

June 15, 1948.

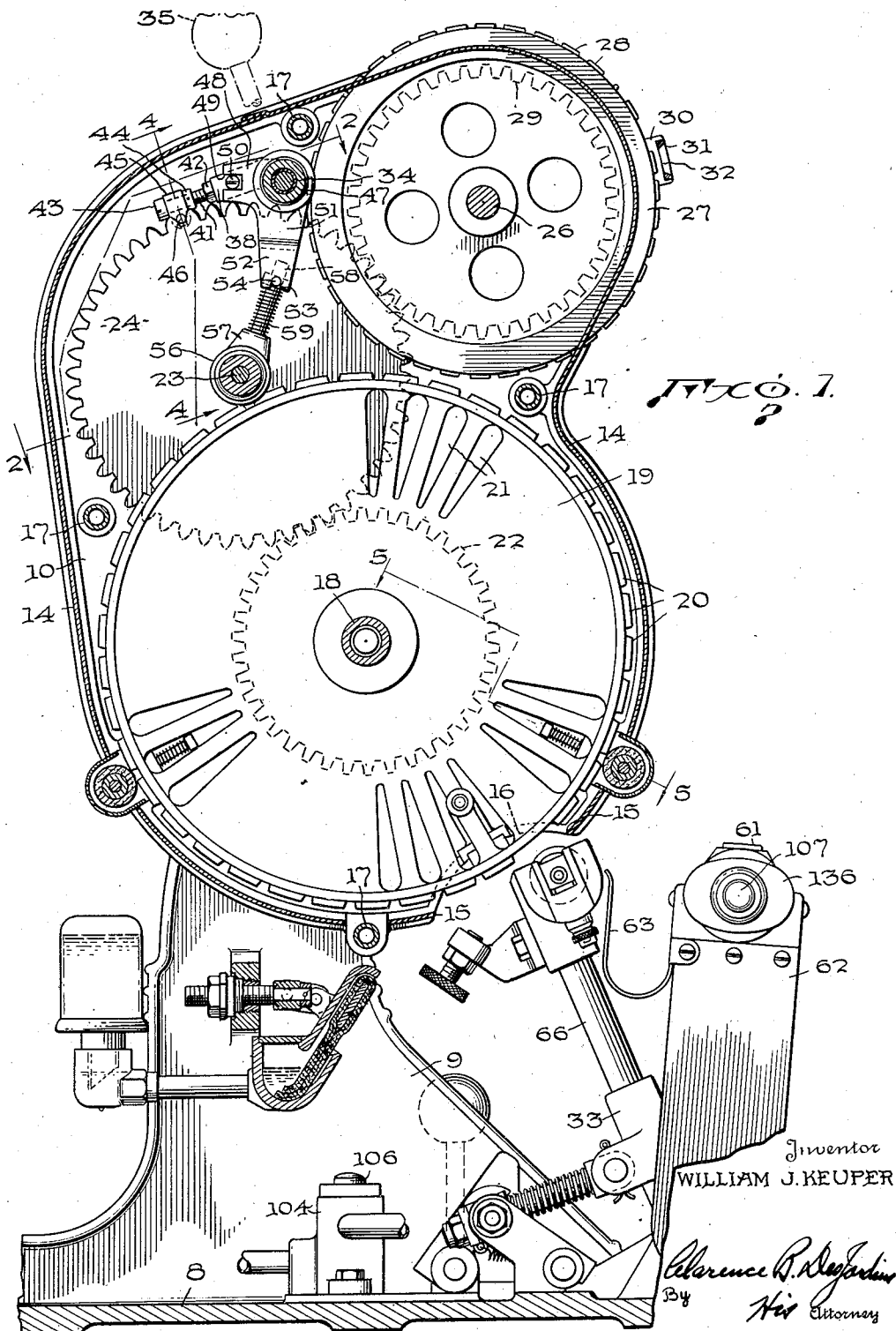
W. J. KEUPER

2,443,426

LAUNDRY MARKING MACHINE

Filed April 5, 1944

3 Sheets-Sheet 1



