Nov. 15, 1927.

1,649,448

W. C. CUTLER

PNEUMATIC BOOK

Filed Nov. 12, 1925

2 Sheets-Sheet 1

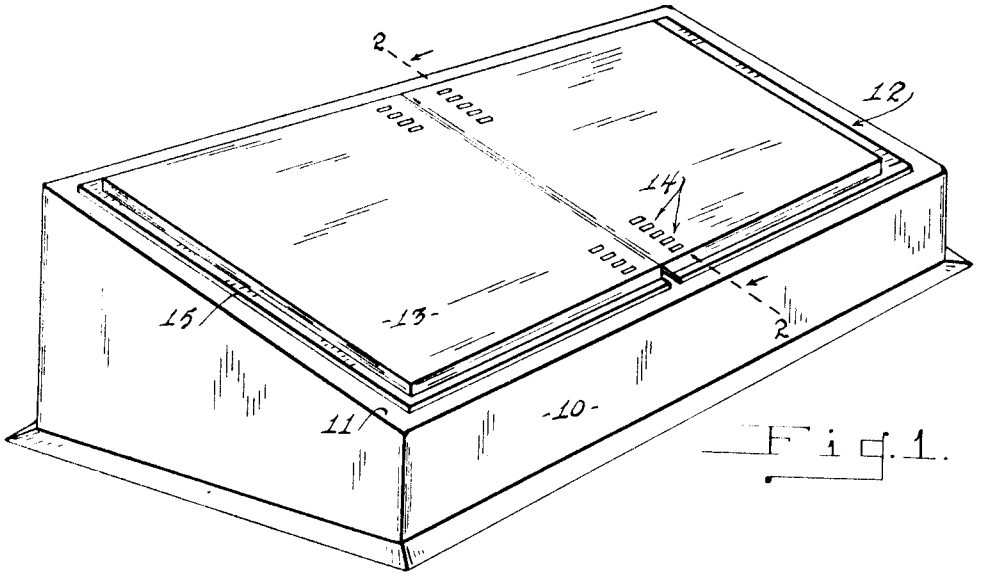


Fig. 1.

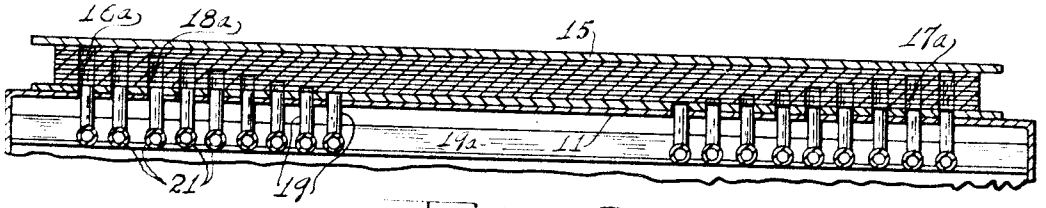


Fig. 2.

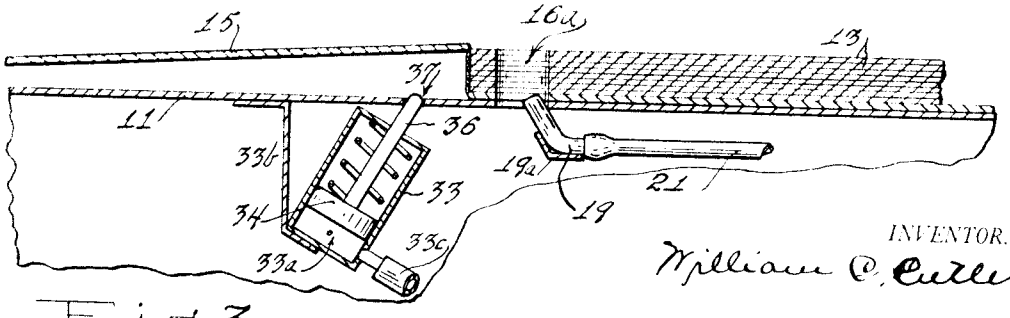


Fig. 3.

INVENTOR.

