Sept. 20, 1949. W. J. KEUPER 2,482,420

CONTROL MECHANISM FOR LAUNDRY MARKING MACHINES

Filed July 7, 1944 3 Sheets-Sheet 1

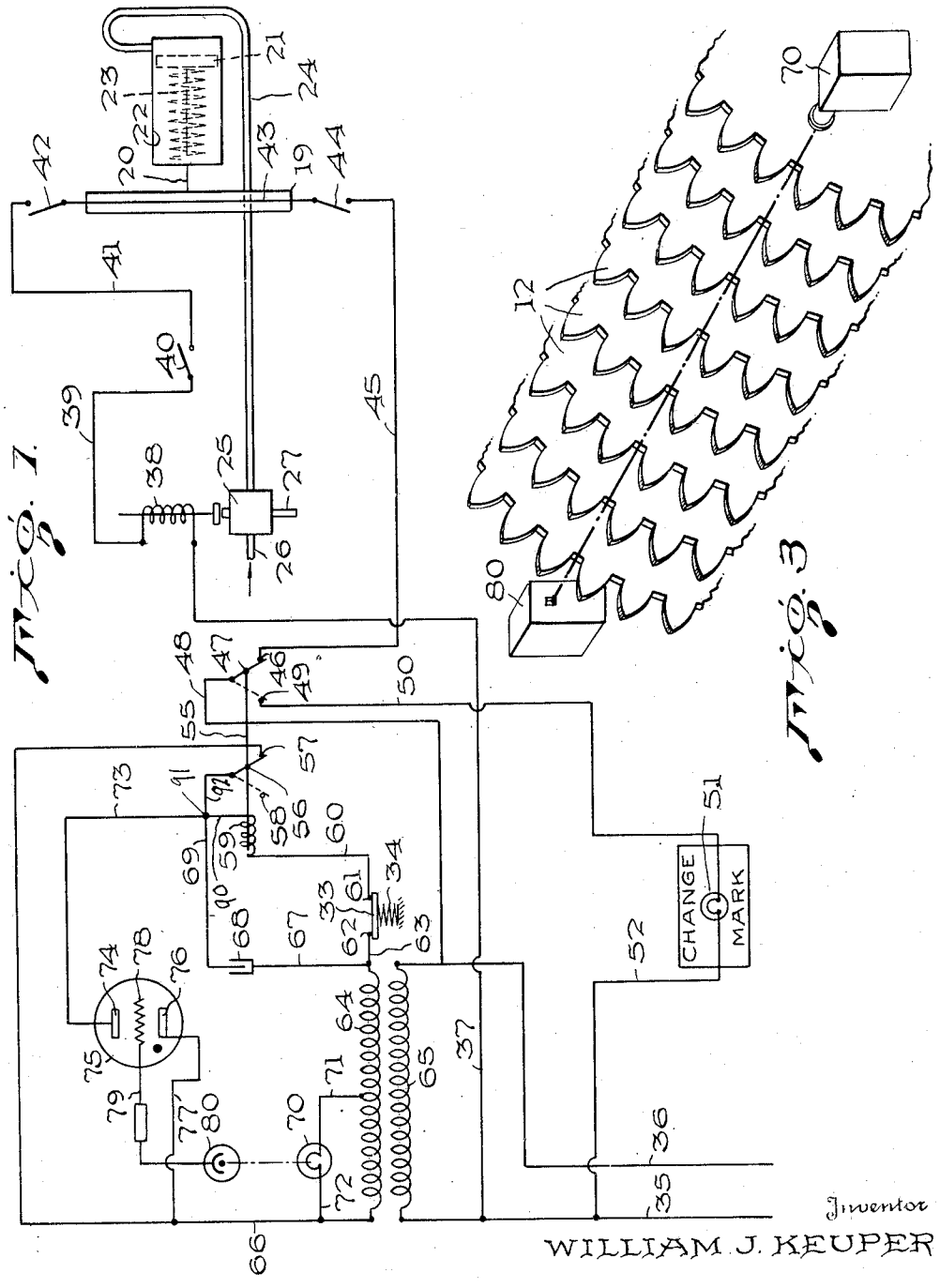


Fig. 1.

Fig. 3.

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Fig. 2.

