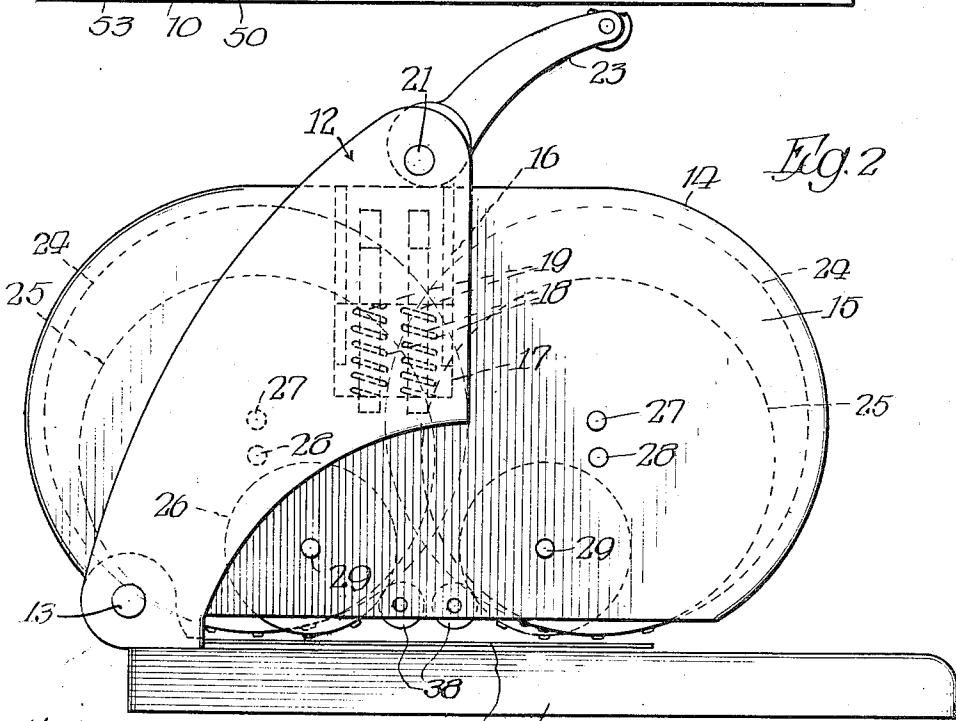
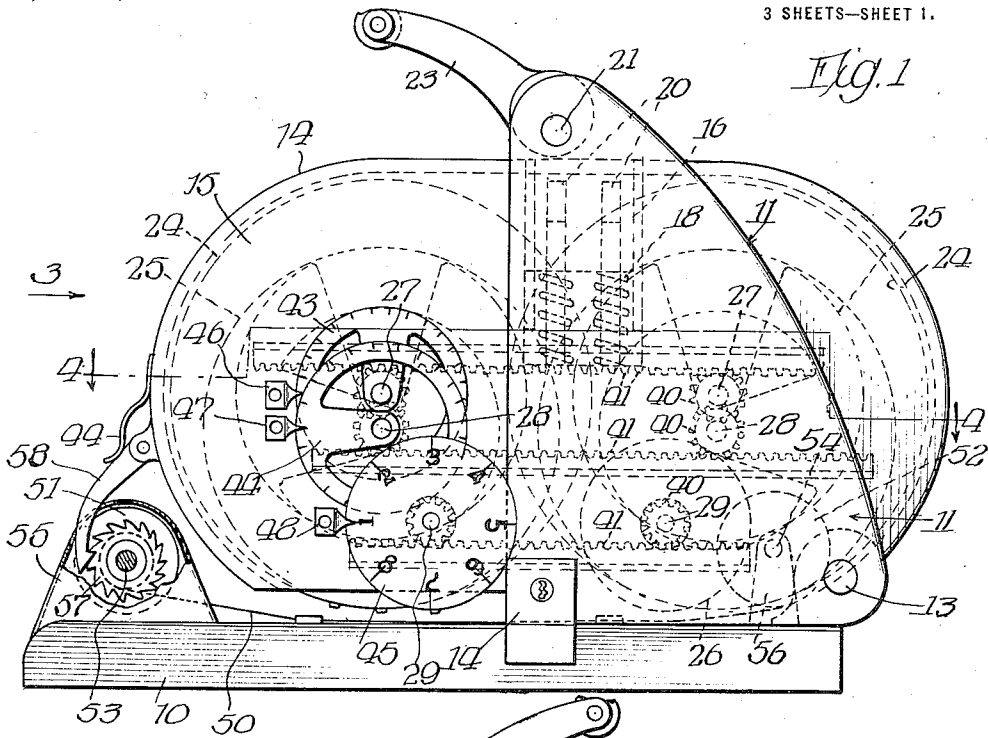


M. J. HOFFMAN.
 COUPON TICKET PRINTING MACHINE AND REGISTER.
 APPLICATION FILED JUNE 28, 1916.

1,210,071.