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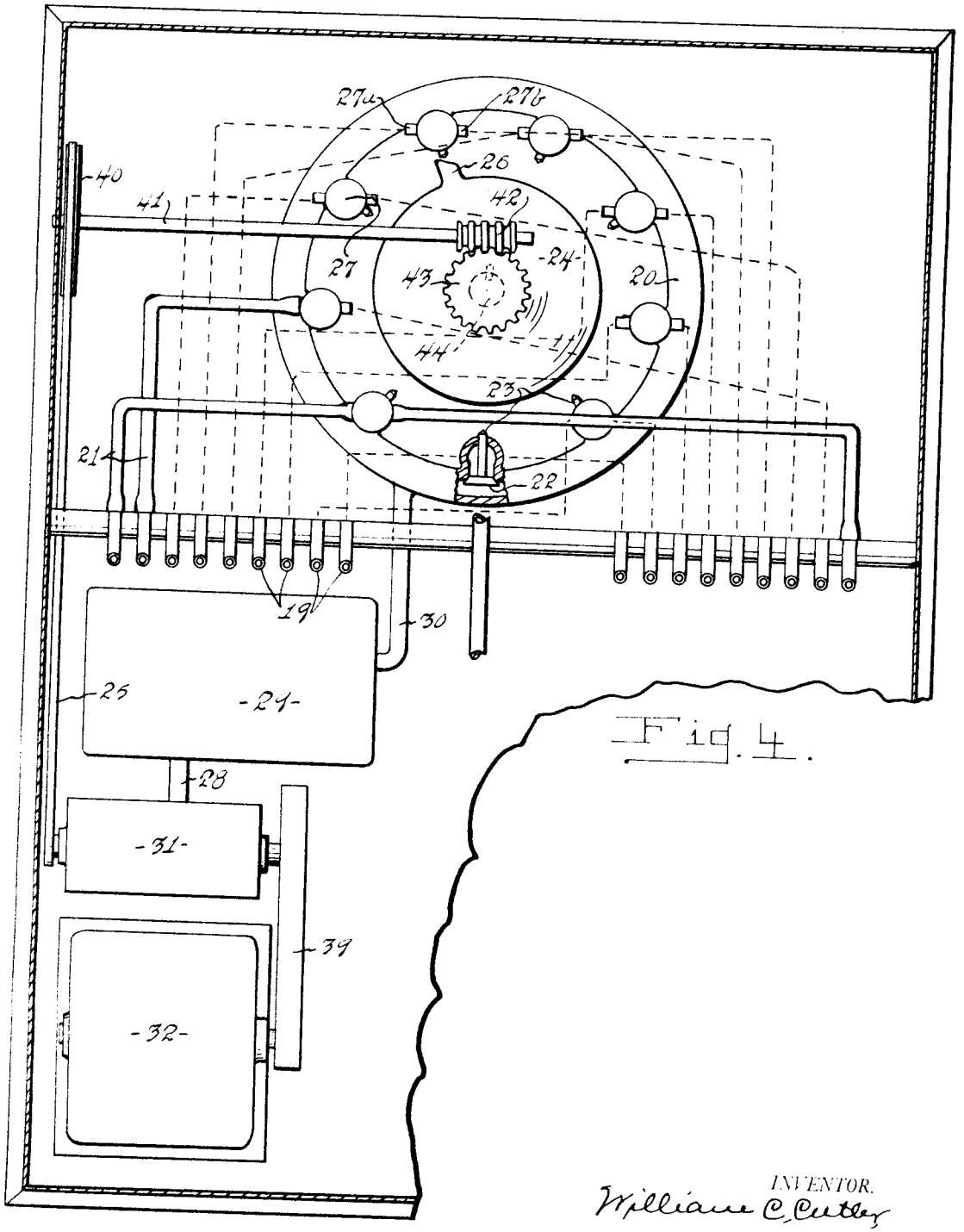


Fig. 4.

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Patented Nov. 15, 1927. 1,649,448

UNITED STATES PATENT OFFICE.

WILLIAM C. CUTLER, OF GLENDALE, CALIFORNIA, ASSIGNOR TO ISABELLA M. CUTLER, OF GLENDALE, LOS ANGELES, CALIFORNIA.

PNEUMATIC BOOK.

Application filed November 12, 1925. Serial No. 68,592.

The present invention relates to advertising display devices and pertains more particularly to automatic devices of that character.

The invention has for its principal object the provision of a device which will automatically display advertising pages one after another to passersby.

Another object of the invention is to provide a device of the character described in which the automatic operation is sufficiently obscure or mysterious to attract and hold the attention of passersby.

Another object of the invention is to provide simple mechanism for carrying out the above objects, so that the entire device may be left to run indefinitely without attention, such as in cases where it is left in a store window at night.