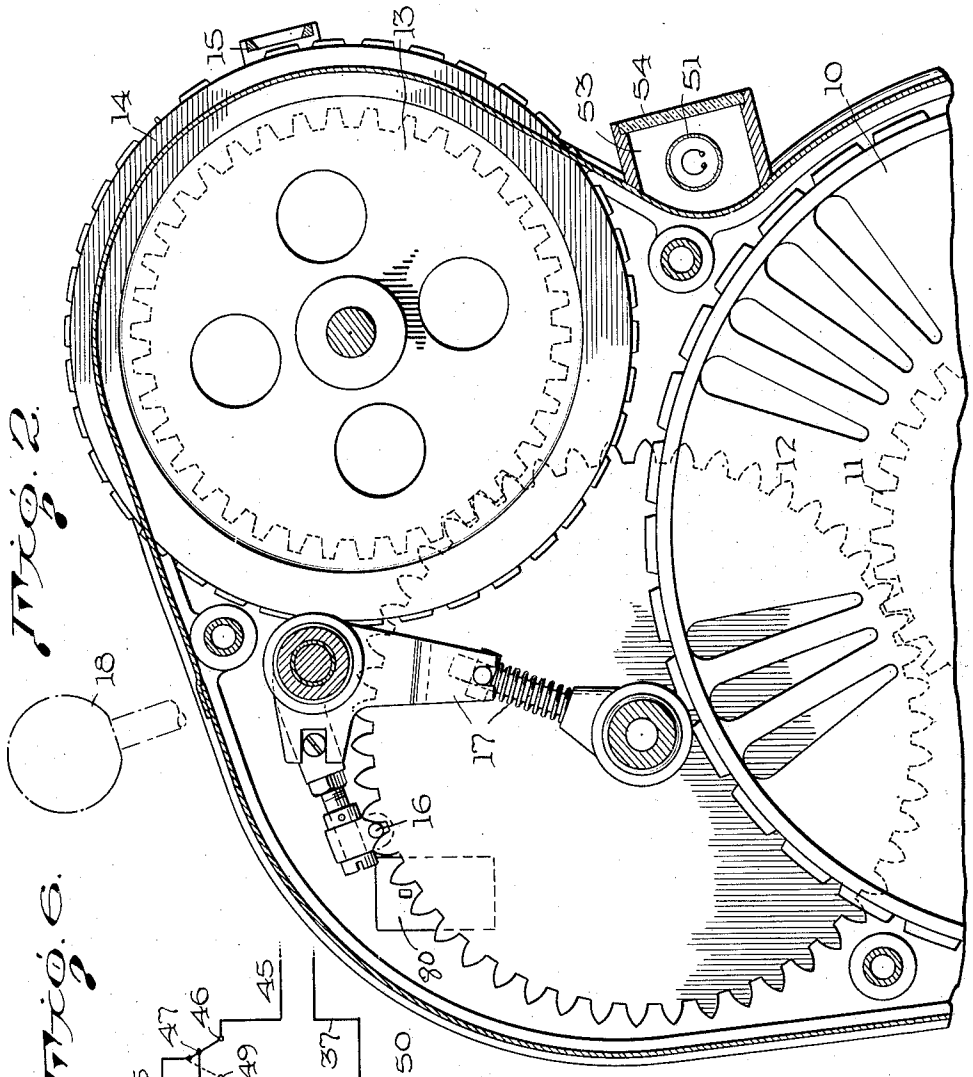
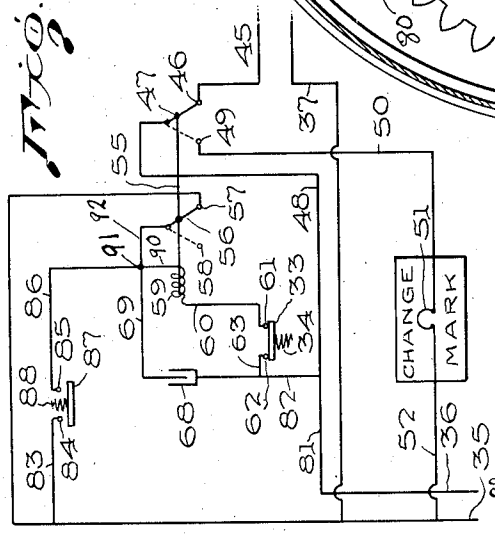


Fig. 6.



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Filed July 7, 1944 3 Sheets-Sheet 3

