Sept. 18, 1951 W. W. PEEPLES 2,568,461

PACKAGE INSPECTING MACHINE USING MIRROR STRUCTURE

Filed Oct. 29, 1949 2 Sheets-Sheet 1

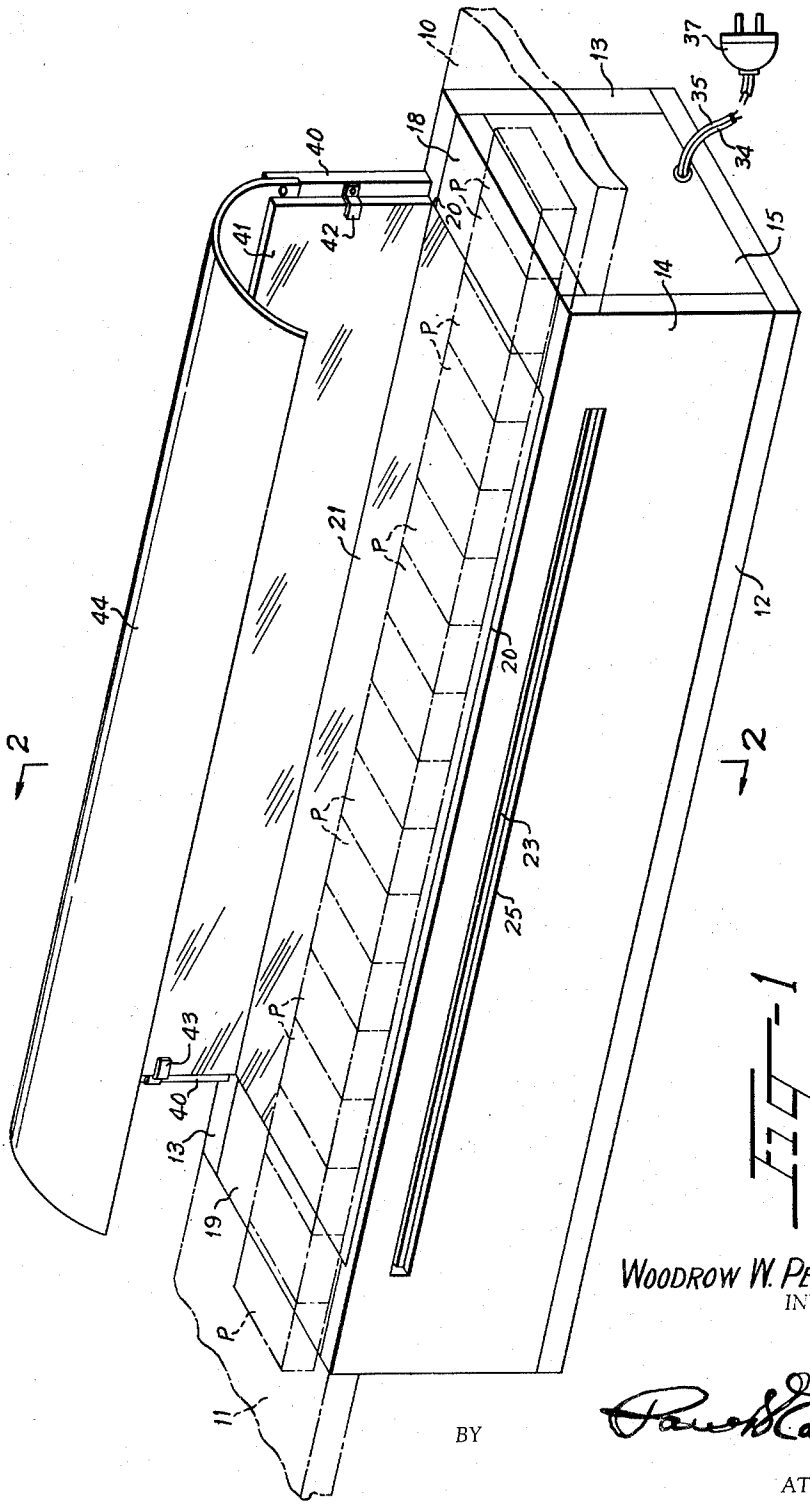


FIG. 1

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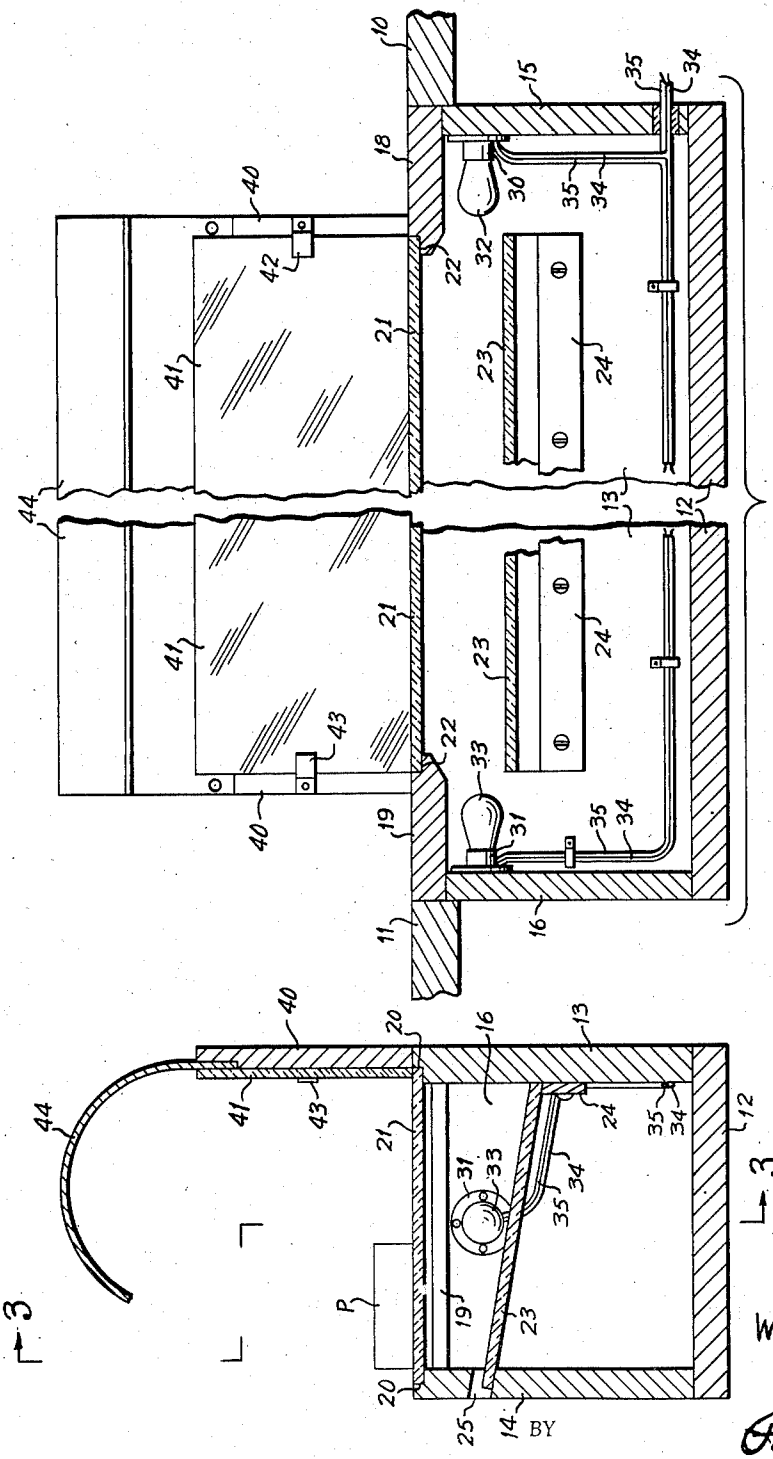


FIG-3

FIG-2

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PACKAGE INSPECTING MACHINE USING MIRROR STRUCTURE

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Application October 29, 1949, Serial No. 124,442

1 Claim. (Cl. 88—14)

1

This invention relates to an inspecting machine and more especially to a carton or package inspecting machine for simultaneously inspecting both sides and both ends of packages, such as individual packages of cigarettes, although I desire it to be understood that this apparatus can be used for inspecting any suitable objects and is not limited to the inspection of packages of cigarettes.

In the manufacture of cigarettes, the individual cigarettes are usually wrapped into individual packages of say 20 cigarettes and the stamp is also affixed thereto and then the packages are wrapped in Cellophane to render them as near moisture proof as possible. It so happens that the machine which supplies the stamps to the cigarette packages very often gets out of order and several stamps will be discharged for a single package and these stamps will be wrapped inside of the Cellophane wrapper by the wrapping machine, thus entailing a great loss to the company during continuous operation, due to the fact that these revenue stamps are expensive.

Heretofore various means have been employed for inspecting the individual packages but in many instances it is required that the inspector turn over the packages of cigarettes so as to view first one side and then the other.