Patented Dec. 26, 1916.

3 SHEETS—SHEET 1.



Witness
 H. Barrett

A. 10

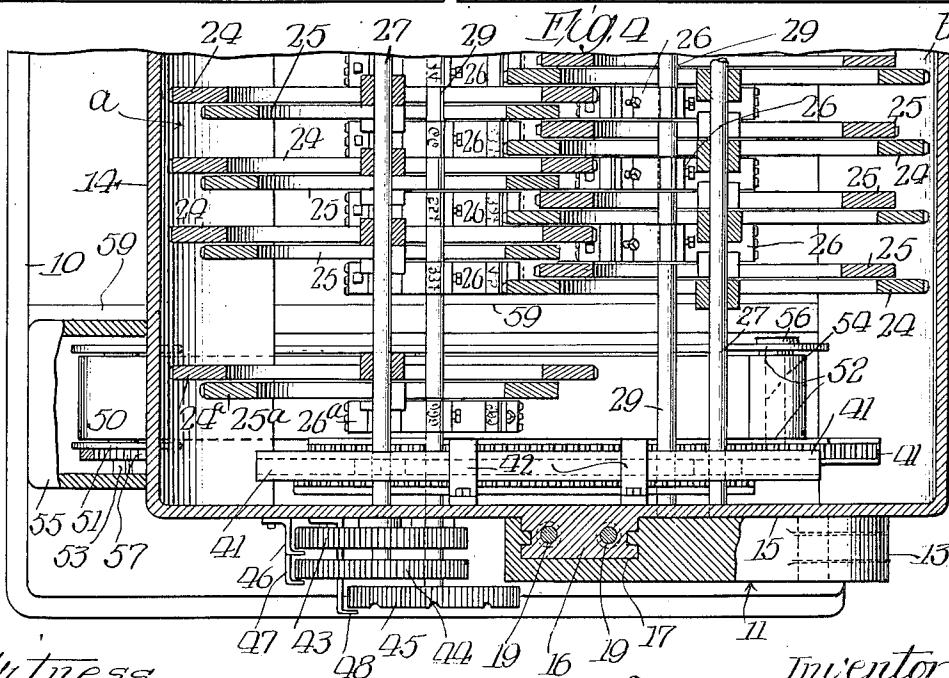
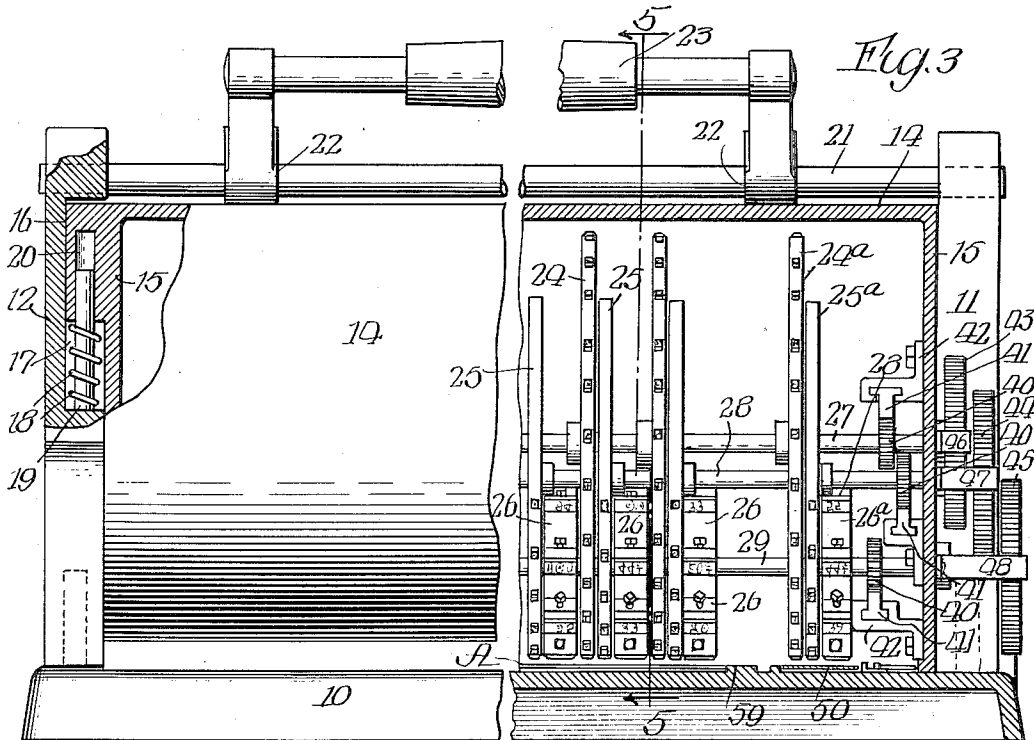
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3 SHEETS—SHEET 2.