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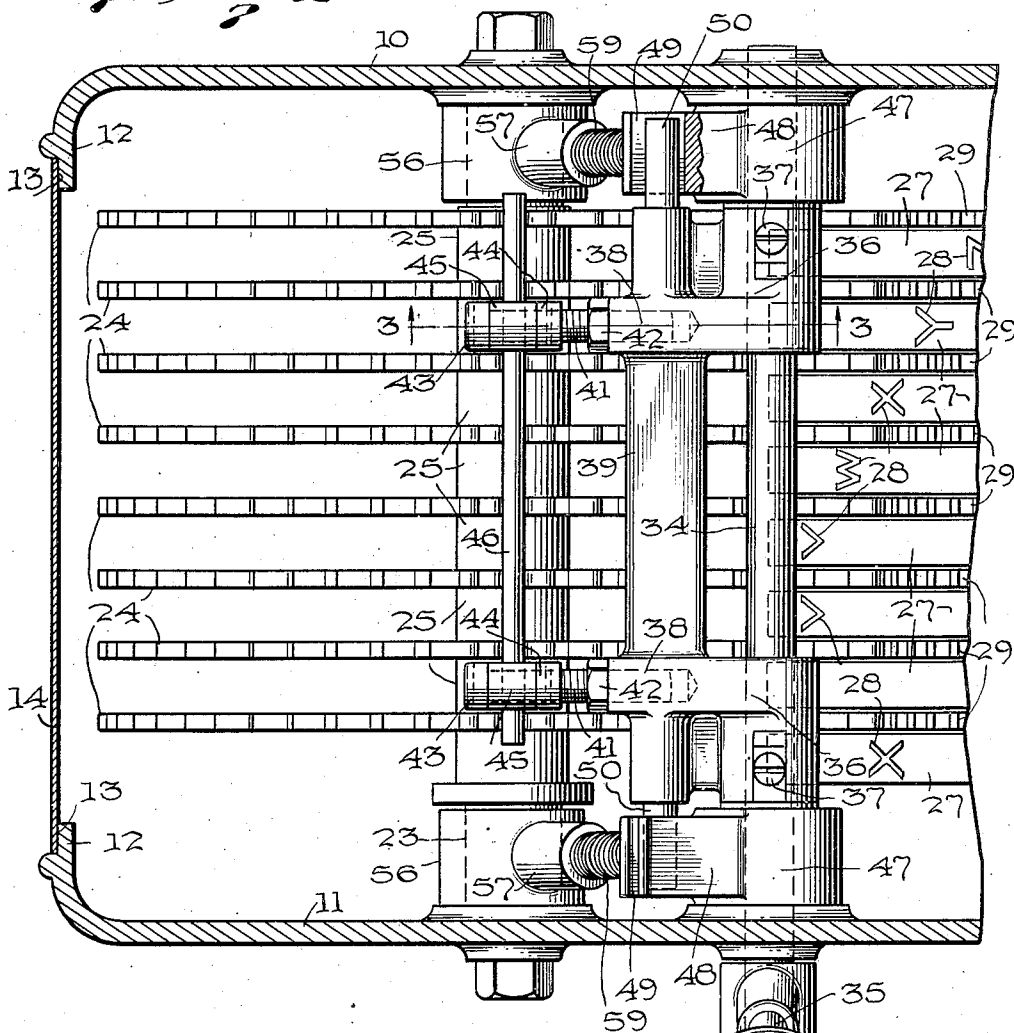
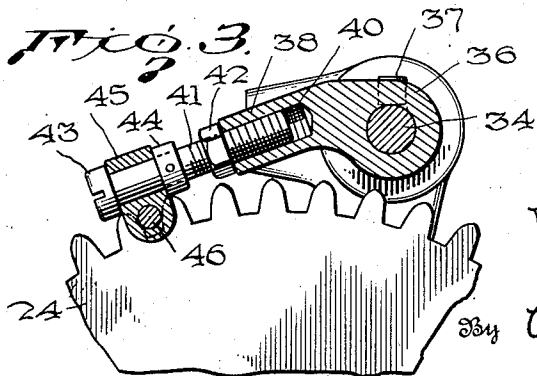
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FIG. 2.



