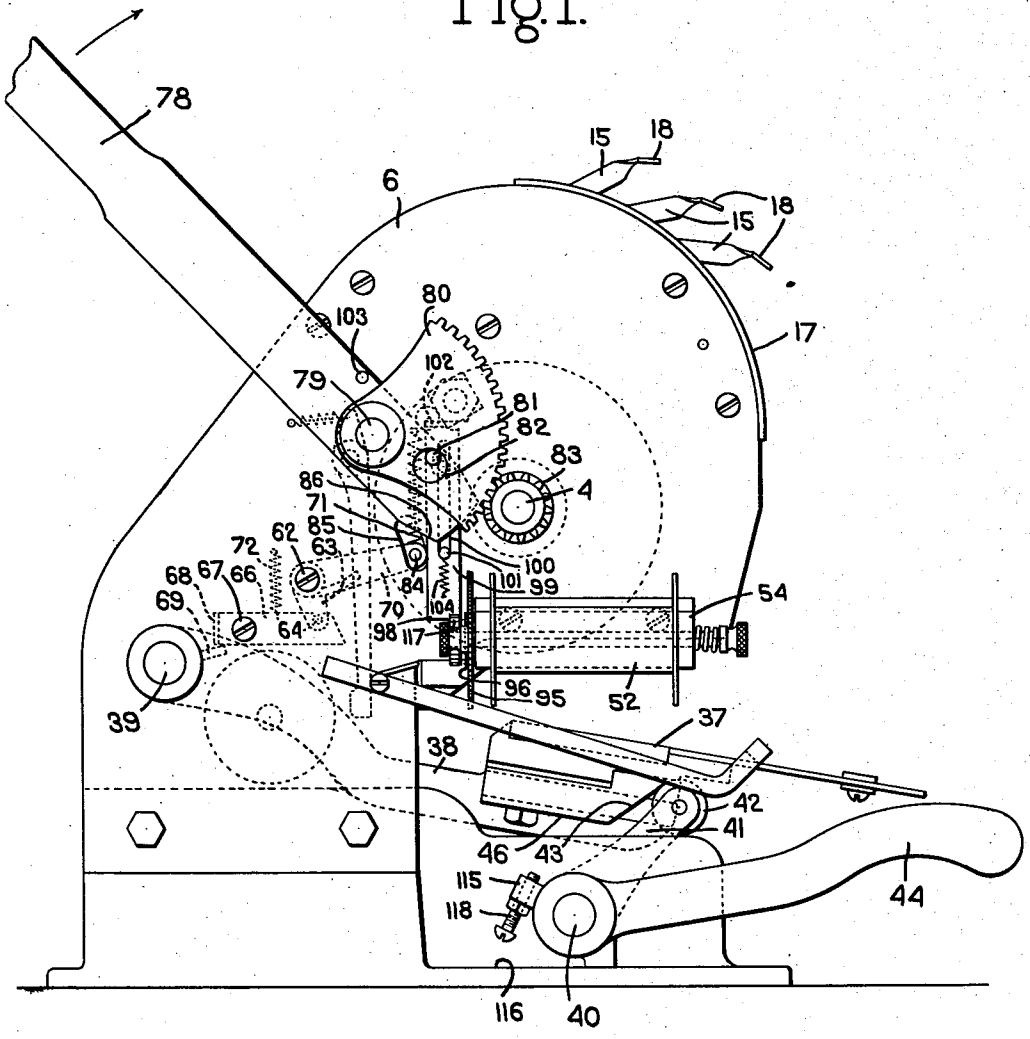
June 7, 1938. G. H. LANG 2,119,713

LAUNDRY LISTING MACHINE

Filed April 2, 1935 4 Sheets-Sheet 1

Fig. 1.



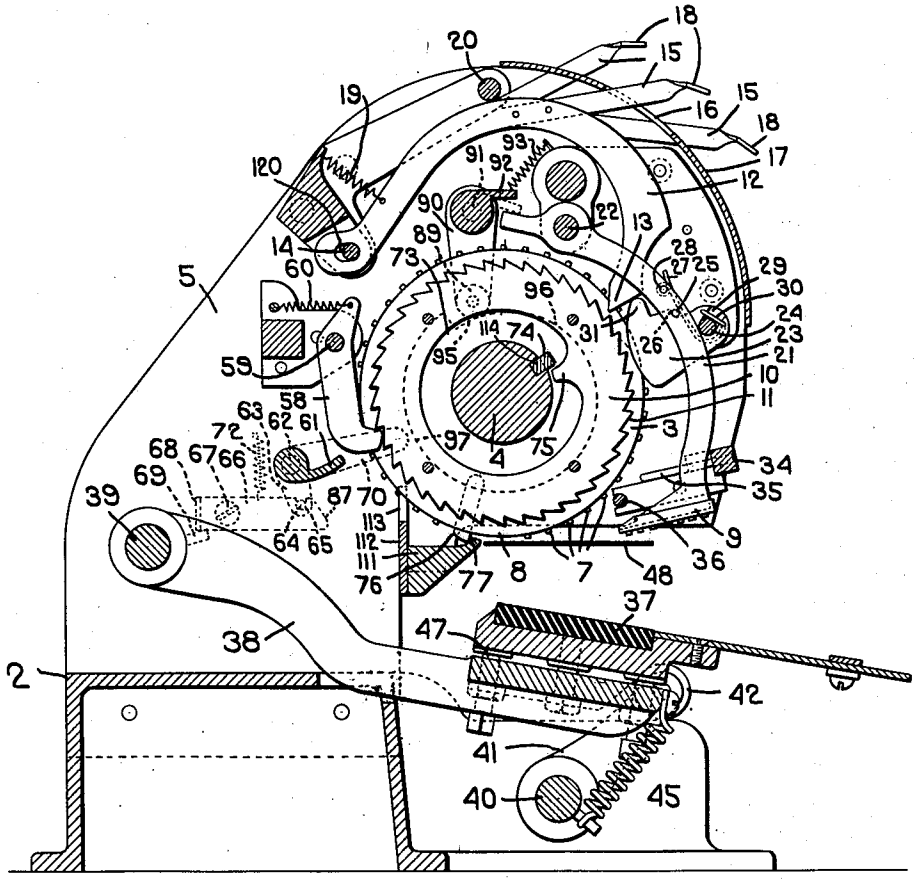
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LAUNDRY LISTING MACHINE

