May 14, 1957 W. R. BRENNEKE 2,791,849

PAGE TURNING DEVICE

Filed Nov. 8, 1956

FIG. 1

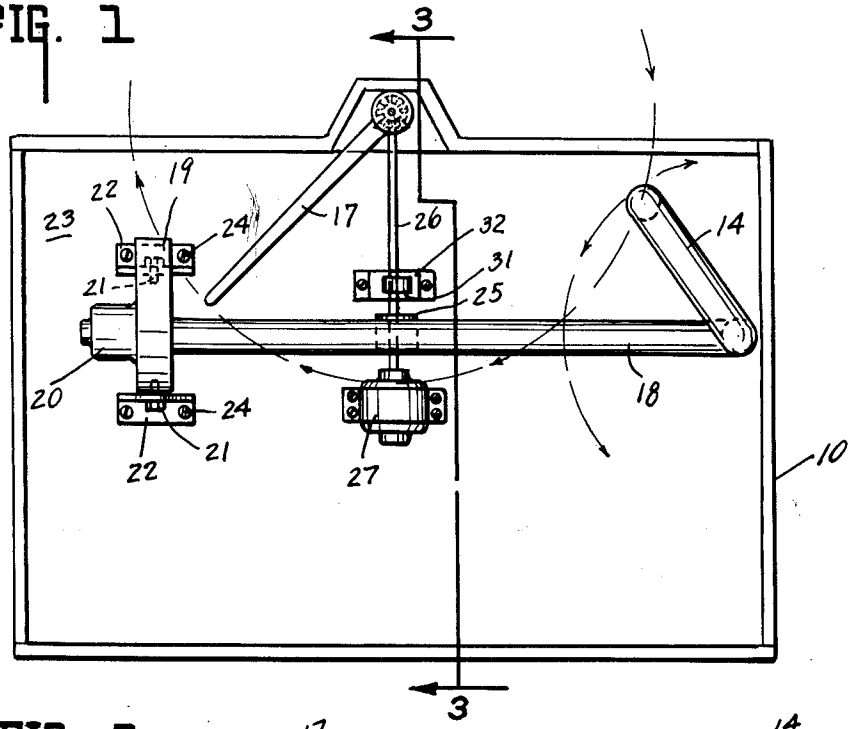


FIG. 2

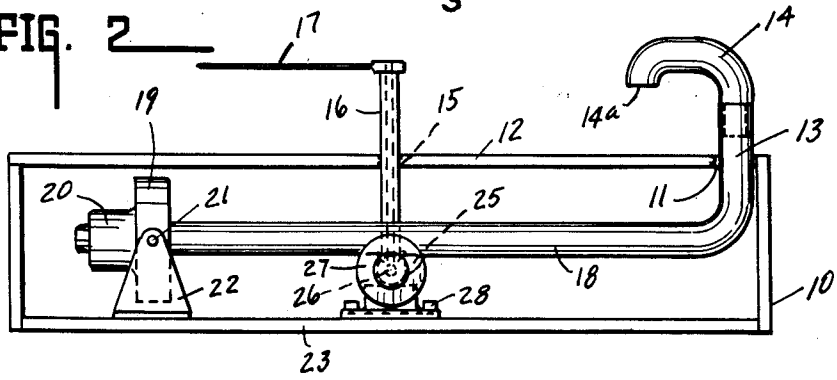
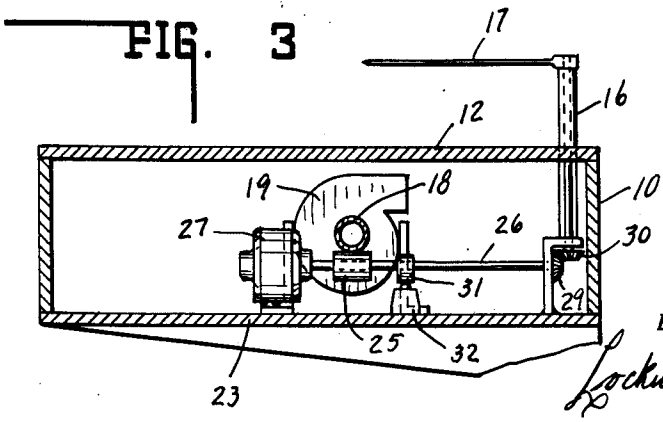


FIG. 3



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PAGE TURNING DEVICE

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4 Claims. (Cl. 40—104)

This invention relates to a page turning device, and more particularly to one for use by paralyzed or otherwise incapacitated people in turning the pages of a book, magazine or the like.

