May 9, 1939. W. S. PETTY 2,157,497

MARKING MACHINE

Filed April 20, 1937 4 Sheets-Sheet 1

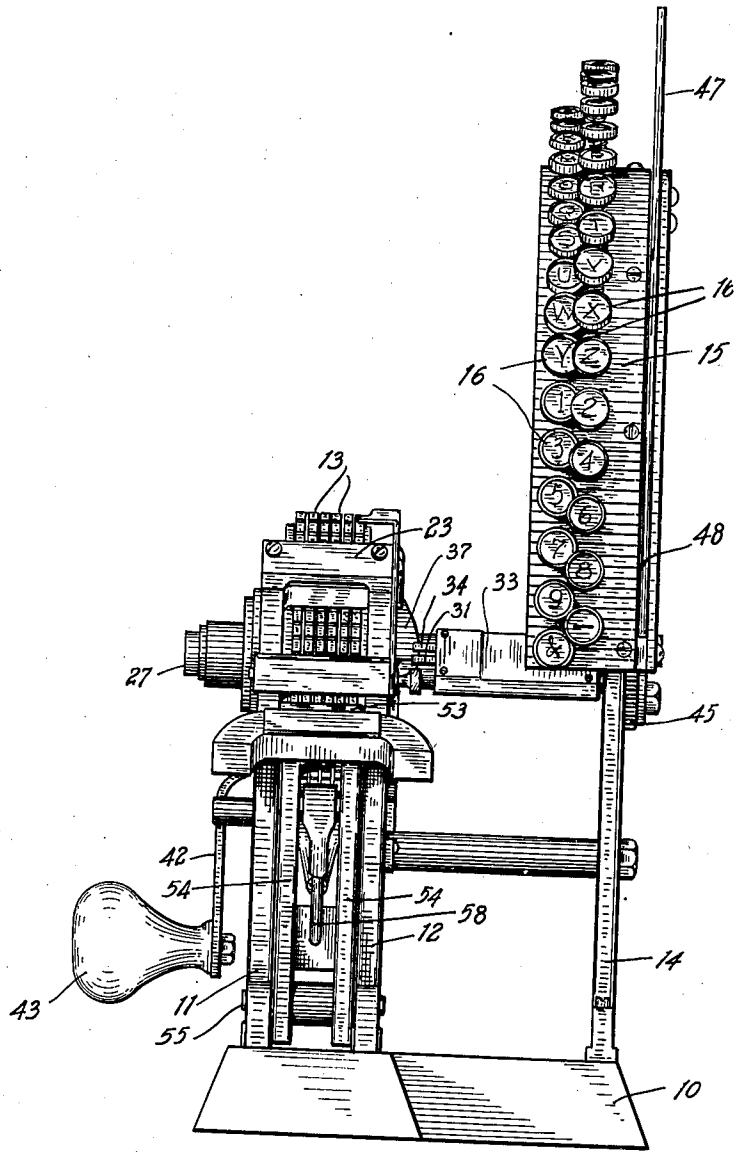

Fig. 1.