Filed April 2, 1935 4 Sheets-Sheet 2

Fig.2.



A.B.C. LAUNDRY

2	SHIRTS
6	COLLARS
4	HOSE
3	COATS
5	SMOCKS
3	APRONS
5	SHEETS
8	TOWELS

Fig.3.

1

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LAUNDRY LISTING MACHINE

Filed April 2, 1935 4 Sheets-Sheet 3

Fig. 4.

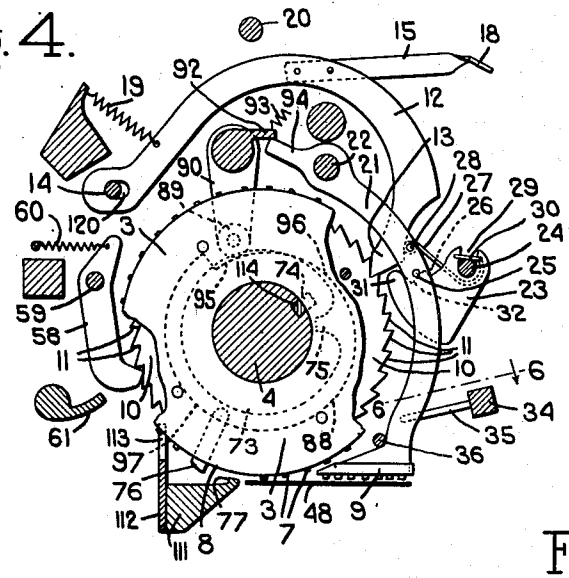


Fig. 6.

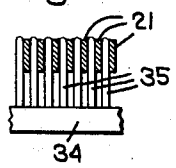


Fig. 5.

Fig. 7.

Fig. 13.

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June 7, 1938. G. H. LANG 2,119,713

LAUNDRY LISTING MACHINE

Filed April 2, 1935 4 Sheets-Sheet 4

Fig.8.

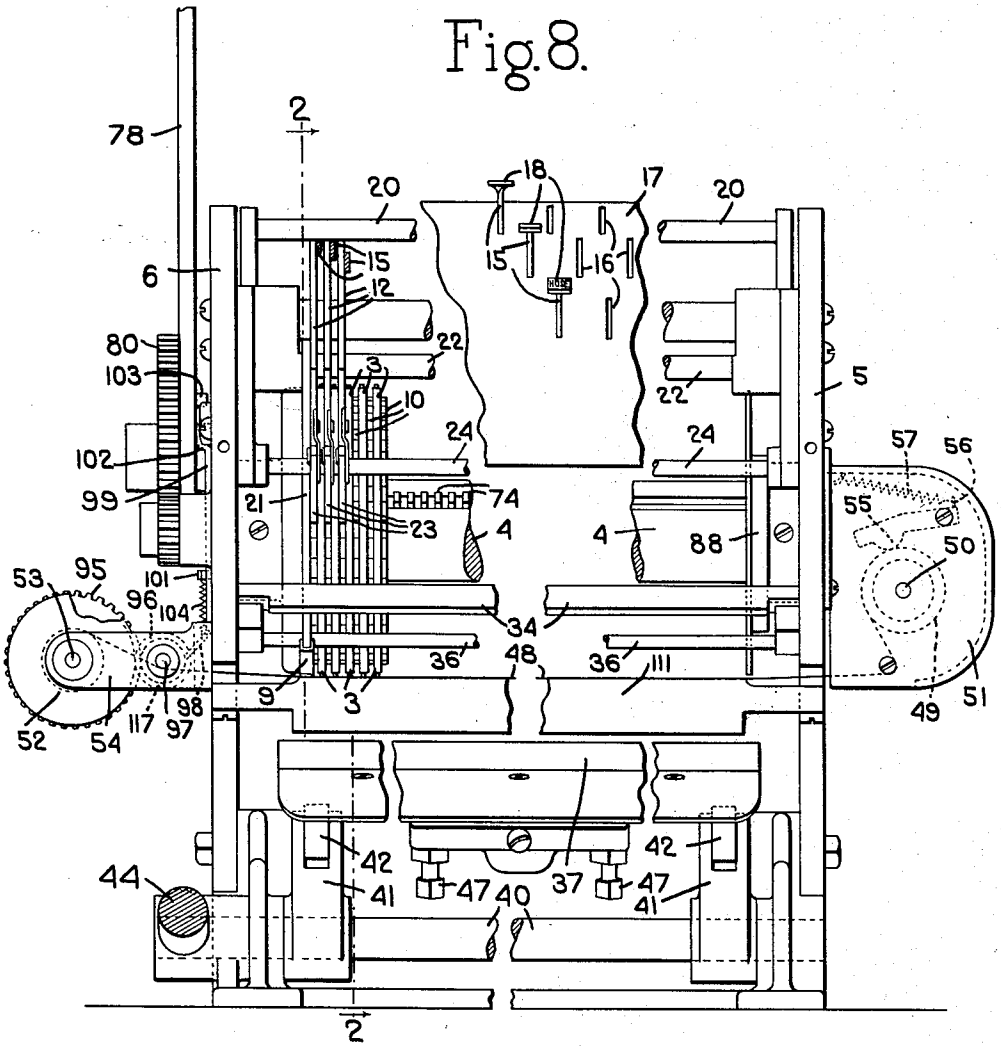


Fig.9.