Witness
St. Barrett

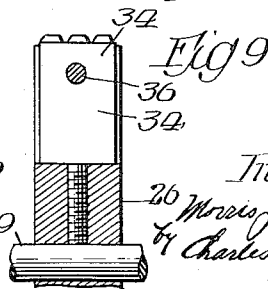
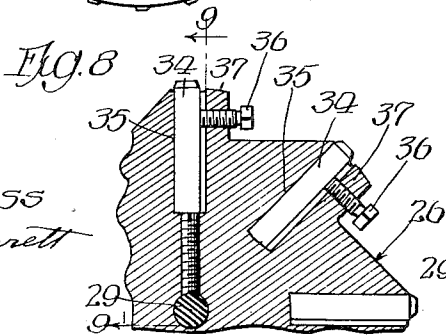
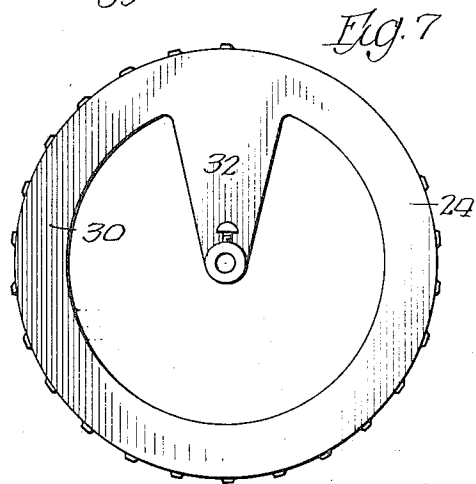
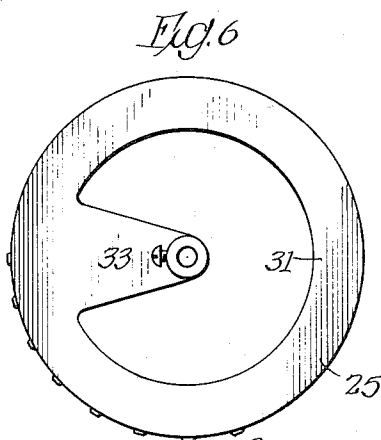
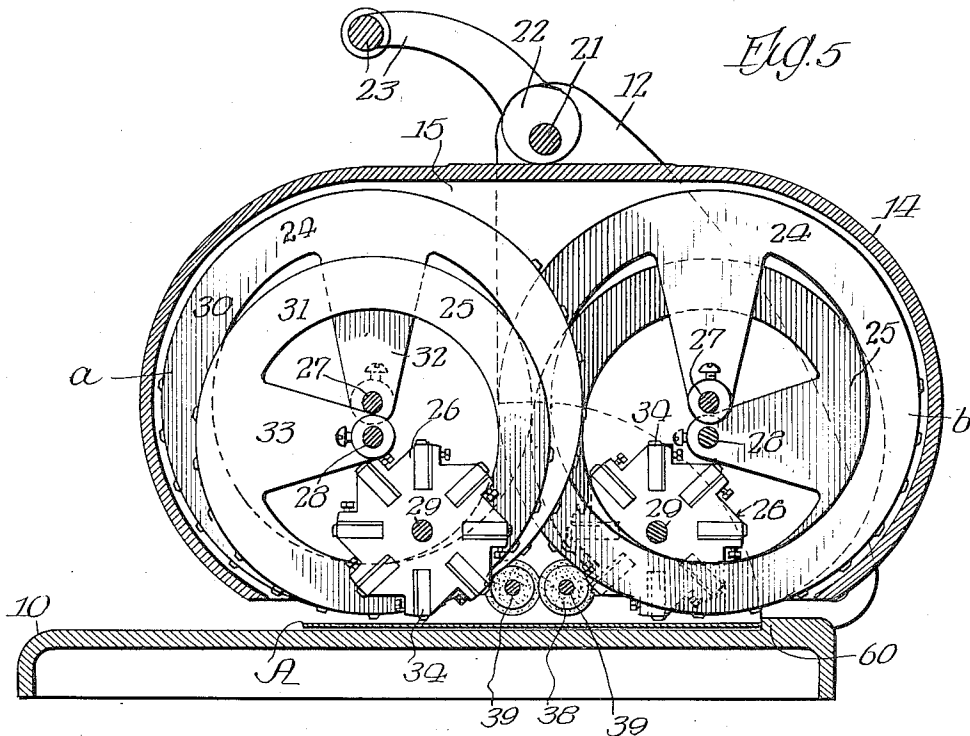
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3 SHEETS—SHEET 3.



