June 17, 1952 M. D. MERRION 2,601,047

PAGE TURNER

Filed Oct. 19, 1948

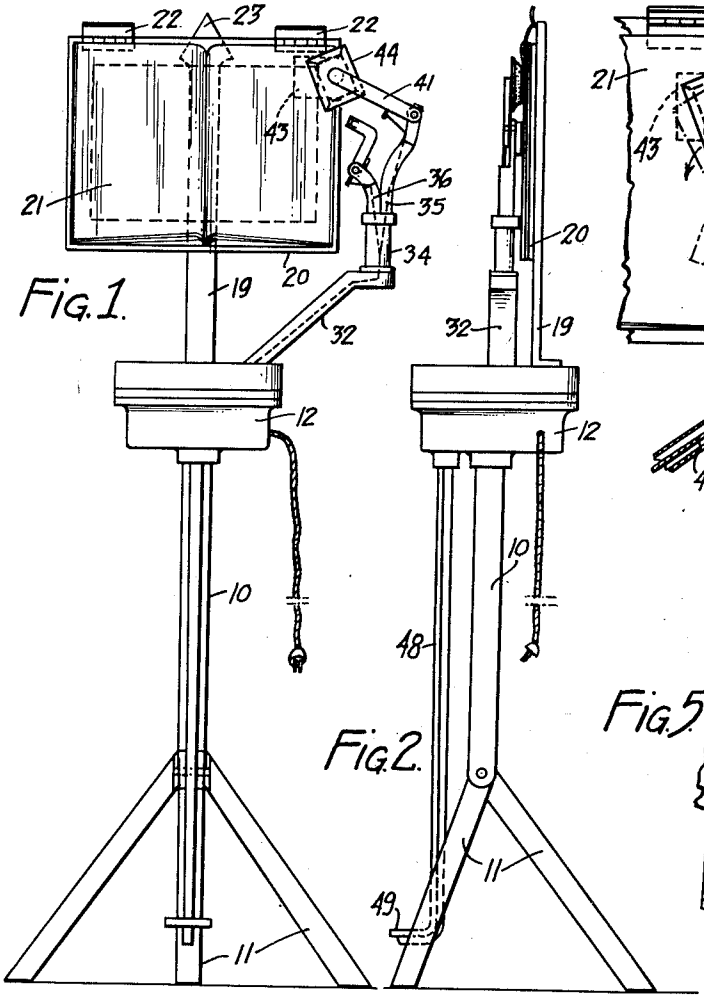


Fig. 1.

Fig. 2.

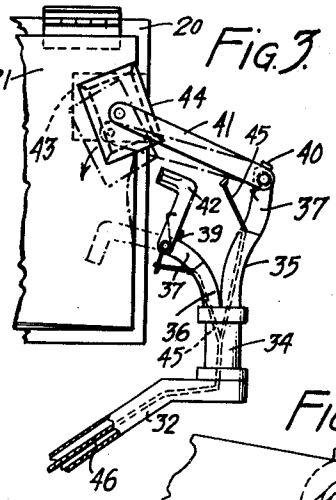


Fig. 3.

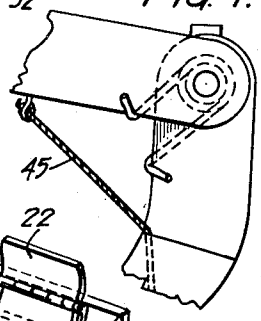


Fig. 4.

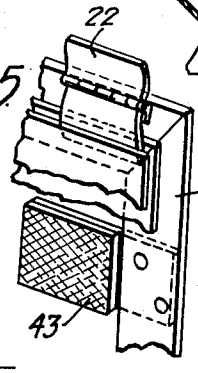


Fig. 5.

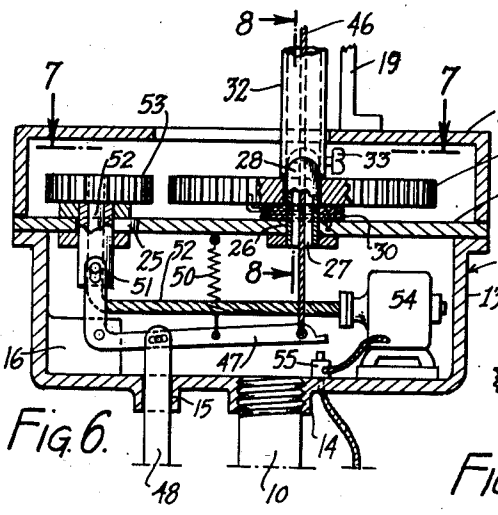


Fig. 6.