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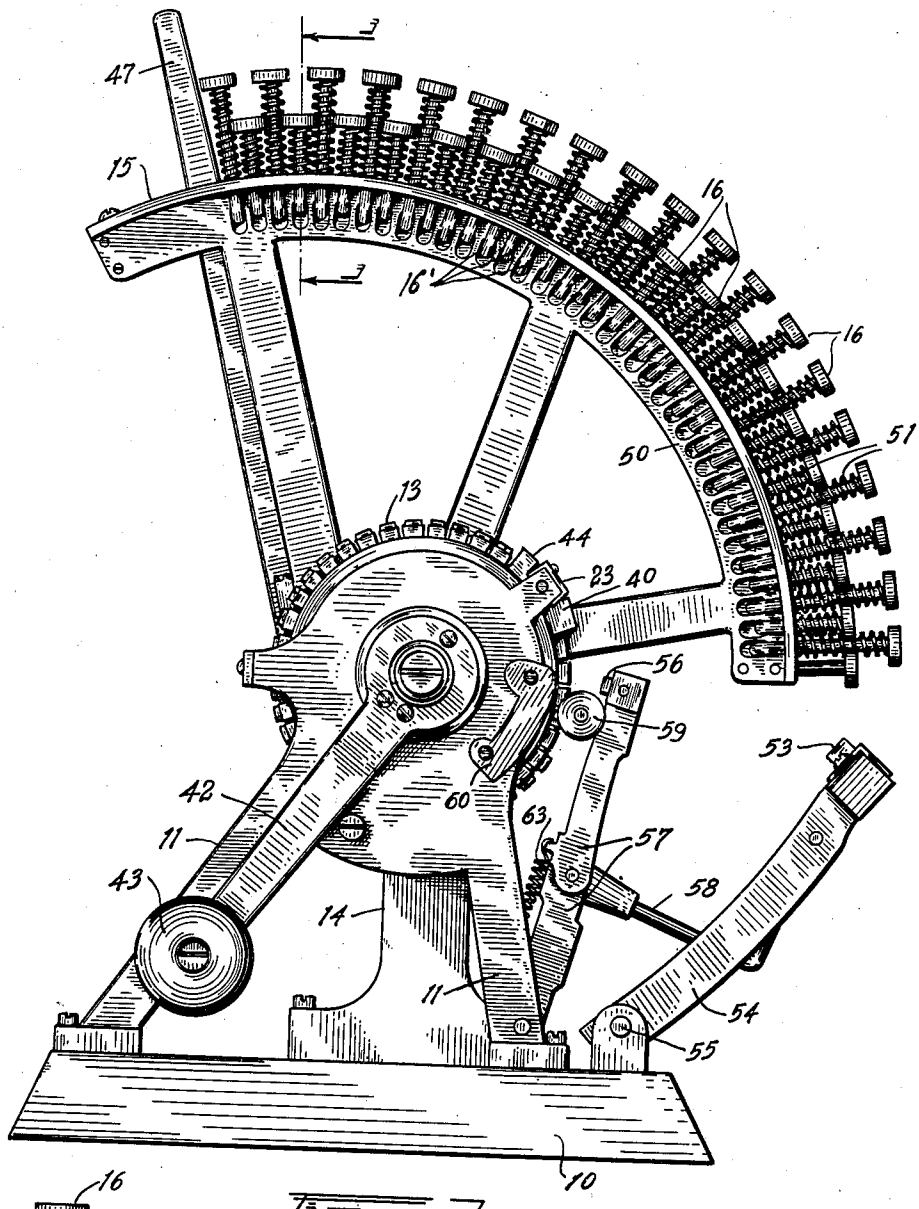

FIG. 2.

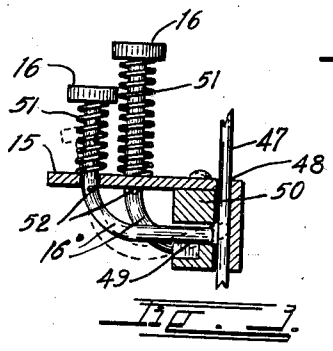

FIG. 3.

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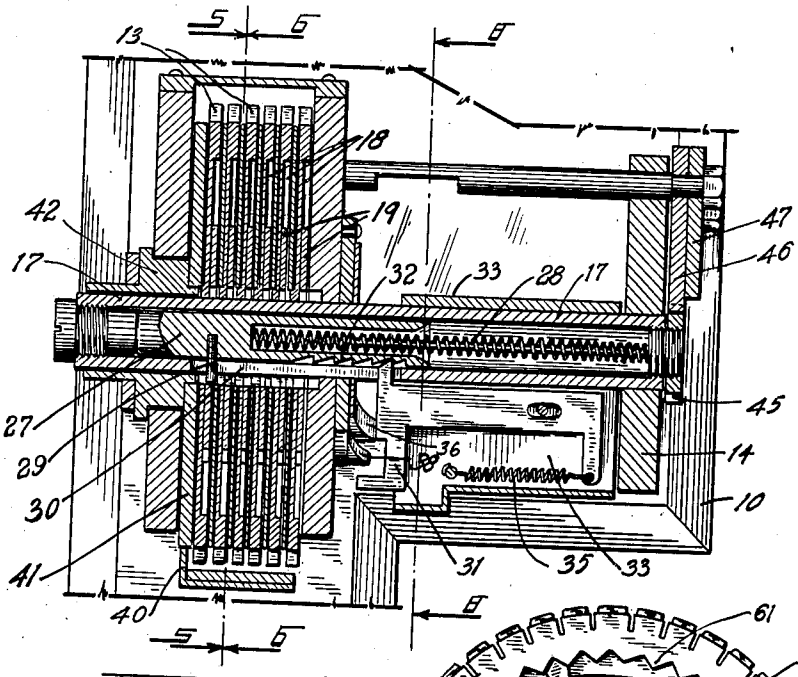