Witness
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UNITED STATES PATENT OFFICE.

MORRIS J. HOFFMAN, OF CHICAGO, ILLINOIS.

COUPON-TICKET-PRINTING MACHINE AND REGISTER.

1,210,071.

Specification of Letters Patent.

Patented Dec. 26, 1916.

Application filed June 28, 1916. Serial No. 106,290.

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 and Registers, of which the following is declared to be a full, clear, and exact description.

This invention relates to coupon-ticket printing machines and registers, and its principal object is to provide an apparatus of simple, substantial and efficient construction for printing information on coupon-tickets such as are used for keeping account of wages to be paid workmen for piece work—information such for instance as the prices to be paid the operatives for work on the material or materials to which the coupons have reference—and also to print the quantity or number of pieces or articles to which the coupon has reference, and in addition thereto to print the total value of the prices registered on the ticket, as well as the number of articles represented by the ticket.

It is well-known that with many classes of work, for instance the manufacture of garments, knitted wear, gloves, etc., a coupon-ticket is employed for keeping an account of the article or the number of articles operated on as well as the prices to be paid the operatives for their respective work upon the article or articles. For instance in making a coat, a ticket, made up of a large number of detachable coupons, each one designating a certain operative's work upon the coat, is attached to the cloth comprising the coat and each operative, who performs work on the garment, tears off the coupon designated for him, retains it and turns it in at the end of the day's work or at the end of certain predetermined intervals, and receives credit or pay for it. On each coupon is written or printed the price to be paid to the particular operative for whom the coupon is designated. Whenever the articles are given to the workmen in lots as for instance in dozens or in fractions of dozens or multiples of ten, the price to be paid for the work as well as the quantity must be written on each coupon, and when there are as many as 25 to 50 coupons included in one ticket, it is an irksome and tedious task, as well as one requiring great painstaking to write or typewrite the prices

and amounts on each of the coupons comprising the ticket.

The present invention has been devised to provide a machine by which the prices and amounts may be printed on each coupon of the ticket with one operation of the machine, thus saving a great deal of time and labor, and obtaining absolute accuracy.

Another object is to provide a machine having means whereby the prices and quantity amounts may be readily and quickly changed to correspond with various predetermined prices and quantity amounts.

Other objects and advantages will readily appear in the following specification, and with all of the said objects and advantages in view, this invention consists in an apparatus having type carriers bearing characters arranged around their peripheries, said type carriers being arranged to print in two separate lines; the invention further consists in means for rotating said type carriers to present the desired characters at the printing position; the invention further consists in an apparatus having type carriers arranged to print in at least two lines, combined with mechanism for printing the total amount printed by the type carriers at any given time upon a strip of paper; the invention further consists in the various novel features of construction, and arrangement and combination of parts hereinafter fully set forth and claimed.

The invention is clearly illustrated in the drawings accompanying this specification, in which:—

Figure 1, is an end elevation of a coupon-ticket printing machine and register, embodying a simple form of the present invention; Fig. 2, is an end view thereof looking at the opposite end of the machine; Fig. 3, is a view partly in front elevation looking in the direction of the arrow 3, in Fig. 1, and partly in vertical, longitudinal section showing the interior construction of the machine; Fig. 4, is a horizontal section of a fragment of a machine taken on the line 4—4 of Fig. 1; Fig. 5, is a vertical cross-section taken on the line 5—5 of Fig. 3; Fig. 6, is a side elevation of one of the type wheels; Fig. 7, is a side elevation of another of the type wheels; Fig. 8, is a vertical, longitudinal section through a fragment of a third form of type wheel, and Fig. 9, is a vertical cross-section taken on the line 9—9 of Fig. 8.

