April 20, 1926. 1,581,118

G. P. HERRICK

DISPLAY DEVICE

Filed Sept. 3, 1921 2 Sheets-Sheet 1

Fig. 2.

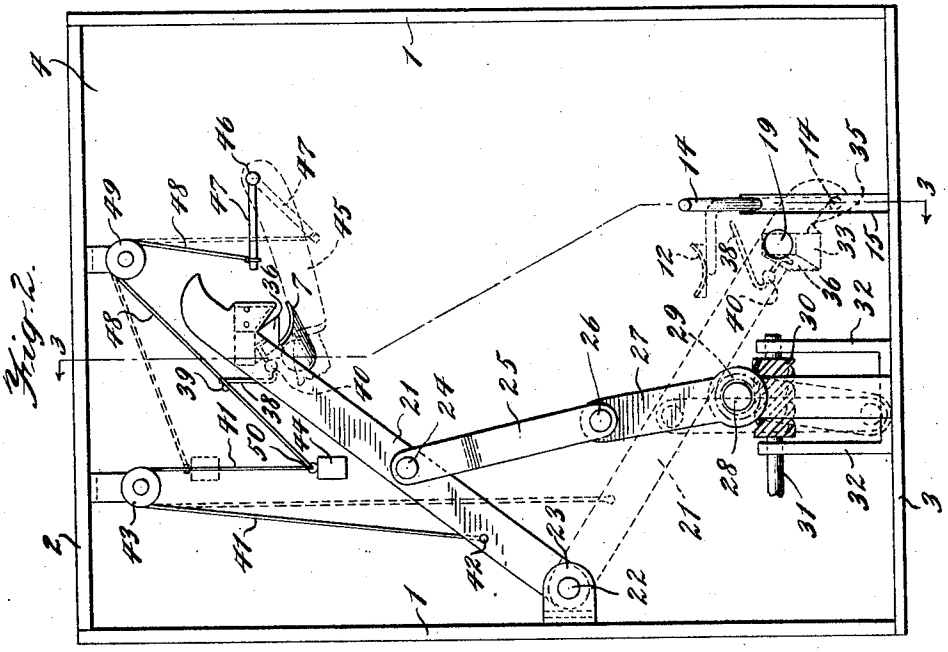
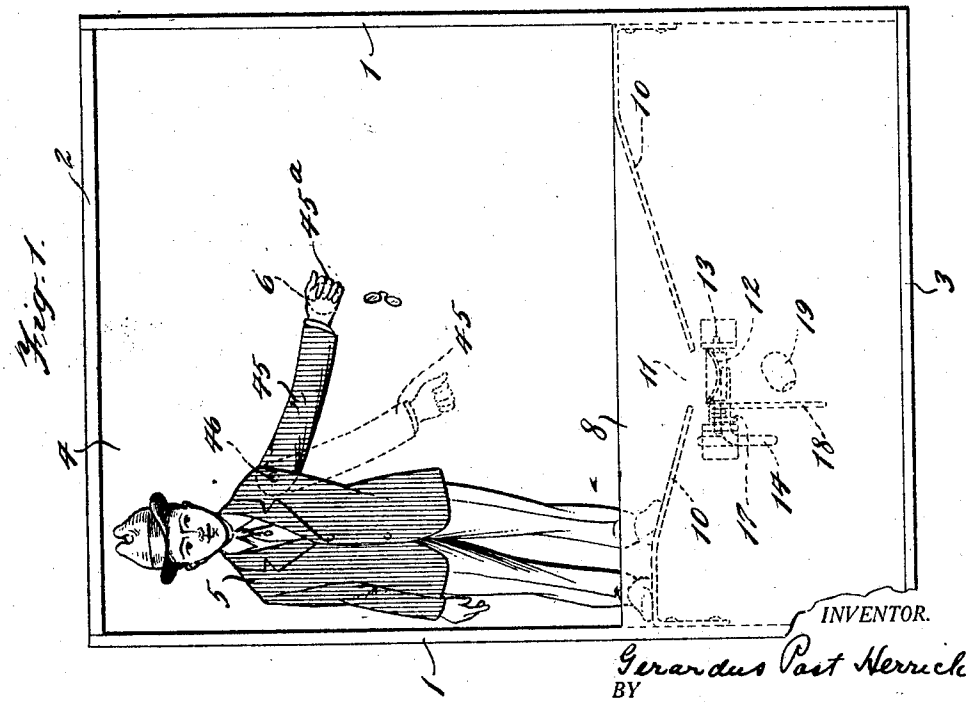


Fig. 1.



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Filed Sept. 3, 1921 2 Sheets-Sheet 2

Fig. 3.