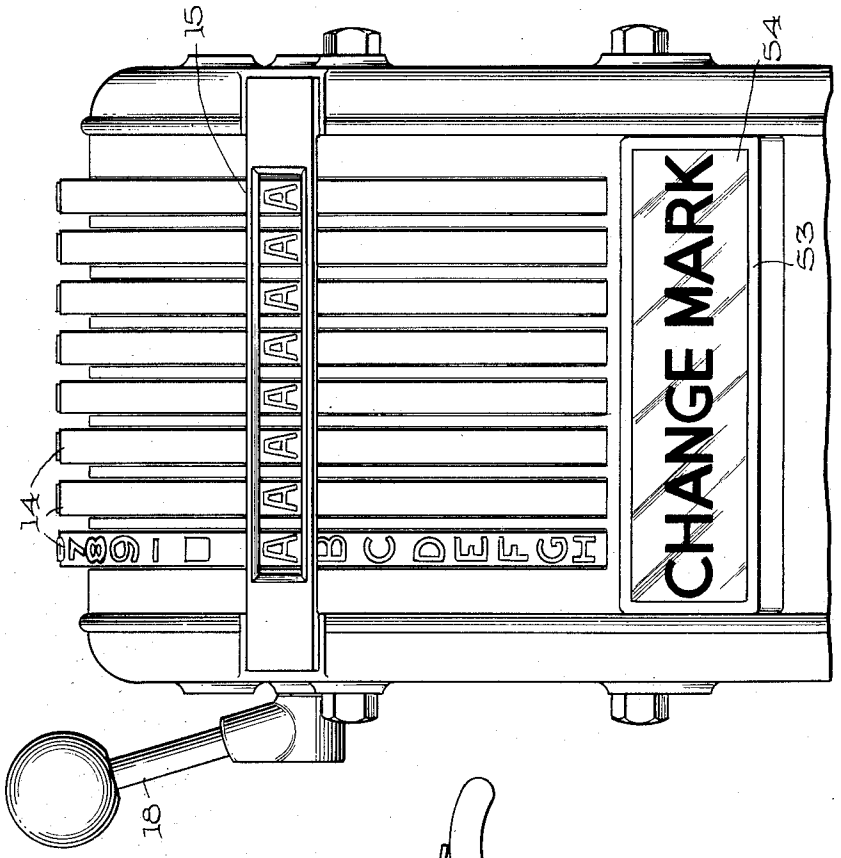


Fig. 4.

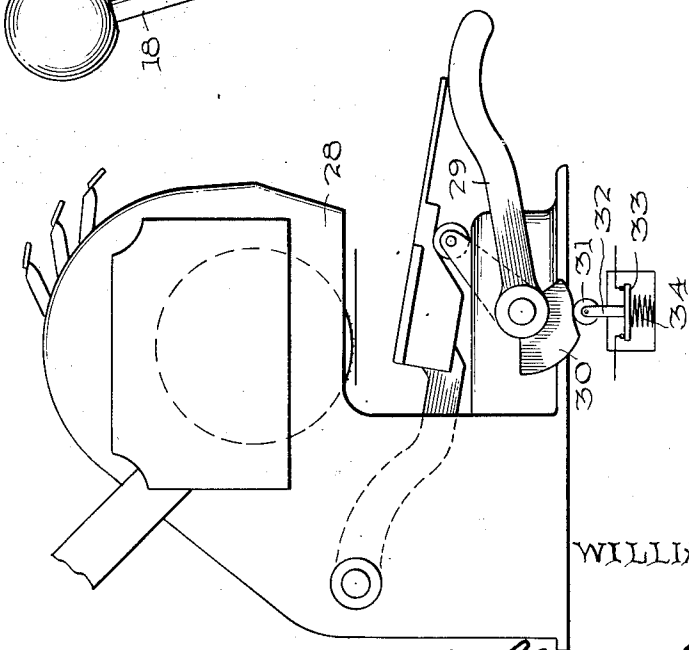


Fig. 5.

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UNITED STATES PATENT OFFICE

2,482,420

CONTROL MECHANISM FOR LAUNDRY MARKING MACHINES

William John Keuper, Cincinnati, Ohio, assignor to The National Marking Machine Company, Cincinnati, Ohio, a corporation of Ohio

Application July 7, 1944, Serial No. 543,836

17 Claims. (Cl. 101—95)

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My invention relates to a new and improved control mechanism for laundry marking machine and has to do, more particularly, with a means for controlling a laundry marking machine with reference to a laundry listing machine used therewith.

In most modern laundries, it is customary to use a laundry marking machine to print, on each piece or article contained in a customer's bundle, the laundry mark that has been assigned to that customer. When the bundle is opened, the operator first sets up on the marking machine the assigned laundry mark, by adjustment of the type-carriers, and places the successive articles of the bundle on the platen of the machine, operating the machine each time to force the platen carrying the article against the type set up, to print the assigned mark thereon. The approved practice is to operate a laundry listing machine alongside the marking machine. When the operator opens the customer's bundle, she takes out the list with the assigned laundry mark on it and places this list on the printing table of the listing machine. As already stated, she sets up this mark on the marking machine. The operator takes the first article from the bundle and depresses the key of the listing machine corresponding to the description of said article. If it is a sheet, she depresses the key labeled "Sheets," if a towel, the key labeled "Towels," and so on. She then marks the article with the assigned mark, on the marking machine, and then throws the piece into a truck or on a conveyor to be carried away for laundering. This procedure is repeated for each article in the bundle. After the last article has been marked and listed, the operator prints the laundry list showing the number of articles of each classification by pulling up on the printing handle of the listing machine. This locks all the keys of the listing machine so that no more articles can be listed without previously resetting the machine to zero. The operator repeats this procedure with a new bundle, first resetting the listing machine to zero and setting up a new mark on the marking machine.

The principal object of my invention is to provide means which will call the operator's attention to the fact that it is necessary to change the mark set-up of the marking machine at the conclusion of the list printing operation.

A further object of my invention is to provide an interlocking control between the marking machine and the listing machine of such nature that the printing of the list by the listing machine will disable the marking machine for subsequent

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marking operations, until enabled by certain manipulations of the operator.