Referring to said drawings, 10, designates a base plate or table upon which are mounted the operating parts of the apparatus. Extending up from said base plate 10, are two frame members 11, 12, which in the preferred form of the invention are hinged to the base plate as at 13, and locked thereto by a lock 14^a, (see Fig. 1). In the preferred form of the invention, the frame member 12, is cut away along the greater portion of its under side as seen in Fig. 2, to permit of the insertion of a coupon-ticket whose length is greater than the length of the machine. Guided to move vertically in said frame members 11, 12, is a casing 14, which contains the various type carriers and other parts of the device. In the preferred form of the invention, said casing is provided upon its end walls 15, with parallel sided lugs 16, that are slidably secured in guideways 17, formed on the inner faces of the frame members 11, 12. The lugs 16, rest upon coiled compression springs 18, which are confined in the guideways 17, and encircle pins 19, that are secured in the frame members 11, 12, and extend up into sockets 20, formed in the lugs 16; said springs act to yieldingly support the casing and parts contained therein, and means are employed for pressing down the casing and therewith the type carriers to print impressions upon the coupon-ticket and record strip, and said means is here shown to comprise a shaft 21, journaled in the upper ends of the frame members 11, 12, cams or eccentrics 22, mounted on said shaft and bearing against the upper side of the casing, and a handle 23, extending up from said eccentrics. The arrangement and shape of the eccentrics is such that when the handle 23, is pressed down, the major axes of the eccentrics swing down toward the top of the casing, whereby the eccentrics force the casing and therewith the type carriers in a downward direction. The lower side of the casing is open as clearly illustrated in Figs. 3 and 5, and the type carriers protrude below said open end. In the preferred form of the present invention there are groups of type carriers here shown in the form of type wheels, one group for each coupon, there being three wheels, 24, 25 and 26, in each group of which the type wheels 24, 25, have type characters disposed on their peripheries designating tens and units, which refer to the number of articles accompanying each ticket, and the type wheels 26, have type characters disposed around their peripheries which designate the prices to be printed on the coupons, or in other words the value of the operator's time for work done by him on the articles. In the machine shown, there are two sets of type wheels, designated by the letters, *a*, *b*, which are duplicates of each other, the one set being arranged on one

side of the longitudinal axis of the machine, and the other set being arranged on the other side thereof, and spaced apart a sufficient distance to print on two rows of spaced oppositely disposed coupons which form the complete ticket designated by the reference letter A. Only one set of type wheels will be described in detail, but it is to be understood that such description applies to both sets inasmuch as they are duplicates of each other and merely placed in reversed arrangement on the other side of the machine.

The type wheels 24, are rigidly secured upon a lengthwise extending shaft 27, journaled in the end walls 15, of the casing; the type wheels 25, are fixedly secured upon a shaft 28, journaled in said end walls, and the type wheels 26, are fixedly secured upon a shaft 29, journaled in said end walls. The type wheels of each group are placed side by side and close together in order that the type of each group may print upon a coupon which is only about one-half an inch in width, although of course this may be varied to suit different requirements, and the groups are placed contiguous to each other because the coupons are contiguous and spaced from each other by rows of perforations. The shaft 28, is placed below the shaft 27, and the shaft 29, is placed below the shaft 28, and to one side thereof as clearly seen in Fig. 5, all three shafts being contained within the peripheries of the type wheels 24, 25. It is also to be noticed that the type wheel 25, is somewhat less in diameter than the type wheel 24, and that the type wheel 26, is of still less diameter than either of the type wheels 24, 25, but that the bottoms thereof lie in one and the same place. The type wheels 24, 25, may be in the form of rings or annular bands 30, 31, each connected with its shaft by a single spoke, numbered respectively 32, 33, whereas the type wheel 26, may comprise a disk, although it is preferred to notch the disk in radial directions for the reception of removable type 34, as clearly indicated in Figs. 8 and 9. By providing the type wheels 24, 25, with single spokes, it is possible to arrange said type wheels in alinement so that the type thereof print in a straight line, and it is also possible to rotate all of the type wheels 24, in unison without disturbing the locations of the type wheels 25, and vice versa; it is also possible to rotate both series of type wheels 24, 25, without disturbing the location of the type wheels 26, and vice versa; in other words, the type wheels 24, of the left hand set, as viewed in Fig. 5, may be rotated to the right until the single spokes 32, thereof strike the shaft 29, and said type wheels 24, may also be rotated toward the left until the single spokes 32, thereof strike the shaft 28. The type wheels

25, may be moved toward the left from the position seen in Fig. 5, until the spokes 33, thereof strike against the shaft 29.

The type wheels 26, are preferably provided with removable type 34, as above stated, and each type may have at least three type characters thereon, if so desired, to indicate price in cents and in fractions of cents; said type 34, are placed in radially extending notches 35, formed in the type wheels 26, and securely held in said notches by set screws 36, that are threaded in lugs 37, formed by making right angle notches in the peripheries of said type wheels 26, as clearly indicated in Fig. 8. By loosening any screw 36, the type held thereby may be removed from the type wheel and replaced by type bearing characters of other denominations.

Inking rolls 38, (see Fig. 5) are provided for inking the type of the several type wheels of both sets, and said inking rolls may comprise ink pads saturated with ink and mounted upon shafts 39, journaled in the end walls 15, of the casing. Obviously other forms of inking mechanism may be applied to the type wheels in accordance with the common and well-known methods of inking type or producing impressions with the use of type.