Heretofore the person incapacitated to such an extent as to be unable to use his arms or hands has been at a serious disadvantage insofar as reading is concerned, and more particularly insofar as the mechanics of turning the pages of a book or magazine are concerned. It has been necessary for such people to rely upon others to do the reading or at least to turn the pages. It is, therefore, the primary object of the present invention to provide a device of such character and construction that even the most seriously incapacitated and paralyzed person may readily and easily cause the pages to be turned.

It is a still further object of the present invention to provide a device of the character described which is relatively economical in price and has a minimum number of working parts.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

Fig. 1 is a top plan view with the cover removed, of the invention.

Fig. 2 is a side elevation view thereof with a side of the housing removed.

Fig. 3 is a vertical section view taken on lines 3—3 of Fig. 1 in the direction of the arrows.

In the drawings the housing **10** is provided for the mechanism. An opening **11** is formed in the upper wall **12** of the housing to permit the arm or section **13** of the suction tube **14** to be passed therethrough. A second opening **15** is provided in the top of the housing to enable the column **16** having a rotating arm **17** to be passed therethrough.

The suction tube includes the elongated portion **18** which is connected to the suction fan housing **19**, the fan (not shown) within the housing being driven by the motor **20**. The fan housing and motor are pivotally connected at **21** to the opposed, upwardly extending brackets **22**. These brackets are secured to the bottom **23** of the housing through the medium of the screws **24** or other suitable means.

The elongated portion of the suction tube assembly rests intermediate its ends upon the elevating and lowering cam **25** mounted on the shaft **26**. With the turning of the cam by motor **27** (also connected to the bottom of the housing by screws **28** or other suitable media) the mouth **14***a* of the suction tube is elevated or lowered with respect to the top of the housing upon which will be resting a magazine, a book or other reading material (not shown). The suction tube assembly is so constructed and arranged that the mouth of the tube will be brought into abutment with the upper right-hand corner of the right-hand page of the book, magazine or the like, when the assembly is in its lowermost position as determined by the cam and gravity.

The shaft also causes the column **16** to rotate and with

it the page turning or rotating arm. This is accomplished through the provision of miter gears **29** and **30** which are in mesh and connected respectively to shaft **26** and column **16**. It is desirable that the rotating arm be of such a length as to come in under the mouth of the suction tube, in order to turn the pages from right to left in the proper fashion and manner. Because of this fact it is, of course, imperative that the construction and arrangement of the suction tube assembly and of the page turning assembly be such that the mouth of the suction tube is elevated to a point above the plane of the page turning arm at the time that the arm is traversing the area of the suction tube. That is to say, it is imperative that the suction tube be elevated to enable the arm to pass under it in a free and unobstructed fashion.

In use the page turning arm will normally first be at rest in the general position shown in Fig. 1 with the mouth of the suction tube at a point lower than the plane of that arm as shown in Fig. 2. In order to enable the paralyzed or otherwise incapacitated person to start the mechanism a pressure pad may be provided, such pad being in effect a switch, the momentary closing of which by-passes microswitch **32**.

By applying slight pressure to this pad, as is known, the shaft **26** may be turned a sufficient amount to enable the cam **31** to actuate the microswitch **32**. The cam **31** is also connected to the shaft **26** and at a point adjacent the elevating and lowering cam. Once the user has actuated the microswitch the motors **20** and **27** will themselves be started. Motor **27** will drive the shaft **26** through the medium of the miter gears and the column **16** will be rotated, turning with it its page turning arm. While this is occuring the elevating and lowering cam will permit the suction tube mouth portion to be lowered into abutment with the page of the book or magazine being read. Further rotation of the shaft **26** will elevate the suction tube thereby lifting the upper right-hand corner of the page. The suction tube will be elevated as aforesaid, to a point above the plane traversed by the page turning arm which itself will be rotated in under the page, engaging it and turning it from right to left. Once the arm is returned to the position shown in Fig. 1 the page will have been turned and the cycle completed. That is to say, the cam **31** will have been rotated to a point where the microswitch is off.