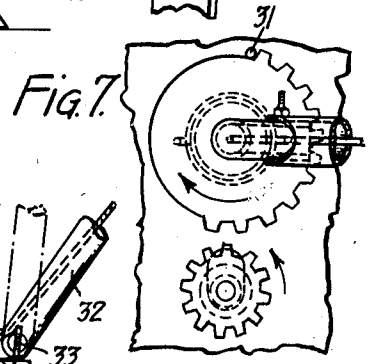


Fig. 7.

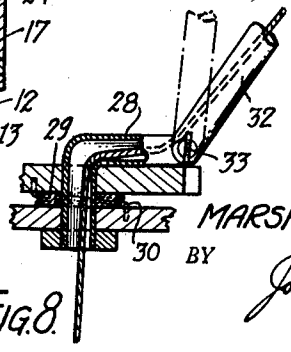


Fig. 8.

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PAGE TURNER

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2 Claims. (Cl. 40—104)

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This invention relates to page turners and in particular to one adapted to turn the pages of sheet music, a book or the like.

A particular object of the invention is to provide a structure of the character referred to which is compact, can be readily set up and being light in weight, is readily portable.

Further objects of the invention are to provide a device which separates the page to be turned so that a turning element can engage one page at a time to turn the same; to provide turning mechanism of simple nature; to provide automatically operated turning means that will operate without loss of time; and to provide a unitary control for the operating parts so that no attention on the part of the person is necessary except to initiate action of the mechanism as desired.

With these and other objects in view, the invention comprises certain constructions hereinafter described and then particularly pointed out in the claims and a preferred embodiment of my invention is illustrated in the accompanying drawing, in which:

Figure 1 is a view in front elevation of a page turner constructed in accordance with my invention,

Figure 2 is a view in side elevation of the device shown in Figure 1,

Figure 3 is an enlarged view of the page bulging and turning arm portions,

Figure 4 is an enlarged view of the joint of the turning arm,

Figure 5 is an enlarged view, in perspective showing the upper corner of the music holder and illustrating the pressure pad or anvil therein,

Figure 6 is an enlarged view in sectional elevation from front to back of the turning mechanism and arm control,

Figure 7 is a section taken on the line 7—7 of Figure 6 showing the relative position of the gear drive in non-operating position, and

Figure 8 is a vertical section on the line 8—8 of Figure 6 showing the mounting of the support arm on a gear.

Referring to the drawing in detail, 10 indicates a bottom standard to the lower end of which is pivoted foldable legs 11, after the manner of the well known music stand construction and on the upper end of which is mounted a housing 12 for operating mechanism. The housing comprises a lower cup piece 13 having a threaded flange 14, for securing the housing to the upper end of the tubular standard 10, an outlet 15 and a bracket 16. The cup is closed by a plate 17

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supporting a cover 18 on which is mounted a top standard 19 which supports at its upper end a rectangular frame 20 for holding a book or sheet music, the cover of which is adapted to be releasably suspended therefrom, by clips 22, in a position centrally of the frame as shown by the pointed upper end 23 of the standard 19 which projects above the top of the frame and serves as an indicator to show proper positioning of the center fold of the music substantially in axial alignment with the center of an operating gear 24 in the housing.

The standard 19 is so mounted that the frame 20 lies substantially in a plane corresponding to the diameter of the gear 24. The plate 17 is provided with an aligned slot 25 and hole 26, in the latter of which is fixed the depending end 27 of a bent tube 28 which is suitably secured to the top face of the gear 24 so that its depending end passes through the gear and the hole and constitutes an axle for the gear. The gear 24 is spaced from the plate 17 by a disk 29 about which is positioned a coil spring 30, the ends of which are connected to the gear and the plate for yieldably holding the gear against a stop pin 31 in said plate. The gear is provided with teeth in substantially one-half of its circumference so that it can be turned by a pinion through an arc of about one hundred and eighty degrees and then returned by the spring 30 to the starting position. The tube 28 extends radially to the outer edge of the gear and has pivoted thereto a hollow carrier 32 which can be adjusted to any desired position and held by a wing nut 33 to describe an arc of any desired radius as may be the case when the pages of matter to be turned vary in width.

