May 15, 1962 J. A. BROWN 3,034,787

BOWLING PIN DUSTER

Filed July 27, 1960

FIG. 1

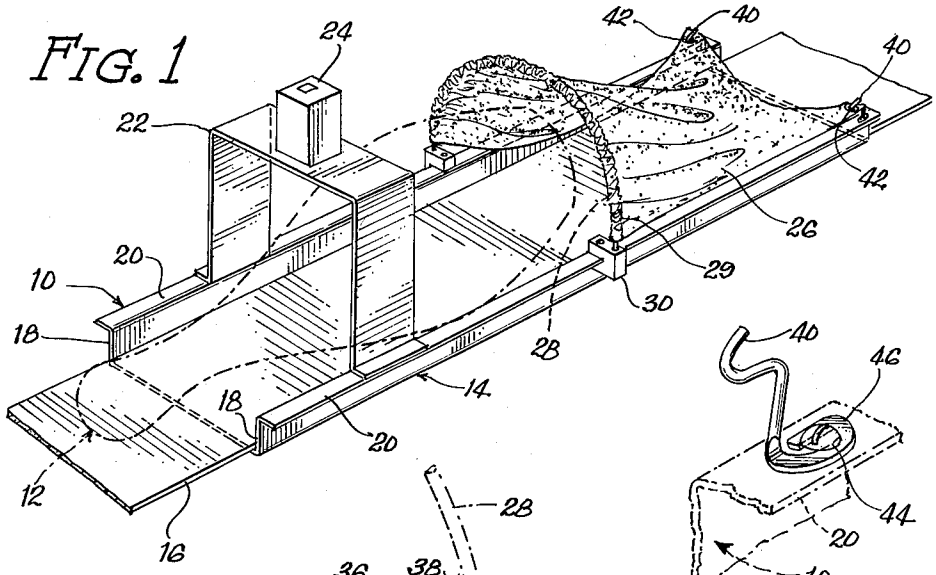


FIG. 3

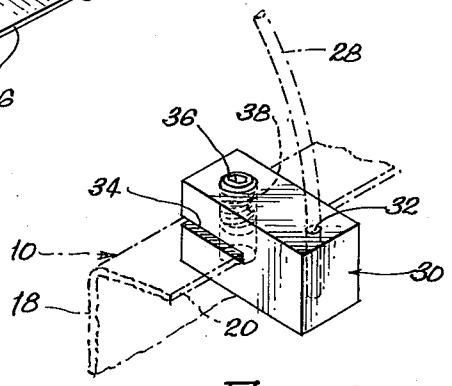


FIG. 2

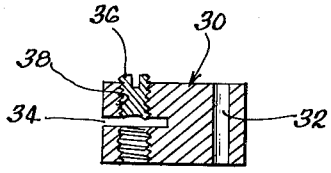


FIG. 4

INVENTOR.
James A. Brown
BY
Toms, McDougall, Williams & Hersh
Attorneys

United States Patent Office 3,034,787 Patented May 15, 1962

3,034,787

BOWLING PIN DUSTER

James A. Brown, 107 S. Dwyer, Arlington Heights, Ill.

Filed July 27, 1960, Ser. No. 45,738
7 Claims. (Cl. 273—54)

This invention relates to automatic machines for setting bowling pins, and pertains particularly to a new and improved device for dusting or wiping the bowling pins as they are handled by the automatic machine.

One object of the present invention is to provide a new and improved arrangement whereby a dusting cloth is draped over the distributor chute of an automatic pin setting machine, so that the bowling pins will wipe against the cloth as they pass along the chute.

A further object is to provide new and improved means whereby the dusting cloth may be mounted on the chute very easily and quickly, without any substantial modification of the machine and without any interference with the normal operation of the machine.

Still another object is to provide an arrangement which will avoid the necessity for dusting bowling pins by hand, and will accomplish the automatic dusting of the pins at extremely low cost.

Further objects and advantages of the present invention will appear from the following description, taken with the accompanying drawings, in which:

FIG. 1 is a perspective view showing the distributor chute of an automatic pin setting machine, the chute being equipped with a bowling pin duster to be described as an illustrative embodiment of the present invention.

FIG. 2 is a fragmentary enlarged perspective view showing the device for supporting the hoop which in turn supports one end of the dusting cloth.