While the invention has been illustrated and described in detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character, it being understood that only the preferred embodiment has been shown and described and that all changes and modifications that come within the spirit of the invention and the scope of the claims are also desired to be protected.

The invention claimed is:

1. A page turning device comprising a housing upon which a book, magazine or the like may be positioned, a suction tube mounted within said housing and including at one end an upwardly directed portion extending through the upper wall of said housing and terminating in a mouth, said tube being connected at its other end to a suction fan assembly including a motor, a pair of upstanding spaced brackets secured to the bottom of said housing, said other end of the tube being pivotally connected to said brackets, a shaft mounted within said housing at substantially right angles to said tube, a second motor driving said shaft, an upstanding column extending through the upper wall of said housing and terminating at its upper end in a page turning arm disposed at right angles to said column and movable in a plane parallel to the upper wall of said housing, means connecting said column and said shaft for rotating said column upon the actuation of said second motor, and a tube elevating and

lowering cam mounted on said shaft, said tube resting upon said cam and elevated or permitted to lower thereby upon the rotation of said shaft whereby said mouth of the tube is first moved downwardly into engagement with the right-hand page of a book or magazine positioned on said housing and then upwardly carrying said page with it from which position said page is turned from right to left by said page turning arm.

2. A page turning device comprising a housing, an elongated suction tube mounted within said housing and having at one end an upstanding portion extending through the upper wall of said housing, said portion terminating in a downwardly directed mouth, the other end of said tube being connected to a suction fan assembly including a motor, means secured to said housing and pivotally supporting said other end of the tube, a shaft mounted within said housing at right angles to said tube and intersecting therewith, a second motor driving said shaft, a rotating column extending upwardly through the upper wall of said housing and terminating in a right angularly disposed page turning arm that is movable circularly in a plane parallel to the upper wall of said housing, means connecting said column and said shaft for rotating said column and arm upon the actuation of said second motor, and a cam carried by said shaft upon which said tube is seated, whereby upon the actuation of said second motor said tube is moved to a first position wherein the mouth thereof is in engagement with the page of a book or magazine positioned upon the upper wall of said housing to a second position wherein the mouth of the tube and the page are in an upwardly spaced position from said upper wall, said page being turned from right to left by said arm.

3. A page turning device comprising a housing, an elongated element mounted within said housing and having at one end an upwardly directed portion extending through the upper wall of said housing and terminating in a downwardly facing mouth, suction means associated with said mouth, a pair of brackets secured to said housing, the other end of said tube being pivotally connected therewith, a shaft mounted within said housing at right angles to said tube and intersecting therewith, a motor

driving said shaft, a rotating column extending through the upper wall of said housing and terminating in a page turning arm that is movable therewith in a circular plane parallel to the upper wall of said housing, means connecting said column and said shaft whereby said column and arm are rotated upon the actuation of said motor, and an elevating and lowering cam carried by said shaft, said element resting upon said cam at a point intermediate its opposite ends whereby upon the rotation of said shaft by said motor the mouth of said element is moved first into engagement with the page of a book positioned upon the upper wall of said housing and second to a position wherein said mouth and said page are in spaced vertical relation to said housing, said rotating arm being engageable with said page for turning it from right to left.

4. A page turning device comprising a housing, an elongated element mounted in said housing and having at one end an upturned portion extending through the upper wall of said housing and terminating in a depending mouth, the other end of said element being pivotally connected to said housing, a shaft mounted within said housing at right angles to said element and intersecting therewith, a rotatable column extending upwardly through the upper wall of said housing and carrying a right angularly disposed page turning arm movable therewith in a circular plane parallel to the upper wall of said housing, means connecting said column and said shaft for rotating said column and said arm upon the actuation of said motor, an elevating and lowering cam carried by said shaft, said element resting upon said cam at a point intermediate the opposite ends of said element whereby upon the turning of said shaft the mouth of said element is moved to a first position in engagement with the page of a book or magazine resting upon the upper wall of said housing to a second position in spaced relation to said upper wall within the path of movement of said page turning arm, a microswitch mounted within said housing, and a second cam carried by said shaft and engageable with said switch for actuating said motor to turn said page turning arm one complete cycle.

No references cited.