The upper end of the carrier 32 supports a sleeve 34 on the capped upper end of which is suitably mounted the arms 35 and 36. Both arms are hollow and have extended flat portions 37 suitably flanged as at 39 and 40 to provide abutments for limiting the pivotal movement of a pad arm 41 and a page turning finger 42 pivoted to the arms 35 and 36, respectively. As seen in Figure 5, the frame 20 has mounted adjacent an upper corner thereof an anvil or pressure block 43 against which the book or music is urged by contact of a friction or wiping pad 44 with the outer page of the music to be turned so that when the arm 41 swings down, the pad 43 will bulge the top or outer leaf to be turned so that the turned end of the finger 42 will swing into the bulged opening behind the page to turn the latter on a subsequent rotary motion of the car-

rier 32. The under surface of the pad 44 as well as the outer surface of the block 43 is knurled and both members are preferably made from rubber or other suitable material.

The pad arm 41 and the finger 42 are each normally spring urged to the position shown in Figure 3 against their respective abutments and are each connected by wires 45 passing through arms 35 and 36 to a common wire or cable 46 passing through the arm 32 so that a downward pull on the cable 46 or Bowden wire will swing both the arm 41 and the finger 42 arcuately downward to successively bulge the page and position the finger 42 behind the page.

The wire 46 passes down through the carrier 32 and tube 28 and is connected to one end of a bell crank 47, pivoted in the bracket 16, and to which is attached the upper end of a rod 48 formed at its lower end to provide a foot pedal 49. A spring 50 joining the plate 17 and the bell crank 47 holds the free end of the bell crank normally in raised position. The opposite or vertical end of the bell crank has pin-and-slot connection with a disk sleeve 51 slidable in the slot 25 of plate 17 and arranged to hold the end of a flexible shaft 52 which actuates the driving pinion 53 supported on the upper end of said sleeve. When the foot pedal is pressed, the pinion 53 is brought into mesh with the gear 24 just after a pull on the wire 46 actuates the arm 41 and finger 42 preparatory to turning the page which is accomplished by the arcuate movement of the gear 24 and carrier 32. The pinion 53 is operated by the flexible shaft from a motor 54 the operation of which is controlled by contact of the end of the bell crank with a spring switch 55.

In the operation of the device the music, as an example, is clipped to the frame by the cover and when the page is to be turned, the musician steps on the pedal which causes the page to be bulged and the turning finger positioned behind it. The pinion meshes with the turning gear and the latter, and the carrier turns through one hundred and eighty degrees to turn the page through arm 36 and finger 42. At the end of the gear teeth, the pinion can freely revolve without effect so that no damage to the parts occurs when the page is completely turned. When the foot pedal is released, the springs that urge the members 41, 42, and 47 restore them to normal or inoperative position and the spring 30 returns the gear 24 to starting position against the stop pin 31 with the result that the carrier places the members 41 and 42 in position for a new page turning operation.

It is to be understood that the mechanism can be used on a piano or in other places where music or a book is to be held and instead of the foot operated pedal, if it is desired, a manually

operated lever can be attached to the bell crank for operation of the latter from one side of the housing.

My invention is not to be restricted to the precise details of construction shown since various changes and modifications may be made therein without departing from the scope of the invention or sacrificing the advantages to be derived from its use.

What I claim is:

1. A page turning device comprising a frame including an anvil portion, clips for supporting a book by its cover on the frame, a mounting for the frame including a housing and a support therefor, page bulging means including a pivoted spring biased arm and a wiping pad on said arm for coactive operation with said anvil, page turning means including a pivoted spring biased page turning finger, means for mounting said page bulging and page turning means for arcuate swinging movement including a gear in the housing and a tubular carrier connected to said gear and upon the upper end of which carrier said page bulging and page turning means is mounted, a retractile spring on the gear for returning said carrier to starting position after a page turning operation, a pinion having sleeve-in-a-slot mounting in said housing for sliding movement into and out of mesh with the gear, motor means for rotating said pinion including a shaft from the motor to the pinion and a switch for controlling a circuit including said motor, spring biased lever means pivoted in the housing and movable to mesh said pinion and gear and close said switch to operate the motor, cable means extending from said lever through the tubular carrier to actuate the arm of the page bulging means and the finger of the page turning finger coordinately, and a manually controlled operating rod extending from said lever means to the exterior of said housing.

2. A page turning device as set forth in claim 1 including means for pivotally mounting said carrier with respect to said gear whereby the carrier can be adjusted radially for swinging movement through an arc of increased radius.

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