Another object of my invention is to provide a control of a laundry marking machine such that the printing of the laundry list by the associated laundry listing machine will prevent subsequent marking operations of the marking machine until said control is automatically released by changing the mark set-up of said machine.

Still another object of my invention is to provide means actuated by the laundry listing machine, in the list-printing operation, for energizing a signal which directs the operator's attention to the need for changing the mark set-up for the marking machine, and means for automatically deenergizing said signal by changing said mark set-up.

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 diagrammatic view showing the electric circuits of my marking machine control.

Fig. 2 is a vertical, central view through a portion of the laundry marking machine, showing the location of the signal and of the photo-electric cell, with reference to parts of said machine.

Fig. 3 is a perspective view of portions of the marking machine, showing the location of the light source and the photo-electric cell, and the path of the light beam.

Fig. 4 is a view, in front elevation, of the upper portion of the marking machine, showing the location of the signal.

Fig. 5 is a view, in side elevation, of the laundry listing machine, showing the parts added thereto for controlling the marking machine, and

Fig. 6 is a wiring diagram illustrating a modified form of controlling circuit.

In the drawings, the same reference numerals refer to the same parts throughout the several views.

In general, my invention consists in providing means, actuated by the operation of printing a laundry list on a laundry listing machine, for disabling an associated laundry marking machine for subsequent marking operations, and means for enabling said machine to permit fur-

ther marking operations. The enabling means may be actuated automatically by the adjustment of the marking machine type-carriers to set up a new mark. The marking machine may be of a type in which the marking operation is effected by application of fluid pressure to move a platen, on which the article to be marked is held, toward the type set at the printing line. In such case, the control may be effected by opening and closing a circuit connecting a source of electric current with the solenoid of an electro-magnetic valve in the line which supplies fluid pressure for operating the marking machine platen. Such circuit may be controlled by an electro-magnetic relay having a holding circuit including a switch opened by the listing machine, when it is operated to print a list. This will break the holding circuit, allowing the relay to open and deenergize the valve solenoid so that the valve closes and cuts off the supply of fluid pressure for the marking machine platen. The relay may be closed, and the holding circuit reestablished, when the listing machine is in normal condition, by closing a circuit through the operating solenoid of the relay. This may be done manually by the operator, as by closing a push-button switch, or automatically as an incident to changing the mark set-up of the marking machine. One means of accomplishing this automatically may comprise a light source so located as to direct a light beam along a path between teeth of certain intermediate gears of the marking machine, when the type-carriers are aligned with selected type at printing position to print an assigned mark, and a photo-electric cell, on which said beam may impinge when the gears and type-carriers are aligned. This photo-electric cell, when active, generates an electric current which is delivered to the grid of an electronic amplifier, preventing the flow of current therethrough. Adjustment of any of the type-carriers, in setting up a new mark, will move one of the gears to interrupt the light beam and thus permit the passage of electric current through the amplifier to close the relay and reestablish the holding circuit therefor, permitting further marking operations at the will of the operator. The relay may also control a signal circuit indicating to the operator that it is time to change the mark set-up.

Referring to the numbered parts of the accompanying drawings, I have shown a laundry marking machine having a plurality of adjustable type-carriers or type-carrying wheels **10**, with printing type on the peripheries thereof. Each of these wheels has a gear **11** fixed thereto, which meshes with an intermediate gear **12**. Each gear **12** meshes with a gear **13** fixed to the side of the corresponding indicating and setting wheel **14**, having characters on the periphery thereof which correspond to the type on the type-carrying wheel **10**. When the indicating wheels **14** are adjusted by the operator so that the characters forming an assigned laundry mark are visible through the opening of the sighting bar **15**, corresponding type will have been brought to the printing line to print the assigned mark. An aligning bar **16** is provided, engaging between teeth of gears **12** and operated by the aligning device indicated generally at **17**. The operator can throw the aligning bar **16** from effective to ineffective position, and vice versa, by the handle **18**. The marking machine mechanism above described is substantially that shown in my pending application for United States Letters Patent on Laundry marking machine, Serial No. 529,882, filed April 5, 1944, now Patent Number 2,443,426, issued June 15, 1948.

