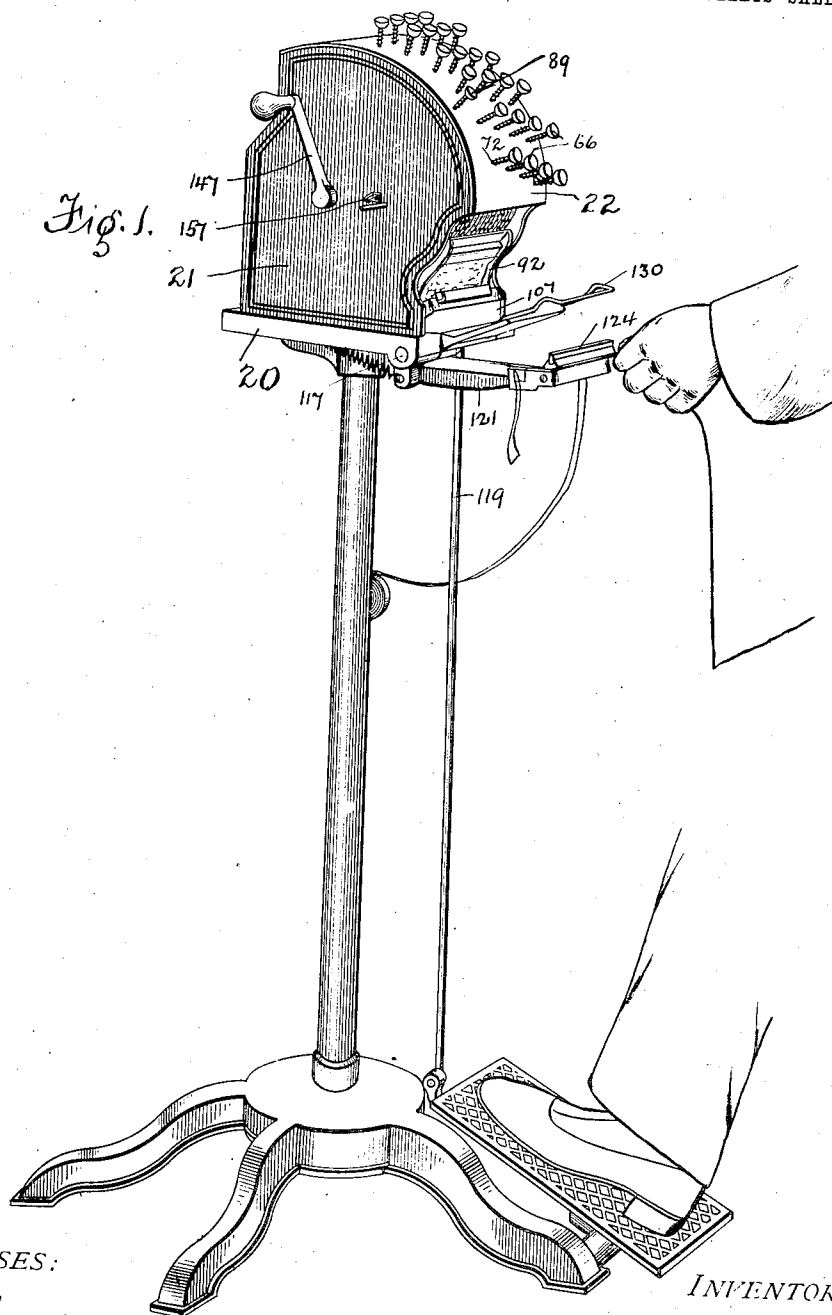


908,673.

T. J. HUME.
LAUNDRY MARKING MACHINE.
APPLICATION FILED APR. 1, 1907.

Patented Jan. 5, 1909.

6 SHEETS—SHEET 1.



WITNESSES:

C. Walker,
H. J. Doyle.

INVENTOR

By

T. J. Hume
C. W. Harrison
Attorney

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6 SHEETS—SHEET 2.

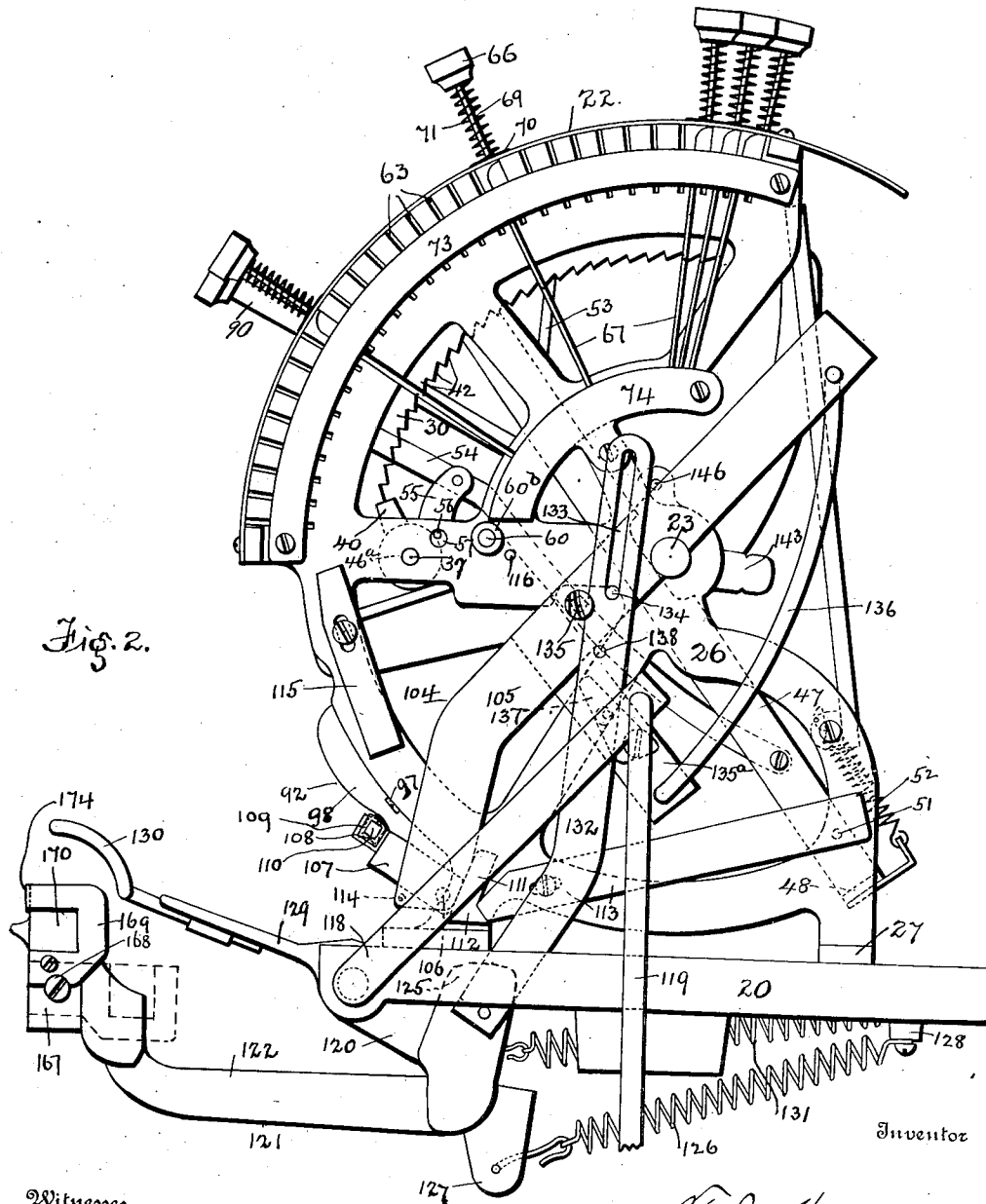


Fig. 2.

Witnesses

C. M. Walker.

H. J. Anderson.

By

T. J. Hume

A. W. Harrison

Attorney

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6 SHEETS—SHEET 3.

Fig. 3.