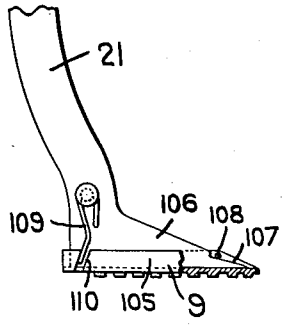


Fig.10.

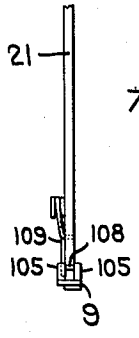


Fig.11.

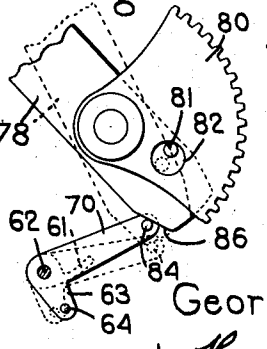
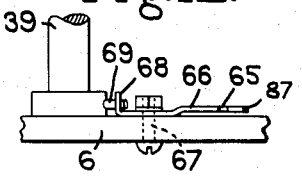


Fig.12.



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UNITED STATES PATENT OFFICE

2,119,713

LAUNDRY LISTING MACHINE

George H. Lang, Boston, Mass.

Application April 2, 1935, Serial No. 14,283

20 Claims. (Cl. 101—96)

This invention relates to laundry listing machines such as are used in laundries for making a printed list of the number of each of the various articles included in a laundry bundle or individual or family wash.

One of the objects of the present invention is to provide a novel listing machine which will print on the laundry slip not only the number of each of the different articles making up an individual wash, but also the name of each article.

Some prior laundry listing machines with which I am familiar are so constructed that they print on the laundry slip only the number of each of the individual articles contained in any individual wash, and this necessitates the use of a laundry slip which has had previously printed thereon a list comprising the names of all articles which are likely to be found in any individual laundry.

With my invention, however, a laundry slip in the form of a blank slip of paper can be used because when the machine is set up in accordance with the articles contained in any particular laundry bundle or family wash, the imprint which is made on the slip will contain the names of the various articles comprising the laundry bundle and the number of each article, and since these imprints are made upon a blank sheet of paper the laundry slip for any laundry bundle when printed will contain only the names of the separate articles making up said bundle and the number of each article.

Other objects of the invention are to provide an improved laundry listing machine having a plurality of type wheels carrying numeral type characters for printing the number of each article in the laundry and a corresponding number of printing plates, each having type characters to print the name of some particular article of laundry.

A further object of the invention is to provide an improved laundry listing machine of this type in which the type plates are normally in inoperative position or out of printing position, and which is so constructed that when any type wheel is given its initial forward step to set it to print the required number, the corresponding type plate will be automatically moved into printing position so that the setting up of the machine for printing any particular laundry list brings into printing position only those printing plates carrying type characters representing the names of the different articles comprising the particular laundry bundle or family wash.

Further objects of the invention are to provide generally laundry listing machines in the various particulars hereinafter set forth.

In the drawings wherein I have illustrated a selected embodiment of my invention,

Fig. 1 is an end view of a laundry listing machine which embodies my invention.

Fig. 2 is a section on the line 2—2 Fig. 8.

Fig. 3 is a fragmentary view showing a hypothetical laundry slip which has been printed on the machine herein illustrated.

Figs. 4 and 5 are fragmentary sectional views showing the operation of setting the type wheels and printing plates and of making a printed impression thereon.

Fig. 6 is a section on the line 6—6 Fig. 4.

Fig. 7 is a fragmentary view showing means for holding the type wheels in correct position.

Fig. 8 is a front view of the machine with parts broken out.

Fig. 9 is a fragmentary view showing one of the type plates and its support.

Fig. 10 is an edge view of Fig. 9.

Fig. 11 is a fragmentary view of part of the restoring mechanism.

Fig. 12 is a fragmentary view of a part of the type-wheel locking mechanism.

Fig. 13 is a fragmentary sectional view through the shaft 4 showing part of the type wheel restoring mechanism.

Referring first to Fig. 3 which shows the manner in which the listing machine herein shown prints a laundry slip, 1 indicates a laundry slip which has received a printed impression by the listing machine. Before the printed impression is made this laundry slip is simply a blank slip of paper with any suitable heading. The machine herein shown is of that known type which is provided with a plurality of setting keys, one for each kind of article likely to be contained in a laundry bundle, and if it be assumed that the particular bundle of laundry which is being listed contains shirts, collars, hose, coats, smocks, aprons, sheets, towels, etc. then the keys corresponding to the above-mentioned articles will be depressed, each key being depressed a number of times equal to the number of the articles represented by each key which the laundry bundle contains. This will set up the machine so that when the printed impression is made there will be one column (the right-hand column in Fig. 3) printed on the laundry slip 1 which contains the names of the articles corresponding to the particular keys that have been depressed, and a second col-

umn (the left-hand column Fig. 3) in which appears the number of each of the articles.