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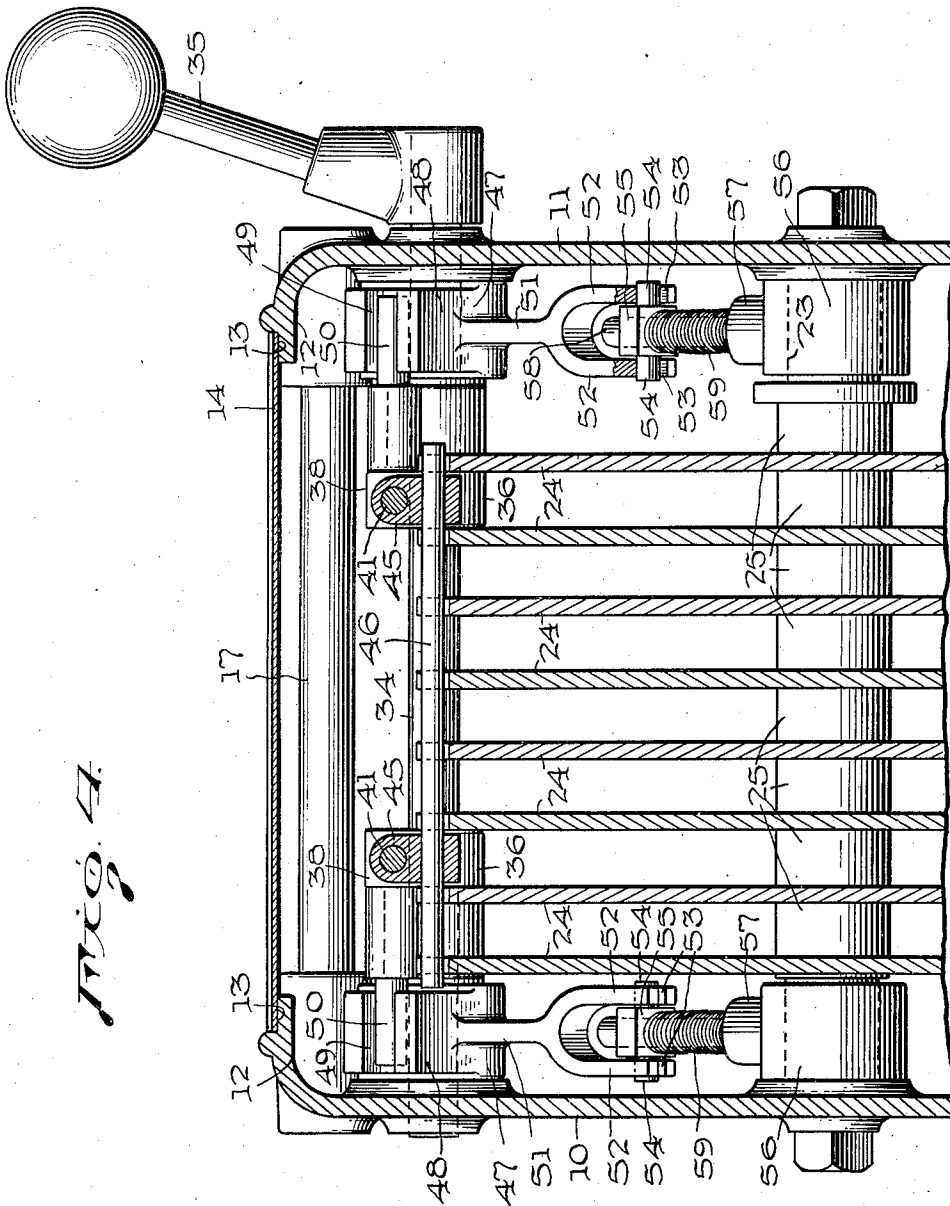


Fig. 4.