FIG. 4.

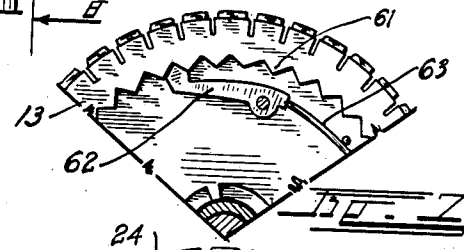

FIG. 7.

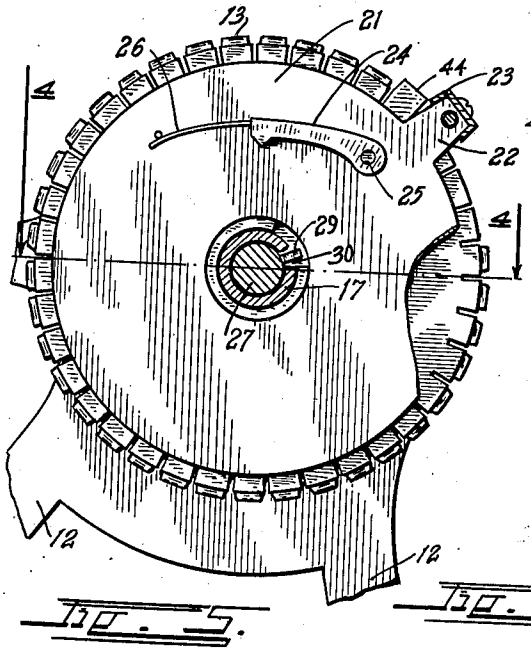

FIG. 5.

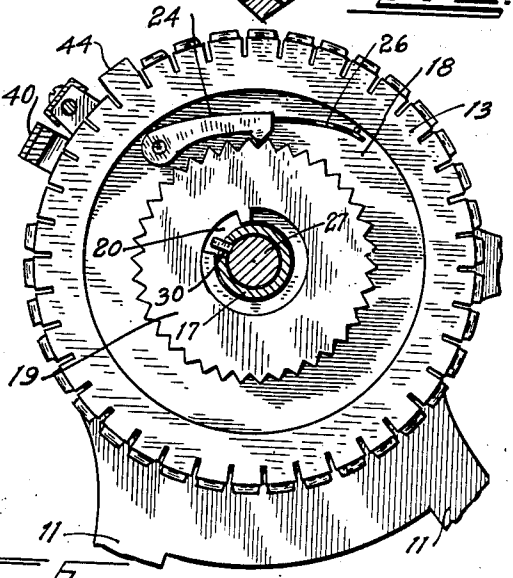

FIG. 6.

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MARKING MACHINE

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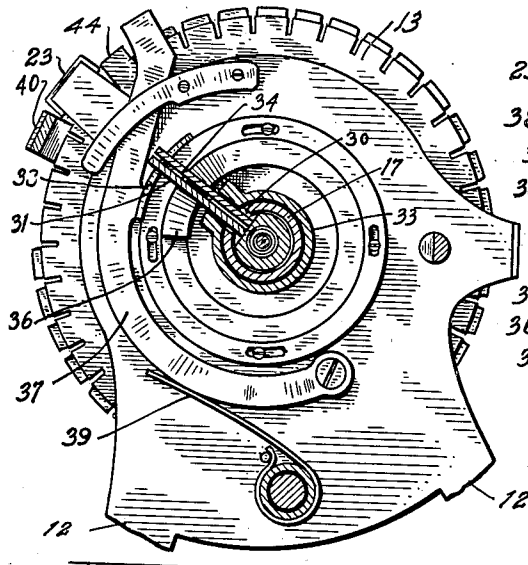

Fig. 8.