The machine herein shown which is designed to make this printed impression comprises a suitable frame 2 in which is mounted a plurality of rotatable type wheels 3 by which the data in the left-hand column of Fig. 3 is printed. These type wheels 3 are mounted for rotation on a supporting shaft 4 which extends the length of the machine and is supported in its end in suitable end pieces 5, 6 of the frame 2. Each type wheel 3 has on its periphery a plurality of numeral type characters 7 designed to print the numerals from "1" to any desired figure. The type wheel is so formed as to provide a blank space 8 adjacent the first type character 7 of the series by which the numeral "1" is printed, and when each type wheel is in zero position the blank space will be in printing position.

The names of the articles in the laundry shown in the right-hand column Fig. 3 are printed by type characters formed on type plates 9, there being one type plate for each type wheel 3, and as stated above, the type plates 9 are normally in inoperative position or out of printing position.

The means for shifting the type wheels 9 from their inoperative to their printing position will be presently described.

Each type wheel 3 may be set to bring any numeral character thereon into printing position through the medium of a key-actuated device. Each type wheel has rigid with it a ratchet member 10 provided on its periphery with ratchet teeth 11 which have the same peripheral spacing as the type characters 7 on the corresponding type wheel 3. Cooperating with each ratchet member 10 is a setting pawl 12 which is provided with a nose portion 13 adapted to engage the ratchet teeth 11 and which is pivotally mounted on a bar 14 extending between and supported by the end pieces 5, 6. Each setting pawl has a setting key 15 rigid therewith which projects forwardly through a slot 16 in a cover plate 17 that is secured to the end pieces 5, 6. Each setting key is formed with a flat end portion 18 on which may be printed the name of an article of laundry or to which may be secured a slip carrying such name. Each setting pawl 12 is acted on by suitable spring 19 which normally holds it in the elevated position shown in Fig. 2 resting against the stop bar 20. When any key 15 is depressed the corresponding setting pawl 12 will be moved downwardly about the rod 14 thus bringing the nose 13 thereof into engagement with one of the teeth 11 of the corresponding ratchet member 10, and continued downward movement of the setting key will move the ratchet member and its attached type wheel forwardly one step in a clockwise direction. Each setting pawl 12 is provided with a slot 120 through which the rod 14 extends, said slot co-operating with the rod to limit the downward movement of each pawl as the corresponding key is depressed. When any key 15 is actuated the initial downward movement thereof brings the nose 13 of the corresponding setting pawl into engagement with one of the ratchet teeth 11 and continued downward movement of the setting pawl causes a turning movement of the ratchet wheel. During this turning movement the setting pawl 12 will be given a bodily movement to the right Fig. 2 because of the curvature of the toothed portion of the ratchet wheel 10. The slot 120 is of such length that when the setting pawl has moved to the right as far as the slot will permit then the corresponding ratchet wheel will have been turned forward one step, thereby turning the corresponding type wheel forward one step or the distance between two adjacent type characters 7. This slot 120, therefore, serves as a means for limiting the setting movement of each setting pawl. In addition it serves to prevent over-running of any type wheel, since when the setting pawl is fully depressed as far as the slot 120 will permit the pressure of the nose 13 of the pawl against the ratchet wheel will hold the ratchet from any over-running movement.

It will be understood that the numeral characters 7 are arranged in regular order beginning with "1", and hence when any key is depressed a predetermined number of times the corresponding type wheel will be advanced the same number of steps to bring into printing position the particular type character 7 designed to print the numeral corresponding to the number of times the key has been depressed.

The type plates 9 for printing the names of the articles in the laundry are carried on swinging arms 21 which are pivoted on a rod 22 extending between the two heads 5, 6. There is one such arm 21 and its type plate for each type wheel 3 and each arm occupies the same plane as the corresponding type wheel.

It may be remarked here that in order to better show the construction the section on which Fig. 2 is taken is such that the ratchet wheel 10 illustrated therein belongs to and is rigid with the type wheel which is on the observer's side of the plane in which the section is taken.

The arms 21 are normally held in a retracted or normal position with the printing plates 9 out of printing position by means of latches 23, there being one such latch for each arm 21. These latches are pivotally mounted on a rod 24 extending between the two heads 5 and 6, and each arm 21 is provided with a laterally-extending pin 25 adapted to engage a shoulder 26 of the latch, the engagement of the pin with said shoulder holding the arm in its retracted position as shown in Fig. 2. Each latch is provided with a spring 27, the free end of which bears against a pin or projection 28 carried by the corresponding arm 21. Each spring 27 thus tends to move the arm 21 toward the left into printing position and normally holds the pin 25 in engagement with the shoulder 26. Each latch is shown as having an open slot 29 in which the rod 24 is received and the latch is retained on the rod by the portion 30 of the spring, said spring extending through the latch on one side of the slot 29, thence across the slot as shown at 30 and thence through the latch on the opposite side of said slot. This construction provides a simple manner of anchoring the spring to the latch.