FIG. 3 is a fragmentary enlarged perspective view showing details of the hooks which support the opposite corners of the cloth.

FIG. 4 is a cross-sectional view through the hoop supporting block shown in FIG. 2.

As already indicated, FIG. 1 illustrates the distributor chute or conveyor 10 of an automatic machine for setting bowling pins. The chute is adapted to carry the bowling pins 12 from the elevator to the pin spotting rack of the machine. Those skilled in the art will be thoroughly familiar with the details of such pin setting machines, so that it will not be necessary to illustrate or describe the machine, beyond the pertinent details shown in the present drawings. It will be seen that the illustrated chute 10 is in the form of a trough or channel 14. The conveyor belt 16 may run along the bottom of the channel for carrying the bowling pins. As shown in FIG. 1, the bowling pins 12 are lying down on their sides as they pass along the chute 10. The illustrated channel 14 is formed with upstanding side flanges or walls 18 which guide the bowling pins. Horizontal flanges 20 project laterally in an outward direction from the upper edges of the side flanges 18. The bowling pins pass under an inverted U-shaped bracket 22 which supports a switch 24. Each bowling pin trips the switch 24 to control the operation of the machine, in a manner that will be understood by those skilled in the art.

The bowling pins are adapted to be dusted by a wiping or dusting cloth 26 which is draped over the chute 10 at any suitable point therealong. As each bowling pin 12 passes along the chute 10, it wipes against the cloth 26. As the machine operates, each pin will pass along the chute many times, so that eventually the entire pin will be wiped free of dust.

The leading end of the cloth 26 is supported by a hoop or arch 28 which is large enough so that the bowling pin may pass under the hoop without engaging it. Thus, the hoop does not interfere with the normal movement

of the bowling pins. As shown, the hoop 28 comprises a length of wire or rod which is bent into a generally semi-circular shape. The hoop 28 is adapted to be inserted through a hem 29 at the leading end of the cloth 26. It will be understood that the hem provides an elongated loop adapted to receive the hoop 28.

In this case, the ends of the hoop 28 are supported by generally rectangular blocks 30 adapted to be secured to the outwardly projecting horizontal flanges 20 on the chute 10. Each block 30 is formed with a vertical hole or bore 32 adapted to receive one end of the hoop 28. The vertical bore 32 is formed in the outer end portion of the block 30, so that the ends of the hoop will be well clear of the flanges 20.

The inner end portion of each block 30 is formed with a horizontal slot 34 which extends part way into the block. The slot 34 is quite narrow so that it will fit closely over one of the horizontal flanges 20. The block 30 may be clamped to the horizontal flange 20 by means of a set screw 36 which is mounted in a threaded opening 38 extending vertically through the block 30. The threaded opening 38 extends into the slot 34 so that the lower end of the set screw 36 may be clamped downwardly against the horizontal flange 20 on the chute 10. As shown, the threaded opening 38 may extend all the way through the block 30 so that the set screw may be mounted in either end of the threaded opening. This arrangement makes it possible to use blocks of the same construction on both the left and right-hand sides of the chute 10. Similarly, the hole 32 extends all the way through the block 30, so that the hoop may be inserted into either end of the hole.

Behind the hoop 28, the cloth 26 drapes downwardly over the chute 10 so as to be engaged by the bowling pins 12 as they pass along the chute. However, the trailing end of the cloth 26 is loosely supported at its corners by means of hooks 40 which extend through eyelets, button holes, loops or other openings 42 in the cloth. The hooks 40 may be mounted on the horizontal flanges 20 of the chute 10 in any suitable manner, as by means of the illustrated bolts 44, which extend through eyes 46 formed in the lower ends of the hooks. The hooks 40 keep the trailing end of the cloth 26 over the chute 10 and prevent the corners of the cloth from catching between the conveyor belt 16 and the channel 14, or between the bowling pins and chute.

The cloth 26 may be chemically treated with a material which will attract and hold dust. In this way, the dusting action of the cloth is improved. From time to time it will be necessary to remove the cloth and install a new one so that the original cloth can be cleaned. The hoop 28 may readily be removed from the blocks 30 so that the cloth may be slipped off the hoop.

