April 26, 1960 B. A. BUSS 2,934,614

LAUNDRY DEVICE

Filed March 12, 1957

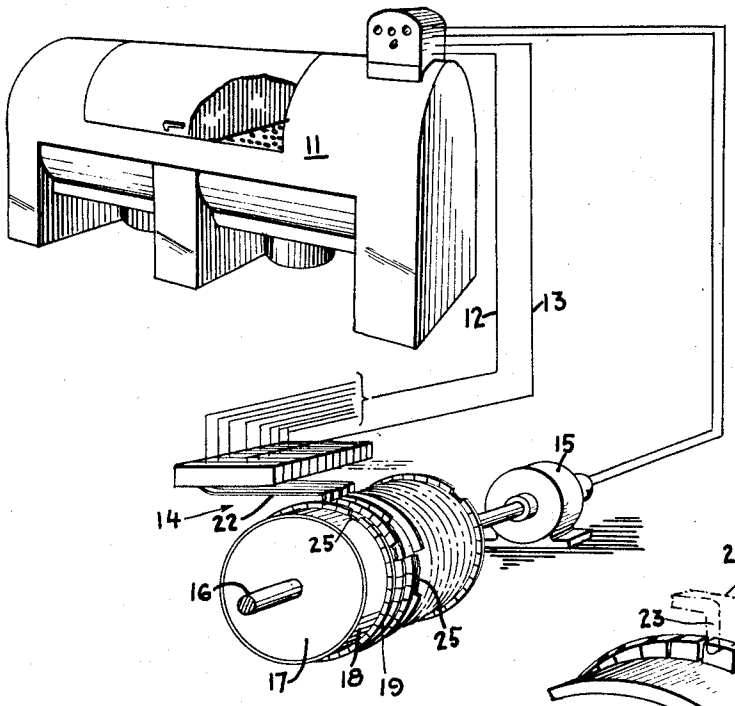


Fig. 1.

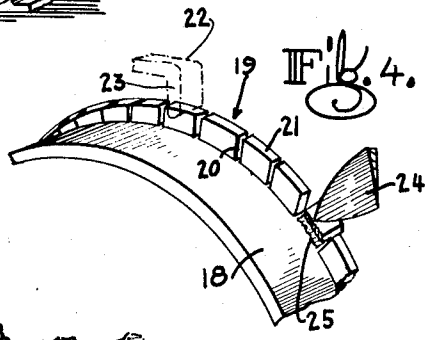


Fig. 4.

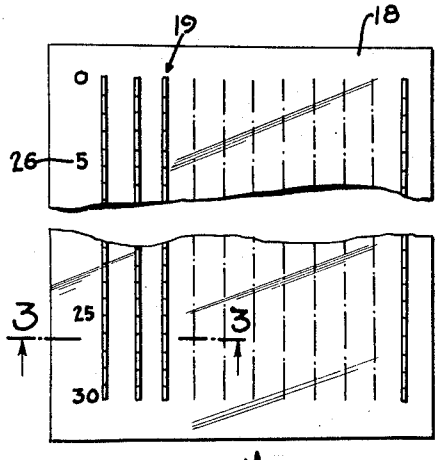


Fig. 2.

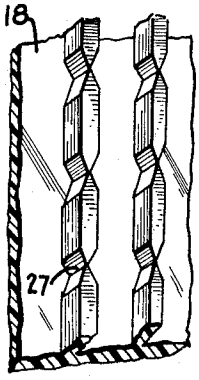


Fig. 5.

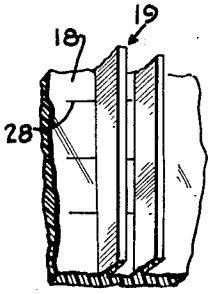


Fig. 6.



Fig. 3.

INVENTOR
BENJAMIN ALVIN BUSS
BY
Pollard Johnston Smythe & Roberts
ATTORNEY

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LAUNDRY DEVICE

Benjamin Alvin Buss, East Moline, Ill., assignor to American Machine and Metals, Inc., East Moline, Ill., a corporation of Delaware

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2 Claims. (Cl. 200—38)

This invention relates to a program control device for a laundry machine, and particularly to the means for setting up a desired program.

In automatic or semi-automatic laundry machines it is the practice to set up a program for the various steps involved in a specified type of washing operation. This program must be changed for each type of washing operation so that the machine will perform as desired. Consequently, it is desirable to provide a manner of programing the operation which is simple and economical to build and which is also readily varied to change the program without the necessity for costly and complicated electronic or mechanical program changers.

It is an object of this invention to provide a construction permitting the setting up of a predetermined program economically and with a minimum of operations.

It is another object of this invention ot provide a construction which permits the ready change from one program of operation to another program of operation.