The machine is so constructed that when the key 15 is depressed to advance the corresponding type wheel from zero position to a position to print the numeral "1", the corresponding latch 23 is moved to release the corresponding arm 21 as shown in Fig. 4, and as soon as this occurs the spring 27 will swing the arm 21 forward, thereby bringing the type plate carried thereby into the printing position shown in Figs. 4 and 5. Each latch 23 is formed with the nose portion 31 adapted to be engaged by the nose 13 of the corresponding setting pawl 12 when the latter is depressed, and hence when any setting pawl is depressed for giving the corresponding type wheel its first forward step the corresponding latch 23 will be swung downwardly sufficiently to release

the shoulder 26 from the pin 25, and as stated above, when this release occurs the spring 27 will swing the arm 21 forwardly into printing position. As the arms thus swing forwardly into printing position the pin 25 thereof rides over the surface 32 of the latch and holds the latch in its depressed position as shown in Figs. 4 and 5. The latch 23 will remain in this depressed position during any subsequent actuations of the setting key and setting pawl so that the type wheel may be set forward any predetermined number of steps after the first step which releases the latch 23 without further disturbing the latch or affecting the position of the type plate 9 which is then in printing position. Each spring 27 thus constitutes a plate-moving member by which the corresponding type plate 9 is given its movement from its inoperative position into its printing position. Each spring is also automatically operative, that is, it operates automatically to give the corresponding plate its movement into printing position as soon as it is released. Each spring normally has energy stored up in itself and when released it constitutes a self-acting propelling means to propel or move the plate into printing position. The arms 21 are held in proper alinement with the type wheels 3 through the medium of a comb device comprising a bar 34 having spacing pins 35 projecting therefrom, there being one of these pins 35 between each two adjacent arms 21. The bar 34 extends from one head 5 to the other head 6 and the pins or fingers 35 hold the arms 21 in their proper position.

36 indicates a stop rod extending from one end to the other of the machine and against which the arms 21 rest when they are in printing position as shown in Figs. 4 and 5.

The setting up of the machine to print any particular laundry list, therefore, involves simply depressing each of the keys 15 corresponding to the different kinds of articles in the laundry bundle a number of times equal to the number of each kind of article which the laundry contains, and this operation selectively sets the type plates 9 to print the list of articles which the said laundry bundle contains and also sets the type wheels 3 to print the number of each article as shown in Fig. 3.

The laundry list 1 to be printed is placed on a vertically movable platen member 37 which is carried by an arm 38 pivotally mounted on the rod 39 that extends between the two heads 5 and 6. This platen is normally in its lowered position shown in Figs. 1 and 2, and after the type wheels and type plates have been properly set, said platen is swung upwardly into printing position shown in Fig. 5 thereby to make the printing impression.

The means for raising the platen into printing position comprises a rock shaft 40 mounted in the frame and having arms 41 fast thereon, each provided with a roll 42 adapted to engage an inclined face 43 formed on the platen. This rock shaft 40 is provided with a handle 44 at one end by which it may be turned, and the roll 42 is held in engagement with the inclined face 43 by means of a pulling spring 45 which is secured at one end to the platen and at the other end to a pin extending from the rock shaft 40. When the handle 44 is raised the engagement of the roll 42 with the cam surface 43 will force the platen upwardly into printing position and as it reaches printing position the roll 42 will pass under the face 46, thereby causing a printing pressure to be applied to the laundry slip. When the rock shaft and arm 41 are returned to their normal position shown in Fig. 2 the platen will be lowered partly by gravity and partly by the spring 45. The platen 37 is supported on suitable leveling screws 47 by which it may be maintained in proper level position for making a good printed impression.

The printed impression is made preferably through the medium of either an inked ribbon or a carbon paper 48 which extends from one end to the other of the machine directly beneath the type wheels and type plates. When the platen is swung upwardly into printing position the inked face of the ribbon or carbon paper rests against the laundry slip and the pressure of the type characters against the back face of the ribbon or carbon paper causes the printed impression to be made on the laundry slip. The provision of the cam surface 46 and the arm 41 by which the laundry slip is pressed against the type with a squeeze pressure is especially advantageous where the impression is made with carbon paper 48 because the impression made from carbon paper is clearer when the printing pressure is a continued sustained pressure rather than the pressure in the form of a blow. One end of this type ribbon is wound on a reel 49 mounted on a shaft 50 carried in a suitable bracket support 51 and the other end is wound on a take-up reel 52 which is mounted on a shaft 53 carried in a suitable bracket 54. Suitable means which will be presently described are provided for rotating the reel 53 intermittently.

In order to apply suitable tension to the ribbon 48 I propose to employ a brake device 55 which rests on the reel 49 and applies a braking friction or drag thereto. This brake is shown as pivoted at 56 and, if desired, it may be acted on by a spring 57 which increases the frictional engagement thereof with the reel. Means are provided for locking the type wheels in their set position at the time that the platen is raised to make the printed impression. For this purpose I have provided a plurality of locking pawls 58, one for each ratchet member 10, which are pivotally mounted on a rod 59 extending between the two heads 5 and 6, each of said pawls being acted on by a spring 60 which yieldingly holds the end of the pawl in engagement with the corresponding ratchet member. When the type wheels are being set forward by the keys the teeth of the ratchet wheel click over the pawls 58, but when the platen is raised to make a printed impression the pawls are all locked against the ratchet wheels through the medium of a locking bar 61 which extends the length of the machine and is pivotally mounted at 62 in the heads 5 and 6. This locking of the pawls against the ratchet wheels serves to lock the ratchet wheels from movement and prevents any possible disalinement of the wheels while the printed impression is being made.

The locking bar 61 has an arm 63 rigid therewith at one end provided with a pin 64 that normally engages a notch 65 in the end of an arm 66 pivoted to the frame at 67 and acted on by a spring 72. This arm 66 is provided with a laterally-extending portion 68 adapted to be engaged by a pin or projection 69 rigid with the rock shaft 39. The locking bar 61 is also provided with another arm 70 to which is connected a pulling spring 71, the other end of the spring being attached to the frame. The spring 71 thus tends to rock the arms 70, 63 and the locking bar 61 counter-clockwise, but the spring-impelled movement is normally restrained by the engagement of the pin 64 in the notch 65. When

the arms 38 are swung upwardly to raise the platen into printing position the projection 69 engages the offset portion 68 of the arm 66, thereby swinging said arm downwardly and withdrawing the notch 65 from the pin 64. As soon as this occurs the spring 71 will swing the locking bar 61 upwardly into locking engagement with the locking dogs 58 as shown in Fig. 5. The dogs 58 thus lock the ratchet members 10 from movement, thereby locking the type wheels while the printed impression is being made.

