E. J. SCHLEICHER.

MEANS FOR TURNING THE PAGES OF SHEET MUSIC.

APPLICATION FILED NOV. 19, 1910.

998,265.

Patented July 18, 1911.

4 SHEETS—SHEET 1.

Fig. 2.

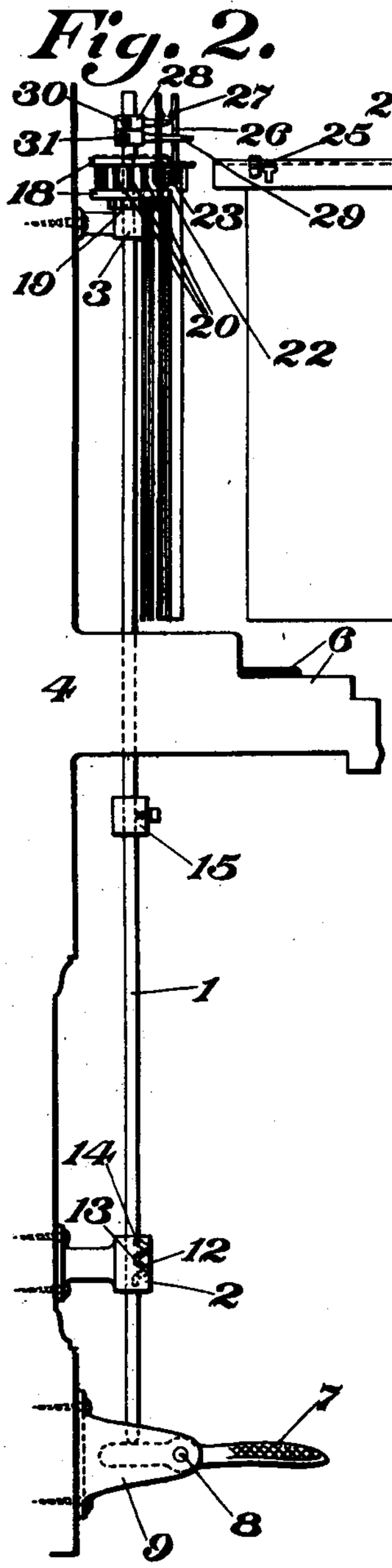

Fig. 1.

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Harry A. Peiss.

Inventor:

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By Hugh K. Wagner,

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4 SHEETS—SHEET 2.

Fig. 3.