My invention contemplates the provision of a book having a plurality of pages on which advertising is delineated, with means for so actuating said book that the pages appear to turn automatically.

Another object of the invention is to provide a book of that nature with a comparatively large number of pages; said pages being somewhat flexible so that the book does not have a mechanical or inartistic appearance.

Another object of the invention is to provide for further attracting the attention of a passerby in case he should not observe the book.

Still other objects and advantages of my invention will appear hereinafter.

I have illustrated my invention by the accompanying drawings, in which;

Figure 1 is a plan view of a preferred embodiment of my invention.

Figure 2 is a view in section thereof on a line 2—2 of Fig. 1.

Figure 3 is a fragmentary view in section thereof at a right angle to the line along which Figure 2 is taken. Figure 4 is a plan view of the book showing the cover broken away to reveal underlying parts.

In carrying out my invention in the present embodiment I employ a hollow base 10 having a top wall 11 on which is disposed the book 12. The book includes several pages 13 each adapted to be turned as in any ordinary book. On the pages of the book advertising, maps, data, pictures and like matter may be delineated. The pages are provided with perforations longitudinally of the book adjacent the bound ends of the pages. The lowermost page has the greatest number of perforations. The perforations in each page are aligned with the corresponding perforations in the page next below. In the present embodiment each succeeding page, from the bottom upwardly, has two less perforations than the page next above it. Thus the outermost perforations of all pages except the cover 15 of the book, provide an open air course which terminates at the cover. The next row of aligned perforations provides a second air course 17^a which terminates at the first page, and the next innermost aligned perforations provide a third course ending at the second page. This arrangement is continued toward the center of the book until the innermost perforations of the last page are covered by imperforate parts of the page next to the last.

The perforations are so arranged that the air courses provided thereby are inclined inwardly toward the center of the book.

It will be apparent now that jets of air rushing thru the outermost air course will impinge against imperforate parts of the cover. Like jets sent thru the second air course will impinge against the imperforate part of the first page.

Below each air course, and extending along the same axis there is provided an air jet or nozzle such as 19. The nozzles and corresponding air courses are arranged in pairs, the number of pairs and courses conforming in number to the number of pages to be turned.

In the space enclosed by the hollow base there is provided a circular manifold 20 from which leads a plurality of tubes 21, each tube being fitted with a valve 22, having a stem 23 protruding radially toward the axis of the circular space encompassed by the manifold. Coaxially of the manifold there is provided a large cam 24 carrying a worm wheel 43. A worm 42 meshes with the worm wheel 43 and is driven by a shaft 41 which carries a pulley 40. The blower 31, which is driven by the motor thru a belt 39, drives a belt 25 which runs over pulley 40. Thus the cam is driven very slowly. The cam is provided with a rise 26 which connects with successive valve stems as it turns and opens one valve after another. Each tube leading from a valve

branches at 27 to connect with two rubber tubes 27^a—27^b, and said rubber tubes lead to corresponding nozzles. The manifold is in communication, by a line 28, with a storage tank 29. The storage tank is connected by a line 30 to an air compressor, or blower 31. If the pages are very light and thin, only low pressure air is required, in which case, a small turbo-blower will serve to supply air at proper pressure. If the pages are heavy, a compressor should be employed to provide higher air pressure. The compressor is driven by a motor 32 and the small pulley is also driven by the motor.

Within the base there is provided a cylinder 33 in which is a plunger 34. The lower part of the piston is fed by a rubber hose 33^c which leads from one of the aforementioned valves. The lower part of the cylinder is vented by a small hole 33^a. When that particular valve which is shown in cross section in Fig. 4 and which is connected by hose 33^c to the cylinder, is opened by the cam, compressed air from the tank and manifold enters the cylinder more rapidly than it can escape thru the small vent hole and forces the piston rod 36 thru a hole 37 in the base. Said rod is arranged to abut the top of the cover of the book, when same is open, and force the cover and superimposed pages over into closed position. The cylinder 33 is shown carried by a bracket 33^b depending from the cover 11.

In the operation of my improved automatic book, the motor is run continuously and drives the compressor to store up air.

