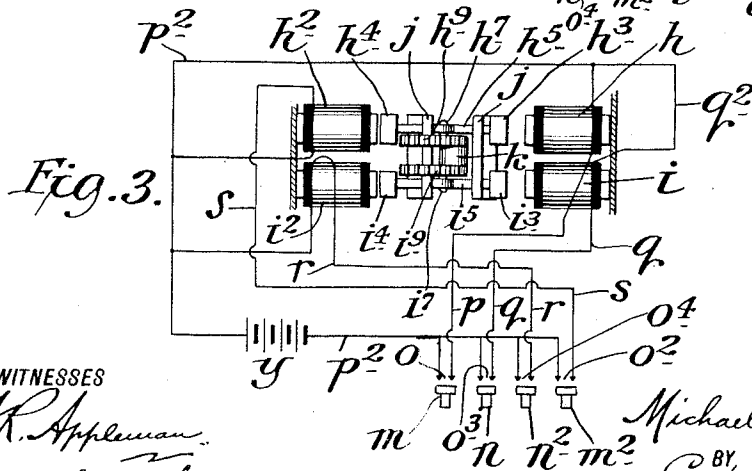
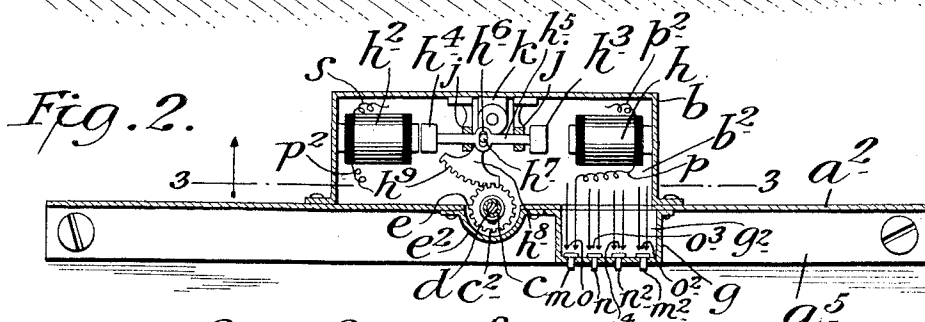
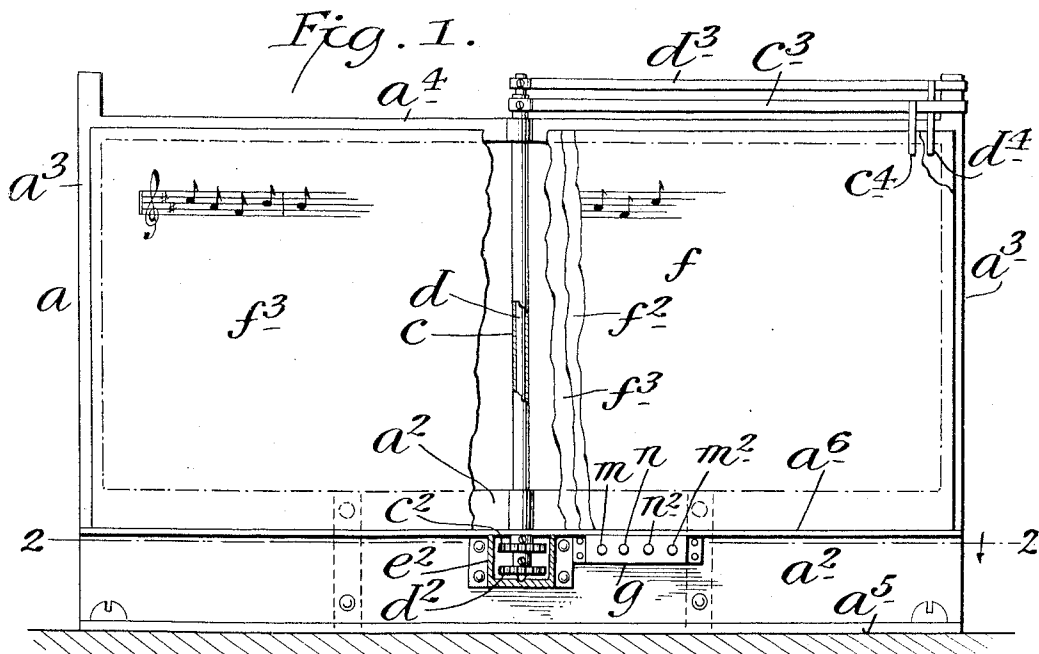


1,038,662.