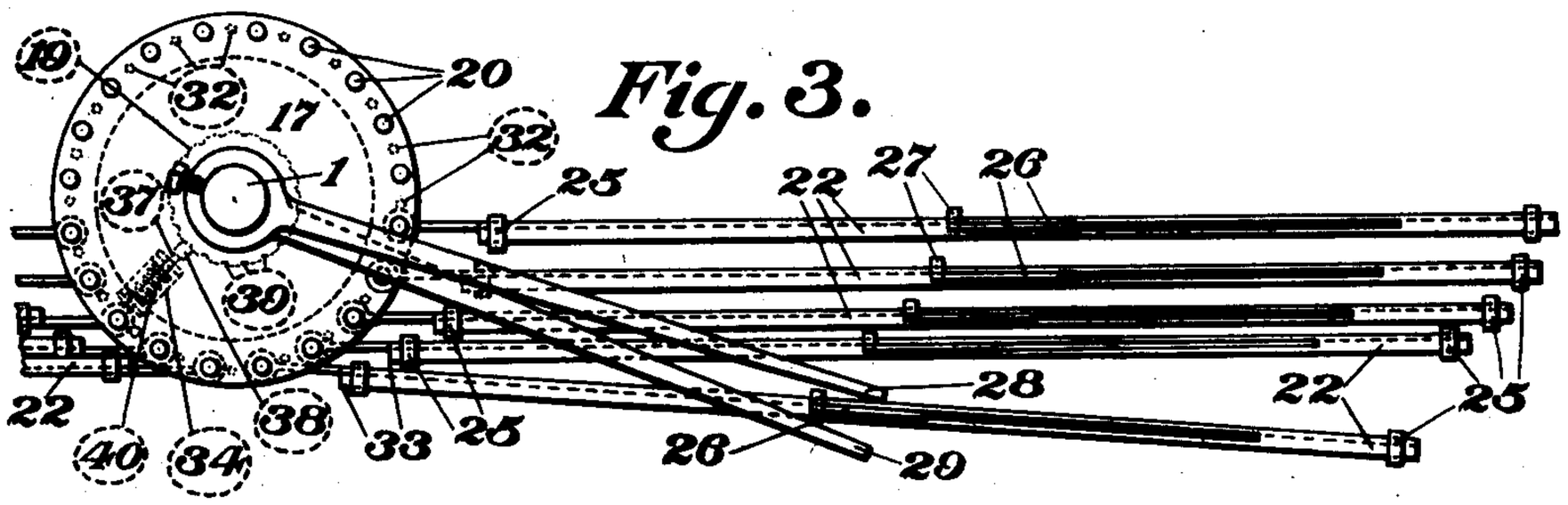


Fig. 4.

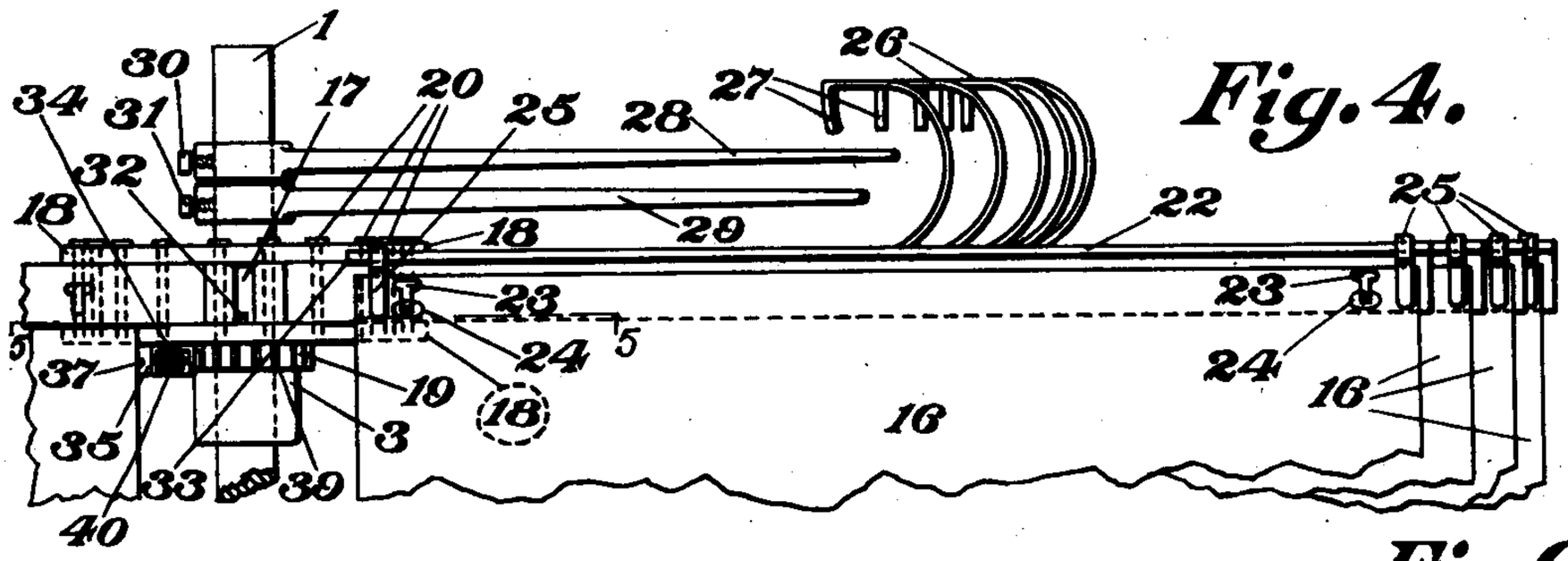


Fig. 5.