Meanwhile the cam runs continuously, and the compressor has an interval between the opening of two adjacent valves, to compress a reserve supply of air. The cam first opens the valve which leads to the outermost set of nozzles. When the valve opens, the reserve supply of air in the tank rushes thru the tubes to the said nozzles. The resultant jets of air pass thru the corresponding air courses provided by the perforations, and strike the imperforate cover of the book. The air impinging on the cover raises it to vertical position, and then, because of the angle of the jets, forces the cover slightly beyond vertical position so that it falls to open position. Now the valve is allowed to close. The first page of the book is now exposed to the view of the observes and during this interval more air is stored in the tank. Soon the second valve is opened by the travel of the cam. The air rushes from this valve thru the two corresponding tubes to the two corresponding nozzles, and thru these nozzles to the air courses provided by the second set of alined perforations. Now the air jets impinge on the imperforate part of the first page of the book and impel the said first page over into superimposed position up on the cover of the book. Thus the second page is revealed to view. This automatic, or pneumatic turning of the pages is slowly carried on until all pages have been turned.

An observer is attracted to the automatically operating book and is inclined to read each page and to wait with curiosity to see what the following page has to reveal. The escaping compressed air also tends to attract others by its sound. When the cam has about completed its cycle it connects with the valve which controls flow of air to the cylinder. When this valve is open air forces the piston outward and the piston rod drives the front cover and all overlying pages back to closed position and thus the book is closed.

It will be apparent now that I have provided a simple and automatically operating book in which the leaves are turned by air alone, and which book is, at first sight, mystifying as to the manner in which the leaves are so naturally turned.

While I have shown and described a specific embodiment of my invention I do not limit myself to any specific construction or arrangements of parts and may alter same as I desire or as occasion requires, without enlarging the scope of my invention, within the appended claims.

What I claim is:

1. In a book, a plurality of superimposed pages provided with perforations, each page having at least one more perforation than the page which immediately overlies it; the perforations in each page alined with the corresponding perforations in the other pages where by a plurality of air courses are provided, each course terminating at a different page and each page being imperforate at the point where the corresponding air course terminates, and nozzles, one for each air course so provided, each nozzle arranged to direct a jet of air into said course.

2. In a book, a plurality of superimposed pages provided with perforations, each page having at least one more perforation than the page which immediately overlies it; the perforations in each page alined with the corresponding perforations in the other pages whereby a plurality of air courses are provided, each course terminating at a different page and each page being imperforate at the point where the corresponding air course terminates, and nozzles, one for each air course so provided, each nozzle arranged to direct a jet of air into said course and a valve for each nozzle.

3. In a book, a plurality of superimposed pages provided with perforations, each page having at least one more perforation than the page which immediately overlies it; the perforations in each page alined with the corresponding perforations in the other pages where by a plurality of air courses

are provided, each course terminating at a different page and each page being imperforate at the point where the corresponding air course terminates, and nozzles, one for each air course so provided, each nozzle arranged to direct a jet of air into said course and a valve for each nozzle and means for successively opening said valves, one at a time.

4. In a book, a plurality of superimposed pages provided with perforations, each page having at least one more perforation than the page which immediately overlies it; the perforations in each page alined with the corresponding perforations in the other pages whereby a plurality of air courses are provided, each course terminating at a different page and each page being imperforate at the point where the corresponding air course terminates, and nozzles, one for each air course so provided, each nozzle arranged to direct a jet of air into said course and a valve for each nozzle, said valves, arranged in a circular formation, and a cam revoluble coaxially of the formation of valves and arranged to open the valves successively, one at a time.

5. In a book, a plurality of superimposed pages provided with perforations, each page having at least one or more perforations than the page which immediately overlies it; the perforation in each page alined with the corresponding perforations in the other pages where by a plurality of air courses are provided, each course terminating at a different page and each page being imperforate at the point where the corresponding air course terminates, and nozzles, one for each air course so provided, each nozzle arranged to direct a jet of air into said course and a valve for each nozzle, said valves arranged in a circular formation and a cam revoluble coaxially of the formation of valves and arranged to open the valves successively, one at a time, a pneumatic cover closing means for said book, and a valve for same; said valve arranged in the circular formation with the other valves.

6. In a book, a plurality of pages, an imperforate area to each page, each of said areas being arranged so that it is not obscured by such area of any of the other pages, air nozzles, one for each page, each nozzle directed toward the corresponding imperforate portion of the corresponding page.

7. In a book, a plurality of pages, an imperforate area to each page, each of said areas being arranged so that it is not obscured by such area of any of the other pages, air nozzles, one for each page, each nozzle directed toward the corresponding imperforate portion of the corresponding page, and means for causing compressed air to emanate from each nozzle successively.

In testimony whereof I affix my signature.

WILLIAM C. CUTLER.