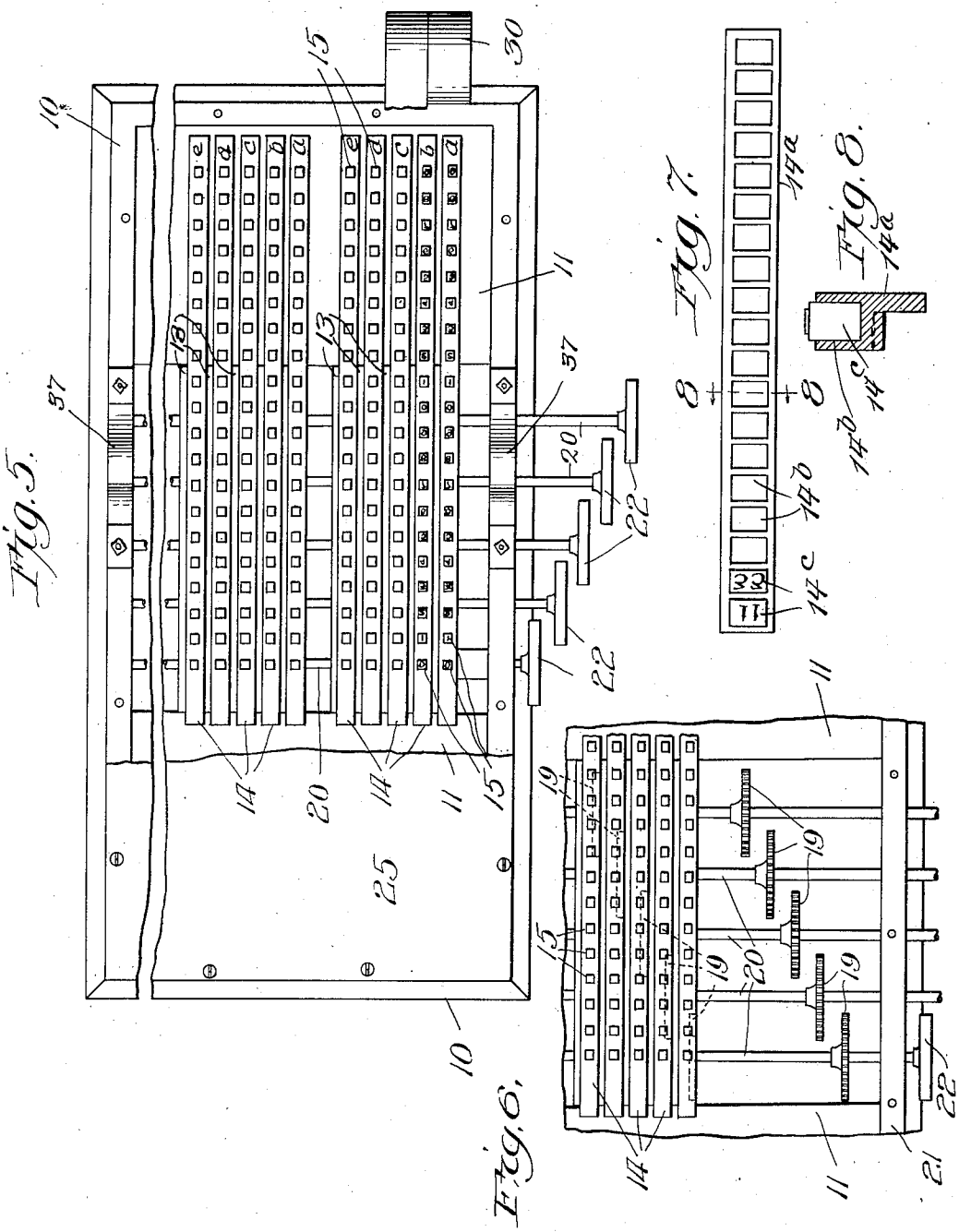
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UNITED STATES PATENT OFFICE.

MORRIS J. HOFFMAN, OF CHICAGO, ILLINOIS.

COUPON-TICKET-PRINTING MACHINE.

1,251,887. Specification of Letters Patent. Patented Jan. 1, 1918.

Application filed July 2, 1917. Serial No. 178,107.

