

Nov. 16, 1965

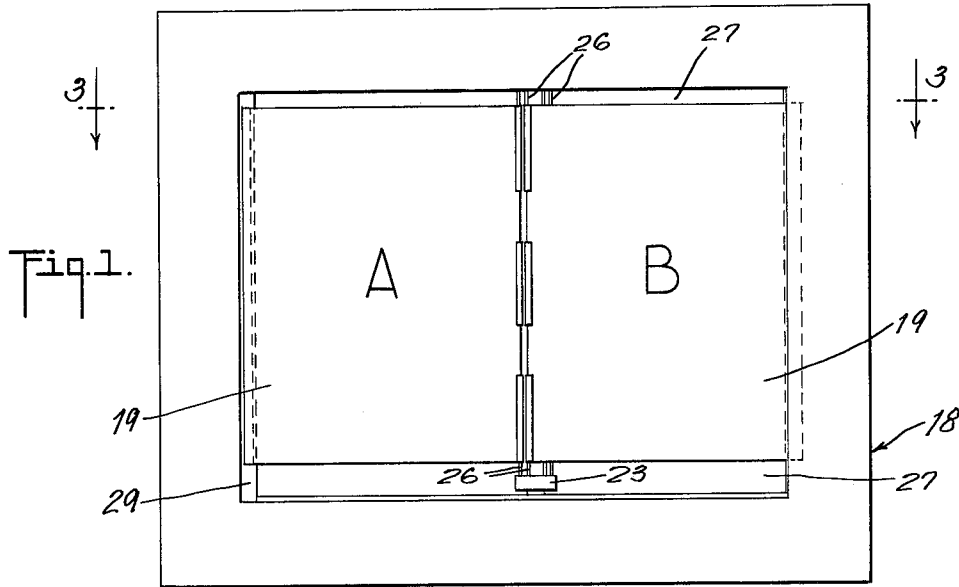
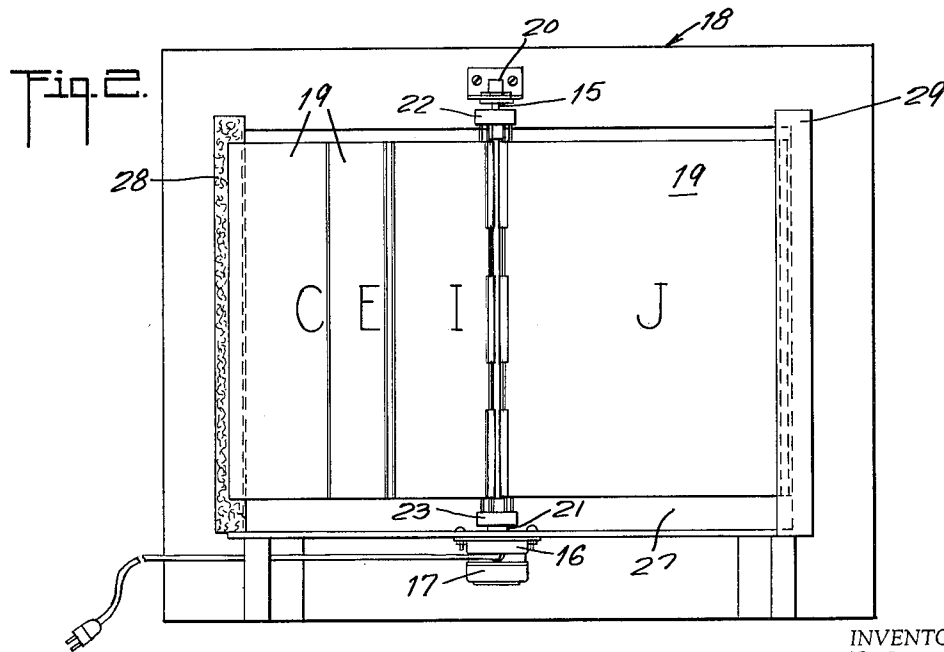
A. F. STEIERT