The apparatus herein shown also includes a restoring device for restoring the type wheels to zero position and also restoring the type plates 9 to their inoperative or out-of-printing position after each printing impression has been made. The locking dogs 58 serve not only to lock the type wheels while the printed impression is being made but they serve to hold the type wheels locked until the restoring mechanism is actuated to restore the type wheels. Hence, after the type wheels have been set for making any printed impression and the printed impression has been made and the type wheels have been locked, it will be impossible to reset the type wheels or make any adjustment in any of them without first restoring the type wheels to zero position.

The restoring device herein illustrated is similar in some respects to that shown in my Patent No. 1,352,070, September 7, 1920. Each ratchet member 10 is formed with a central opening 73 larger than the shaft 4 so that there is provided spaces between adjacent type wheels 3 immediately surrounding the shaft 4. The shaft 4 has a type wheel restoring projection 74 extending into each of these spaces, and each ratchet member is provided with an inwardly-extending projection 75 which is adapted to be engaged by the corresponding projection 74 when the shaft 4 is rotated. When the type wheels are in their zero position the projection 75 on each ratchet member 10 will be situated closely adjacent and just in front of the corresponding restoring projection 74. The operation of setting any type wheel by manipulating its key 15 causes the wheel to rotate clockwise, Fig. 2, so that the projection 75 will move away from the restoring projection 74, the distance which it is separated from said projection depending upon the number of times which the corresponding key 15 is depressed to set the type wheel. When the type wheels are to be restored the shaft 4 is rotated counter-clockwise, during which rotation the restoring projections 74 will engage and pick up the projections 75 corresponding to the type wheels which have been set and will restore said type wheels to the zero position.

Each type wheel is provided with an outwardly-extending stop projection 76 which is adapted to engage a rib 77 when the type wheel is in zero position. The rotating of the shaft 4 counter-clockwise in Fig. 2 to effect the restoring of the type wheels is accomplished by means of a restoring lever 78 which is pivoted to the machine at 79. This restoring lever is connected to a segmental gear 80 through a lost motion connection comprising a pin 81 extending from the lever 78 and operating in an opening 82 formed in the segmental gear 80. This segmental gear is pivotally mounted at 79 co-axially with the lever 78 and the teeth thereof engage a pinion 83 fast on the outer end of the shaft 4. The type wheel restoring movement of the lever 78 is in the direction of the arrow in Fig. 1. The initial movement of this lever takes up the lost motion between the pin 81 and the opening 82, during which time the locking bar 61 is released from the locking pawls 58, thereby unlocking the type wheels, and further rotation of the lever then gives a turning movement to the segmental gear 80 and thus gives the shaft 44 the necessary counter-clockwise movement to restore the type wheels to zero position.

I have stated above that the initial movement of the restoring lever 78 by which the lost motion between the pin 81 and opening 82 is taken up serves to release the locking bar 61 from its locking engagement with the dogs 58. The arms 66 and 70 are situated on the inside of the end portion 6 of the frame and the arm 70 is provided at its outer end with a projection 84 which extends through a slot 85 in said frame end (see Fig. 1). When the locking bar 61 is in its operative locking position shown in Fig. 5, the pin 84 will be at the upper end of the slot 85 and in engagement with the cam face 86 with which the inner end of the restoring lever 78 is provided as shown in full lines Fig. 11. The initial movement of the restoring lever 78 by which the lost motion above referred to is taken up causes the cam surface 86 to engage the pin 84 and throw the lever 70 downwardly into the position shown in the dotted line position Fig. 11, and in Figs. 1 and 2, thereby swinging the locking bar 61 out of engagement with the locking dogs 58. These dogs 58 are so shaped at their ends that when the type wheels are restored the ratchet teeth may freely wipe by the dogs.

The swinging movement of the arms 70, 63 from the full line position Fig. 11 to the dotted line position causes the pin 64 to wipe over the inclined end 87 of the arm 66 and to snap into the notch 65 whereby the locking bar 61 is locked in its inoperative position until it is again released by the raising of the platen.

The restoring of the type plates 9 to their inoperative or out-of-printing position is accomplished through the medium of a cam member 88 which is fast on the shaft 4 inside of the frame end 5. This cam cooperates with a follower 89 carried on the end of an arm 90 which is fast on a shaft 91 journalled in a frame. This shaft 91 has a web or fin 92 extending longitudinally thereof which is acted on by a pulling spring 93 and which overlies the tail end 94 of each of the arms 21. When any arm 21 is in its operative position with its printing plates 9 in printing position as shown in Figs. 4 and 5, the tail portion 94 of said arm engages the fin 92 (see Figs. 4 and 5). The cam 88 is provided with the low portion 95 which is connected by an eccentric portion 96 with the high portion 97. When the parts are in normal position as shown in Fig. 2 the follower 89 rests on the low portion 95 of the cam. When the shaft 4 is turned counter-clockwise to restore the type wheels 3 the engagement of the eccentric portion 96 of the cam with the follower 89 swings the arm 90 to the left Fig. 2, thereby causing the fin 92 to move downwardly into the dotted line position Fig. 2, during which movement said fin will engage the tail ends 94 of all the arms 21 which are in operative printing position and will swing said arms backwardly into their inoperative position shown in Fig. 2. As each arm 21 is thus swung backwardly its pin 25 slides off from the surface 32 of its latch and the latch then returns to its operative position shown in Fig. 2 with its shoulder 26 engaging the pin 25, thereby locking the arm in its inoperative

position. This return movement of each latch results from the action of the spring 27 which is placed under tension by the backward swinging movement of the arm 21.