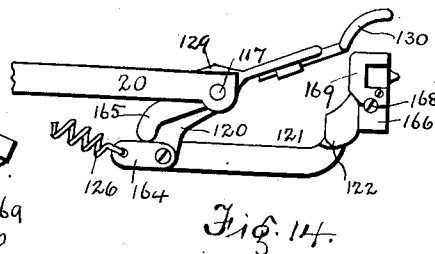
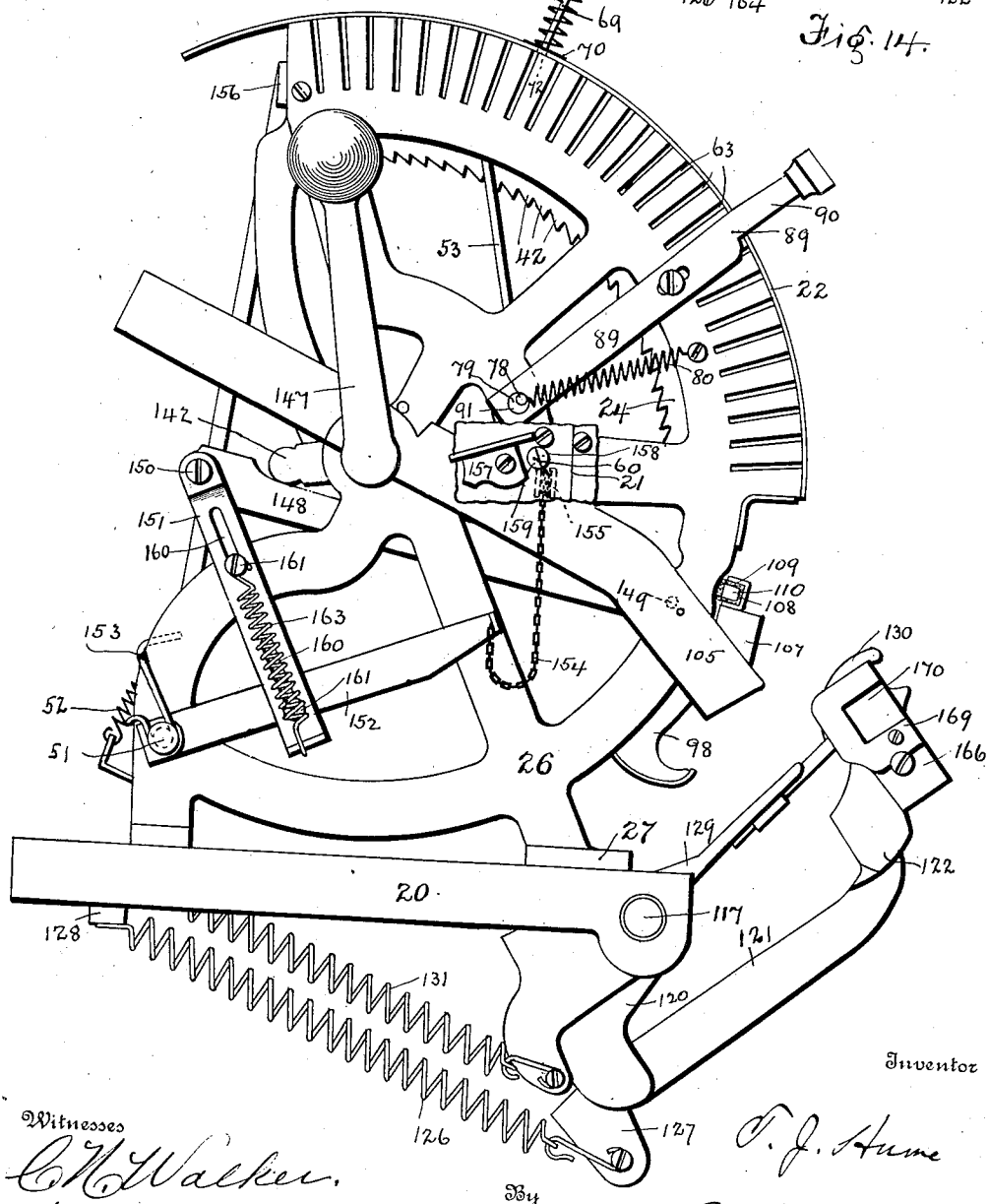


Fig. 14.



Inventor

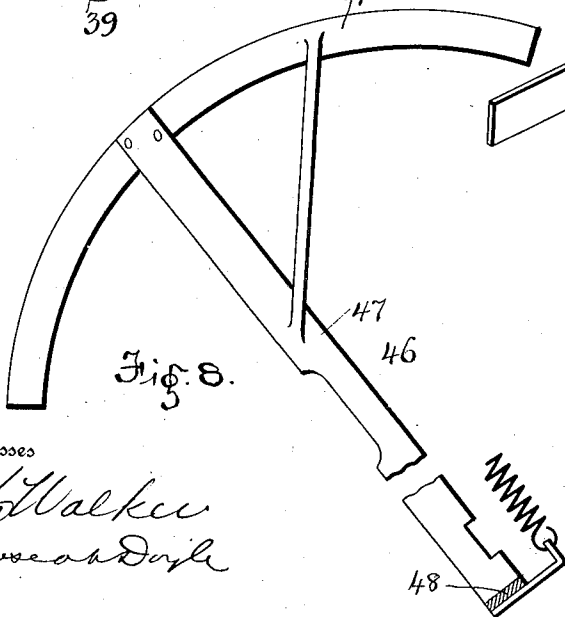
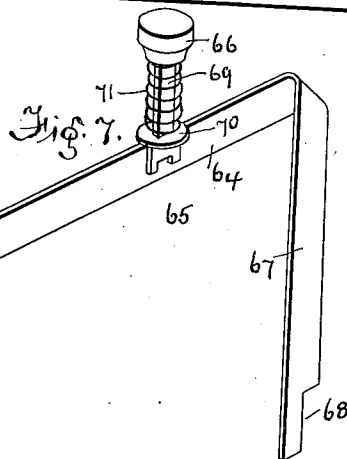
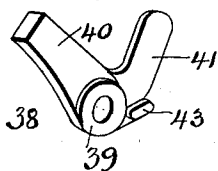
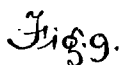
T. J. Hume

Attorney

Witnesses
C. M. Walker.
H. J. ...

T. J. HUME.
LAUNDRY MARKING MACHINE.
APPLICATION FILED APR. 1, 1907.

Fig. 4



Inventor

E. J. Hume

by *A. W. Harrison*
Attorney

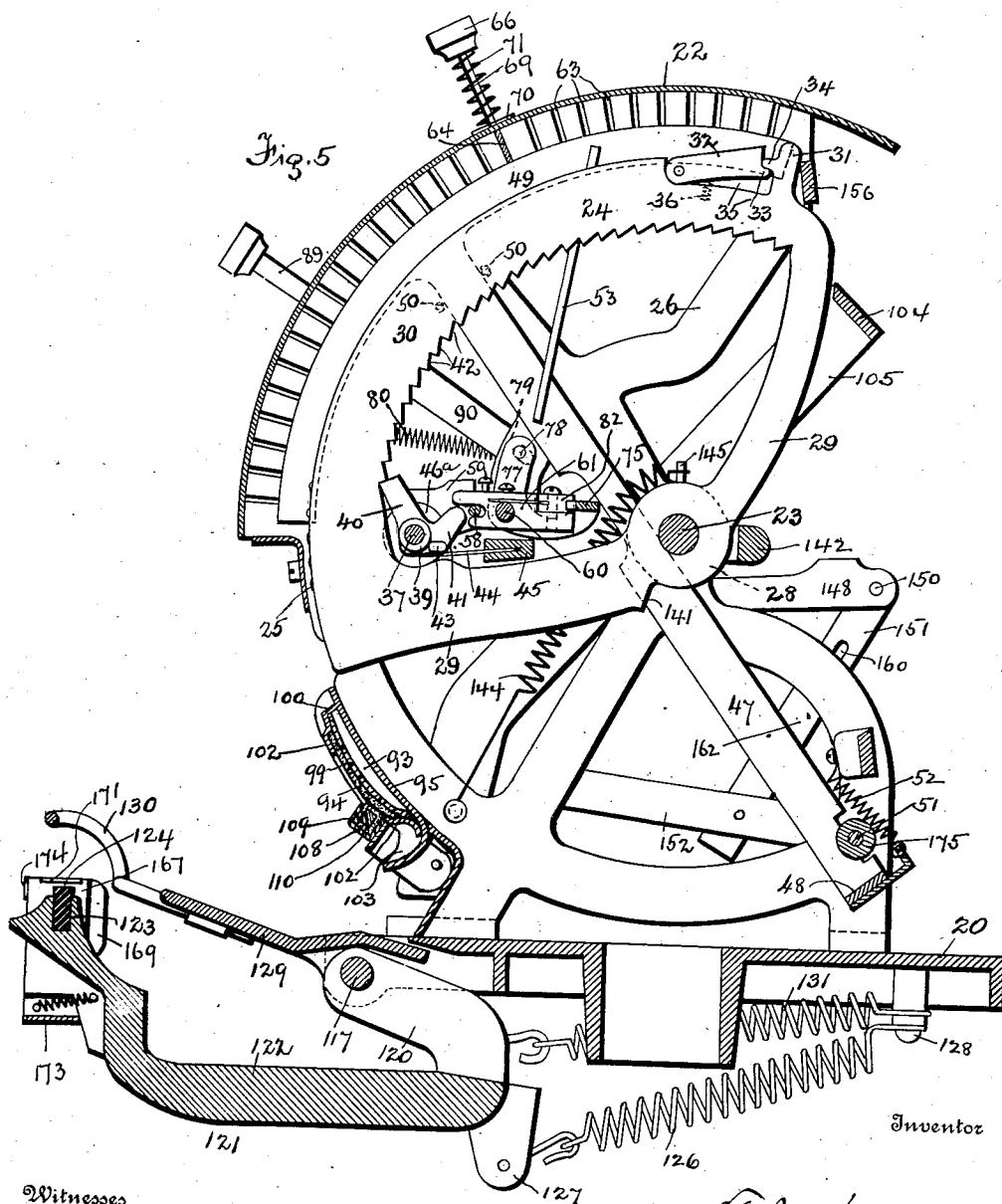
Witnesses

C. H. Walker
H. June and Doyle

908,673.