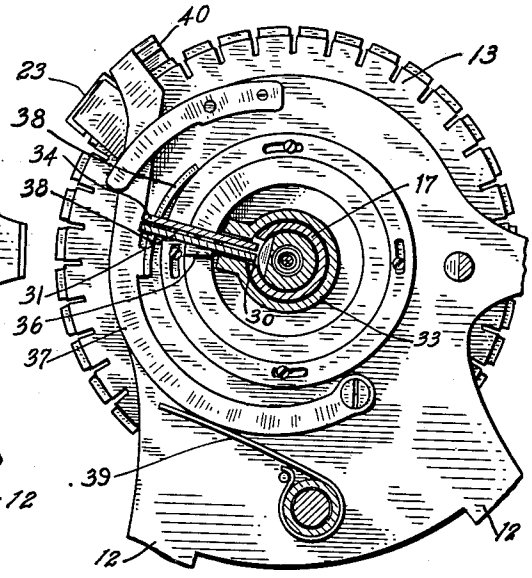

Fig. 9.

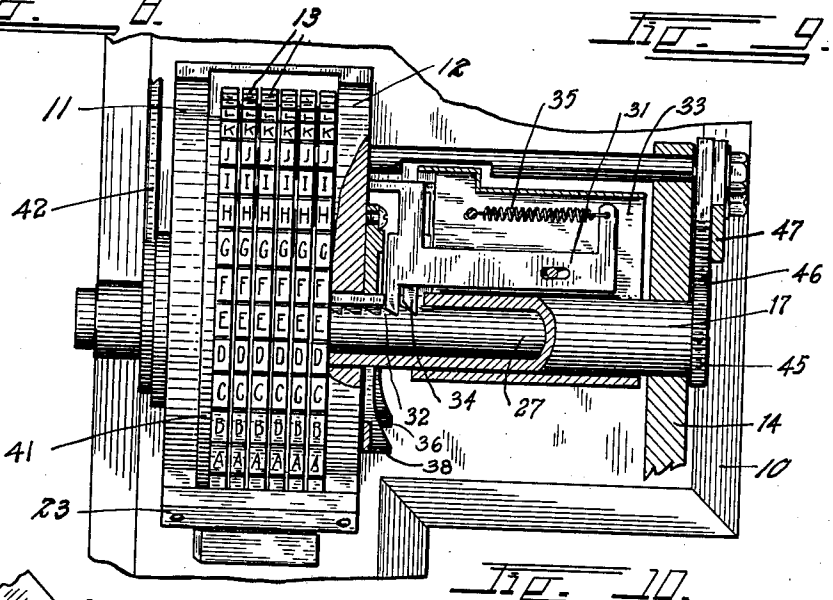

Fig. 10.

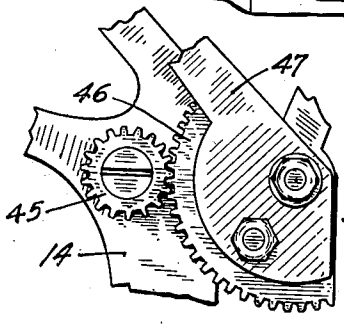

Fig. 11.

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Patented May 9, 1939

2,157,497

UNITED STATES PATENT OFFICE

2,157,497

MARKING MACHINE

William S. Petty, Denver, Colo., assignor of two-thirds to Russell Young and William Young, both of Denver, Colo.

Application April 20, 1937, Serial No. 137,961

7 Claims. (Cl. 101—110)

This invention relates to a laundry marking machine and is more particularly designed as an improvement over the machine illustrated and described in applicant's copending application Serial 124,052 filed Feb. 4, 1937.