Means are also provided herein for feeding the type ribbon 48 forward one step each time the restoring lever 78 is actuated. The reel 52 on which the ribbon is wound has a gear 95 rigid therewith which meshes with a pinion 96 on a shaft 97, which also has a ratchet wheel 117 thereon. Co-operating with this ratchet 117 is a feed pawl 98 having a shank portion 99 which rests against the outer face of the frame end 6 and is provided with a slot 100 in which are received guiding pins 101. The upper end of the feed pawl member is offset laterally as shown at 102 (see Fig. 8) and the restoring lever 78 is provided with a laterally-projecting pin 103 which is adapted to engage the offset end 102 of the feed pawl when the restoring lever is given its full forward movement. The engagement of the pin 103 with the pawl depresses it downwardly, thereby actuating the ratchet wheel 117 and feeding the pinion 96 forward one step which will result in giving the type ribbon 48 a forward feeding movement. 104 is a pulling spring attached at one end to one of the pins 101 and at the other end to the feed pawl 98. Said spring results in raising the feed pawl when the lever 78 is returned to its normal position.

The printing plates 9 may be attached to the arms 21 in any appropriate way. I will preferably provide a construction which permits any type plate to be readily removed from its arm and replaced by a different type plate. This provides for setting up the machine to fit any special laundry requirements. Each type plate 9 is formed with two side walls 105 forming between them a groove to receive the foot end 106 of the arm 21, and is also formed with an abutment extending inwardly from the side walls, said abutment being herein shown in the form of a pin 108 extending from one side wall 105 to the other. The foot portion 106 of the supporting arm 21 is provided with a tapered toe 107 which has wedging engagement with the abutment 108. Each printing plate is applied to its supporting arm 21 by placing the foot portion 106 in the groove formed between the walls 105 and sliding the toe 107 underneath and into wedging engagement with the abutment 108. Each arm 21 is provided with a retaining spring 109, the end of which is adapted to be detachably-engaged in a slot 110 formed in the outer face of one of the side walls 105 of the printing plate. The spring tends to move the printing plate to the left Fig. 9, thereby holding the tapered toe 107 in wedging engagement with the abutment 108. Any type plate can be readily removed by simply disengaging the end of the spring from the slot 110 and then withdrawing the plate from the foot portion of the supporting arm. By this construction each type plate is firmly held in its proper position on its supporting arm but can be easily and quickly removed and replaced by a different type plate.

The setting pawl 12 may be used for moving the individual type wheels backwardly as well as forwardly. If, for instance, in setting-up the machine the operator makes a mistake by depressing the wrong key or depressing any given key too many times the corresponding type wheel can be set backwardly to correct the mistake by pulling forwardly on the corresponding key to move the setting pawl forwardly and then swinging said pawl downwardly into engagement with the ratchet teeth, such movement being accomplished without turning the wheel forward. A backward pressure on the key sufficient to hold the nose of the pawl into engagement with the ratchet and an upward movement of the key will result in moving the type wheel back one step.

While I have illustrated a selected embodiment of my invention I do not wish to be limited to the construction or features shown.

I claim:

1. A laundry listing machine comprising a plurality of rotatable type wheels, a setting key for each type wheel adapted to set the type wheel forward one step each time it is actuated, a printing plate in line with each type wheel, means normally holding each printing plate out of printing position, means to move each type wheel forward with a step-by-step movement and automatically-operative plate-moving means rendered operative when any type wheel receives its first forward step to move the corresponding type plate into printing position.

2. A laundry listing machine comprising a plurality of rotatable type wheels, a separate printing plate for each type wheel movable into and out of printing position, a latch normally holding each type plate in its out-of-printing position, means for setting each type wheel independently and means for releasing the latch for any type plate when the corresponding type wheel is set and means moving said type plate into printing position.

3. A laundry listing machine comprising a plurality of rotatable type wheels, manually operated means to set each type wheel forward from zero position with a step-by-step movement, a printing plate for each type wheel movable into and out of printing position, a latch normally holding each type plate out of printing position and means for releasing each latch when the corresponding type wheel is given its first forward step from zero position.

4. A laundry listing machine comprising a plurality of rotatable type wheels, a manually operated setting pawl for setting each type wheel forward from zero position with a step-by-step movement, a printing plate for each type wheel movable into and out of printing position, a latch normally holding each printing plate out of printing position, the initial type-wheel-setting movement of any pawl releasing the corresponding latch, and means operative when any latch is released to move the corresponding type plate into printing position.

5. A laundry listing machine comprising a plurality of rotatable type wheels, manually operated means for setting each type wheel forwardly from zero position with a step-by-step movement, a printing plate for each type wheel movable into and out of printing position, a latch normally holding each type plate out of printing position, means operative during the initial forward movement of any type wheel to release the corresponding latch and means to move the released printing plate into printing position, said means being inoperative during any succeeding forward movements of the type wheel.

6. A laundry listing machine comprising a plurality of rotatable type wheels, key-actuated means for setting each type wheel forwardly from zero position with a step-by-step movement, a type plate for each type wheel, a swinging arm on which each type plate is mounted, means normally holding each arm in retracted position with

its type plate out of printing position, means operated by the movement of any key-actuated means by which the type wheel is given its first forward movement from zero position to release the swinging arm of the corresponding type plate and means to move the type plate into printing position.