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UNITED STATES PATENT OFFICE

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LAUNDRY MARKING MACHINE

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Application April 5, 1944, Serial No. 529,882

6 Claims. (Cl. 101—95)

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My invention relates to improvements in a laundry marking machine and has to do, more particularly, with improved means for setting the type wheels of such machine, and for retaining them in set positions with selected type pre-

sented at the printing point. The principal object of my invention is to provide simple and convenient means for adjusting a plurality of type wheels to present selected type at printing position. A further object of my invention is to provide a machine, in which the type wheels are set by manipulation of wheels serving the combined functions of setting and indicating wheels, that is to say, wheels which not only constitute the setting devices but also indicate readily to the operator the setting of the type wheels.

Another object of my invention is to provide a simple and convenient aligning mechanism for retaining the setting and type wheels in adjusted positions, and to insure the alignment of the selected type at the printing line.

Further objects, and objects relating to details of construction and economies of operation, will definitely appear from the detailed description to follow. In one instance, I have accomplished the objects of my invention by the devices and means set forth in the following specification. My invention is clearly defined and pointed out in the appended claims. A structure constituting a preferred embodiment of my invention is illustrated in the accompanying drawings, forming a part of this specification, in which

Fig. 1 is a vertical, sectional view through a laundry marking machine embodying my invention, parts being shown in side elevation and other parts being partially broken away.

Fig. 2 is a sectional view taken substantially on the line 2—2 of Fig. 1, and showing the aligning mechanism.

Fig. 3 is a detail, sectional view taken on the line 3—3 of Fig. 2.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 1, and showing the engagement of the aligning bar with the intermediate gears.

In the drawings, the same reference numerals refer to the same parts throughout the several views and the sectional views are taken looking in the direction of the arrows at the ends of the section lines.

In general, my invention relates to a laundry marking machine of the type having a platen, upon which articles to be marked may be supported, movable to and from printing position and in which, when the platen is in printing position,

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it may be moved toward selected type to carry the article thereon against the type and take an impression therefrom. The printing type are mounted on the peripheries of a plurality of type wheels, arranged parallel to each other and rotatably mounted upon a horizontal shaft. To adjust the type wheels and, thereby, bring selected type to printing position, I provide a plurality of setting wheels likewise rotatably mounted parallel to each other on a horizontal shaft, there being one setting wheel for each type wheel. These setting wheels are so connected to the type wheels that angular movement of a setting wheel will cause an equal angular movement of the corresponding type wheel. A simple and convenient form, which these connections may take, consists of gears, having the same number of teeth, connected to the setting wheels and the type wheels and meshing with a plurality of intermediate gears rotatably mounted upon another horizontal shaft parallel to each other and in alignment with the type wheel gears and the setting wheel gears, respectively. The setting wheels project from the upper portion of the housing of the machine, in such position that they may be conveniently manipulated by the operator to bring selected type to the printing position. These setting wheels, preferably, bear on their peripheries indicia corresponding to the characters on the printing type, and in the same angular relation to each other as are the printing type. A sighting bar may be provided extending across the peripheries of the setting wheels, and having a sighting aperture therein through which indicia on the peripheries of said setting wheels are visible to the operator. This bar and the indicia will be so located that, when certain characters are visible through the sighting aperture, the printing type bearing the corresponding characters will be aligned at printing position.

In order to lock the setting wheels and type wheels in adjusted positions, and to make sure that the type wheels are aligned with the selected printing type at the printing line, I have provided an aligning bar engageable with the teeth of the intermediate gears that transmit motion from the setting wheels to the type wheels. This aligning bar may be supported in arms projecting from a frame fastened to an aligner shaft. This aligner shaft will have an operating handle fixed thereto outside of the housing, by which the aligner shaft may be conveniently rocked by the operator to throw the aligner bar from engaging to disengaging position and vice versa. A spring

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toggle mechanism is provided which yieldingly holds the aligning bar in either of these two positions.

Referring to the numbered parts of the drawings, the machine has a base 8, from which the frame side members 9 extend upwardly. Secured to said frame side members, or integral therewith, are the housing side members, 10 and 11. Each of these has an inwardly extending flange 12 provided with a seat 13, upon which the edges of the housing 14 are seated. As shown in Fig. 1, this housing is cut away at 15 adjacent the printing position, and the upper portion of the housing is also cut away to permit the setting wheels to project therefrom. The side members, 10 and 11, of the housing have their lower edge portions curved inwardly as at 16, adjacent the printing point. The side members, 10 and 11, are connected by the spacing bars 17 and the parts, 10, 11 and 14, constitute a housing carried by the frame and enclosing the type wheels, the setting wheels and the intermediate gearing.