In a cigarette packaging machine the individual packages are usually expelled from the wrapping machine and are pushed by the expelling mechanism in a long straight line across a suitable platform and then into a machine which places them in cartons say of 10 packages to the carton. In this line of travel I propose to place my inspecting machine, which will be described in detail, so that an operator, as the packages are moved along by the expelling mechanism of the wrapping machine, can inspect the same and both sides and both ends of the cigarette packages can be seen simultaneously by an arrangement of mirrors.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds when taken in connection with the accompanying drawings, in which—

Figure 1 is an isometric view of the inspecting machine disposed between two platforms over which the cigarettes are pushed;

Figure 2 is a vertical sectional view taken along the line of 2—2 and Figure 1;

Figure 3 is a longitudinal vertical sectional view taken along the line 3—3 in Figure 2.

Referring more specifically to the drawings the numeral 10 indicates a platform along which

2

packages of cigarettes are pushed from a processing machine such as the machine which places the cigarettes in packages, or a machine which places Cellophane wrappers around the same and also as they pass by the stamping machine where stamps are affixed to the same before the Cellophane wrappers are applied. Numeral 11 indicates a platform onto which cigarettes are pushed by the pressure of the line emanating from the wrapping machine which wraps the Cellophane wrappers around the packages. The top surface of these platforms 10 and 11 are flush top with the top surface of the inspecting machine to be presently described.

The inspecting machine comprises a bottom 12, a rear wall 13, a front wall 14, end walls 15 and 16. The front and rear walls are chamfered or grooved as at 20 for supporting a transparent pane of glass or other transparent material indicated at 21 and over which the packages of cigarettes, indicated at P, are forced by the machine which applies the Cellophane wrapper thereto. It has already been stated that the side walls 13 and 14 are chamfered as at 20 to receive a transparent pane of glass 21 and the end walls 15 and 16 support planar portions 18 and 19 which are grooved as at 22 to support the end portions of the pane of glass 21.

Immediately below the transparent pane of glass 21 is a reflecting mirror 23, which is supported by a ledge member 24 secured to the inner surface of the back wall 13 and is inserted in position and supported at its front by a slot 25 in the front wall 14. On the inner surfaces of the end walls 15 and 16 are disposed electrical sockets 30 and 31 in which incandescent bulbs 32 and 33 are mounted and suitable wires 34 and 35 lead to the two sockets 30 and 31 and are connected to a suitable plug 37 which can be connected to any suitable source of electrical energy for illuminating the bulbs 32 and 33.

Secured to the top edge of the back wall 13 by any suitable means, not shown, such as gluing, or it could be an integral part of the back wall 13, is a backboard 40 which has a reflecting mirror 41 secured thereto by any suitable means such as clips 42 and 43 and, if desired, a transparent or translucent shield 44 may extend upwardly and forwardly from the upper portion of the back wall 40 to cut down the glare from the reflecting mirror 41.

It is seen that the top and front ends of the packages can be seen directly by the inspector, whereas, due to a well known law of physics, namely, that the angle of incidence is equal to

the angle of reflection, the bottom surface of the packages can be seen in the mirror **41** as the images of the lower surfaces will be reflected by the angle of the disposed mirror **23**, whereas the rear end of the packages P next to the mirror **41** will be reflected directly from the mirror **41**.

Therefore any unneeded stamps appearing on the bottom or the top or the far end of the cigarettes, where the stamps are usually applied, will immediately be observed by the operator and such defect can be corrected in the stamp applying machine. Also improperly wrapped packages can be detected or any other imperfection either in the wrapping or in the cigarette packages themselves can be quickly observed.

In the drawings and specification there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only, and not for purposes of limitation, the scope of the invention being defined in the claim.

I claim:

A package inspecting machine comprising a box-like structure having a transparent top disposed in a horizontal plane and an angularly disposed reflecting mirror disposed in spaced relation and below the transparent top and having its front edge at a higher elevation than its rear edge, a vertically disposed reflecting mirror disposed at the back side of the box and rising upwardly from the plane in which the transparent top is mounted and the angle of the angularly disposed mirror being such as to reflect onto the vertically disposed mirror whereby the top and nearest end of packages partially covering the transparent top and being moved across the transparent top can be directly visible by an inspector standing in front of the box and the lower surface of the packages will be reflected by the angularly disposed reflecting mirror onto the vertically disposed mirror, and an arcuate shade member rising from near the upper edge of the vertically disposed mirror and extending forwardly and then downwardly toward the operator so as to shield the eyes of the operator from the glare of the vertically disposed mirror.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,100,769	O'Shaughnessey	June 23, 1914
2,060,528	Powell	Nov. 10, 1936
2,219,572	Everett	Oct. 29, 1940
2,325,499	Fornet	July 27, 1943

FOREIGN PATENTS

Number	Country	Date
571,045	Great Britain	Aug. 2, 1945