A separate group of type wheels 24^a, 25^a, 26^a, is rigidly mounted upon the shafts 27, 28, 29, respectively, and said type wheels are similar in all essentials to type wheels 24, 25, 26, except that the characters on the type wheels 24^a, 25^a, represent the totals of the characters on the type wheels 24, 25. That is to say, the total of any alined series of characters on the type wheels 24, 25, is represented by the characters in alinement therewith on the type wheels 24^a, 25^a. The characters on the type wheel 26^a, which represent the quantity or number of articles accompanying the ticket, are the same as the characters in alinement therewith on the type wheels 26.

The shafts 27, 27; 28, 28; 29, 29, are arranged in pairs and are operatively connected together so that when one of said shafts 27, 27 or 28, 28, or 29, 29, is rotated or turned, the other one of the pair will be correspondingly turned. The simple means here shown, comprises pinions 40, mounted on said shafts 27, 28, 29, and the pinions of the corresponding shafts to rotate in unison are connected by rack bars 41, guided in brackets 42, mounted upon the adjacent end wall 15. Means are provided for reciprocating said racks, and as here shown said means may comprise type wheel adjusting members in the form of hand wheels 43, 44, 45, rigidly mounted upon the ends of the shafts 27, 28, 29, which in this instance project through the adjacent end wall; said hand wheels are preferably provided with

indicating characters which correspond with the type characters on the type carriers, and pointers 46, 47, 48, are secured to the end wall adjacent said hand wheels and assist in determining the locations of the type of the various type wheels, so that the user may turn said hand wheels and bring the desired type into printing position.

The registering mechanism for recording the total value of the coupons printed upon, and the quantity or numbers of articles represented by the entire ticket, may comprise a strip of paper 50, wound around spools 51, 52, which are removably supported on shafts 53, 54, detachably secured in brackets 55, 56, extending up from the base plate or table 10. The strip of paper and spools are located under the type wheels 24^a, 25^a, 26^a, and receive impressions therefrom each time that the handle 23, is pressed down to bring the type into contact with the ticket. Coupled with the spool 51, is a ratchet wheel 57, which is engaged by a spring pressed pawl 58, carried by the casing; the pawl acts to partially turn the ratchet wheel 57, and therewith the spool 51, each time the casing moves in an upward direction, thus winding up a small portion of the strip to leave a fresh space to be printed upon the next time the type wheels are depressed.

Adjacent the last of the groups of type wheels 24, 25, 26, the base or table is formed with a transversely extending shoulder or abutment place 59, which acts as a guide for aiding in positioning tickets under the type wheels, and a longitudinally extending shoulder 60, (see Fig. 5) is formed at the rear edge of the base plate, which acts as a guide for the long edge of the ticket. There is sufficient space, however, between the top of the shoulder portion 60, and the bottom of type wheels to permit the ticket to be pushed through the machine, which is important where a ticket having more than two rows of coupons is employed.

The type characters borne by the peripheries of the type wheels 24, may comprise the Figs. 1 to 10 inclusive, and in addition thereto letters of the alphabet may be added if so desired. The characters borne by the type wheels 25, may comprise fractions of numerals or whole numbers arranged in consecutive order, and the characters borne by the type wheels 26, may be arbitrarily fixed to designate predetermined prices in dollars or cents and fractions thereof, or other suitable denominations. It is to be understood that in printing certain kinds of coupon tickets, the type characters in each row of the wheels 24, are similar, and those in each row of the wheels 25, are similar, since the number of articles accompanied by each ticket remains the same for that ticket. The prices contained on the type wheels 26, vary, however, and are arbitrarily

fixed by the user of the machine; they represent the value or price for doing each class of work designated by each particular coupon. For instance, the wheels 24, 25, may be set to print "9-6", indicating that there are $9\frac{1}{2}$ dozens of articles in the group accompanied by a particular ticket, and the wheels 26, may be set so that the predetermined price for performing each particular operation on the $9\frac{1}{2}$ dozens of articles is printed on each coupon. Each row of type in the type wheels 26, prints the prices for performing work, and that price is arbitrarily fixed in accordance with the value of the service performed by the person doing the particular work designated by a coupon. The type wheels 26, have several rows of type characters because there may be several grades or scales of prices, or the prices are necessarily changed when different kinds of articles are worked on.