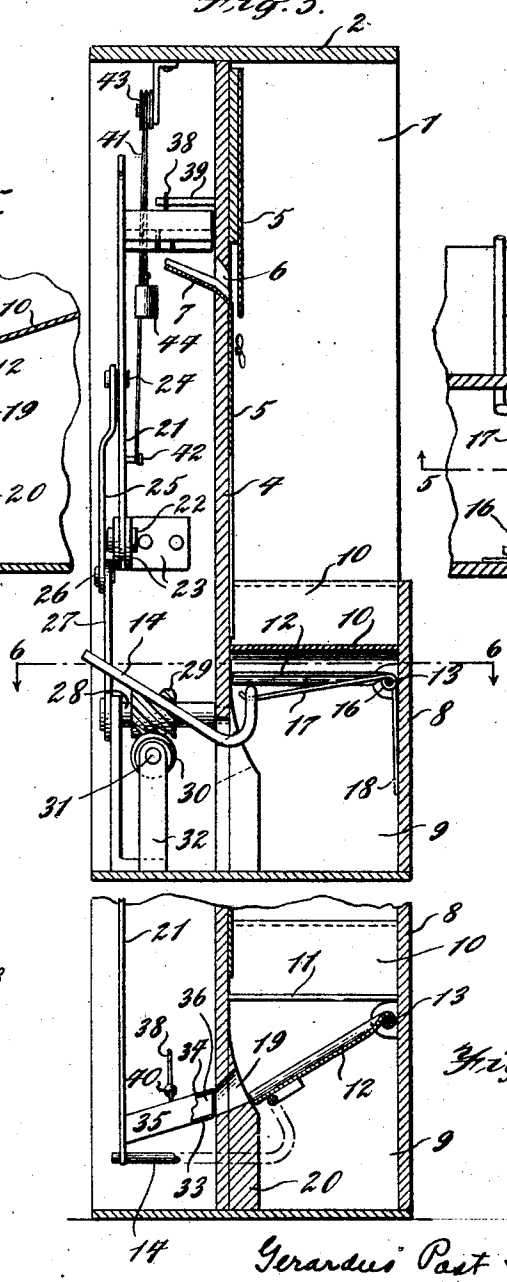


Fig. 5.

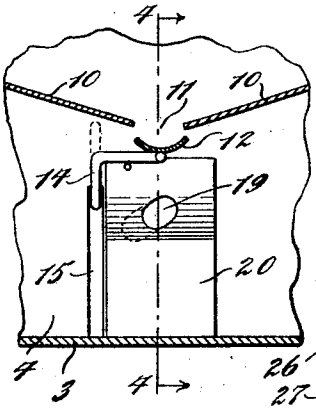


Fig. 6.

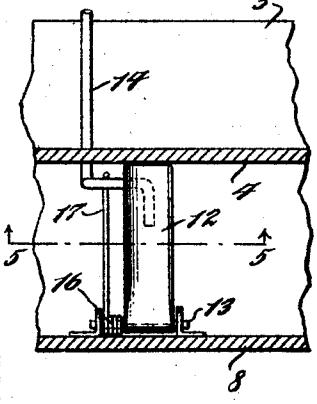


Fig. 7.

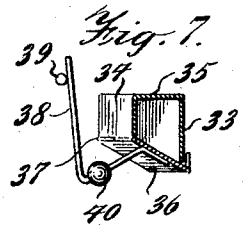


Fig. 4.

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Patented Apr. 20, 1926. 1,581,118

UNITED STATES PATENT OFFICE.

GERARDUS POST HERRICK, OF NEW YORK, N. Y.

DISPLAY DEVICE.

Application filed September 3, 1921. Serial No. 498,305.

To all whom it may concern:

Be it known that I, GERARDUS POST HERRICK, a citizen of the United States, residing at New York city, borough of Manhattan, in the county of New York and State of New York, have invented certain new and useful Improvements in Display Devices, of which the following is a specification.

My invention relates to new and useful improvements in display devices, and in its preferred embodiment contemplates a device having means adapted to lift and drop an object in order to display or exhibit qualities or characteristics of the said object.

My invention consists in the construction and arrangement of parts in operative combination, to be more fully described hereinafter, and the novelty of which will be particularly pointed out and distinctly claimed.

I have fully and clearly illustrated a preferred embodiment of my invention in the accompanying drawings, to be taken as a part of this specification, and wherein—

Figure 1 is a view in front elevation of one embodiment of the invention;

Fig. 2 is a view in rear elevation of the structure shown in Fig. 1, positions of certain parts being shown in full and dotted lines;

Fig. 3 is a section on the line 3—3 of Fig. 2;

Fig. 4 is a section on the line 4—4 of Fig. 5;

Fig. 5 is a section on the line 5—5 of Fig. 6.

Fig. 6 is a section on the line 6—6 of Fig. 3, and

Fig. 7 is a view in perspective of the receptacle for returning the object to the point from which it is dropped.