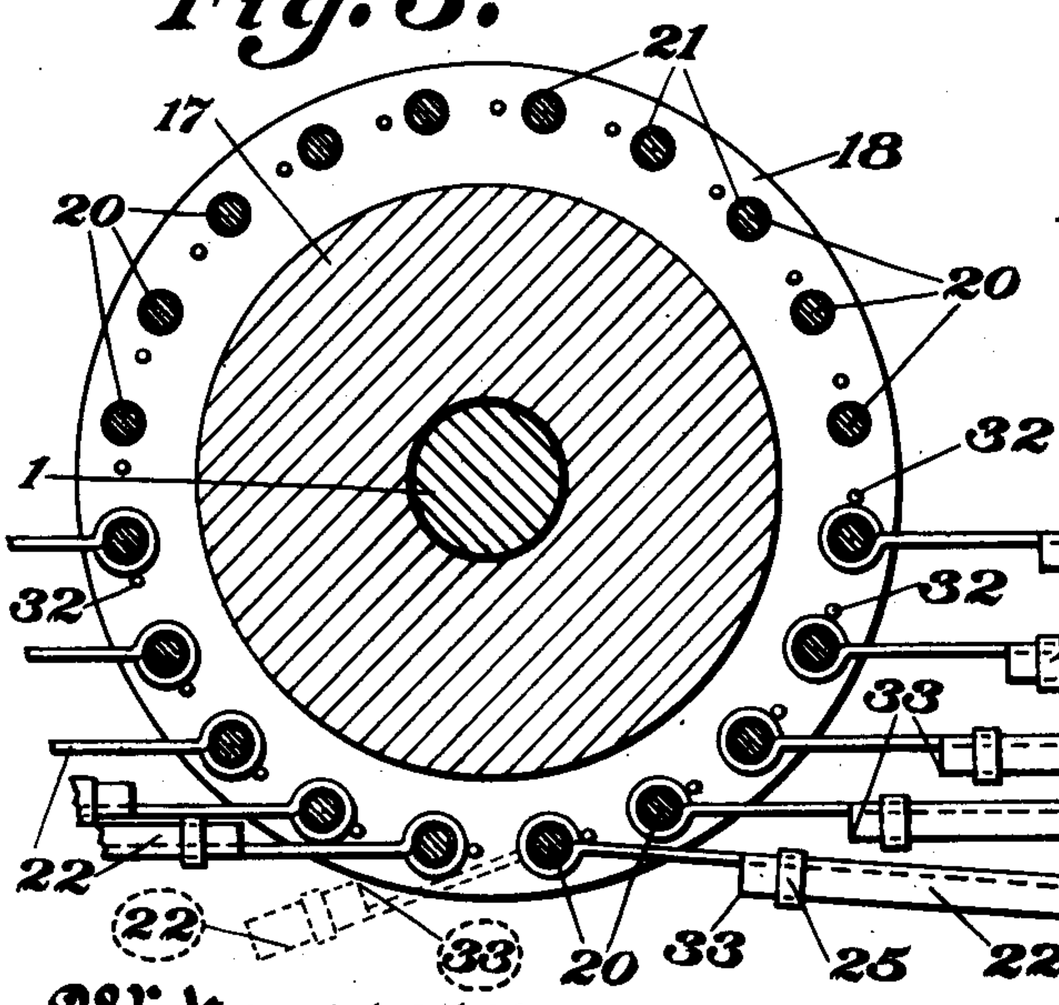
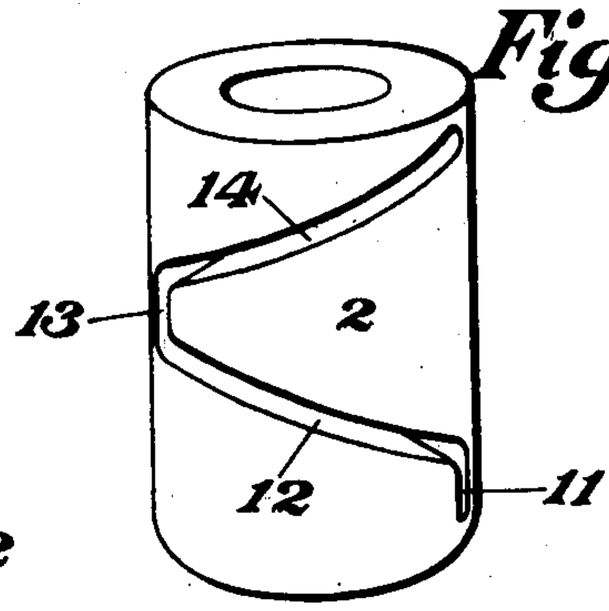


Fig. 6.



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4 SHEETS—SHEET 3.

Fig. 7.