A platen carrier is pivotally mounted on the base 8 and supports a platen 61, upon which the articles to be marked may be held by the operator while grasping the handles 136, by means of which the platen carrier may be rocked to and from printing position. When the platen carrier is in printing position, the platen 61 will be automatically moved toward the printing type to carry the article held thereon against said type, under control of plungers 107 in the ends of the handles 136, which are held depressed by the operator while grasping the handles. The platen carrier has a cover 62, with a portion 63 thereof bent upwardly to form a guard. Ears 33 on the platen carrier have sockets formed therein which receive the upwardly projecting posts 66. Included in the connections for supplying pneumatic pressure to operate the platen 61, is a valve 104 having a control plunger 106, which is depressed, to open valve 104, when the platen carrier is in printing position. The details of construction of this platen carrier, the means for operating the platen, the pneumatic connections thereto and the means for controlling them, are not described or illustrated herein, since they are shown in my pending application, Serial No. 470,052, for Laundry marking machine, filed December 24, 1942, on which U. S. Letters Patent, No. 2,384,035, were granted on September 4, 1945. Certain differences should be pointed out, however, among which is the fact that, in said application, the posts 66 support a combined ink reservoir and ink roller, whereas that is not the case in the machine illustrated herein. The valve 104 is differently located in the machine of the present application, and the plunger 106 is operated by different parts. So far as possible, the reference numerals applied here to parts that are shown also in said application, Serial No. 470,052, are the same as used for said parts in that application.

A horizontal shaft 18 is mounted in the housing side members 10 and 11, and extends transversely of the housing. A plurality of type wheels 19 are journaled on said shaft 18, parallel to each other, and each of these wheels has on its periphery a plurality of spaced printing type 20. These type wheels may be lightened by forming the slots 21 therein, a few of which are shown in Fig. 1. A gear 22 is fastened to the side of each type wheel 19, coaxial therewith. A horizontal shaft 23 is mounted in the housing side members 10 and 11, and extends transversely

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of the housing. A plurality of gears 24 are journaled on shaft 23, there being one of these gears 24 for each of the type wheels, and each of said gears is in line with and meshes with the gear 22 of the corresponding type wheel. These gears are properly spaced by the sleeves or hubs 25.

A horizontal setting wheel shaft 26 is mounted in the upper portion of the housing, being supported by the housing side member 10 and 11, and a plurality of setting wheels 27 are journaled on said shaft, parallel to each other, with peripheral portions of said wheels projecting from the upper portion of the housing through an opening formed therein for that purpose. There is one of these setting wheels for each of the type wheels, and each setting wheel bears on its periphery indicia, 28, in the form of characters corresponding to the characters on the printing type 20, and arranged on the setting wheel in the same angular relation to each other as are the corresponding printing type on the type wheel. A gear 29 is fast to each setting wheel 27 and coaxial therewith, and each of said gears meshes with the corresponding one of the intermediate gears 24. Gears 22 and 29 have the same number of teeth, so that a given angular movement of a setting wheel will produce the same angular movement of the corresponding type wheel. In this way, the type wheels may be adjusted to bring selected type to the printing position by rotational adjustment of the setting wheels, in either direction.

Arms 30, secured to the side members 10 and 11 of the housing, support a sighting bar 31, which extends across the peripheries of the setting wheels 27, in front thereof, and has a sight aperture 32 therein, through which the indicia on the setting wheels may be viewed by the operator from the front of the machine. This sighting bar is so located, and the indicia are so placed on the setting wheels, that, when certain characters are visible through the sight aperture 32, the setting wheels 19 will be adjusted so that the printing type having the same characters will be aligned at the printing position.