In the operation of the machine, a coupon ticket is used which has coupons along its two side edges, separated by rows of perforations and bearing certain printed matter indicating the class of work belonging to each coupon. The coupons have spaces adjacent certain printed data as for instance "price" and "quantity" arranged in two lines along each row of coupons which spaces register with the lowermost type of the type wheels, and in printing a ticket, the ticket is inserted from the front of the machine and moved up against the guide shoulders 59, 60, where it is positioned in place underneath the type wheels. The handle 23, is thereupon depressed which causes a resulting downward movement of the casing and type wheels, the lowermost type of the type wheels printing the several values and amounts upon the coupons at the proper places and also upon the record strip. It is understood that the type wheels should be rotated occasionally to bring the type which are used in printing into contact with the inking rolls so as to receive ink therefrom. In case it is desired to print a subsequent ticket, where the quantity or amount of articles is the same, but that the values have a different grade, the type wheels 26, are turned to bring the type thereof to correspond with the other grade into printing position.

When the handle 23, is released the springs 18, raise the casing and type wheels to their uppermost position and at the same time the pawl 58, turns the ratchet wheel 57, and therewith the spool 51, thus winding up a small part of the paper strip 50, to leave a new space for the total amount types to print upon at a subsequent operation of the press.

The type on the type wheels 24, 25, are not changeable since they simply represent whole numbers and fractions of units and

tens, but the type 34, of the type wheel 26, are removable in case it becomes necessary to change the amounts to correspond with the values of the work done upon any particular article.

To change the type on the wheel 26, the lock 14^a, is unlocked, the frame members, and therewith the casing and type wheels swung upward to expose the type wheels 26; any type thereof may now be removed by loosening its screw 36, and replaced by a different type; the screw 36, is then tightened against the type.

The total amounts printed on the record strip when added together, should agree with the total cost of work performed on the articles for which tickets have been issued, and should also indicate the total number of articles. In this manner, a perfect account may be kept of the cost of work performed on the articles.

It is perfectly obvious that the device may be constructed with only one set of type carriers, and such a machine will serve to print coupon tickets having a single row of coupons, or it may serve to print a double row coupon ticket by printing one row first and thereupon printing the other row.

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

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

1. In a machine of the class described, series of rotatory type carriers arranged in groups, side by side, there being at least two type carriers in each group, and each having type characters thereon, and the type carriers of each series being in alinement and eccentrically disposed with respect to those of the other series, and means for independently bringing the type characters of each series into printing position in alinement with each other.

2. In a machine of the class described, series of rotatory type carriers having type characters disposed on their peripheries, shafts one supporting each series of type carriers, the one shaft being arranged eccentric with respect to the other, and located within the periphery of the other series of type carriers, and means for independently turning said type carriers of each series to bring the characters thereof into printing position in alinement with each other.

3. In a machine of the class described, adjacent groups of rotatory type carriers, each bearing type characters on its periphery, and there being three type carriers of

differing radii in each group, shafts carrying said type carriers, each shaft carrying type carriers having the same radii, two of said shafts being in vertical alinement, and the third shaft being disposed at one side of said other shafts and below the same, and means for independently turning said shafts to bring certain type characters of all the type carriers into printing position with the type characters of two carriers of each group in alinement and the type characters of the third type carrier of each group in alinement, but in a line disposed to one side of the first mentioned line.

riers to bring the type characters thereof into printing position, means for bringing the type characters into contact with the object to be printed upon, and means for raising the type carriers therefrom.

4. In a machine of the class described, a plurality of groups of rotatory type carriers, each type carrier bearing type characters on its periphery, shafts carrying said type carriers, the one shaft being eccentrically disposed with respect to the other, but contained within the periphery of the type carriers carried by said other shaft, means for turning said type carriers to present the type characters in printing position in at least two closely spaced separate lines, and means for pressing said type characters against an object to be printed upon.

8. In a machine of the class described, the combination of a base plate, frame members hingedly secured thereto, a casing slidably mounted in said frame members, means for moving said casing toward and away from the base plate, rotatively mounted type carriers contained in said casing, said type carriers having type characters on their peripheries, and being arranged in contiguous groups arranged to print in two closely spaced lines, the distance between said lines being less than the radius of any of said type carriers, each type carrier of each group being operatively connected with a corresponding type carrier of the other groups, whereby they rotate in unison, and means for adjusting said type carriers to bring the characters thereof into printing position.

5. In a machine of the class described, a plurality of contiguous groups of rotatory type carriers, each type carrier bearing type characters on its periphery, and at least one type carrier of each group being of less radius than another type carrier of said group, shafts, one for the type carriers having the same radii, all of said shafts being located within the periphery of the type carriers having the largest radius, and an indicating dial for each shaft whereby the type carriers may be adjusted to present the desired type characters in printing position.