T. J. HUME.
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Patented Jan. 5, 1909.
6 SHEETS—SHEET 5.



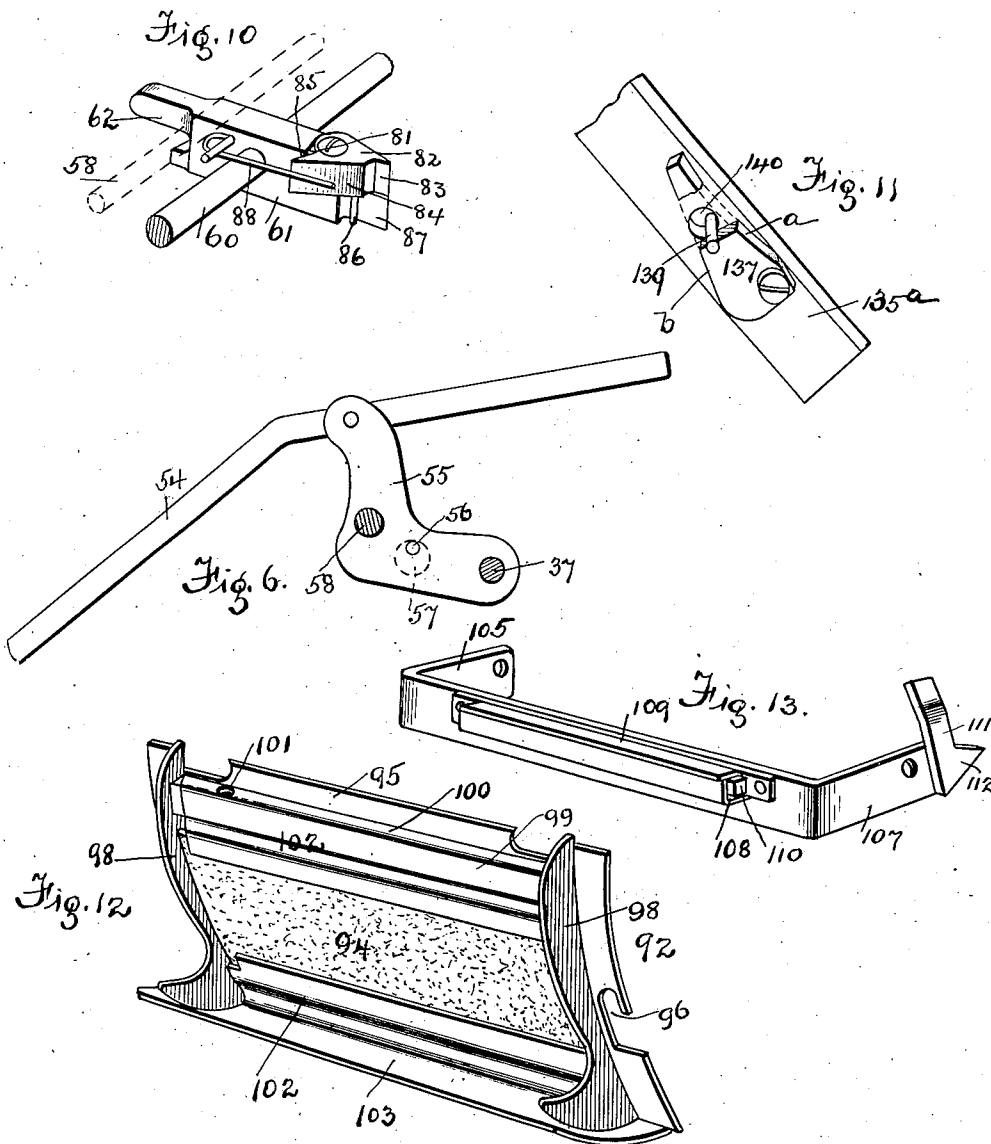
Witnesses
C. M. Walker
H. Joseph Doyle

T. J. Hume
C. W. Harrison
Attorney

908,673.

T. J. HUME.
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APPLICATION FILED APR. 1, 1907.

Patented Jan. 5, 1909.
6 SHEETS—SHEET 6.



WITNESSES:

C. M. Walker
H. Joseph Dodge

INVENTOR

BY

T. J. Hume
C. M. Harrison
Attorney

UNITED STATES PATENT OFFICE.

THOMAS J. HUME, OF KANSAS CITY, KANSAS, ASSIGNOR TO HUME MANUFACTURING CO., OF KANSAS CITY, KANSAS.

LAUNDRY-MARKING MACHINE.

No. 908,673.

Specification of Letters Patent.

Patented Jan. 5, 1909.

Application filed April 1, 1907. Serial No. 365,779.

To all whom it may concern:

Be it known that I, THOMAS J. HUME, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Laundry-Marking Machines, of which the following is a specification.

This invention relates to printing-machines, and has for its object particularly to provide a machine whereby laundrymen may indelibly print or mark symbols or names of their customers upon the goods prior to their being washed.

In the embodiment of the invention illustrated in the accompanying drawings, the machine comprises a plurality of pivotally-mounted segments bearing letters and numbers upon portions of the peripheries thereof, said segments being movable, by gravity, to bring any desired character into a predetermined position forming, with similarly positioned characters on adjoining segments, the line of printing, ready to be inked and to thereafter cause an indelible mark to be applied to the goods.

Another of the particular objects of the invention is to provide means whereby the type (meaning either letters or numerals or any symbol that may be preferred) may be set by means of finger keys bearing a suitable indicating symbol or symbols.

Another object is to provide a structure in which each finger key acts upon a segment-releasing mechanism common to all of the keys, said releasing mechanism coöperating with escapement mechanism in such manner as to release the segments successively.

Another object is to provide a structure in which the length of pivotal movement of the segment is controlled by depressed key, the segment being locked in position when the predetermined position has been reached.

Another object is to provide means for limiting the number of segments which may be used in the operation of the machine.

Another object is the provision of an inking mechanism which is positive in its action and which has its movements timed and positively actuated in such manner as to prevent any liability of the material contacting therewith during the printing operation.

Another object is the provision of a platen

for the material which may be used to carry either separate articles of laundry or a tape structure to the printing line.

Another object of the invention is to provide a machine of this character in which the type segments may be quickly returned to normal position after as many impressions of a given alinement as may be desired have been made upon the goods.

Another object of the invention is to provide a machine of this character in which a spacer may be employed so as to enable certain type-segments to be left in normal position in order to leave a blank space, such as between two names or initials or between a name and a number.

To these and other ends, the nature of which will be readily understood as the invention is hereinafter disclosed, said invention consists in the improved construction and combination of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, in which similar reference characters indicate similar parts in all of the views, Figure 1 is a perspective view of a machine embodying my invention. Fig. 2 is a view showing in elevation the mechanism on the right hand side of the machine, the side wall having been omitted. Fig. 3 is a similar view of the opposite side of the machine. Fig. 4 is a plan view partly in section. Fig. 5 is a view similar to Fig. 2, partly in section. Fig. 6 is a sectional view taken on line 6—6 of Fig. 4, looking in the direction of the arrow. Fig. 7 is a detail view of one of the key plates or bars. Fig. 8 is a detail view of a part of the U-shaped frame which forms the actuating mechanism for releasing the segments. Fig. 9 is a detail view of one of the pawls for retaining the segments in position. Fig. 10 is a detail view of the block of the escapement mechanism. Fig. 11 is a detail view showing the latch or dog forming part of the mechanism for moving the type-inking pad frame pivotally. Fig. 12 is a detail view of the ink reservoir and pad. Fig. 13 is a detail view of the frame carrying the type-inking pad. Fig. 14 is a detail view showing a modified arrangement of the material-gripping members.

20 designates a suitable base on which are mounted the two side-walls 21, through one of which the shaft 23 projects, said shaft

having the type-segments 24 loosely mounted thereon. The upper portion of the side walls is curved concentrically with the axis of the shaft 23, and mounted upon said curved portions is a plate 22 through which the key stems extend, the side walls 21 and plate 22 forming an inclosing structure for the mechanism.