In its preferred form, the device of the invention is utilized in conjunction with a laundry machine or machines having a program to be controlled and comprises normally a rotatable cylinder, a plurality of ribs extending radially from said cylinder about its circumference, each of said ribs having spaced indicating means about one of its surfaces which indicate predetermined periods relative to the rotary speed of the cylinder, the portions of said ribs between adjacent indicating means being selectively removable so as to set up a predetermined program, and switch means for each of said ribs actuated by the removed portions of the ribs to produce a control signal. The cylinder may be made of plastic, rubber or similar material and if desired, shapes other than cylindrical can be used.

These and other objects, features and advantages of the invention will become apparent from the following detailed description and drawings which are merely exemplary:

In the drawings:

Fig. 1 is a perspective view of the device of the invention controlling the operation of a laundry machine, with certain portions being shown schematically;

Fig. 2 is a plan view of the sheet before it is applied to the cylinder;

Fig. 3 is a view taken along the line 3—3 of Fig. 2 looking in the direction of the arrows;

Fig. 4 is an enlarged view of one of the ribs showing one manner whereby a portion can be broken away;

Fig. 5 is a perspective view of a modified form of a rib; and

Fig. 6 is a perspective view of still another form of rib.

As shown in Fig. 1 the programing device is adapted to be used in conjunction with an automatic or semi-automatic laundry machine in which various operations are performed according to the requirements of the particular load to be washed. In its preferred form, the laundry machine **11** is connected, as through electrical means **12**

and **13**, to a plurality of switches such as of the type sold under the trademark "Micro-switches," shown generally as **14**, each of which controls a particular operation of the machine by transmitting a control signal in a manner well known in the art.

A timing motor **15** operating at a constant speed causes the rotation of shaft **16** and rotatable drum **17** keyed thereto. A plastic sheet **18**, mounted on the outside of drum **17**, has a plurality of ribs **19** on its outer surface, each rib being positioned in alignment with the arm of its corresponding switch. These ribs are formed as integral parts of the sheet and are notched as at **20** so that the portion between adjacent notches, for example **21**, indicates a predetermined period of time relative to the rotary speed of drum **17**. Each switch is provided with an actuating arm or contact **22** for energizing the switch when the arm is depressed. Each of these arms, which is biased downwardly when in the position shown in Fig. 1, has a hooked or feeler portion **23** which rides on the outer surface of one of the ribs.

In order to energize a particular switch at a predetermined time during the machine operation, the proper portion **21** of the corresponding rib is broken away, for example by a knife **24**, permitting hooked portion **12** to drop into the cavity **25** which is formed. In order to facilitate the selection of the proper portion **21** suitable indicating means, such as **26**, may be provided. If the particular switch which is energized must remain energized over a period of time longer than the time defined by a portion **21**, more than one portion may be broken away. If desired, sheet **18** may be molded in a circle and attached to drum **17**.

The construction described above is capable of being set up in any desired program for each switch and thus for each of the machine operations. This construction is economical because it is simple to make a new plate and set up a different program on it and also because there is no necessity for special tools.

Fig. 5 shows a modified form of rib in which weakened portions **27** are utilized instead of notches **20**. If desired, the portions **21** can be indicated by lines, such as **28** in Fig. 6, in which case the entire portion **21** which is to be removed must be cut out. Many other modifications of the rib structure will become apparent to those skilled in the art.

It is to be understood that details of construction can be varied without departing from the spirit of the invention except as defined in the appended claims.

What is claimed is:

1. In a program control device for a laundry machine, a rotatable drum, a normally flat flexible sheet adapted to be wrapped around and removably mounted on said drum so as to form a cylinder thereabout, a plurality of continuous integral ribs on said sheet which extend radially outwardly when said sheet is mounted on said drum, and spaced indicating means on said sheet for indicating predetermined periods relative to the rotary speed of the drum, the portions of said ribs between adjacent indicating means being selectively removable so as to set up a predetermined program, switch means for each rib, and cam follower means operatively connected to each switch means, said cam follower means travelling on a surface of said rib, said switch means being actuated when said cam follower enters the portion of the rib which has been removed to produce a control signal.

2. In a program control device for laundry machine, a rotatable drum, a normally flat rubber sheet adapted to be wrapped around said drum so as to form a cylinder thereabout, the ends of said sheet being removably secured to the drum adjacent each other, a plurality of continuous integral ribs on said sheet which extend radially outwardly

when said sheet is mounted in position on said drum, and spaced indicating means on the flat surface of said sheet between adjacent ribs which indicate predetermined periods relative to the rotary speed of the drum, the portions of said ribs between adjacent indicating means being selectively removable so as to set up a predetermined program, switch means for each rib, and cam follower means operatively connected to each switch means, said cam follower means travelling on a surface of said rib, said switch means being actuated when said cam follower enters the portion of the rib which has been removed to produce a control signal.

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