To provide for locking the type wheels and setting wheels in adjusted positions, and for releasing them to permit their adjustment, as well as to align the type wheels with selected printing type in line at the printing point, I have provided an aligning mechanism which comprises a horizontal aligner shaft 34, supported by the housing side members 10 and 11. One end of this shaft projects through the side member 11 and has an operating handle 35 secured thereto, by means of which the shaft can be rocked. An aligner frame is provided which includes hub portions 36, mounted on the shaft 34 and secured thereto by set screws 37, and rearwardly projecting arms 38 connected by a crossbar 39. In each of the arms 38, there is formed a threaded socket 40, into which a threaded stud 41 is screwed. These studs can be locked in adjusted positions in the sockets 40 by the lock nuts 42. A block 45 is mounted on each stud 41 between the head 43 thereof, and a collar 44 pinned thereto, and an aligning bar 46 is supported by and extends through these blocks 45. Said aligning bar is of such length as to extend across the entire set of gears 24, and the blocks 45 are so located with respect to the gears as to fit between certain of them, when the aligning bar is in engagement with teeth of said gears. Thus, it will be seen that, when the aligning bar is in engaging position, it engages between teeth of all of the in-

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intermediate gears 24 and prevents movement of type wheels 19 and setting wheels 27. The shaft 34 can be rocked by the handle 35 to throw the aligning bar to the disengaging position, in which the gears 24, setting wheels 27 and type wheels 19 are released and free to rotate.

To provide for yieldingly holding the aligning bar in either the engaging or the disengaging position, I provide an over-center spring toggle mechanism which comprises a pair of bell cranks 47, journaled on hub extensions of the side members 10 and 11, concentric with shaft 34. The rearwardly extending arm 48 of each bell crank has a notch 49, which receives a stud 50 projecting laterally from arm 36 of the aligner frame, so that said bell cranks are rocked as the frame is rocked to move the aligner bar from one position to the other. The downwardly extending arms 51 of said bell cranks are forked, and each of the fork arms 52 has a notch 53, in the lower end thereof, receiving the studs 54 projecting from a pin block 55, slidably mounted on a rod or post 58. Members 56 are journaled on hub extensions of side members 10 and 11 concentric with shaft 23, and have shouldered portions 57 from which the posts 58 project. Springs 59 are mounted on said posts and compressed between the shouldered portions 57 and the said pin blocks 55. It will be clear that this constitutes a spring toggle mechanism which, in the position shown in Fig. 1, holds the aligning bar yieldingly in engagement with the gears, but, when the shaft 34 is rocked to disengage the aligning bar, the toggle mechanism passes over dead center so that the springs 59 then act to hold the aligning bar yieldingly in the release position.

The operation of this laundry marking machine should be quite apparent from the description of the parts given above. The articles to be marked are to be held by the operator over the platen 61, while he grasps the handles 136 and thereby moves the platen carrier to the printing position, in line with selected type which have been brought thereto. The pneumatic mechanism, under control of the plungers 106 and 107, thereupon causes the platen to be projected upwardly, carrying the article against the faces of the selected type to take an imprint therefrom. The type, arranged on the peripheries of the type wheels 19, may be brought to printing position by manipulation of the setting wheels 27, which also serve as indicating wheels. Thus, the operator, by manipulating setting wheels 27 until certain characters show through the sight aperture 32, will adjust the type wheels so that the type bearing the same characters will be brought to the printing line. When this adjustment takes place, the shaft 34 will have been rocked by the handle 35 to disengage the aligning bar 46 from gears 24, and, after the setting has been completed, the handle can be operated to rock the shaft 34 in the other direction until said aligning bar engages with gears 24, which will align the selected type at the printing position, and will also lock both setting wheels and type wheels against movement.

I am aware that the machine described and illustrated herein may be varied considerably without departing from the spirit of my invention, and, therefore, I claim my invention broadly, as indicated by the appended claims.