3,217,435

PAGE TURNER

Filed May 16, 1963

3 Sheets-Sheet 1



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3 Sheets-Sheet 3

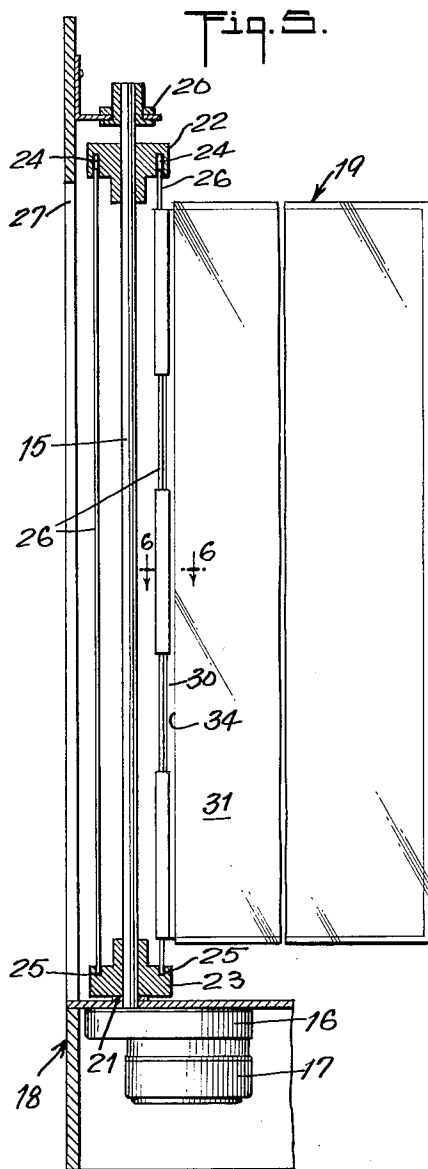
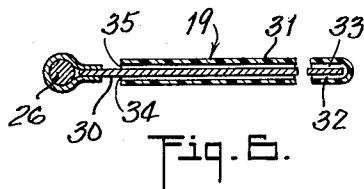
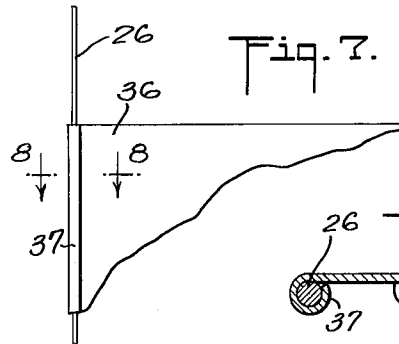
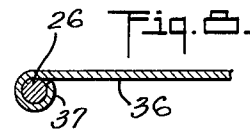
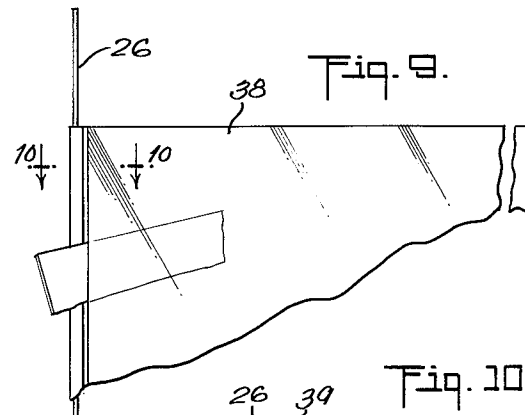
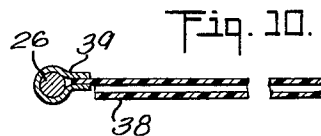
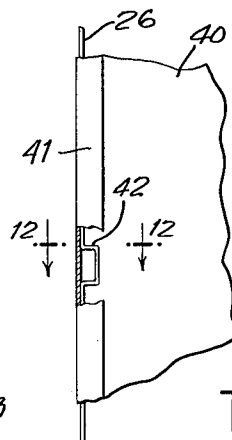
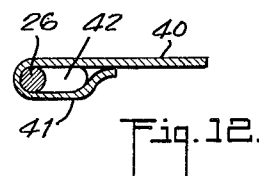


Fig. 11.

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PAGE TURNER

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2 Claims. (Cl. 40-35)

The invention herein disclosed relates to page or leaf turners.

Objects of the invention are to provide simple, inexpensive and quiet running mechanism for automatically turning pages or leaves carrying reading, advertising, display or other subject matter and in which such subject matter can be quickly and readily changed as required.

Special objects of the invention are to provide such mechanism in compact, portable form, adapted for use in store windows and other places where such changeable exhibitors may be desired.

Other desirable objects and the novel features of construction, combination and relation of parts through which the purposes of the invention are attained are set forth and will appear in the course of the following specification.

The drawings accompanying and forming a part of the specification are illustrative of a present commercial embodiment of the invention. Structure however may be modified and changed as regards the immediate illustration, all within the true intent and scope of the invention as hereinafter defined and claimed.