This laundry marking machine may be of the sort having a platen, on which the article of laundry to be marked is held, mounted in a platen-carrier rockable from normal to printing position and having a cylinder adapted to be connected with a source of fluid pressure. The platen is fixed to a piston working in said cylinder and, when the fluid pressure is admitted to the cylinder, the platen is moved toward the selected type, against the pressure of a spring, to print the mark on the article held on the platen. Such a platen-operating mechanism, generally, is shown in my pending application for United States Letters Patent for Laundry marking machine, Serial No. 470,052, filed December 24, 1942, now Patent Number 2,384,034, patented February 22, 1945. In Fig. 1, I have shown diagrammatically the platen at **19**, the cylinder at **22**, the piston at **21**, the piston rod connecting the piston to the platen at **20**, and the spring at **23**. The means for controlling the admission of fluid pressure to the cylinder are not the same as in my said application, Serial No. 470,052, but include a conduit **24** leading to the cylinder and having therein an electro-magnetic valve **25** operated by solenoid **38**. When the solenoid **38** is energized, valve **25** connects conduit **24** with tube **26** leading to a source of fluid pressure and disconnects it from exhaust pipe **27**. When solenoid **38** is deenergized, valve **25** connects conduit **24** to exhaust passage **27** and disconnects it from the tube **26** leading to the source of fluid pressure. The circuit of the solenoid **38** includes certain switches, one closed by movement of the platen-carrier to printing position, and others closed by the hands of the operator as she holds the article on the platen.

In Fig. 5 I have shown, in side elevation, indicated generally at **28**, a laundry listing machine of the type referred to above, which is used to control the laundry marking machine. This machine may be of the type shown in United States Letters Patent of George H. Lang, Nos. 1,352,070 and 2,119,713, to which cross-reference is hereby made. It includes a printing handle **29**, which is rocked upwardly by the operator to carry the laundry list against the type in order to print the list. I have provided a cam **30** integral with the handle **29**, adjacent the axis thereof, which engages a roller **31** carried by a stem **32** secured to a switch member **33**. This switch member is normally held in closed position by the spring **34**, but, when the printing handle **29** is rocked upwardly to print the list, the cam **30** presses the switch member **33** downwardly to open position against the pressure of spring **34**.

Referring to Fig. 1, the power supply lines **35** and **36** are connected to a suitable source of electric current, such as a source of 110 volt, alternating current. Lead **37** connects line **35** to one end of the solenoid **38**. The other end of solenoid **38** is connected by lead **39** to a switch **40**. This switch is normally open but is closed by the movement of the marking machine platen-carrier to printing position. The contact with which switch **40** cooperates is connected by lead **41** to a contact for a switch **42**, the latter being connected by lead **43** to another switch **44**. Switches **42** and **44** are normally open, but are held closed by the operator as she holds the article to be marked on the platen of the laundry marking machine. To this end, it is contem-

plated that switches 42 and 44 will be mounted in the handles of the platen, so as to be in convenient position to be held closed by the operator. The contact with which switch 44 cooperates is connected by lead 45 to a contact 46 for the switch member 47 of an electro-magnetic relay. Said switch member 47 is connected by lead 48 to the line 36. Thus, a circuit is established from the line 35 through lead 37, solenoid 38, lead 39, switch 40, lead 41, switch 42, lead 43, switch 44, lead 45, switch 47 and lead 48 to line 36 and, when switches 47, 40, 42 and 44 are closed, the solenoid 38 will be energized to connect cylinder 22 with the pipe 26 leading to the source of fluid pressure, so that fluid pressure may operate the platen to move it, and the article held thereon, against the type to print a mark on said article.

When switch 47 is open, it engages contact 49, which is connected by lead 50 to the lamp 51 of a signal, the latter being connected by lead 52 to the line 35. Thus, when the switch 47 leaves contact 46 to break the solenoid circuit, it engages contact 49 to close a signal circuit from line 35 through lead 52, lamp 51, lead 50, contact 49, switch member 47 and lead 48 to line 36. As shown in Fig. 2, the lamp 51 is located within a casing or housing 53 having a glass front 54, on which a suitable legend, such as "Change mark" is placed. This signal casing is preferably mounted on the front of the marking machine just below the indicating and setting wheels 14, as shown in Figs. 2 and 4. When the signal circuit is closed, it causes the legend to be illuminated, thus directing the operator's attention to the fact that it is time to change the mark set-up of the laundry marking machine.

Switch member 47 of the electro-magnetic relay is operated by the solenoid 59, and the operating stem or armature 55 of said relay is connected to another switch member 56, which controls a holding circuit for solenoid 59. When solenoid 59 is energized, switch member 56 engages contact 57 and, when the solenoid is deenergized, it engages an idle contact 58. One end of solenoid 59 is connected by lead 60 to contact 61, with which the switch 33 coacts. The other contact 62 for the switch 33 is connected by lead 63 to one end of the secondary 64 of a transformer. The other end of said secondary is connected by the lead 66 to the contact 57. The primary 65 of said transformer is connected across the lines 35 and 36. The switch 33 is the one previously referred to, which is normally closed by the spring 34 but opened by the movement of the printing handle 29 of the laundry listing machine, in printing a list. When solenoid 59 is energized, switch member 56, engaging contact 57, closes a holding circuit for said solenoid which includes the transformer secondary 64, lead 63, switch member 33, lead 60, solenoid 59, lead 90 to the junction point 91, lead 92 to the switch member 56, contact 57 and lead 66 to the other side of the transformer secondary. So long as switch 33 and switch 56 remain closed, the holding circuit will be maintained, but the opening of switch 33 by the operation of printing a list on the listing machine breaks this holding circuit. A condenser 68 is connected in parallel to switch 33 and solenoid 59 by leads 67 and 69.