To all whom it may concern:

Be it known that I, MORRIS J. HOFFMAN, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Coupon-Ticket-Printing Machines, of which the following is declared to be a full, clear, and exact description.

This invention relates to printing machines, and its principal object is to provide a comparatively simple, substantial and efficient machine for printing numbers or other data upon the coupon tickets or other sheets. It is well known to those skilled in the art to which this invention pertains, that in many establishments a coupon ticket accompanies the article to be constructed, which ticket is made up of a number of detachable coupons, one for each workman who performs any work upon the article. The tickets are numbered consecutively, and the coupons of the tickets are numbered to correspond with the number of the ticket itself, and the amounts to be paid to the workmen are printed upon the several coupons. Frequently the coupons are arranged along each side edge of the ticket, there being two rows of coupons, and the present machine has been especially designed to print along two rows of coupons, although for many other purposes it may be constructed to print along a single row or along more than two rows, if so desired. It may be used for printing upon other cards and sheets, and I desire it to be understood that the use of this device is not limited to printing coupon tickets but it may be used wherever the use of a machine of this class is possible. The invention consists in the several novel features of construction, arrangement and combination of parts hereinafter fully set forth and particularly defined in the claims.

Referring to the drawings, Figure 1, is a longitudinal section taken through a coupon ticket printing machine embodying a simple form of the invention; Fig. 2, is a vertical cross section taken on the line 2—2 of Fig. 1, and partly broken away; Fig. 3, is a fragmental plan of the top plate of the machine; Fig. 4, is a detail side elevation of a hand wheel used in setting the type bars; Fig. 5, is a plan of the machine partly broken away, and having its platen removed; Fig. 6, is a fragmental plan of a number of the type bars, setting pinions, and their shafts; Fig. 7, is a plan of a slightly modified form of type-bar; and Fig. 8, is a vertical cross section taken on the line 8—8 of Fig. 7.

Referring to said drawings, the reference numeral 10, designates the frame of the machine, which frame may be of rectangular form, as clearly illustrated in Figs. 1 and 2. Supported within said frame 10, are two lengthwise extending supporting bars 11, which lie in one and the same horizontal plane and are spaced apart, as seen in Fig. 1. Below said supporting bars 11, is a supporting plate 12, which is carried by the frame 10, and resting upon said plate 12, are vertically extending spacing strips 13, between which are type bars 14. Said spacing strips 13, act to separate the type bars 14, from each other, to thereby prevent any one type bar from moving an adjacent one whenever it is moved. Upon the upper faces of the type bars 14, are type characters 15, which may be the letters of the alphabet or numerals, and in the preferred form of the invention, numerals are employed, said numerals being arranged numerically from "0" to "9". (See Fig. 5.) Where it is desired to print upon two rows of coupons, each type bar has two sets of type characters running numerically from "0" to "9," one set following the other along the length of the type bar.

Each type bar has a comparatively thin web portion 16, extending from its bottom edge to a point near its upper edge, and the lower edge of its thicker portion 17, is formed with teeth to provide a rack 18, that meshes with a pinion 19, fast upon a shaft 20, journaled in the end walls 21, of the frame 10, and extending through the spacing strips 13. It is to be understood that associated with each bar is a pinion 19, which meshes with its rack, and the shafts of said pinions are spaced far enough apart to permit the pinions of any one shaft to stand between any two adjacent shafts. Upon the outer ends of said shafts, at one end of the machine, are setting wheels 22, which may be turned by hand to rotate the pinions 19, and therewith move the type bars lengthwise of themselves to bring the desired type characters thereof into printing position. Conveniently the setting wheels may be provided with notches in their peripheries for engagement with pawls or spring detents 23, said notches being spaced apart a distance

corresponding to the distance between the type characters. Said setting wheels may also have characters on their faces, corresponding with the characters on the type bars so that the user may be guided thereby in setting the type bars.