The segments 24 are provided with type characters 25. In the embodiment of the invention herein disclosed, said characters include the complete alphabet, the ampersand, and the period, and also a series of numerals. The type characters are preferably arranged successively on each segment, but such arrangement may be modified as desired, it being understood, of course, that whatever the arrangement of the characters on the segments, a similar arrangement of keys must be made. I also prefer to provide two series of segments, one series having numerals alone, the other series having the letters and other characters, thereby decreasing the size of the segments as well as the number of keys required.

26 26 designates skeleton side frames having feet 27 for attachment to the base 20, suitable means, such as screws or bolts, being used for this purpose, said frames being spaced apart a distance sufficient to receive the segments 24. Suitable braces are interposed between the two frames to retain them in fixed position relative to each other. Said frames contain the bearings for the shaft 23 hereinbefore referred to.

Each segment 24 (shown in side elevation in Fig. 5) is formed with a hub portion 28 (see Fig. 4) from which extend two arms 29, the outer ends of which are connected with the segmental portion 30, the latter having on its periphery the printing characters hereinbefore referred to. The hub, arms 29 and segmental portion 30 are preferably formed integral, as shown. At the upper end of the segmental portion 30 is an outwardly-extending projection 31, and said segmental portion is also recessed, as at 35, to receive a spring-actuated pawl or detent 32, the latter being pivotally mounted and provided at its outer end with a lug 33 adapted to limit the outward movement of the pawl by contacting with a lug 34 formed on the projection 31. The pawl 32 is of such a size and form as to fit within the recess 35 when pushed inward against the action of its spring 36, in which position the outer edge of said pawl forms a substantial continuation of the periphery of the segment. When the pawl is moved outward by its spring, a space is formed between its end and the projection 31, for a purpose hereinafter referred to.

The segmental portion is of sufficient length to permit all of the desired characters to be placed on its periphery, and all of the segments used in the machine are of the same

shape and size regardless of the number of characters which may be carried by each, and all of the segments prior to the setting operation will be in aligned position. To retain the segments in such aligned position, but capable of being released to move pivotally on the shaft 23, I provide independent mechanism for each segment, which mechanism I will now describe:—

37 designates a rod which extends horizontally between the frames 26, on which rod are mounted the retaining pawls 38 shown in detail in Fig. 9. Each pawl 38 comprises a hub 39 and arms 40 and 41 extending therefrom, the arm 40 having its face formed to engage one of a series of teeth 42 formed on the inner edge of the segmental portion 30 concentrically with the outer edge or periphery of the segment which bears the printing characters 25. The arm 41 is provided with a laterally-extending lug 43, against the lower surface of which a spring 44, carried by a plate or bar 45, extends, said spring tending to retain the pawl 38 in contact with the teeth 42.

It will be readily understood that if the pawl 38 be moved pivotally to carry the arm 40 out of contact with the tooth with which it is engaged, the segment 24 is thereby made free to move pivotally, by gravity, as long as said arm 40 be held out of the path of movement of the teeth 42. If, however, the arm 40 be permitted to pass into the path of movement of the teeth, the pivotal movement of the segment will be arrested and the segment will be retained in the arrested position by the pawl 38 engaging the teeth.

Each segment is formed with a space in the rear of or behind its character bearing surface, said space being bounded by the inner toothed edge of the segmental portion 30 and the arms 29, said space receiving, or allowing room for, the releasing mechanism. The teeth 42 of the segments are directly opposite the character bearing surfaces so that the pawls 40 are not far removed from the printing characters of the segments; that is, the outer edges of the segmental portions present the character bearing surfaces while the inner edges thereof are toothed. This provides for compactness and durability, less metal and consequently less inertia and less momentum than if a complete wheel were employed. It also enables the pawl mechanism to be located inside the segments or between their character bearing surfaces, and their axis of oscillation, thus providing for compactness and accuracy.

The teeth 42 are of a size and shape, and so positioned relative to each other, as to bring the peripheral characters of the segment into a given line, the character so aligned depending upon which tooth is engaged

with the pawl 38. And when the pawl has engaged a particular tooth the segment will remain in that position until re-set, owing to the relative form of the teeth and the position of the pawl 38, but such structure will not prevent the pawl from riding freely over the teeth during a reverse or resetting movement of the segment.

To prevent liability of the pawl 38 of one segment operating on the teeth of an adjoining segment, I provide washers 46* between each hub 39, said washers spacing the pawls a sufficient distance apart to insure against such engagement. Should further protection be desired, the washers 46* may be of a size sufficient to extend outwardly between adjoining segmental portions 30.

The release of the segments 24 and the positioning thereof to present a predetermined character to the given line of printing is performed by the following mechanism:—

46 designates a U-shaped frame, the side arms 47 of which are located adjacent to the inner sides of the frames 26, and between said frames and the adjacent segments 24. The connection portion 48 of the frame 46 is located at the bottom portion of the machine. The outer free ends of the arms 47 are each connected to or formed integral with a segmental plate 49, the outer periphery of which is concentric with the plate 22 and the periphery of the segments 24, said plates 49 being of a length to permit of contact with the periphery thereof of each of the keys hereinafter described. The frame 46 extends at an angle to the vertical, and is adapted to be moved in but a single plane, the side arms 47 being guided in such movement by means of guide pins 50 located on the frames 26, the shaft 23, and the rod 51 hereinafter described, as best shown in Fig. 5. Said frame is normally held in a raised position by means of a spring 52 attached to the connection 28 and to one of the cross bars of the frames 26. A brace rod 53 (see Figs. 5 and 8) connects the side arms 47 and segmental plates 49.

Pivotally mounted on one of the side arms 47 is a connecting bar 54 (see Figs. 2 and 6), which extends forwardly a suitable distance, the forward end of said bar 54 being loosely connected with an arm 55 pivotally mounted on the rod 37, the pivotal movement of said arm 55 being limited by a pin 56 extending into a slot or opening 57 formed in the frame 26. The arm 55 is connected, by a horizontally-extending rod 58, with an arm 59 mounted on the rod 37 on the opposite side of the machine, said arms 55 and 59, with the rod 58, forming a frame pivoted on the rod 37 and adapted to receive a limited pivotal movement by a movement of the frame 46.

60 designates a rod slidably mounted in

the side frames 26, and on which is secured, as by a set screw, a block 61 (shown in detail in Fig. 10), said block having its forwardly-extending portion bifurcated as at 62, to provide a recess within which the rod 58 extends. One of the bifurcated ends of the block 61 projects over the end of the arm 41 of one of the retaining pawls, said end 62 being of a width to contact with but one of the arms 41 at any pivotal movement of the block, the block being moved across the machine as hereinafter described, to actuate the arms 41 successively. Therefore, the movement of the rod 58 relatively downward, through the action of the frame 46 and the parts operated thereby, as hereinbefore explained, will cause the block 61 to move pivotally (the rod 60 serving as a pivot) and, through the projecting end of the block 61 contacting with the arm 41, move the pawl 38 on its pivot, to release the corresponding segment and permit it to drop by gravity.

To impart a longitudinal movement to the frame 46 in a direction to release the pawl 38, I provide a series of key plates or bars, best shown in Fig. 7, which plates also serve as means for controlling the length of pivotal movement of the segments 30. The keys or push-pieces and their supports and the manner of operation will now be described.

The upper segmental portion of each of the frames 26 is provided with a series of radially-extending slots or kerfs 63, corresponding in number to the number of teeth 42. Said kerfs extend inwardly from the peripheries of the frame 26 a suitable distance and serve as guides to receive the horizontally-extending arm 64 of the key-plate 65, said arm, when in position, crossing the periphery of both segmental plates 49. The key-plate 65 is formed by folding or bending the strip of metal in such manner as to provide two arms which extend substantially at right angles to each other, the horizontally-extending arm 64 carrying the key or push-piece 66, while the vertical arm 67 has its lower end provided with a recess 68. The key or push piece 66 is connected to the arm 64 by means of a metallic strip 69, the lower end of which is secured, as by riveting or brazing, to the arm 64. The strip 69 carries a washer 70 and spring 71. The plate 22 is provided with a series of openings 72 for the passage of the strips or stems 69 of the keys. The openings 72 are preferably arranged in series of four across the machine, each series being inclined, so that keys or push-pieces which extend through the openings 72 will be seated in successive slots or kerfs 63. Therefore, when all of the keys are in position, the successive kerfs or slots 63, beginning with the uppermost, will each contain a single key-plate, the number of kerfs used depending, of

course, upon the number of keys employed. When the keys or push-pieces 66 are in position, the washer 70 and spring 71 will be located on the outer surface of the plate 22, the spring serving to retain the key in its normal position or return it to that position after being depressed by the user in the operation of the machine. To retain the plate 65 in position against a movement laterally of the machine, I provide a segmental plate or strip 73, said plate being secured to the side frame 26 between which and the plate the vertically extending arms 67 are passed. A segmental plate 74 of less size than the plate 73 is also secured to the frame 26 at a point between the plate 73 and the shaft 23, a space being formed between said plate and the frame 26 to receive the reduced lower ends of the vertical arms 67.