Referring to the drawings by characters of reference, the side walls 1, top wall 2, and bottom wall 3, arranged in planes at right angles to each other from a casing, as clearly shown in Figs. 1 and 2. The casing is divided in a vertical plane by a partition 4, at the front of which, and preferably secured thereto, is a representation 5 of a person, who, in the embodiment shown, is represented as dropping the object to be displayed. Through the wall 4 adjacent the upper portion thereof is an opening 6, through which the object dropped passes, in order to be dropped in front of said partition, the latter in rear thereof being provided with a chute or guide 7 to receive the object to be dropped and guide the same through the opening 6.

At its lower portion the casing is provided with a front wall 8 of a height substantially less than that of the casing, as shown clearly in Figs. 1 and 3, and providing a receptacle 9 at the bottom of the casing in front of the said partition 4. The upper portion of the receptacle 9 is closed by a floor, consisting of oppositely disposed plates 10 connected to the end walls of the casing and inclined downwardly toward each other to a point intermediate the end walls, the inner walls of said floor members terminating short of each other to provide a slot or passage 11 extending from wall 8 rearwardly, to the partition 4. (See Figs. 1, 4 and 5.) The object dropped from the opening 6 falls upon the floor 10 and through the slot 11 upon suitable delivery or transferring means, to be thereby delivered to a lifting and dropping means, which means will now be described:

12 designates a chute member consisting of a transversely curved plate substantially of the same width and length as the slot 11, said plate being fulcrumed, in any suitable manner, as at 13, on the front wall of the casing. The plate carries, at its free end, a tappet arm 14 rigidly secured to the plate and extending rearwardly therefrom through a slot 15 (Fig. 5) in the partition 4, heretofore described. The plate 12 is normally held in upper position adjacent the slot 11, as shown in dotted lines in Fig. 2 and in full lines in Fig. 5, by means of a spring 16 arranged on the fulcrum pin 13, and having one arm 17 engaging the tappet arm 14, another arm 18 abutting the front wall 8 of the casing. When the plate 12 is in the position shown in Figs. 1 and 5, it is adapted to receive the object dropped on the surface 10, the object sliding down said surface and passing through the slot 11 onto said plate. The tappet arm 14 is adapted to be engaged by means to be presently described, whereby the plate 12 is depressed to inclined position, as shown in Fig. 4, to cause the object to slide from such plate through a guide opening 19 in a fixed member 20 of a lifting and dropping device arranged in rear of the partition 4.

I will now describe means for receiving the dropped object, lifting it to an elevated point and dropping the same through the opening 6, heretofore described. This

means consists preferably of a lever arm 21 fulcrumed, as at 22, on a bracket 23 on one of the side walls of the casing, said lever arm swinging in a vertical plane so that, in its upper position, it is adjacent the discharge opening 6, and in its lower position, as shown in dotted lines in Fig. 2, and full lines in Fig. 4, it is located opposite the guide opening 19. Connected to an intermediate point on the lever arm, as at 24, is a link member 25, pivotally connected, as at 26, to one end of an arm 27, the lower end of which is fixed, in any suitable manner, to one end of a horizontally disposed shaft 28, mounted in suitable bearings in the casing in rear of the partition 4. Upon the shaft 28 is fixed a worm 29, which is in mesh with a worm 30 fixed on a driving shaft 31 journalled in brackets 32 fixed in the casing, which shaft 31 is adapted to be driven, by any suitable source of power, not shown. When the shaft 31 is driven it rotates the shaft 28, giving the arm 29 a rotary movement about the axis of the shaft 28, thereby raising and lowering the lever arm 21 between the limits, indicated in full and dotted lines in Fig. 2.

Carried by the lever arm 21 is a suitable device adapted to receive the object from the guide opening 19, carry the object to the discharge opening 6 when the lever 21 is raised, and discharge the object through said opening 6. This means consists of a box or receptacle having a bottom wall 33, which, when the lever is in lowermost position, is inclined downward from the guide opening 19, as shown in Fig. 4. The receptacle is also provided with a top wall 34, an end wall 35 and a wall 36 opposite the said wall 35, and hinged, as at 37, to the wall 34, said movable wall cooperating with the edge of the bottom wall 33 to close the receptacle. The bottom wall 33 is made longer than the opposite wall 34, so that the wall 36 is inclined when closed, as will be hereinafter described. Connected to the wall 36 is a tappet arm 38 adapted to cooperate with a stop member 39 fixed in the upper portion of the casing, and adapted to be engaged by said arm 38 when the lever 21 is raised, whereby the movable wall 36 is moved to open position. When disengaged from the stop member 39, the member 36 is held closed by a weight 40 mounted on the tappet arm 38, so that said receptacle is closed, except for its receiving end, when it is in alinement with the guide opening 19.