An electric lamp 70 constituting a light source is connected by lead 71 to a point midway of transformer secondary 64, and by a lead 72 to the lead 66 connected to one end of said secondary. As shown in Fig. 3, this light source 70 is so located, at one side of the laundry marking machine, as to project a light beam transversely of the peripheries of the intermediate gears 12, through the spaces between teeth of said gears, when they are aligned by the aligning bar 16 holding the adjusted type-carriers in adjusted positions. A photo-electric cell, represented at 80, is mounted, on the other side of the laundry marking machine, in the path of said light beam, which will be interrupted by any movement of any of the intermediate gears 12 from a position of alignment, such as will be necessary in the adjustment of the type-carriers to set up a new mark. The junction point 91, which is connected by lead 90 to one end of the solenoid 59, is connected by lead 73 to the anode 74 of an electronic tube 75, such as one of the Thyratron type. The cathode 76 of this electronic tube is connected by lead 77 to lead 66, which connects to one end of the transformer secondary 64. The grid 78 of the electronic tube is connected by lead 79 to the photo-electric cell 80. When the light beam from light source 70 is uninterrupted and falls on the photo-electric cell 80, current is generated by the latter and a potential set up in the grid 78 of the electronic tube, which suppresses the passage of current between anode 74 and cathode 76, but, just as soon as the light beam is interrupted, as it will be by any adjustment of the intermediate gears 12 in setting up a new mark, the suppressing potential is reduced or eliminated and current can pass from the transformer secondary 64 through the lead 66, lead 77, cathode 76, anode 74, lead 73, lead 90, solenoid 59, lead 60, switch 33 which will now be closed, lead 63 and back to the transformer secondary 64. This energizes the solenoid 59, closing the switches 56 and 47, and the closing of switch 56 reestablishes the holding circuit through the solenoid 59, previously described.

The normal condition of the circuit will be as shown in Fig. 1, with solenoid 59 energized and the switches 56 and 47 closed. Switch 33 is closed because the printing handle of the laundry listing machine is in normal position, and the solenoid 38 of electro-magnetic valve 25 will be energized whenever switches 40, 42 and 44 are closed, to permit the fluid pressure coming from pipe 26 to operate piston 21 for platen 19 and print a mark on an article held on the platen. However, when the operator raises the printing handle 29 of the listing machine to print the laundry list, the switch 33 will be opened and this breaks the holding circuit for solenoid 59 of the electro-magnetic relay and causes switch member 47 to move from contact 46 to contact 49, thus breaking the circuit including the solenoid 38 and closing the circuit to the signal 51. As long as this condition exists, the electro-magnetic valve 25 cannot be opened to permit fluid pressure to flow to the cylinder 22 to operate the platen of the marking machine, and the signal light 51 will be energized to direct the operator's attention to the fact that the mark should be changed. When the operator finishes the printing of the laundry list, handle 29 returns to normal position and switch 33 will be closed by the spring 34, but this will be ineffective, by itself, to energize solenoid 59 and reestablish the holding circuit. However, just as soon as the operator adjusts any of the type-carriers 10, the movement of one or more of intermediate gears 12 will interrupt the light beam from source 70 and permit current to pass through the electronic tube 75, which, since switch 33 is closed, will energize solenoid 59, closing switch members 47 and

56 on contacts 46 and 57, and thus reestablishing the holding circuit for solenoid 59. The platen will be operated, to print a mark on an article held thereon, whenever the switches 40, 42 and 44 are closed, until the handle 29 of the laundry listing machine is again raised to open switch 33, in the operation of printing a new list. The signal light 51 will be deenergized as soon as switch member 47 is moved from contact 49 to contact 46.

In Fig. 6, I have shown a modified form of my invention, in which the transformer, 64, 65, the electronic tube 75, the light source 70 and the photo-electric cell 80 are eliminated, and solenoid 59 is energized, and the holding circuit therefor reestablished, by the operator's closing a push-button switch, when the switch 33 is closed due to the return of the printing handle 29 to normal position. Contact 62, with which switch 33 cooperates, is connected by leads 63, 82 and 81 to the power line 36. The power line 35 is connected by lead 83 to contact 84, with which push-button switch 87 cooperates. That switch also cooperates with a contact 85, which is connected by lead 86 to the junction point 91 and lead 90, which extends to one end of solenoid 59. Switch 87 is biased to open position by a spring 88. It will be seen that the circuit for solenoid 59 will be opened by the opening of switch 33, when the printing handle 29 of the laundry listing machine is moved upwardly to print the list, and the movement of switch member 56 from contact 57 will open the holding circuit for said solenoid 59. To energize solenoid 59 and reestablish the holding circuit therefor, the operator closes the push-button switch 87, so that the circuit is completed from the power line 35 through lead 83, contact 84, switch 87, contact 85, leads 86 and 90, solenoid 59, lead 60, contact 61, closed switch 33, contact 62, lead 63, and leads 82 and 81 to the power line 36. This causes the switch member 56 to engage contact 57, which completes the holding circuit for solenoid 59 from the power line 35 through contact 57, switch member 56, leads 92 and 90, solenoid 59 and back to the power line 36. With this modified form of control, the circuit to solenoid 38 will be broken at the switch 47 when the handle 29 of the laundry listing machine is raised to print the laundry list. The laundry marking machine is then disabled for subsequent marking operations, until switch 47 is again closed. At the same time, the circuit to the signal light 51 is energized and that signal is illuminated to indicate to the operator that it is necessary to change marks. The marking machine can be enabled for subsequent marking operations, after handle 29 of the listing machine has been returned to normal and switch 33 has been closed, by closing the push-button switch 87 temporarily, which will energize solenoid 59 and, by closing switch 56 on contact 57, reestablish the holding circuit for said solenoid.