The principal object of the invention is to provide a laundry marking machine which can be quickly and easily set up to produce and impress any desired series of characters or letters; which will have a minimum of working parts; which will eliminate all internal drive gears with their excessive weight and cost; and which will be light in weight and easily portable.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention reference is had to the accompanying drawings which forms a part hereof. Like numerals refer to like parts in all views of the drawings and throughout the description.

In the drawings:

Fig. 1 is a front view of the improved marking machine.

Fig. 2 is a left side elevation thereof.

Fig. 3 is a detail cross section through the index segment, taken on the line 3—3, Fig. 2.

Fig. 4 is a detail horizontal section through the type wheels, taken on the line 4—4, Fig. 5.

Fig. 5 is a cross section through the type wheel, taken on the line 5—5, Fig. 4.

Fig. 6 is a similar section, taken on the same line, looking in the opposite direction, as indicated by the arrow 6—6, of Fig. 4.

Fig. 7 is a detail view showing an alternate form of ratchet for the type wheels.

Fig. 8 is a section taken on the line 8—8, Fig. 4.

Fig. 9 is a similar section showing the cams in the released position.

Fig. 10 is a plan view of the type wheels with the operating mechanism shown in section.

Fig. 11 is a detail view, illustrating the connection between the setting lever and the setting shaft.

The invention is carried on a supporting base 10 having a pair of type wheel brackets 11 and 12 projecting upwardly to support a series of type wheels 13. A third bracket 14 projects upwardly from the base 10 to support an arcuate table 15 from which a series of setting keys 16 project. The brackets 11 and 12 at their upper extremities are formed into rounded discs which close the two sides of the type wheel series 13.

The type wheels are journalled on a hollow shaft 17 which extends completely through the series, and is itself journalled in the two brackets 11 and 12. The type wheels comprise solid discs carrying at their periphery, engraved letters or numerals as illustrated. The interior portion of each wheel is indented or hollowed to form a chamber 18 in which a toothed ratchet wheel 19 is formed. The ratchet wheel is preferably cast with, and forms an integral part of the type wheel itself. The type wheels do not completely enclose the hollow shaft 17, a portion being cut away to form a pocket 20 adjacent the shaft.

Between each pair of type wheels 13 is a relatively thin pawl disc 21. The pawl discs are all similar and each is formed with an ear 22 which extends into a locking channel 23 which in turn is fixed to and extends between the bracket members 11 and 12. These ears 22 prevent the discs 21 from rotating with the hollow shaft 17.

Each of the discs carries a ratchet pawl 24, mounted upon a suitable hinge pin 25, projecting from the disc. A wire spring 26 constantly forces the extremity of the ratchet pawl into the teeth of the ratchet wheel 19 of the adjacent type wheel. The teeth of the ratchet wheels correspond in number to the number of type characters carried by the type wheels, so that the pawls will stop each type wheel with these characters in alignment with each other.

The type wheels are rotated in succession from the hollow shaft 17. The shaft contains a sliding block 27 which is moved in one direction by means of a compression spring 28. The block 27 contains a key pin 29 which projects from the shaft 17 through a longitudinal slot 30 into the pockets 20 of the type wheels. Thus, if the shaft 17 is rotated when the key 29 is in the pocket of the first wheel, this wheel alone will rotate. If the key 29 is then moved to the key pocket 20 of the second wheel, the second wheel will be rotated and so on, throughout the series.

The block 27 is moved by means of a sliding pawl 31, having a hooked extremity which engages in ratchet teeth 32 in the block. This pawl is carried in a pawl housing 33 which rotates with the shaft 17. The pawl housing also carries a pivoted pawl 34 which prevents return movement of the block when the sliding pawl 31 releases. Both pawls are urged into engagement with the ratchet notches 32 by means of tension springs 35.

The extremity of the sliding pawl 31 bears

against the side of the bracket 12, and this bracket side is formed with a bevelled cam 36 which, at one position of the shaft 17, will force the sliding pawl to the right, causing it to draw the key pin 29 into the next successive type wheel. The pawls are both released from the block 29 when desired, to allow the spring 28 to return the plug to its initial position, by means of a resetting lever 37. The latter carries an inclined surface 38 positioned to come beneath arms on both pawls to lift them from engagement with the teeth.