I preferably provide means for equalizing the movement of the lever 21, such means consisting preferably of a flexible connection 41 having one end connected to said lever, as at 42, said connection being carried over a guide wheel 43, mounted in the casing, and carrying at its free end an equalizing weight 44. The figure 5 may be provided with a movable arm 45, fulcrumed, as at 46, the fulcrum pin extending through the partition 4, and carrying on its rear end a lever arm 47, to which is connected one end of a flexible connection 48 passing over a guide pulley 49 in the casing, and connected, in any suitable manner, as at 50, to the flexible connection 41 adjacent the weight 44. It will thus be seen that when the lever arm 21 is raised, and the weight 44 lowered, the weight will exert a pull on the flexible connection 48 to lift the lever 47 and the arm 45 until the hand 45^a is closely adjacent the opening 6, heretofore described. The operation of the device is as follows:

The shaft 31 being driven from any suitable source, and the lever arm 27 rotated, the lever arm 21 will be raised between the limits, shown in full and dotted lines in Fig. 2. When the lever arm 21 is in the position shown in dotted lines in Fig. 2, the free end of said arm will engage the tappet arm 14 and thereby depress the chute plate 12 to the position shown in Fig. 4, whereupon, any object lying upon said plate will, by gravity, slide therefrom and through the guide opening 19 into the receptacle 35 through the open end thereof. The lever will then be raised toward its uppermost position, and since it is disengaged from the tappet arm 14, the plate 12 will resume its normal position, as shown in Figs. 1, 3 and 5. The lever arm 21, upon reaching the upper limit of its movement, will bring the tappet arm 38 into engagement with the fixed stop arm 39, which will cause the movable wall 36 of the receptacle, which wall is now in lowermost position, to open, discharging the object contained in the receptacle upon the inclined chute 7, permitting the object to drop freely from the opening 6 onto the surface 10 down which it slides through the slot 11 onto the plate 12. The lever having discharged the object, then moves toward its lowermost position, and upon reaching such position again depresses the plate 12 to deliver the object from the plate to the receptacle on the lever.

The invention, as shown and described, is adapted for displaying various objects, but I particularly contemplate the use of the same for displaying certain characteristics of commercial articles, which characteristics can be best appreciated by dropping the same from an elevated point so that they may fall upon a surface, and particularly for illustrating the non-breakable characteristics of eye-glasses embodying novel features invented by me, rendering them quite breakproof.

What I claim and desire to secure by Letters Patent of the United States is:—

1. A display device comprising a lever having an up and down movement, a receptacle carried by said lever and adapted to

receive an object when the lever is in lower position, means for discharging the object from the receptacle when in upper position, means to receive the object when dropped, a free space being provided between the point of discharge and the receiving means, and means for delivering the object from said receiving means to said receptacle when the lever is in lower position.

2. In a display device, a casing, a partition dividing the said casing into an enclosed space and a space visible to a spectator, a discharge device for an object comprising a chute adjacent said partition, means comprising a receptacle and a lever within said enclosed space for elevating said object from a position below the end of said chute to a position above said chute, a plate, automatic means for opening said receptacle in its elevated position to permit said object to fall by gravity onto said plate and then into said chute and automatic means for closing said receptacle when the latter is in a receiving position.

3. In a display device, means for lifting and dropping an object and having means for receiving the object, a member to be struck by the falling object, means receiving said object when dropped and adapted to hold same against the action of gravity whereby said object may be exhibited, there being a free space between the point of discharge and said member to be struck and means for returning said object to the lifting and dropping means.

4. In a display device, means for lifting and dropping an object and having means for receiving the object, a member to be struck by the falling object, means receiving said object when dropped and adapted to hold same against the action of gravity whereby said object may be exhibited, there being a free space between the point of discharge and said member to be struck and means for returning said object to the lifting and dropping means, including means for altering the inclination of said receiving member.

5. In a display device, means for lifting and dropping an object and having means for receiving the object, a member to be struck by the falling object, pivoted means receiving said object when dropped and adapted to hold same against the action of gravity whereby said object may be exhibited, there being a free space between the point of discharge and said member to be struck and means actuated by said lifting and dropping means for inclining said receiving member into register with the receiving means of said lifting and dropping means.

6. In a display device, means for lifting and dropping an object and having means for receiving the object, a member to be struck by the falling object, said member having sufficient inclination to allow the dropped object to slide thereupon, a receiving, pivoted means adapted to hold said object against the action of gravity whereby it may be exhibited, there being a free space between the point of discharge from said receiving means and said member to be struck, and means actuated by said lifting and dropping means for inclining said receiving means into register with the receiving means for said lifting and dropping means.

In testimony whereof I have hereunto signed my name.

GERARDUS POST HERRICK.