FIG. 1 in the drawings is a front elevation of one of the new page turners with two adjoining pages marked A and B in the display or reading position.

FIG. 2 is a back view of the device.

FIG. 3 is a horizontal sectional view on substantially the plane of line 3-3 of FIG. 1 showing the pages in the position occupied in FIG. 1.

FIG. 4 is a similar view showing the carrier turned far enough to release one, the right front sheet, and about ready to release the other, left hand sheet.

FIG. 5 is a vertical sectional view on substantially the plane of line 5-5 of FIG. 4.

FIG. 6 is an enlarged broken sectional detail, illustrating construction of one of the envelope type pages for carrying advertising or other subject matter.

FIGS. 7 and 8 are fragmentary and sectional views respectively of another, simpler form of page, FIG. 8 being taken on substantially the plane of line 8-8, FIG. 7.

FIGS. 9 and 10 are similar views of an envelope forming type of page.

FIGS. 11 and 12 are similar views of a simple one-sheet form of page construction.

Briefly stated the invention may be considered as comprising an upright motor driven shaft carrying upper and lower disks having opposed sockets to receive the ends of wires carrying the pages, with stops which will be engaged by the free edges of the pages, positioned to release the pages in the radial translation of the wires in the turning movement of the disks.

The vertical shaft is designated 15 and is shown in FIGS. 2 and 5, as driven through reduction gearing 16 from a small electric motor 17, all mounted on a base 18 in the nature of a picture frame for the pages 19.

The shaft 15, journaled in suitable bearings 20 and 21 at the top and bottom of the frame, carries the disks 22, 23 at its upper and lower ends, having opposed sockets 24, 25 to receive the ends of the wires 26 which carry the pages 19.

As shown in FIG. 5, the sockets 24, 25 for the wires are given a depth greater than the length of the wires so that by lifting slightly the wires may be disengaged at the lower ends from the lower disk 23 and then be

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lowered from engagement with the upper disk and thus be completely separated from the rotary carrier.

As shown in FIGS. 1, 2 and 5, the pages are of a height less than the height of the exposure opening 27 in the frame and, as shown in FIGS. 3 and 4, of a width greater than the distance between the shaft center and the adjoining side edges of the frame opening.

Consequently in the turning movement of the carrier the sheets will be successively rotated into position with their side edges caught by the side edges of the frame opening and be restrained in that position until the carrier turns far enough to pull the edges of the sheets inwardly out of engagement with the restraining edges.

To assure smooth, quiet operation and temporary holding of the pages in the exposed position the restraining edges of the frame may carry stop strips 28 of felt or the like, as indicated at the right in FIGS. 3 and 4.

In practice the sheets may carry advertising or other subject matter on both sides, readable on the front side while first held by the right hand stop 28 and readable on the reverse side when turned over and held by the left hand stop 29.

Also the sides of the two pages exposed at one time may carry overlapping or successively readable subject matter so as to present in effect one continuous display.

In the restrained position the continuous turning of the carrier tensions the front appearing leaf about the pivot wire of the successive or following leaf, as shown in the two views, FIGS. 3 and 4, thus applying tension which will cause the front leaf to snap forward and swing over to the other side as soon as released from the holding stop.

To facilitate and insure this action the leaves are preferably made of somewhat elastic material, such as plastic, cardboard or the like.

In FIG. 1 the left hand leaf carrying subject matter A on the back of the same is matched with the leaf carrying following subject matter B on the face of the same. In this display position, as shown in FIG. 3, the sheet carrying subject A rests against the sheet in front of it which is still held by stop 29 and the right hand leaf carrying subject B is held against the right hand stop 28.

In the slightly further rotary movement indicated in FIG. 4, sheet A is still retained by stop 29 while the sheet in front of it is released and sheet B has just been released by the right hand stop, after the leaf following the same has come up in back of it into engagement with stop 28.

Thus there is never an absence of leaves appearing in display position, affording thus a continuing display.

As page B, FIG. 4 swings over to the left the subject C on the back of that leaf arrives in the left hand display position and the subject D on the front of the succeeding leaf is uncovered and appears in the right hand side of the frame.

Both sides of the leaves are therefore successively brought into display position, first at one side and then at the opposite side of the frame.

The leaves may be made up in different ways depending on the use of the display device. FIGS. 5 and 6 show a leaf made up with a central core 30 having a transparent plastic envelope 31 about the same, providing pockets 32, 33 at opposite sides of the central sheet 30 for advertising or other subject matter which may be inserted through the full length openings 34, 35 at the inner edges of the envelope.