The resetting lever 37 is moved away from the pawls by means of a suitable spring 39 and is moved against the pawls by means of a type wheel resetting bar 40. The resetting bar 40 projects from rotary disc 41 mounted on the hub of a resetting handle 42. The resetting handle 42 is journalled on the shaft in the bracket handle 11 and terminates in a suitable hand hold 43. This bar contacts a high point 44 on each of the type wheels to push them all back to the starting position against the channel member 23.

The shaft 17 terminates at the third bracket 14 in a toothed pinion 45 which meshes with a segment gear 46. The segment gear 46 is secured on the lower extremity of a setting lever 47 which projects upwardly between a guide bar 48 and the table 15. This table supports a series of key tablets 16 similar to typewriter key tablets. The tablets are carried on bent rods 16' extending downwardly through the table 15, thence curving through guide openings 49 in a segment bar 50. A compression spring 51 pushes each key upwardly and a locking pin 52 limits the upward movement of each key.

It can be seen that when the key is depressed, it will naturally move downwardly and to the left due to the fact that its extremity is in the guide opening 49 which prevents the latter extremity from moving downwardly. This leftward movement projects the extremity of the locking key across the guide passage along the bar 48 into the path of the lever 47 to stop the movement of the latter at any desired point.

Operation

Let us assume that it is desired to set the type wheels so that they will print the initials "M J H" and that the wheels are all in the "zero" position of Fig. 6. The setting key M is depressed with the left hand, the setting lever 47 is drawn downwardly with the right hand until it strikes the stem of the key M which will prevent further downward movement. This movement rotates the hollow shaft 17 rearwardly, and causes the key 29 to carry the first type wheel rearwardly until the letter M is opposite the printing point of the wheel.

The setting lever 47 is now swung upwardly to its starting point. This causes the sliding cam 31 to ride upon the inclined surface 36 so that the cam moves to the right one tooth space 32 which is sufficient to draw the key 29 within the second type wheel. The first type wheel is held in its present position by means of its pawl 24. The plug 29 is held within the second wheel by means of the pivoted pawl 34.

The key J is now depressed and the lever 47 is brought against its bent rod stem. This causes the key 29 to rotate the second type wheel to the printing point for the letter J. The lever 47 is again raised to the top to cause the sliding cam 21 to move the plug 29 to the right to position the key in the third type wheel. The key is now depressed to set the letter H. The type wheels are set up in alignment for printing the initials "M J H".

To reset the wheels for a different set of initials, the operator rotates the resetting handle 42 upwardly and toward him. This causes the resetting bar 40 to travel around the type wheels and strike the high points 44 thereof to return them all to their original position. As the resetting bar 40 reaches the limit of its resetting movement, it strikes the lever 37 which positions the inclined member 38 beneath the pawls 31 and 34 to allow the block 32 to snap back to its original position.

The actual printing is accomplished by means of a platen cushion 53 which is mounted on the extremity of a platen arm 54 journalled to the base 10 at 55. The goods to be printed is laid across the platen 53 with the operator's thumbs engaging the back of the platen arm 54 and the arm is then pressed against the set up type wheels. The type wheels are inked by means of an inking pad 56 carried at the upper extremity of a toggle lever 57. The hinge point of the toggle lever is connected by means of a connecting rod 58 with the platen bracket 54 so that when the platen is moved forwardly, the inking lever will be moved forwardly to press the pad 56 against the type. Rollers 59 will then strike a roller guide track 60 to cause the toggle lever 57 to collapse and withdraw the ink pad downwardly from the path of the platen 53. The operation of the inking device and platen are described more in detail in applicant's said co-pending application.

In Fig. 7, an alternate method of constructing the stop ratchet is illustrated. In this form, internal ratchet teeth 61 are formed in the cavity 18 and an outwardly acting pawl 62 is forced against these teeth by means of a spring 63. The action is exactly similar to the previously described ratchet.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:

1. In a marking machine: a series of disc-like type wheels having printing characters around their periphery; a hollow shaft serving as a support for said wheels; a key projecting from said shaft; means for moving said key along said shaft to successively engage said wheels; a depression formed in the side of each wheel; a ratchet wheel secured to each type wheel in said depression, the teeth of said ratchet wheel corresponding in number to the character spaces on said type wheel; a ratchet pawl within the depression of each wheel in engagement with said teeth to stop said wheels at predetermined positions; and means for holding said ratchet pawls stationary as said type wheels rotate.