The keys or push-pieces each bear one or more characters, as for instance, the upper key may bear the letter "A" and the numeral "0", the second key bearing the letter "B" and the numeral "1", etc., this double arrangement of characters depending upon the arrangement of the series of segments 24, it being understood that a key will be provided for each character on the segment carrying the greatest number of characters. If but one series of segments is used or employed, the keys bear but a single character, but as heretofore stated, I prefer to employ two or more series of segments, one series for the letters and other marks and another for numerals or private marks alone, and therefore, such keys as will operate on both series, will bear a plurality of characters.

It will now be understood that when one of the keys or push-pieces is depressed by the operator, the inward movement will cause the horizontally-extending arm 64 to bear upon the plates 49 and force inward the frame 46, resulting in the pivotal movement of the pawl 38 and release of the segment which thereby becomes free to move pivotally by gravity. The inward movement of the arm 64 carries said arm to a point where it will cross the path of movement of the projection 31, so that during the pivotal movement of the segment, when the projection 31 comes into contact with the arm 64, further pivotal movement of the segment will be prevented by said arm 64. And as the key returns to its normal position under the action of its spring 71, the pawl 38 that had been moved by the inward movement of the key, will return to its position in contact with the teeth 42, the particular tooth being determined by the position of the segment when such return movement takes place, the parts being so arranged that the pawl 38 will be sufficiently engaged with a tooth prior to the disengagement of the arm 64 and projection 31, to prevent further pivotal movement of the segment. During the pivotal

movement of the segment the pawl or dent 32, when passing into contact with the arm 64, recedes into the recess 35 and permits the segment to continue its movement until contact of the arm 64 and projection 31 is had. After the pawl 32 has passed the arm 64, however, it immediately returns to its outward position, its outer edge forming a stop to prevent a return movement of the segment, such as might occur when one of the lower keys are used, in which case the pivotal movement of segment would be of considerable length with a tendency of a rebounding action taking place when the projection 31 reaches the arm 64. As, however, the arm 64 rests within the space between the projection 31 and pawl 32, the segment is practically locked against movement in either direction until the arm 64 passes out of the path of movement of the projection and pawl, at which time the further gravity movement of the segment is prevented by the pawl 38, as hereinbefore explained. From this description it will be seen that the length of movement of the segment is controlled by the position of the key which operates the frame 46. Hence, there is a requirement that the successively - arranged keys must bear characters similar to those arranged successively on the segments; otherwise the operation of a key bearing one character would result in the placing of a different character on the line of printing.

As heretofore explained, the movement of the block pivotally affects but one segment during a single movement. Hence it is necessary, in order that other segments may be manipulated, that the block be moved across the machine so as to bring the end 62 over the arm 41 of pawl 38 of the desired segment. In other words, the block must be capable of being moved to a position over any one of the arms 41. Such lateral movement is obtained by providing the rod 60 in the form of a sliding rod, and to permit of a step-by-step movement of the block across the machine, to permit the segments to be operated successively, I provide the escapement mechanism now to be described.

75 designates an escapement rack which extends across the machine in rear of the sliding rod 60, said rack being secured to or formed integral with two arms 76, the forward ends of which form bearings mounted on the rod 60. One of said arms 76 is provided with an arm 77 which projects vertically and is provided with a laterally-extending pin 78 which extends through an opening or slot 79 formed in the frame 26. A spring 80, having one end secured to the frame 26 and the other end secured to said pin 78, acts to place the frame formed by the escapement rack and the arms 76, under tension, but permitting movement of the rack on its pivot (the sliding rod 60) a distance controlled by the size

of the opening or slot 79. The cooperating mechanism for the escapement rack 75 is carried by the block 61 and is particularly shown in Fig. 10. As shown the rear of the block is recessed, as at 81, to receive the pivoted escapement member 82, having a tooth 83 and a flat side 84, the width of the member being greater than the width of the block, whereby said side 84 is located beyond the plane of the side face of the block 61. The side 84 is of a length to provide a shoulder 85 which, when the member is moved pivotally, will contact with the side of the block 61 to limit the pivotal movement in one direction. To limit the movement of the member in the other direction, I provide a pin 86 on the under surface of the member 82, said pin being adapted to contact with one of the faces of a tooth 87 formed at the rear of the block below the recess 81. A spring 88 serves to place the member 82 under tension. The rod 60 is placed under a longitudinal tension by means of a spring 60^a mounted thereon between one of the frames 26 and a collar 60^b secured at the end of the rod 60.

During the time the machine is at rest, the teeth 83 and 87 are in vertical alinement, the tooth 83 being in one of the notches formed by the teeth of the rack 75, the pin 86 preventing a movement of the member 82 to such an extent as to permit the block 61 to ride freely past the teeth of the rack 75 under the action of the spring 60^a. When one of the keys or push-pieces is depressed, the block 61 is moved pivotally, as hereinbefore described, and this movement causes the rear end of the block, with the member 82, to be moved in a vertical direction a distance sufficient to permit the tooth 83 to pass above the plane of the rack 75, this movement causing the tooth 87 of the block to pass into the notch in the rack 75 which had been occupied by the tooth 83, and thereby retain the block 61 against movement across the machine. As soon as the tooth 83 has been raised above the plane of the rack 75, the spring 88 causes the member 82 to move on its pivot until the shoulder 85 contacts with the side of the block 61, which movement is just sufficient to carry the tooth 83 to a position where it will enter the next notch of the rack 75 when the block is returned to its normal position. It is to be understood, of course, that the teeth 83 and 87 are both within the plane of the rack 75 during a portion of the pivotal movement of the block, so that the engagement of either one or both of said teeth and the teeth of the rack 75 is had at all times. Therefore, when pressure on the key has been released, and the block 61 is permitted to return to its normal position, as hereinbefore explained, the tooth 83 will enter the notch to which it has been passed prior to the passage of the tooth 87 from the preceding notch, so that when the tooth 87

has completely passed from its notch the tooth 83 will prevent any longitudinal feed movement of the rod 60 greater than that corresponding to the distance between succeeding teeth of the rack 75, the spring 60^a serving to move the rod 60 the required distance, this movement causing the member 82 to be moved pivotally until the pin 86 again comes into contact with the tooth 87. By this construction the block 61 is fed step-by-step across the machine, such feed movement carrying the bifurcated end 62 of the block 61 over the several arms 41 successively. The feed movement described, however, requires the manipulation of one of the keys or push-pieces, and as such manipulation causes a movement of a segment 24, with the resultant positioning of a character on the printing line, without the formation of a space if such space be desired in the printed name, the described manipulation or movement of the keys cannot be had when the space is to be formed, such spacing being possible only by omitting the movement of a segment or the bringing of a blank space on the segment into the line of printing. Preferably, the space is formed by feeding the block 61 without releasing a segment, and the necessary feed movement is obtained by the following construction.

A spacing key 89 which is slidably mounted on the outer side of one of the frames 26, is provided, the stem 90 of said key having an opening 91 through which the pin 78 extends. If the key 89 be depressed, the frame which includes the rack 75 will be moved pivotally in a downward direction a sufficient distance to carry the rack out of the plane of the tooth 83 and into the plane of the tooth 87, leaving the tooth 83 free to move pivotally in the manner hereinbefore described. Upon release of the key 89, the rack will return to its normal position under the action of the spring 80, whereupon the feed movement will be completed under the tension of the spring 60^a as before described.

The two feed movements just described for the block 61 produce the same result, but differ in the fact that when a segment releasing key is actuated the block is moved pivotally, the rack 75 remaining stationary, while when the spacing key is actuated, the rack 75 is moved on its pivot and the block remains stationary.

From the above description it will be understood that with all of the segments in the upper position and the sliding rod in a position where the block 61 will have its end 62 located over the arm 41 of the pawl 38 of the first segment, a pushing-in movement on one of the character-bearing keys, for instance the key bearing the letter "J", will release the pawl 38 of the first segment which will then move pivotally, by gravity, until its projection 31 contacts with the arm 64 of

that key, whereupon the segment will be set in this position upon release of the key. This operation brings the letter "J" on the face of the segment on to the printing line and feeds the block a sufficient distance to place its end 62 in position to release the second segment. If the key bearing the letter "O" is then pushed in, the second segment will be set with the letter "O" of the second segment on the printing line adjacent to the letter "J" previously set. If now the keys bearing the letters "H" and "N" be successively pushed in, the third and fourth segments will present these letters on to the printing line, thus completing the word "John". The spacing key is then operated with the resultant movement of the block 61 past the fifth segment and then the key bearing the letter forming the first letter of the next name is pushed in, operating the sixth segment and placing the letter in the printing line, but separated from the preceding word by a space represented by the width of one of the segments. The operation is continued until the name is set. If the number of letter-bearing segments is greater than the number of letters in the name to be printed, the spacing key is manipulated the necessary number of times to carry the block 61 across to the numeral-bearing segments when the number is set in the same manner as just described. As similar letters on the unset segments are necessarily in alinement across the machine, it will be understood that the key bearing one of the letters can also bear the numeral corresponding to the numeral on the unset segments which is in alinement with that letter on the letter segments. For instance, if the "5" line of numerals on the numeral segments is in alinement with the "F" line of letters on the letter segments, when all of the segments are in their uppermost or unset position, the key which will set the letter "F" will also set the numeral "5" when the numeral segments have been reached by the block 61. Under such circumstances the key may bear two characters. Where numerals are not used in the laundry mark, the block 61 is left in the position it has assumed after the last letter of the name has been set.