I am aware that the marking machine control shown 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.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. A control for laundry marking machines comprising the combination with a laundry listing machine and a laundry marking machine, of means, actuated by said listing machine in the operation of printing a list thereby, for disabling said marking machine for subsequent marking operations; and means effective only while the listing machine is in non-printing condition for enabling said marking machine to permit subsequent marking operations thereby.

2. A mechanism of the class described comprising the combination with a laundry listing machine of a signal device; operating means therefor; means controlled by said listing machine for automatically actuating said operating means upon the printing of a list by said listing machine; and operable means for disabling said operating means, effective upon return of said listing machine to normal after printing said list.

3. A control for laundry marking machines comprising the combination with a laundry marking machine and a laundry listing machine of a signal device; means, actuated by said listing machine in the operation of printing a list thereby, for operating said signal device and disabling said marking machine for subsequent marking operations; and operable means, effective only when said listing machine has been normalized after printing a list, for causing said signal device to cease operation and enabling said marking machine.

4. A control for laundry marking machines comprising the combination with a laundry marking machine and a laundry listing machine having a printing handle movable from normal to printing position to print a laundry list, of a signal device; means, actuated by movement of the listing machine handle to printing position, for operating said signal device and disabling said marking machine for subsequent marking operations; and operable means, effective only when said handle is in normal position, for causing said signal device to cease operation and enabling said marking machine.

5. A control for laundry marking machines comprising the combination with a laundry marking machine, having fluid pressure means for moving a platen toward type to print a mark, and a laundry listing machine, of an electro-magnetic valve controlling admission of fluid pressure to said platen-moving means; an electric circuit in which said electro-magnetic valve is connected; a switch for opening and closing said circuit; movable means, moved from normal position by said listing machine during part of the operation of printing a list thereby and thereafter returned to normal position, for moving said switch to open position to thereby disable said marking machine and means rendered operable when said movable means is in normal position for moving said switch to closed position to enable the marking machine.

6. A control for laundry marking machines comprising the combination with a laundry listing machine and a laundry marking machine having fluid pressure means for moving a platen toward type to print a mark, of an electro-magnetic valve controlling admission of fluid pressure to said means; a circuit connecting said electro-magnetic valve with a source of electric current; an electro-magnetic relay in said circuit; means, actuated by said listing machine in the operation of printing a list thereby, for operating said relay to break said circuit; and means, effective only when said listing machine is normalized, for operating said relay to reestablish said circuit.

7. A control for laundry marking machines comprising the combination with a laundry listing machine and a laundry marking machine having an element adjustable to condition the

marking machine to print different marks of means, actuated by said listing machine in the operation of printing a list thereby, for disabling said marking machine for subsequent marking operations; and means, actuated by movement of said element away from its last adjustment while the listing machine is in non-printing condition for enabling said marking machine for subsequent operation.

8. A control for laundry marking machines comprising the combination with a laundry listing machine and a laundry marking machine having an element adjustable to condition the marking machine to print different marks of a signal device; means, actuated by said listing machine in the operation of printing a list thereby, for operating said signal device; and operable means, actuated by adjustment of said element for causing said signal device to cease operation.

9. A control for laundry marking machines comprising the combination with a laundry listing machine and a laundry marking machine having an element adjustable to condition the marking machine to print different marks of a signal device; means actuated by said listing machine in the operation of printing a list thereby, for operating said signal device and disabling said marking machine for subsequent marking operations; and operable means, actuated by movement of said element from its last adjustment while said listing machine is in non-printing condition for causing said signal device to cease operation and enabling said marking machine.

10. A control for laundry marking machines comprising the combination with a laundry listing machine and a laundry marking machine having a plurality of adjustable type-carriers, of means, actuated by said listing machine in the operation of printing a list thereby, for disabling said marking machine for subsequent marking operations, and means, actuated by adjustment of any of said type-carriers while said listing machine is in non-printing condition, for enabling said marking machine for subsequent marking operations.