2. In a marking machine: a series of disc-like type wheels having printing characters around their periphery; a hollow shaft serving as a support for said wheels; a key projecting from said shaft; means for moving said key along said shaft to successively engage said wheels; a depression formed in the side of each wheel; a ratchet wheel secured to each type wheel in said depression, the teeth of said ratchet wheel corresponding in number to the character spaces on said type wheel; a pawl support positioned between each pair of

wheels; a ratchet pawl mounted on each of said pawl supports and engaging the ratchet teeth of the adjacent type weel; and means for preventing said pawl supports from rotating with said type wheels.

3. In a marking machine: a series of disc-like type wheels having printing characters around their periphery; a hollow shaft serving as a support for said wheels; a key projecting from said shaft; means for moving said key along said shaft to successively engage said wheels; a depression formed in the side of each wheel; a ratchet wheel secured to each type wheel in said depression, the teeth of said ratchet wheel corresponding in number to the character spaces on said type wheel; a pawl support positioned between each pair of wheels; a ratchet pawl mounted on each of said pawl supports and engaging the ratchet teeth of the adjacent type wheel; a tongue formed on each pawl support and projecting beyond the periphery of said type wheels; and means for engaging said tongues to prevent said supports from rotating with said type wheels.

4. In a marking machine: a series of disc-like type wheels having printing characters around their periphery; a hollow shaft serving as a support for said wheels; a key projecting from said shaft; means for moving said key along said shaft to successively engage said wheels; a depression formed in the side of each wheel; a rachet wheel secured to each type wheel in said depression, the teeth of said ratchet wheel corresponding in number to the character spaces on said type wheel; a ratchet pawl within the depression of each wheel in engagement with said teeth to cause said wheels to rest at predetermined positions; means for holding said ratchet pawls stationary as said type wheels rotate; a resetting bar extending across said series of type wheels; a high point on each of said wheels; and means for rotating said setting bar about said wheels into engagement with said high points to reset said wheels in their initial positions.

5. In a marking machine: a series of disc-like type wheels having printing characters around their periphery; a hollow shaft serving as a support for said wheels; a key projecting from said shaft; a depression formed in the side of each wheel; a ratchet wheel secured to each type wheel in said depression, the teeth of said ratchet wheel corresponding in number to the character spaces on said type wheel; a ratchet pawl within the depression of each wheel in engagement with said teeth to position said wheels in accordance with the spacing of the printing characters thereon; means for holding said ratchet pawls stationary as said type wheels rotate; a sliding block in said hollow shaft carrying said key; ratchet teeth formed in said block; a sliding pawl actuated in consequence of the movement of said type wheels engaging said teeth to successively move said key through said type wheels; and means for lifting said sliding pawl to allow said block to return to its initial position.

6. In a marking machine of the type having a series of type wheels carrying type characters and an actuating lever for rotating said wheels selectively to the desired characters, means for stopping the movement of said lever at any desired character comprising: an arcuate index member positioned along the path of movement of said lever; a series of stop members carried by said index member, said stop members being movable so that they may be positoned in the path of said lever to stop it at any desired point, each of said stop members comprising, a key tablet; a rod extending from said tablet to a position adjacent the path of said lever so that it may be projected across said path; and a spring urging said tablet outwardly to hold said rod normally out of the path of said lever, said rod being bent so that its extremity will project laterally across said path while said tablets are positioned alongside of said path.

7. In a marking machine of the type having a lever for actuating a series of type wheels, means for stopping the movement of said lever at any one of a series of desired points corresponding to the number of type spaces on said wheels comprising: an arcuate index member having a slot for the path of said lever; a series of curved setting keys positioned along said slot; a key tablet on each of said keys, said keys extending through said index member and then turning to a position along one side of said slot so that when pressed upon, the turned extremity will be forced across said slot; and spring means for returning said keys when released.

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