After the line of printing has been completed, as above described, the printing is performed by the following mechanism. Removably mounted on the front of the frames 26 below the line of printing, is a casing 92 containing an ink reservoir 93 and ink pad 94. The casing 92 is formed with a back 95 which is located out of the path of movement of the segments, said back extending laterally a sufficient distance to extend over the front of the frames, its ends being provided with suitable slots 96 for the passage of screw heads 97, the slots being arranged so that when the casing is in proper position, it

will be held from movement by having the edges of the slots 96 pass behind the heads 97. Projecting forwardly from the back 95 are two flanges 98 located near the ends of the back 95. Said flanges form the end walls of the ink reservoir 93 the remaining walls of which are formed by a front plate 99 spaced from the back 95, and a top 100, the plate 99 being preferably secured at its bottom to the back 95, the whole forming a reservoir which gradually decreases in size from its top to its bottom, the reservoir extending entirely across the back between the flanges 98. The plate 99 is perforated and the top 100 is provided with a filling opening for the ink. To the front of the plate 99 are secured two spaced longitudinally-extending guides 102 beneath which is placed a piece of felt or other material which receives ink from the reservoir through the perforations in the plate 99, said material forming the ink pad 94. The lower portion of the back 95 is brought forward and turned upwardly to form, with the flanges 98, a trough-shaped receptacle 103 which will receive any drippings, etc., which may pass from the pad.

104 designates a U-shaped frame which is pivotally mounted on the shaft 23 outside of the frames 26, the connecting portion extending around the rear of the machine. The side arms 105 of said frame are preferably formed as shown in Fig. 2, and are provided, adjacent their front ends, with pintles 106 on which is pivotally mounted a U-shaped frame 107, shown in detail in Fig. 11, said frame having a receptacle 108 extending across the outer side of the end of said frame 107, to receive the type-inking pad 109 preferably formed of a square bar 110 covered by felt or other suitable material. This construction permits of the bar being removed and changed to present a new surface to the line of printing. One of the side arms of the frame 107 is provided with a laterally-extending arm 111 having on its rear face a projection 112 which, when the frame 104 is in its lowermost position, contacts with the front end of an adjustable plate 113 mounted on the frame 26, one of the faces of said projection 112 serving as a cam to move the frame 107 pivotally when contact is made with the plate 113, and thereby bring the pad 109 into close contact with the ink pad 94, and retain it in that position. When, during the pivotal movement of the frame 104, the projection 112 is released from contact with the plate 113, the weight of the front portion of the frame 107 will cause a pivotal movement of the frame to permit the front to drop until said frame comes in contact with the pin 114 secured in the said arm 105, whereupon the relative position of the frames 104 and 107 will be preserved until the frame 104 has almost reached the limit of its upward movement, 130

at which time one end of the arm 111 will pass into contact with a plate 115 adjustably secured on the frame 26, resulting in a pivotal movement of the frame 105 to bring the face of the pad 109 into contact with the characters on the printing line. This double pivotal movement of the frame 107, by bringing the inking face of the type pad 109 into contact at but two points, serves to prevent a distribution of the ink over any surfaces other than the pad 94 and the printing line, the outward movement of the frame 107 carrying it away from any liability of being brought into contact with other parts of the machine. The movement of the frame 104 is limited in one direction by the contact of the projection 112 and plate 113 and in the other direction by a pin 116 carried by the frame 26.

The movement of the inking mechanism just described takes place during the movement of the platen presently described, and the various parts and connections for producing these movements will be described in connection with the platen movements.

117 designates a rod or shaft extending across the base of the machine, said shaft having an integral arm 118 projecting laterally therefrom to which is removably secured a connecting rod 119 leading to a suitable treadle (not shown). Mounted on the shaft 117 to have movement therewith, are two bearings 120 formed on the platen carrier 121, said carrier being formed substantially as shown in section in Fig. 5, and comprising a forwardly-extending frame 122 carried by said bearings 120, said frame having its front end elongated laterally, as shown in Fig. 4. The upper face of the elongated portion of the arm 122 is provided with a groove 123 to receive a platen 124, formed of rubber or other suitable material, the arrangement of the parts being such that an oscillatory movement of the shaft 117 will cause the platen 124 to be carried toward and from the printing line, the movement in one direction being limited by the contact of the platen or the material carried thereby with the printing line, and in the other direction by the contact of a lug 125 carried by one of the bearings 118, with the base 20. A spring 126, connected to a lug 127 formed on the frame 122 and to a lug 128 on the base 20, serves to normally retain the platen frame in its lowermost position.

To retain the material on the platen I provide a plate 129 pivotally mounted on the shaft 117, said plate extending into a recess formed in the base 20, the plate being of sufficient length to pass under the base 20, which limits the downward movement of the front of the plate. To the front of the plate 129 I removably secure a loop-shaped structure 130 (shown in Figs. 2, 4 and 5), the ends of which are adapted to cross the ends of the

platen when the latter is brought into contact therewith. The plate 129 is normally held in its lowermost position by means of a spring 131 connected to the lug 128 and to the frame of said plate. The downward movement of the front of the plate 129 is limited, as heretofore stated, and the lower limit of movement of said plate is such as to retain the loop 130 a suitable distance above the face of the platen 124. When, however, the platen is moved toward the line of printing by the treadle, the platen will, during this movement, come in contact with the loop 130, and the further movement of the platen will cause the platen and loop to move together, the loop being under the tension of the spring 131. The loop, when the platen is carried into contact with the printing line, does not contact with the character on the segments, the characters being spaced apart sufficiently to permit the front of the loop to pass between them. Upon the return movement of the platen the plate 129 will, under the action of the spring 131, accompany the platen until said plate 129 has reached its lowermost position, whereupon further movement of the platen carries it below the loop to separate the loop and platen and thereby relieve the material-gripping action provided by the contact of the loop and platen.

132 designates a lever pivotally connected to the platen frame, said lever extending upwardly through a slot formed in the base 20, and having its upper end provided with an elongated slot 133 within which a pin 134, carried by one of the side arms 105, is adapted to ride. For the purpose of retaining the lever in position against a lateral movement which would permit a disengagement of the pin 134 from slot 133, I place a headed screw 135, having a flat side, on the said arm 105 in such position that when turned with the flat side of the screw parallel with the edge of the lever said lever can be moved laterally to disengage the pin and slot, but when said screw is turned to a different position, the head will prevent such lateral movement. 135^a designates an arm projecting laterally from said side arm 105, the outer end of said arm 135^a being connected, by a brace 136, with the said arm at a point distant from the point of connection of the arm 135^a with the said arm 105, thereby preventing any relative movement of the arms 105 and 135^a. Pivotaly mounted on the arm 135^a is a latch or dog 137, of the shape shown in Fig. 2, the edges of said dog forming cam surfaces against which a pin 138, carried by the lever 132, is adapted to ride. The pivotal movement of the dog 137 is limited by a pin 139 which extends into an opening or slot 140 formed in the arm 135^a.

When the mechanism of the machine is in the position shown in Fig. 2 of the drawings, the dog 137 is in its normal position with the

pin 139 at the left of the opening or slot 140, being retained in that position by gravity. As the shaft 117 is rocked to begin the movement of the platen, the lever 132 moves downwardly until the pin 138 is brought into contact with the cam surface *a* on the right of the dog 137. Further downward movement of said lever causes the arm 135^a to move toward the left, due to the riding of the pin 135 on the surface *a*, and thereby move the frame 104 on its pivot to carry the type-inking pad to the line of printing. As this latter point is being approached, the pin 138 passes downward to a point below the line of pivot of the dog 137, whereupon the dog is moved pivotally to the opposite extreme of its movement, this latter position being reached at the time when the characters on the line of printing have been properly inked. When the pin 138 has passed off of the cam surface *a*, the frame 104 will be free to drop to its normal position, this movement taking place while the platen is being moved toward the line of printing and before reaching the line, the parts being so timed that the frame 104 has returned to its normal position before the platen or the parts carried thereby, has reached a point where the movement of these parts could be interfered with by said frame 104. After the pin 138 has passed beyond the point where it is in contact with the face *a* of the dog 137, the latter returns to its normal position and remains in such position during the downward or return movement of the frame 104; after the impression has been made, the return movement of the platen and lever 132 causes the pin 138 to ride against the face *b* of the dog 137, moving the upper end of the latter toward the right and out of the path of movement of said pin. As the pin passes above the plane of the upper end of the dog the latter returns to its normal position and ready to be again acted upon by the pin when the machine is again operated.