It will be evident that the blocks 30 and the hooks 40 may be mounted on the machine very readily, without any substantial modification of the machine. The bowling pin duster has no effect upon the normal operation of the machine, except that the bowling pins are kept clean and free from dust so that their appearance is improved and their useful life is prolonged. The removal of the dust also tends to reduce the wear on the pin-setting machine. The bowling pin duster obviates any need for dusting the pins by hand, which is a slow and laborious operation.

Various modifications, alternative constructions and equivalents may be employed without departing from the true spirit and scope of the present invention, as exemplified in the foregoing description and defined in the following claims.

I claim:

1. An automatic pin setting machine, the combination comprising a distributor chute for carrying the bowling

pins, said chute comprising a channel having outwardly projecting horizontal flanges thereon, a pair of blocks mounted on said flanges at opposite points on said chute, each of said blocks having a narrow substantially horizontal slot extending part way through said block and received over the corresponding flange, each block having a threaded opening extending therethrough and a set screw received in said opening for clamping the block to the flange, a generally semi-circular hoop extending between said blocks and arching over said chute, each of said blocks having vertical openings extending therethrough and disengageably receiving the ends of said hoop, a cloth having a hem at one end received over said hoop, and a pair of hooks mounted on said flanges at opposite sides of the said chute for supporting the trailing end of said cloth, said cloth having openings formed in its trailing corners and received over said hooks.

2. A bowling pin duster for an automatic pin setting machine, said duster comprising a generally semi-circular hoop, a pair of mounting blocks for supporting said hoop, each of said blocks having a generally vertical opening extending therethrough for receiving one end of said hoop, each block having a generally horizontal slot extending part way therethrough, a threaded opening extending through said block and opening into said slot, and a clamping screw mounted in said threaded opening, a cloth having a hem at one end received over said hoop, and a pair of hooks for supporting the opposite end of said cloth, said cloth having openings in the corners thereof for receiving said hooks.

3. In an automatic machine for setting bowling pins, the combination comprising a chute for carrying the bowling pins, a generally semi-circular hoop arching over said chute, a pair of mounting devices for supporting the ends of said hoop on the opposite sides of said chute, a cloth having one end mounted on said hoop, and a pair of devices for loosely supporting the opposite end of the cloth on the opposite sides of said chute so that the bowling pins will wipe against the cloth as they pass along the chute.

4. A bowling pin duster for an automatic pin setting machine, comprising, in combination, a generally semi-circular hoop, a pair of mounting blocks having generally vertical openings therein for disengageably receiving the ends of said hoop, a cloth having one end mounted on said hoop, and means for loosely supporting the opposite end of said cloth so that bowling pins will wipe against the cloth when they pass under said hoop.

5. In an automatic pin setting machine, the combination comprising a distributor chute for carrying the bowling pins, said chute comprising a channel having outwardly projecting horizontal flanges thereon, a pair of blocks mounted on said flanges at opposite points on said chute, each of said blocks having a narrow substantially horizontal slot extending part way through said block and received over the corresponding flange, each block having means clamping the block to the flange, a generally semi-circular hoop extending between said blocks and arching over said chute, each of said blocks having vertical openings therein disengageably receiving the ends of said hoop, a cloth having one end mounted on said hoop, and means mounted on said chute for supporting the trailing end of said cloth.

6. A bowling pin duster for an automatic pin setting machine, said duster comprising a generally semi-circular hoop, a pair of mounting blocks for supporting said hoop, each of said blocks having a generally vertical opening therein for receiving one end of said hoop, each block having a generally horizontal slot extending part way therethrough, a threaded opening in said block and opening into said slot, and a clamping screw mounted in said threaded opening, a cloth having a hem at one end received over said hoop, and a pair of devices for loosely supporting the corners of said cloth at the opposite end thereof.

7. A bowling pin duster for an automatic pin setting machine, said duster comprising a generally semicircular hoop, a pair of mounting blocks for supporting said hoop, each of said blocks having a generally vertical opening therein for receiving one end of said hoop, a cloth having a hem at the front end thereof and received over said hoop, and a pair of hooks for anchoring the opposite end of said cloth, said cloth having openings in the rear corners thereof for receiving said hooks.

References Cited in the file of this patent

UNITED STATES PATENTS

1,145,803	Schlossberg	July 6, 1915
1,468,212	Redfield	Sept. 18, 1923
2,587,927	Tshcudy	Mar. 4, 1952