11. A control for laundry marking machines comprising the combination with a laundry listing machine and a laundry marking machine having a plurality of adjustable type-carriers, of a signal device; means, actuated by said listing machine in the operation of printing a list thereby, for operating said signal device; and means, actuated by adjustment of any of said type-carriers while said listing machine is in non-printing condition, for causing said signal device to cease operation.

12. A control for laundry marking machines comprising the combination with a laundry listing machine and a laundry marking machine having a plurality of adjustable type-carriers, of a signal; means, actuated by said listing machine in the operation of printing a list thereby, for energizing said signal and disabling said marking machine for subsequent marking operations; and means, actuated by adjustment of any of said type-carriers while the listing machine is in non-printing condition, for deenergizing said signal and enabling said marking machine for subsequent marking operations.

13. A control for laundry marking machines comprising the combination with a laundry listing machine and a laundry marking machine having a plurality of adjustable toothed members, of means, actuated by said listing machine in the operation of printing a list thereby, for disabling said marking machine for subsequent marking operations; and means for enabling said marking machine for subsequent marking operations including a light source arranged to project a light beam between the teeth of said toothed members when they are aligned, and a photo-electric cell disposed to receive said beam, said beam being interrupted by adjustment of any of said toothed members from alignment to thereby render ineffective the means disabling the marking machine if the listing machine is in non-printing condition.

14. A control for laundry marking machines comprising the combination with a laundry listing machine and a laundry marking machine having a plurality of adjustable type-carriers and fluid pressure means for moving a platen toward said type-carriers, of an electro-magnetic valve controlling admission of fluid pressure to said means; a circuit connecting said electro-magnetic valve with a source of electric current; means, actuated by said listing machine in the operation of printing a list thereby, for opening said circuit; and means, actuated by adjustment of any of said type-carriers while said listing machine is in non-printing condition, for closing said circuit.

15. A control for laundry marking machines comprising the combination of a laundry listing machine and a laundry marking machine having fluid pressure means for moving a platen toward type to print a mark on an article held on the platen, of an electro-magnetic valve controlling the admission of fluid pressure to said platen-moving means; an electric circuit for said electro-magnetic valve including a relay having an operating solenoid; a holding circuit for said operating solenoid; a normally-closed switch in said holding circuit; means, actuated by said listing machine in the operation of printing a list thereby, for opening said normally-closed switch; and means operable when said normally-closed switch is closed for energizing said solenoid and reestablishing said holding circuit.

16. A control for laundry marking machines comprising the combination with a laundry listing machine and a laundry marking machine having a plurality of adjustable type-carriers and fluid pressure means for moving a platen toward said type-carriers to print a mark upon an article held on said platen, of an electro-magnetic valve controlling admission of fluid pressure to said platen-moving means; an electric circuit including said electro-magnetic valve; a relay in said circuit and having an operating solenoid; a holding circuit for said solenoid; a normally-closed switch in said holding circuit; means, actuated by said listing machine in the operation of printing a list, for opening said normally-closed switch; a light source projecting a light beam in such a path that it will be interrupted by adjustment of any of said type-carriers from printing position; a photo-electric cell upon which said light beam impinges when uninterrupted; and means operable when said normally-closed switch is closed, and controlled by said photo-electric cell, for energizing said operating solenoid and reestablishing the holding circuit therefor.

17. A control for laundry marking machines comprising the combination with a laundry listing machine and a laundry marking machine having a plurality of adjustable type-carriers and fluid pressure means for moving a platen toward said type-carriers to print a mark on an article held on the platen, of an electro-magnetic valve controlling the admission of fluid pressure to said

platen-moving means; an electric circuit including said electro-magnetic valve; a relay included in said circuit and having an operating solenoid; a holding circuit for said operating solenoid; a normally-closed switch in said holding circuit; means, actuated by said listing machine in the operation of printing a list, for opening said normally-closed switch; an energizing circuit for said operating solenoid including said normally-closed switch and an electronic tube; a photo-electric cell connected to the grid of said electronic tube; and a light source arranged to project a light beam upon said photo-electric cell when the adjustable type-carriers are aligned at printing position and interrupted by any adjustment of any of said type-carriers from printing position, the interruption of said light beam by such adjustment permitting the passage of electric current through said solenoid-energized circuit, when said normally-closed switch is closed.

WILLIAM JOHN KEUPER.

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Certificate of Correction

Patent No. 2,482,420 September 20, 1949

WILLIAM JOHN KEUPER

It is hereby certified that errors appear in the printed specification of the above numbered patent requiring correction as follows:

Column 4, line 19, for "Patent Number 2,384,034" read *Patent Number 2,384,035*; line 20, for "February 22, 1945" read *September 4, 1945*; column 11, line 19, for the word "energized" read *energizing*;

and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 24th day of January, A. D. 1950.

[SEAL]

THOMAS F. MURPHY,
Assistant Commissioner of Patents.

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