7. A laundry listing machine comprising a plurality of rotatable type wheels, key-actuated means for setting each type wheel forwardly from zero position with a step-by-step movement, a type plate for each type wheel, a swinging arm on which each type plate is mounted, means normally holding each arm in retracted position with its type plate out of printing position, means operated by the movement of any key-actuated means by which the type wheel is given its first forward movement from zero position to release the swinging arm of the corresponding type plate and means to move the type plate into printing position, said means maintaining the type plate in such printing position during subsequent type wheel setting movements of the key-actuating means.

8. A printing machine comprising a plurality of rotatable type wheels, a type plate for each type wheel movable from inoperative position into printing position, means normally holding each type plate in its inoperative position, means for setting each type wheel independently, spring means for simultaneously moving the corresponding type plate into printing position and means to restore the type wheels to zero position and the printing plates to inoperative position.

9. A printing machine comprising a plurality of rotatable type wheels, a type plate for each type wheel movable from inoperative position into printing position, means normally holding each type plate in its inoperative position, means for setting each type wheel independently, spring means for simultaneously moving the corresponding type plate into printing position, means for restoring said type wheels to zero position and means actuated thereby to restore the type plates to inoperative position.

10. A printing machine comprising a plurality of rotatable type wheels, a type plate for each type wheel movable from inoperative position into printing position, a latch normally holding each type plate in its inoperative position, means for setting the type wheels independently, spring means for moving the corresponding type plates into printing position, a type-wheel restoring device for restoring the set type wheels to zero position, a type plate restoring member and means to actuate the same by the type-wheel restoring device.

11. A laundry listing machine comprising a plurality of rotatable type wheels, a type plate for each type wheel movable into and out of printing position, means normally holding each type plate out of printing position, said type wheels having numeral-forming type characters and the type plates having type to print the names of different articles of laundry, a key for setting each type wheel, and spring means for bringing any type plate into printing position when the corresponding key is actuated, each key carrying a printed designation which is a duplicate of the printed impression formed by the corresponding type plate.

12. A printing machine comprising a plurality of rotatable type wheels, a type plate for each type wheel movable from inoperative position into printing position, a latch normally holding each type plate in its inoperative position, means for setting each type wheel independently, means to release each latch when the corresponding type wheel is set, spring means acting to move the released type plate into printing position, and means to restore the type wheels to zero position and the corresponding printing plates to inopertive position and simultaneously store up energy in the springs for such type plates.

13. A laundry listing machine comprising a plurality of rotatable type wheels, a type plate for each type wheel movable into and out of printing position, spring means acting on each type plate tending to move it into printing position, means normally holding the spring means inoperative, means for setting each type wheel independently, and means to release the spring means for any type plate when the corresponding type wheel is actuated.

14. A laundry listing machine comprising a plurality of rotatable type wheels, a setting key for each type wheel adapted to set the type wheel forward one step at each actuation of the key, a printing plate for each type wheel, spring means acting on each printing plate and normally tending to move it into printing position, a latch to hold each printing plate out of printing position, and means to release any latch upon the initial actuation of the key for the corresponding type wheel.

15. A laundry listing machine comprising a plurality of rotatable type wheels, a setting key for each type wheel adapted to set the type wheel forward one step at each actuation of the key, a printing plate for each type wheel, spring means acting on each printing plate and normally tending to move it into printing position, a latch to hold each printing plate out of printing position, and means to release any latch upon the initial actuation of the key for the corresponding type wheel, each spring maintaining its printing plate in printing position during subsequent actuations of the corresponding key.

16. A printing machine comprising a plurality of type elements, means for setting said type elements independently, a pivotally-mounted platen for supporting the sheet to be printed and movable into and out of printing position, said platen having cam surfaces, a rock shaft, means to rock said rock shaft, arms on the rock shaft engageable with the cam surfaces to move the platen into printing position and to apply thereto a sustained printing pressure, a spring connected to the rock shaft eccentrically thereof and also connected to said platen whereby turning movement of the rock shaft in a direction to release the printing pressure on the platen will operate through the spring to assist in moving the platen away from the type elements.

17. A laundry listing machine comprising a plurality of rotatable type wheels, a type plate for each type wheel movable from an inoperative position into printing position, means normally holding each type plate in its inoperative position, means for setting each type wheel independently, and automatic means structurally separate from the type wheel setting means to move any type plate into printing position when the corresponding type wheel is set.

18. A laundry listing machine comprising a plurality of rotatable type wheels, each having type characters to print numerals, a setting key for each type wheel adapted at each actuation to set the type wheel forward one step, a plu-

rality of printing plates, one for each type wheel, means normally holding said printing plates out of printing position, and self-acting plate-propelling means to move each printing plate into printing position when the corresponding setting key is actuated.

19. A laundry listing machine comprising a plurality of rotatable type wheels, each having type characters to print numerals, a setting key for each type wheel adapted at each actuation thereof to set the type wheel forward one step, a plurality of printing plates, one for each type wheel, means normally holding said printing plates out of printing position, and self-acting plate-propelling means to move each printing plate into printing position when the corresponding setting key is actuated and to maintain said printing plate in its printing position during subsequent actuations of the setting key necessary to produce the desired setting of the corresponding type wheel.

20. A laundry listing machine comprising a plurality of rotatable type wheels, each having type characters to print numerals, a setting key for each type wheel adapted at each actuation thereof to set the type wheel forward one step, a plurality of printing plates, one for each type wheel, automatically operative means tending to move each type plate from its inoperative to its printing position, means normally holding said automatically operative means inoperative, and means to release the automatically operative means for any type plate when the corresponding type wheel is given its initial forward step.

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