Patented Sept. 17, 1912.



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MICHAEL J. RYAN, OF PERTH AMBOY, NEW JERSEY.

MUSIC-SHEET TURNER.

1,038,662.

Specification of Letters Patent.

Patented Sept. 17, 1912.

Application filed March 26, 1912. Serial No. 686,237.

To all whom it may concern:

Be it known that I, MICHAEL J. RYAN, a citizen of the United States, and residing at Perth Amboy, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Music-Sheet Turners, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to devices or apparatus for turning sheet music, and the object thereof is to provide an improved device of this class which involves, in its construction, a suitable frame adapted to be mounted on or connected with a support of any kind or class, and which may also be mounted upon or in connection with a piano, organ, or other musical instrument, and by means of which sheets of music may be easily, quickly and conveniently turned both forward and backward; and with this and other objects in view the invention consists in a device or apparatus of the class specified constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification of which the accompanying drawing forms a part, in which the separate parts of my invention are designated by suitable reference characters in each of the views, and in which;—

Figure 1 is a front view of my improved music sheet turner with part of the construction broken away and part shown in section, and also showing sheets of music mounted thereon and the central portions of which are broken away;—Fig. 2 a horizontal section on the line 2—2 of Fig. 1, and;—Fig. 3 a diagrammatic sectional plan view on the line 3—3 of Fig. 2.

My improved music sheet turner involves, in its construction, and in the form shown in the drawing, an oblong rectangular frame *a* comprising a horizontal upright base board *a*¹, upright end members *a*³ and a horizontal top part or member *a*⁴. The base board *a*¹ is provided at the bottom thereof with a flange *a*⁵ by which the frame may be secured at any suitable support, and at the top of said base board is a forwardly directed ledge *a*⁶ on which the sheets of music are placed in an upright position, and the base board *a*¹ extends above the flange *a*⁵, and secured centrally of the back thereof is a casing *b*.

In front of the frame *a* and centrally

thereof is mounted a vertical main tubular shaft *c* through which is passed a supplemental shaft *d*, and the base board *a*¹ of the frame is cut out centrally to form a space *e* to receive the lower ends of said shafts and said shafts extend downwardly through the ledge *a*⁶, and secured to the front of the base board *a*¹ is a semicircular casing *e*² which incloses or covers the lower ends of said shafts, and mounted on the lower end of the shaft *c* is a gear *c*², and on the lower end of the shaft *d* and below the gear *c*² is a gear *d*². The upper ends of the shafts *c* and *d* project above the top frame member *a*⁴ and said end of the shaft *c* is provided with an arm *c*³, and the corresponding end of the shaft *d* with an arm *d*³ which is above the arm *c*³, and said arms are respectively provided at their outer ends with downwardly directed clips *c*⁴ and *d*⁴ which are adapted to engage, or be connected with, the upper outer corners of the sheets of music supported on the frame *a*, and shown in Fig. 1 at *f* and *f*², and said sheets *f* and *f*² are provided, in the construction shown, with a back sheet *f*³ on the inner side of which the music is or may be printed, as well as on the sheets *f* and *f*².

Secured to the front of the base board *a*¹, and at the right of the casing *e*², is an oblong casing *g*, and the chamber *g*² formed by this casing is in communication with the chamber *b*² formed by the casing *b* at the back of the base board *a*¹.