When the necessary number of impressions have been made and it is desired to change the name, etc., in the line of printing, the segments 24 are all returned to their upper or unset positions at a single operation, ready to be manipulated to set a new line of printing. The mechanism for doing this is as follows: As shown in Fig. 5 each segment is provided, adjacent its hub, with a shoulder 141 which lies in the path of movement of the connecting bar 142 of a yoke-frame 143 secured on the shaft 23, said bar 142, in its normal position, lying beyond the limit of the path which the shoulders 141 move in when the segments are passing from their upper to the lowermost positions which they can assume, thereby interposing no structure which will prevent the free movement of the segments in presenting any one of all of the characters carried on the periphery of the

segments. This position of the bar or the yoke frame of which it forms a part, is maintained by means of a spring 144, the lower end of which is secured to the side frame 26, while the upper end of said spring is passed upwardly and partially around one of the bearings formed on the frame 143 and connected to the pin 145 secured on said bearing, thereby placing the yoke frame under tension. A pin 146 (see Fig. 2), carried by the yoke frame and adapted to contact with a portion of the side frame 26, forms a stop to limit the movement of the yoke frame under the action of the spring 144. The outer end of the shaft 23 is provided with an operating handle 147.

148 designates a lever pivotally connected to one of the side frames 26, as at 149, and extends rearwardly to a point beyond the path of movement of the yoke frame. The rear end of said lever is pivotally connected, as at 150, to the upper end of a link 151, the lower end of which is connected to a lever 152 pivotally mounted on the rod 51. The lever 152 is held under the tension of a spring 153 coiled about the rod 51 and having one of its ends passed around the side frame 26. The front end of said lever 152 is connected, by suitable means such as a chain 154 passed over a pulley 155 in the side frame, to the block 61.

When the name and number have been set by the manipulation of the segments as hereinbefore described, the shoulders of the several segments will be found to be in different positions relative to the connecting bar 142 of the yoke frame, due to the difference in the length of movement of the segments in presenting the proper character on the line of printing, the sliding rod 60 at the same time having moved practically across the machine so that the block 61 is practically at the right of the machine. This latter movement draws upon the chain 154 and thereby moves the lever 152 on its pivot to raise the free end of said lever, and through the link 151, raises the rear end of lever 148 so as to bring its upper surface into the path of movement of the yoke frame 143. With the parts in this position, and it is desired to return the parts to a position from which they can be re-set, the handle 147 is grasped and moved rearwardly, thereby imparting a movement to the yoke frame 143. As said frame describes its path of movement, it comes in contact with the upper surface of the lever 148 which, under the pressure placed thereon by the yoke frame, is forced downwardly, resulting, by reason of the connections described, in drawing the chain 154 downward, this in turn drawing the block 61 across the machine, the tooth of the escapement member 82 riding freely over the teeth of the escapement rack 75 during such movement. As the block 61 is secured to the rod

60, this movement of the block will at the same time carry the rod 60 in the same direction and thereby place a tension on the spring 60^a. This operation places the escapement mechanism in position ready for a new setting of the first segment. The yoke frame, during its pivotal movement, also comes in contact with the shoulder 141 of those segments which have been used in the setting of the former line of printing, the time of contact depending upon the relative position of the shoulders, the movement of the yoke-frame, by reason of such contact, imparting a pivotal movement to the segments, which movement is continued until all of the segments have been moved to their normal or unset or upper positions, this movement being limited by the contact of the projections 31 with a bar 156 secured on the side frames 26. This places all of the parts in position for another setting of the segments, whereupon a release of the handle 147 will, under the action of the spring 144, cause the yoke frame 143 to resume its normal position.

When it is desired to limit the line of printing to numerals, and the machine has not been operated to return the segments to the unset position, in which case the sliding rod 60, with the escapement mechanism has completed its movement toward the right, the left end of the rod having passed within the face of the side wall 21 on the left of the machine, a stop 157, mounted on the side wall, is turned so as to extend partially across the opening 158 in the side wall through which the rod 60 passes and into the path of movement of said rod. The left end of the rod 60 is provided with a recess 158 formed by cutting away a side of the rod to form a shoulder 159 located at a suitable distance from the end of the rod. If, therefore, the stop 157 is moved to extend across the path of movement of the shoulder 159, the movement of the rod 60 toward the left of the machine will be limited by contact of the stop and shoulder, and as said stop and shoulder are relatively positioned so as to bring the tooth of the escapement member 82 into the proper tooth of the rack 75 to cause the initial setting movement to be imparted to the first segment bearing numerals, the operator is able to dispense with the manipulation of the spacing key which would be required to move the rod 60 from a position at the extreme left of the machine. While such manipulation of the spacing key imparts a rapid movement to the sliding rod 60, care would be necessary that the tooth of the escapement member be brought to the required tooth of the rack 75. By the use, however, of the stop 157, such care need not be exercised, as the proper relative positions are obtained by moving the stop in the manner indicated. As, however, the return move-

ments of the sliding rod 60 and the segments are produced by the same mechanism—the yoke frame 143—it is necessary, in order that the full movement of said yoke frame be had irrespective of the shortened movement of the sliding rod. To permit this complete movement of the yoke frame, I form the link 151 with two elongated slots 160 through which are adapted to pass screws 161 carried by a plate 162 which is mounted alongside of the link, the lower screw extending into the lever 152 and forming the pivot for the connection of the link and said lever. A spring 163 connects the upper screw 161 and the lower end of the link. This construction is such that when the lever 152 is held stationary by reason of the contact of the stop 157 and shoulder 159, the lever 148 and link 151 may continue their movement under the action of the yoke frame, the link 151 sliding on the screws 161 against the tension of the spring 163, thereby permitting the yoke frame to move the segments to their normal positions without imparting a complete movement to the sliding rod 60 so as to draw it to its position on the left of the machine. The spring 163 is of sufficiently greater tensile strength than the resistance offered by the movement of the tooth of the escapement member over the teeth of the rack 75, to cause the link connections to operate the parts without expanding the spring 163, when the stop 157 is out of the path of movement of the rod 60. And if it is desired to entirely lock the machine against a setting operation, the stop 157 is moved entirely across the opening 158, thereby preventing any movement of the rod 60 toward the left. This will not, however, prevent the return movement of the segments, the slotted yielding connection of the link 157 being of sufficient length to permit a complete movement of the yoke frame without any substantial movement of the sliding rod 60.

In Fig. 14, I have illustrated a modified form of mounting for the platen members. In this construction I have dispensed with the spring 131, the spring 126 being connected to a link 164 pivotally mounted on the carrier 121, the plate 129 having an arm 165 located above the link 164. With this construction, the movement of the platen toward the printing line causes an expansion of the spring 126 without affecting the relative position of the link 164, until the loop 130 is reached, whereupon the continued movement of the two members causes the arm 165 to contact with the upper surface of the link 164 and gradually force the latter downward and increasing the tension of the spring and places both members under a spring tension which is sufficient to retain the members in their gripping positions during the return movement of the platen until contact of the plate 129 is had with the base

20 as hereinbefore described, at which time the arm 165 will pass out of contact with the link 164, the spring then returning the platen to its normal position.

5 In view of the fact that all materials are not suitable for receiving the identification mark thereon, as where the color or the material is substantially the same as that of the ink used, or when it is not desired that the mark be placed on the article, it is desirable that the mark be applied in some other form, and this I accomplish by printing the mark on a strip of tape which can then be sewed or otherwise secured to the article.

10 In order that the tape may be readily placed in position on the platen rubber, I provide a U-shaped frame 166 having its sides 167 pivotally connected, as at 168, to the platen in substantially vertical alinement with the platen rubber. On the outer side of each of the sides 167 is mounted a resilient plate 169 having a recess 170, said recess being below the plane of recesses 171 formed in the ends of the sides 167, thereby providing clamping plates between which and the outer surface of the sides 167, the tape is passed. The frame 166 is adapted to be held in either one of two positions by means of a spring 172 secured to the connecting plate 173 of the frame and the frame of the platen. The tape, which is preferably in the form of a roll or skein (not shown), is led through the recess in one of the plates 169, between said plate and the side 167, into the recess 171 and across the top of the frame into the recess 171 of the opposite side 167, between said side and its contacting plate and out through the recess 170 of the latter plate. To permit of a ready insertion of the tape, the clamping portion of the plates 169 is formed with a lip 174 which projects outwardly beyond the edges of the side 167. When the frame is in operative position the tape is held directly over the platen rubber. By moving the frame 166 on its pivots, the tape is carried to the position shown in dotted lines in Fig. 5, this movement carrying the frame entirely out of a position where it would not interfere with the positioning of other classes of material.