The type bars are arranged in groups, each group being spaced apart from the other by the end spacing strips of the group, or by washers or other spacing devices, 24. When the machine is used for printing numbers on the coupons, five bars may be conveniently used in each group, five bars being capable of printing any number from "0" to "99999," but this number of bars may of course be varied to suit the requirements of the particular establishment. Each shaft 20, carries as many pinions 19, as there are groups of type bars, there being one pinion for one type bar of each group, and each pinion meshing with the racks of the type bars corresponding in location in each group. For instance, the shaft 20, at the left-hand side of Fig. 6, carries pinions 19, that mesh with the first racks (nearest the bottom of the figure) of each group. The pinions of the second shaft 20, mesh with the racks of the second racks of each group, and so on, so that by turning one shaft 20, one type bar of each group is moved lengthwise of the machine to bring a corresponding character on each type bar into printing position. In the position shown in full lines in the drawings, all of the type bars are set with the character "0" in printing position, and when it is desired to print the numeral "1" with each group of type bars, the setting wheel for the units column is turned until the first notch of the setting wheel comes underneath the detent 23. The rack bars of the units column are thereby moved one step, bringing the characters "1" on each units column type bar into printing position.

Supported on the frame of the machine immediately above the type, is a thin plate 24, which is formed with lengthwise extending slots 26, that determine the printing position of the type and which expose the type at said printing position. Above said slots 26, are inked ribbons 27, by means of which the impressions are made upon the sheet to be printed upon. A stop 28, is adjustably secured at the rear end of the machine, and forms a gage against which the ticket A, is placed when it is to be printed upon.

Movably supported upon the frame 10, of the machine is a platen 29, which is here shown as hinged to the frame at 30, and provided upon its lower side with resilient strips 31, which may comprise rubber strips secured upon the lower side of the platen in position to pass through the slots 26, whenever the platen is depressed, and thereby force those parts of the ticket lying above the slots down through the slots, carrying with those parts the ribbons, whereby impressions are made on the ticket by the type standing under the slots. Any suitable means may be provided for moving the platen, and I have here shown a lever, comprising a handle 32, two crank arms 33, connected by a lengthwise extending bar 34, having rollers 35 thereon which bear against the upper face of the platen, and are held thereon by straps 36, secured to the platen. The arms 33, have stub shafts which are journaled in brackets 37, extending up from the top of the machine and the handle 32, is fastened upon the outer end of the shaft of one of the arms 33. By pulling forward upon the handle 32, the arms 33, are thereby swung downward, and the platen moved down.

In the operation of the machine, the ticket is laid upon the top plate 25, the hand wheels manipulated to bring the proper type characters into printing position, and the platen pressed down, thereby forcing those parts of the ticket overlying the slots 26, down through said slots carrying the ribbons with them into contact with the exposed type characters, thereby causing said type characters to make the impressions on the ticket through the ribbons. The platen is then raised, and the printed ticket removed. Inasmuch as the coupon tickets are numbered consecutively, the proper setting wheel is turned one notch before the next ticket is printed, thereby bringing the next higher number into printing position. The type bar having the type characters thereon, for printing the units column is designated by the reference character *a*, the one for printing the tens column, is designated by the character *b*, and the one for printing the hundreds column by *c*, thousands column by *d*, and so on. Obviously, after the type bar which prints the units column has been moved to print the figure "9," it is moved back to the position where "1" is in printing position, and thereafter the type bars which print the tens column are moved to print "0" and so on, in a step-by-step manner, as heretofore explained.

From the above, it is readily apparent that with the use of type bars, each having two sets of type characters formed thereon, two rows of data can be printed upon the coupon ticket or other sheet, and by turning any setting shaft, all of the type bars controlled by said shaft are simultaneously moved to bring the desired type characters into printing position in two rows. In this way, a large number of tickets may be printed in consecutive order, all of the coupons being similarly numbered by the one printing operation of the press.

In the modified form of the type bars shown in Figs. 7, and 8, the type bars 14^a, are provided with sockets 14^b, in their upper

faces, said sockets being closely spaced and adapted to receive the type 14^c. The type 14^c, may of course have type characters of any described description formed upon their upper faces, and by making the type removable from the bar, the user may select type showing such characters as he may desire to print upon the coupon ticket or other article.

More or less variation of the exact details of construction is possible without departing from the spirit of this invention; I desire, therefore, not to limit myself to the exact form shown and described, but intend in the following claims to point out all of the invention disclosed herein.

I claim as new and desire to secure by Letters Patent:

1. In a printing machine of the character described, lengthwise movable type bars having type characters thereon, said type bars being arranged in groups, a support for said type bars, and means for moving the type bars occupying corresponding locations in the several groups, whereby said corresponding type bars of the several groups may be simultaneously moved to bring the type characters thereon into printing position.