What I claim as my invention and desire to secure by Letters Patent, is:

1. In a laundry marking machine including a

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platen on which articles to be marked may be supported and means for moving the platen to and from printing position, the combination of a plurality of type wheels mounted parallel to each other for rotation about a horizontal axis, a plurality of setting wheels mounted parallel to each other for rotation about a horizontal axis fixed with relation to said first axis, driving connections between said setting wheels and said type wheels comprising a plurality of intermediate gears rotatable about a horizontal axis fixed with relation to said first and second axes, an aligning bar engageable with the teeth of said gears to lock the setting and type wheels in adjusted positions, means for shifting said bar from gear-engaging to gear-releasing position and vice versa, and an over-center spring toggle mechanism acting to hold the bar yieldingly in either position.

2. In a laundry marking machine including a platen on which articles to be marked may be supported and means for moving the platen to and from printing position, the combination of a plurality of type wheels mounted parallel to each other for rotation about a horizontal axis, a plurality of setting wheels mounted parallel to each other for rotation about a horizontal axis fixed with relation to said first axis, driving connections between said setting wheels and said type wheels comprising a plurality of intermediate gears rotatable about a horizontal axis fixed with relation to said first and second axes, an aligning bar engageable with the teeth of said gears to lock the setting and type wheels in adjusted positions, an aligner shaft, a frame secured to said shaft and supporting said aligning bar, an operating handle secured to said shaft, and an over-center spring toggle mechanism acting on said frame to yieldingly hold it in either of two positions.

3. In a laundry marking machine including a platen on which articles to be marked may be supported and means for moving the platen to and from printing position, the combination of a plurality of type wheels mounted parallel to each other for rotation about a horizontal axis, a plurality of setting wheels mounted parallel to each other for rotation about a horizontal axis fixed with relation to said first axis, driving connections between said setting and type wheels comprising a plurality of intermediate gears rotatable about a horizontal axis fixed with relation to said first and second axes, an aligning bar engageable with said gears to lock the setting and type wheels in adjusted positions, an aligner shaft, a frame secured to said shaft and supporting said aligning bar, a stud projecting laterally from said frame, an operating handle fixed to said shaft, a bell crank journaled on said shaft and having a notch in one arm thereof receiving said stud, and a spring toggle mechanism acting on said bell crank.

4. In a laundry marking machine including a platen on which articles to be marked may be supported and means for moving the platen to and from printing position, the combination of a plurality of type wheels mounted parallel to each other for rotation about a horizontal axis, a plurality of setting wheels mounted parallel to each other for rotation about a horizontal axis fixed with relation to said first axis, driving connections between said setting and type wheels comprising a plurality of intermediate gears rotatable about a horizontal axis fixed with relation to said first and second axes, an aligning bar

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engageable with said gears to lock the setting and type wheels in adjusted positions, an aligner shaft, a frame secured to said shaft and supporting said aligning bar, a stud projecting laterally from said frame, an operating handle fixed to said shaft, a bell crank journaled on said shaft and having a notch in one arm thereof receiving said stud, the other arm of said bell crank being forked, a member oscillatable about the axis of said gears and having a shouldered stud, a pin block slidable on said stud and engaging in notches in the forked arm of said bell crank, and a spring on said stud compressed between said member and said pin block.

5. In a laundry marking machine including a platen on which articles to be marked may be supported and means for moving the platen to and from printing position, the combination of a frame; a type wheel shaft, a setting wheel shaft and an intermediate shaft mounted on said frame, each of said shafts being horizontal and extending parallel to the others but spaced therefrom; a plurality of type wheels journaled on the type wheel shaft and each having a plurality of printing type on the periphery thereof; a plurality of gears journaled on the type wheel shaft and each secured to one of the type wheels; a plurality of setting wheels journaled on the setting wheel shaft, one for each type wheel, each setting wheel having a plurality of indicia on the periphery thereof corresponding to the type on the corresponding type wheel; a plurality of gears journaled on the setting wheel shaft, one for each setting wheel and secured thereto, each gear having the same number of teeth as the gear secured to the corresponding type wheel; and a plurality of gears journaled on the intermediate shaft, each of said last-mentioned gears meshing with one of said gears on the setting

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wheel shaft and one of said gears on the type wheel shaft.

6. The combination of claim 5 in which the frame carries a casing having an opening therein through which portions of the peripheries of the setting wheels protrude and another opening adjacent the printing point for permitting said platen to engage type on the type wheels in printing position.

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