9. In a machine of the class described, the combination of a base plate, frame members extending up therefrom, a casing slidably mounted in said frame members, means for moving said casing toward the base plate, springs for retracting said casing, a plurality of type carriers rotatively mounted in said casing, said type carriers having type characters disposed on their peripheries and being arranged in contiguous groups, those of each group having at least three different radii, shafts for said type carriers located within the peripheries of the type carriers having the greatest radii, and means for bringing the type characters of said type carriers into printing position in at least two closely spaced lines.

6. In a machine of the class described, a plurality of contiguous groups of rotatory type carriers, each bearing type characters on its periphery, there being at least three type carriers in each group, and those of each group having at least three different radii, shafts, one for the type carriers having the same radii, two of said shafts being arranged in vertical alinement, and the third one disposed below and to one side of said other shafts, all of said shafts being contained within the periphery of the type carriers having the largest radius, all of the type carriers being arranged to print upon a flat surface, and means for adjusting said type carriers to bring the desired characters thereof into printing position in at least two closely spaced lines.

10. In a machine of the class described, the combination of two sets of rotatory type carriers placed side by side, each set consisting of contiguous groups of type carriers, all of said type carriers having type characters disposed around their peripheries, each group of type carriers comprising at least two eccentrically disposed type carriers, one of less radius than the other and both arranged to print on a flat surface, shafts for the type carriers of each series, the shafts of the corresponding type carriers of both series being geared to rotate in unison and setting mechanism for said type carriers.

7. In a machine of the class described, the combination of contiguous groups of rotatory type carriers, the type carriers of each group being arranged to print in two closely spaced lines, the distance between said lines being less than the radius of any of the type carriers, means for adjusting said type car-

11. In a machine of the class described, at least two eccentrically disposed series of rotatory type carriers arranged in adjacent groups and having type characters disposed around their peripheries, one series of type carriers being of less radius than the other, and having a shaft extending through arc shaped openings in the other series, whereby any of the type characters of one series and

any of the other series may stand in the same plane, and setting mechanism for said type carriers.

12. In a machine of the class described, 5
a group of type carriers, comprising a plurality of eccentrically disposed type wheels of different radii having type characters disposed on their peripheries and arranged to print in two closely spaced lines in a single 10
plane, the axes of rotation of said type wheels being located within the periphery of type wheel having the longest radius, a casing supporting said type characters, a base upon which said casing is mounted, 15
spools mounted on said base and having a record strip wound thereon, and actuating means operating to intermittently rotate one of said spools to wind the strip thereon.

13. In a machine of the class described, 20
a group of rotatory, circular type carriers placed side by side, each type carrier having a different radius than the others, and the axes of rotation of all being confined within the periphery of the one having the longest 25
radius, all having type characters disposed around their peripheries any of which may be brought into printing position, and setting mechanism for said type carriers.

14. In a machine of the class described, 30
a plurality of adjacent groups of rotatory, circular type carriers, each group comprising at least two type carriers having different radii, all having type characters disposed around their peripheries, any of which 35
may be brought into printing position, shafts for the type carriers having the same radii, the type carriers being fixedly secured to said shafts, and the shafts being located within the peripheries of the type carriers 40
having the longest radii, a support for said shafts, and setting mechanism for said type carriers.

15. In a machine of the class described, 45
a plurality of series of rotatory type carriers arranged in groups side by side, there being at least two type carriers in each group and each having type characters thereon, the type carriers of each series being co-axial

and eccentrically disposed with respect to those of the other series, and setting means 50
for each series operating independently of the others.

16. In a machine of the class described, the combination of two sets of rotatory type carriers placed side by side, each set consisting of series of type carriers arranged in adjacent groups, all of the type carriers having type characters disposed around their peripheries, each group of type carriers comprising at least two eccentrically disposed 60
type carriers, shafts, one for each series of type carriers, operative connections between the corresponding shafts of each set and setting mechanism for each series of one set, operating in conjunction with said operative connections to set the corresponding 65
type carriers of any two corresponding series.

17. In a machine of the class described, series of rotatory type carriers arranged in 70
groups, side by side, there being at least two type carriers in each group and each having type characters thereon, eccentrically disposed shafts, one for the type carriers of each series the type carriers being secured 75
to their shafts, whereby they move in unison, and setting means for each series of type carriers located at one end of the machine whereby all the type carriers of any series may be manipulated simultaneously from 80
one end of the machine to bring characters thereon into printing position.

18. In a machine of the class described, series of rotatory type carriers arranged in groups side by side, there being at least two 85
type carriers in each group and each type carrier having type characters thereon, eccentrically disposed, closely spaced shafts, one for each series of type carriers, said type carriers being secured to their shafts, 90
and setting means for each series of type carriers, whereby all of the type carriers of any series can be manipulated simultaneously to bring characters thereon into printing position.

MORRIS J. HOFFMAN.