2. In a printing machine, lengthwise movable type bars having type characters thereon, and provided with tooth racks, said type bars being arranged in groups, a support for said type bars, setting shafts corresponding in number to the number of type bars in a group, and pinions fixedly secured to said shafts, the pinions on each shaft meshing with the tooth racks of the type bars occupying corresponding locations in the several groups, whereby said corresponding type bars of the several groups may be moved lengthwise by turning the shaft, to thereby bring the corresponding type characters thereof into printing position.

3. In a printing machine, lengthwise movable type bars having type characters thereon and arranged in groups, a support for said type bars, a cover plate above the type bars, said plate having a slot formed therein at the printing position, and a platen having a strip and adapted to register with said slot, said resilient strip being capable of being moved through said slot, into contact with the exposed type characters.

4. In a printing machine, lengthwise movable type-bars having type characters thereon, and arranged in groups, a support for said type bars, means for moving a corresponding type bar of each group to bring the type characters thereof into printing position, a top plate immediately above said type bars and formed with a slot at the printing position of the machine, and a platen coöperating with the exposed type characters below the slot to make impressions upon a sheet.

5. In a printing machine, lengthwise movable type bars having type characters thereon, and arranged in groups, setting means for moving correspondingly located type bars of the several groups in unison, a top plate supported adjacent the type bars and having a slot extending across the type bars at the printing position of the machine, and a platen coöperating with the type characters of the type bars at the printing position to print upon the sheet laid upon the top plate.

6. In a printing machine, a supporting frame, lengthwise movable type bars having two sets of type characters formed on each type bar, said type bars being arranged in groups, supporting plates for said type bars, means for setting corresponding type bars of the several groups in printing position, a top plate secured to said frame and having two slots, one located at the printing position of one set of type characters and another located at the printing position of the other set of type characters, and a platen carried by said frame, and having two resilient strips arranged to be projected down through said slots, substantially as and for the purposes set forth.

7. In a printing machine, lengthwise movable type bars having type characters thereon, and provided with tooth racks, said type bars being arranged in groups, stationary spacing strips interposed between the type bars, a support for the type bars, setting shafts, there being a corresponding number of setting shafts as there are type bars in each group, pinions mounted on said shafts and meshing with said tooth racks, the pinions on each shaft corresponding with correspondingly located type bars in the several groups, a top plate having a slot located at the printing position of the machine, and a platen having a strip adapted to be projected down through the slot, substantially as and for the purposes set forth.

8. In a coupon ticket printing machine, lengthwise movable type bars having type characters thereon, and provided with tooth racks, said type bars being arranged in groups, stationarily supported spacing strips between said type bars, transversely extending setting shafts, corresponding in number to the number of type bars in a group, pinions secured upon said setting shafts, and meshing with said tooth racks, the pinions upon each setting shaft meshing with the racks of the type bars occupying corresponding positions in the several groups, and a platen arranged to engage the type characters at the printing position of the press.

9. In a coupon ticket printing machine, lengthwise movable type bars having type characters thereon, and provided with tooth racks, said type bars being arranged in

groups, said type bars having a thin web along their lower portions, and the tooth racks being formed on the lower side of the thicker upper portions of the type bars, a support for said type bars, setting shafts corresponding in number to the number of type bars in any group, pinions fast to said setting shafts and meshing with the tooth racks, the pinions on each shaft meshing with the tooth racks of the type bars occupying corresponding positions in the several groups, and a platen having a resilient member adapted to engage the type at the printing position of the press.

10. In a coupon ticket printing machine, lengthwise movable type bars having type characters thereon, and provided with tooth racks, said type bars being arranged in groups, setting shafts corresponding in number to the number of type bars in a group, pinions fast on said setting shaft and meshing with said tooth racks, the pinions on each shaft meshing with the racks of the type bars occupying corresponding location in the several groups, and hand wheels on the outer ends of said shafts.

11. In a coupon ticket printing machine, independently movable type bars having type characters thereon, and provided with rack teeth, said type bars being arranged in groups, a support for said type bars, and independently operable setting means for correspondingly located type bars of each group, having pinions meshing with the racks of said correspondingly located type bars.

MORRIS J. HOFFMAN.