FIGS. 7 and 8 show the leaf as a single layer 36 of plastic, cardboard or other sheet material, secured by being wrapped at 37 about the wire.

This sheet material may be of such a nature as to be

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written on, painted on or otherwise treated for display purposes.

FIGS. 9 and 10 show the leaf made up as a single transparent plastic envelope 38 adhesively or otherwise secured to the wire at 39. Advertising matter or other material may be readily slipped into and out of this transparent envelope.

FIGS. 11 and 12 show the leaf as a single piece of sheet material 40 wrapped about the wire as indicated at 41 and the wire as having a bend or offset 42 in the intermediate portion of the same to firmly hold the sheet in position thereon.

In FIGS. 3 and 4 the leaves are lettered to show how succeeding leaves will arrive at the display position to expose both sides, first one side and then the other, to thereby effect a continuing disclosure of subject matter, illustrative, pictorial, advertising or the like. The subject matter is readily changeable by removing and replacing the different sheets or the material enclosed in the transparent envelopes forming or constituting the leaves or pages.

The structure is relatively simple, inexpensive, consisting of but few parts requiring no servicing or other attention.

The rotary carrier disposed intermediate the sides of the frame withdraws the sheet at one side from the edge stop at that side while retracting the sheet from the stop at the opposite side, tensioning these sufficiently to effect continuing travel from one side to the opposite side.

Of the two, horizontally spaced upright stops, the one at the right, 28, may be considered as a front stop and the other, at the left, 29, as a back stop for the rotating tensioned leaves on the rotating carrier disposed midway between the stops.

The display is attractive, having the appearance of the two pages of an open book and the action is quiet and smooth like the turning of the pages of a book.

The rotating carrier in sliding the edges of the pages off the side stops tensions the pages sufficiently to swing them over quickly from one side to the other and to then hold them temporarily in flat readable relation, engaged with the stops.

The action may be continuous or intermittent and if desired switching means may be provided for starting and stopping the turner at will, for example, as a convenience in delivering a lecture or illustrating merchandise or the like.

While shown as operating on a vertical axis the device may be arranged with the carrier on a horizontal or inclined axis.

If desired, the leaves and supporting wires may be made separable from each other enabling ready change of display matter.

Also the pages may be made up and be secured on the wires by "welding" methods appropriate to such materials.

The timing of the turning of the pages is automatic and may be governed by relatively proportioning the position of the stops with respect to the width of the pages so that pages will be released earlier or later in the revolution of the carrier. By such control the two pages to be exposed may be made to turn both together or one after the other.

What is claimed is:

1. A page turner comprising

an upright frame having a display opening defined in part by upright side edge portions,

an upright shaft journaled on said frame in back of

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said display opening, midway between said upright side edge portions,

a motor on said frame geared to rotate said shaft at a speed for observation of the pages to be turned, collars on the upper and lower end portions of said shaft, having aligned opposed sockets for page carrying wires,

the sockets in the lower collar being closed at the bottom to support wires in definite position therein and the aligned sockets in the upper collar being vertically extended to permit lifting of the wires supported in the lower sockets,

wires of a length greater than the distance between opposed sockets,

said wires being engaged in supported position in said lower sockets and free for vertical movement in the upper sockets sufficient to effect clearing of the lower ends of the wires from the lower sockets, whereby said wires will be retained in aligned sockets but may be removed by first lifting them to clear the lower sockets and then lowering them away from the upper sockets, enabling ready removal and replacement of the wires,

display pages of stiff, flat, flexible and bendable springy sheet plastic carried by said wires,

said pages being of less height than the vertical extent of said opening and of a width to slightly overlap said opposite side edge portions of the opening, rearwardly and forwardly facing stop strips of plastic page restraining material on said opposite edge portions of the display opening, engageable by the free edges of the forwardly and rearwardly turning pages, and

said sockets for the wires being spaced circumferentially on the collars to engage the wire supported portion of a page in back of the front forwardly turning page while that page is still held in engagement with the rearwardly facing stop strip to thereby apply a bending force on the back of the front forwardly turning page whereby to bend and tension that page in a forwardly turning direction while still held by said stop strip, enabling said front page as it is drawn clear of the stop strip to snap forwardly of its own force into position at the opposite side of the display opening in engagement with the forwardly facing stop strip at that side of the opening.

2. The invention according to claim 1 in which said pages are in the form of transparent flexible plastic envelopes, open along one edge enabling insertion and removal of cards or other illustrated matter.

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