Mounted in the casing *b* are two pairs of electromagnets *h*—*h*² and *i*—*i*² and in the operation of the device the pair of magnets *h*—*h*² operate to give the shaft *c* a half revolution from right to left and back again from left to right, while the pair of magnets *i*—*i*² operate to rotate the shaft *d* through a half revolution from right to left and back again from left to right, as will be hereinafter described. The pair of magnets *h* and *h*² operate in connection with block armatures *h*³ and *h*⁴ carried on the opposite ends of a reciprocating bar *h*⁵ which is mounted in suitable bearings *j*, and said bar is provided centrally of its length with a transverse slot *h*⁶ adapted to receive a pin *h*⁷ carried on a swinging arm *h*⁸ which is provided with a segmental gear *h*⁹ designed to mesh with, and partially rotate the gear *c*². The pair of magnets *i* and *i*² operate in connection with block armatures *i*³ and *i*⁴ carried on the opposite ends of a reciprocating bar *i*⁵, which is mounted in the bearings *j*,

and said bar is provided centrally of its length with a transverse slot similar to the slot h^6 and is adapted to receive a pin i^7 carried on a swinging arm, similar to the arm h^8 , which is provided with a segmental gear i^9 which is intended to mesh with, and partially rotate the gear d^2 . The arm h^8 and its counterpart are mounted to swing on a block bearing k secured to one side of the casing b , as are also the bearings j . The electro-magnets h and h^2 and i and i^2 are wired in multiple and are controlled respectively by push buttons m and m^2 , and n and n^2 mounted in the front wall of the casing g and which operate in connection with normally open terminals o , o^2 , o^3 and o^4 .

In the operation of the device the music is placed on the frame, as shown in Fig. 1, with the clips c^4 and d^4 engaging the upper corners of the sheets f and f^2 at the right, and when it is desired to turn the music sheet f to the left the push button m is pressed inwardly to close the terminal o , which establishes a circuit through a conductor p , the electro-magnet h , a main conductor p^2 , and a battery y . This operation energizes the electro-magnet h , and acts to draw the armature block h^3 to the right which, through the bar h^5 and the pin and slot connection with the arm h^8 , swings said arm to the right and through the instrumentality of the gears h^9 and c^2 , rotates the shaft c to the left, to swing the arm c^3 , having the music sheet f secured thereto, to the left, as will be readily understood. When it is desired to turn the next music sheet f^2 the push button n is pressed inwardly to close the terminal o^3 to establish a circuit through a conductor q , the electro-magnet i , a conductor q^2 , the main conductor p^2 , and the battery y , and this operation energizes the electro-magnet i , and acts to draw the armature block i^3 to the right and through the bar i^5 to swing the segmental gear i^9 to the right, which gives the gear d^2 a half revolution to the left, and as said gear d^2 is fast with the shaft d and with the arm d^3 it will be seen that the sheet f^2 of music will also be carried to the left by the said arm d^3 , as will be readily understood. When it is desired to return the music sheets to the normal po-

sition, shown in Fig. 1, the push button n^2 is pressed inwardly which closes the terminal o^4 to establish a circuit through a conductor r , the electro-magnet i^2 , the main conductor p^2 , and the battery y , thus the electro-magnet i^2 is energized to draw the armature i^4 to the left to reverse the operation, as just described, of the parts i^5 , i^9 , d^2 and d^3 , and swing the music sheet f^2 to the right, and in order to return the music sheet f to the right, the push button m^2 is pressed inwardly to close the terminal o^2 and establish a circuit through a conductor s , the electro-magnet h^2 , the main conductor p^2 and the battery y , and this operation energizes the electro-magnet h^2 to draw the armature block h^4 to the left to reverse the operation, as previously described, of the parts h^5 , h^8 , h^9 , c^2 , c and c^3 , and swing the music sheet f to the right, as will be readily understood.

Having fully described my invention what I claim as new and desire to secure by Letters Patent is:—

1. In a music sheet turner, the combination with a music sheet support of two vertically disposed rock shafts one within the other, gears at the lower end of said shafts, arms pivoted adjacent to said gears and provided with segmental gears engaging said first named gears, reciprocating armature bars which engage said arms and means for reciprocating said bars to rotate said rock shafts in either direction.

2. In a music sheet turner, the combination with a music sheet support of two vertically disposed rock shafts one within the other, gears at lower end of said shafts, arms pivoted adjacent to said gears and provided with segmental gears engaging said first named gears reciprocating armature bars engaging said arms for reciprocating said bars consisting of oppositely arranged electromagnetic devices.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 22nd day of March, 1912.

MICHAEL J. RYAN.

Witnesses:

JAMES J. HARRIGAN,
MARGARET HARNED.