To prevent a free swinging movement of any of the segments 24 should it happen that said segment would not be held by the pawl 38 during the setting operation, and thereby permit a movement of the segment to an extent which would cause it to forcibly come in contact with the pawl in a manner to damage it, I place a roller 75, preferably of wood, on the rod 51, said rod limiting the movement of the segment.

Inasmuch as I have described the operation of the several parts of the machine while proceeding with the description of the said parts and their construction, the operation of

the machine as a whole will be readily understood without further description.

Having now described my invention, one of the embodiments of which is shown in the accompanying drawings, although without attempting to point out such obvious changes as might be made without departing from the spirit of the invention and without attempting to point out all of the uses to which it may be put, what I claim is:—

1. In a marking machine, a plurality of pivotally mounted character-bearing segments having spaces, means for holding the segments against rotation, means located in said spaces for releasing individual segments, the release of a segment permitting it to move on its pivot by gravity, and a platen to support the article to be marked.

2. In a marking machine, a plurality of pivotally-mounted character-bearing segments, having spaces, means for holding the segments against rotation, means located in said spaces for controlling the length of movement of the segments pivotally, the movement of the segments being due to gravity, and a platen to support the article to be marked.

3. In a marking machine, a plurality of pivotally-mounted character-bearing segments having spaces, each segment being movable between two points by gravity, means located within said spaces whereby the length of movement between said points may be determined, and means for presenting the article to be marked at a predetermined point on the periphery of the segments which have been moved.

4. In a marking machine, a plurality of pivotally-mounted character-bearing segments having spaces, the movement in one direction being by gravity, means located in said spaces for controlling the length of gravity movement of the segments, and a platen to support the article to be marked.

5. In a marking machine, a plurality of pivotally-mounted character-bearing segments having spaces, the movement of each segment in one direction being by gravity, means located in said spaces for controlling the length of gravity movement of each segment, said means being common to all of the segments, and a platen to support the article to be marked.

6. In a marking machine, a plurality of pivotally-mounted character-bearing segments having spaces, the movement of each segment in one direction being by gravity, said movement being between predetermined points, and means located in said spaces common to all of the segments for controlling the length of movement of the segments.

7. In a marking machine, a plurality of pivotally-mounted character-bearing segments having spaces, the movement of each

segment in one direction being by gravity, means for holding the segment in either one of two positions, and means located in said spaces for releasing the segment from one of its positions to permit it to have its gravity-movement.

8. In a marking machine, a plurality of pivotally-mounted character-bearing segments having spaces, the movement of each segment in one direction being by gravity, means for holding the segment in either one of two positions, and means located in said spaces for releasing the segment from one of its positions to permit it to have its gravity-movement, said releasing means controlling the length of movement of the segment.

9. In a marking machine, a plurality of pivotally-mounted character-bearing segments having spaces, the movement of each segment in one direction being by gravity, a pawl for holding each segment in either one of two positions, and means located in said spaces for simultaneously releasing said pawl and presenting a stop for limiting the gravity movement of the segment.

10. In a marking machine, a plurality of pivotally-mounted character-bearing segments having spaces, the movement of each segment in one direction being by gravity, a pawl for retaining the segment in either one of two positions, stop devices in said spaces, and a series of push-devices operatively connected with the pawl, the movement of any one of said devices releasing the pawl and presenting one of said stop devices to limit the gravity-movement of the segment, the position of the device controlling the length of movement of the segment.

11. In a marking machine, a plurality of pivotally-mounted character-bearing segments having spaces and having their movement in one direction by gravity, and means located in said spaces for simultaneously releasing individual segments and presenting a stop to limit the amount of gravity-movement.

12. In a marking machine, a plurality of pivotally-mounted character-bearing segments having spaces, each segment having a projection, a permanent and a movable stop between which said projection is adapted to move, and means located in said spaces for retaining the segment in either one of its two positions.

13. In a marking machine, a pivotally-mounted character-bearing segment having spaces and movable in one direction by gravity, a projection carried by said segment, a plurality of stops for limiting the movement of the segment in one direction, the movement of any one of said stops into the path of movement of the projection determining the length of movement of the segment, and means located in said spaces for retaining the segment in either one of its two positions.

14. In a marking machine, a pivotally-mounted character-bearing segment, a projection carried by said segment, a stop movable into the path of movement of the projection, and means carried by the segment for preventing re-bounding upon the contact of the stop and projection.

15. In a marking machine, a pivotally-mounted character-bearing segment having a projection, a stop movable into the path of movement of the projection, and a movable abutment carried by the segment for preventing a re-bounding movement upon contact of the stop and projection.

16. In a marking machine, a pivotally-mounted character-bearing segment having a projection, and also having a movable abutment adjacent to but spaced from said projection, and a stop movable into the path of movement of said projection and adapted to limit the movement of the segment, said abutment cooperating with the stop to prevent rebounding of the segment.

17. In a marking machine, a pivotally-mounted character-bearing segment having a projection and a movable abutment adjacent to but spaced from said projection, and a stop movable into the path of movement of said abutment and projection, said abutment permitting a free movement of the segment in one direction.

18. In a marking machine, a pivotally-mounted character-bearing segment having a projection and spring-actuated movable abutment adjacent to but spaced from said projection, and a stop movable into the path of movement of said abutment and projection, said abutment yielding to permit a free movement of the segment in one direction but forming a stop against movement in the other direction.

19. In a marking machine, a pivotally-mounted character-bearing segment having a space and movable in one direction by gravity, means for retaining the segment in either one of two positions, a plurality of L-shaped push-devices, and means located in said space and operated by any one of said push-devices for releasing said retaining means, said device controlling the length of movement of the segment.

20. In a marking machine, a pivotally-mounted segment having a space and movable in one direction by gravity, means for retaining the segment in either one of two positions, a movable frame located on opposite sides of the segment, a plurality of push-pieces common to said frame, and connections intermediate said frame and the retaining means for releasing said means upon actuation of one of the push-pieces, portions of said connections being located in said space of the segment.

21. In a marking machine, a pivotally-mounted segment having a space and mov-

able in one direction by gravity, means for retaining the segment in either one of two positions, a movable frame located on opposite sides of the segment, a plurality of push-pieces each having an arm removably contacting with the frame on both sides of the segment, and connections intermediate said frame and the retaining means for releasing said means upon actuation of one of the push-pieces, portions of said connections being located in said space of the segment.

22. In a marking machine, a pivotally-mounted gravity-impelled character-bearing segment having a space, a series of teeth projecting into said space, a pawl located in said space and movable into and out of the path of movement of said teeth, and means for controlling the movement of said pawl.

23. In a marking machine, a pivotally-mounted gravity-impelled segment having a peripheral character-bearing surface, and also having a series of teeth mounted concentrically with and between the axis and peripheral surface of the segment, a spring-actuated pawl between said teeth and the axis of the segment and normally in contact with one of said teeth, and means for releasing the pawl to permit the gravity movement of the segment.

24. In a marking machine, a plurality of pivotally-mounted character-carriers movable to present a character on a predetermined line, a carrier-selecting device, means for operating said device step-by-step in one direction, and means for limiting the movement of the device in the opposite direction, whereby the number of carriers open to selection is limited.

25. In a marking machine, a plurality of pivotally-mounted character-carriers mov-

able to present a character on a predetermined line, a carrier-selecting device movable step-by-step in one direction, a stop in the path of movement of said selecting-device to limit its return movement, and a device for moving said selecting device in the return direction simultaneously with a return movement of all of the carriers, the movement of said carrier-returning device placing the carriers in unset position regardless of the length of return movement of the selecting device.

26. In a marking machine, a plurality of settable character-carriers, a swinging ink-pad, a stationary ink-pad against which said swinging pad is normally held in contact, and means for guiding the swinging pad in its swinging movements so that it will first move outwardly from the stationary pad, then rise on the pivot of its carrier, then be carried into contact with the line of printing, then be returned with similar movements in the opposite direction, whereby the distribution of ink by the swinging pad is confined to the stationary pad and the line of printing.

27. In a marking machine, a plurality of settable character-carriers, a platen frame movable toward and from the line of printing on said carriers, a platen on said frame, a tape carrying device pivotally mounted to carry the tape into and out of a position across said platen, and material-gripping means located in the path of movement of said platen.

In testimony whereof I have affixed my signature, in presence of two witnesses.

THOMAS J. HUME.

Witnesses:

J. C. HUME,

G. H. HICKS.