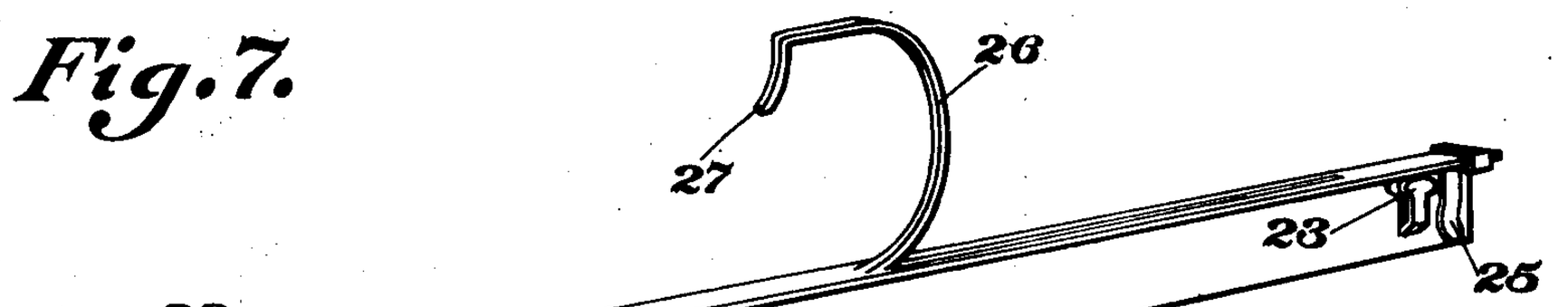

Fig. 10.

Fig. 8.

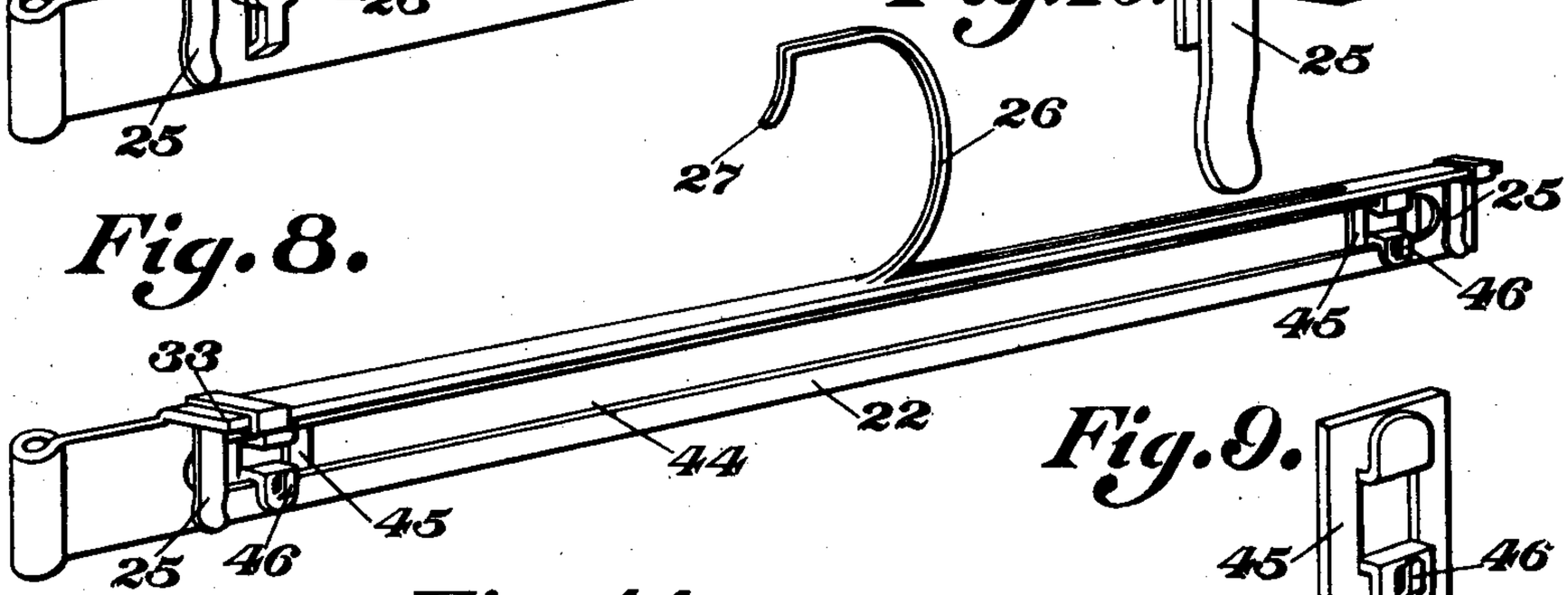

Fig. 9.

Fig. 11.

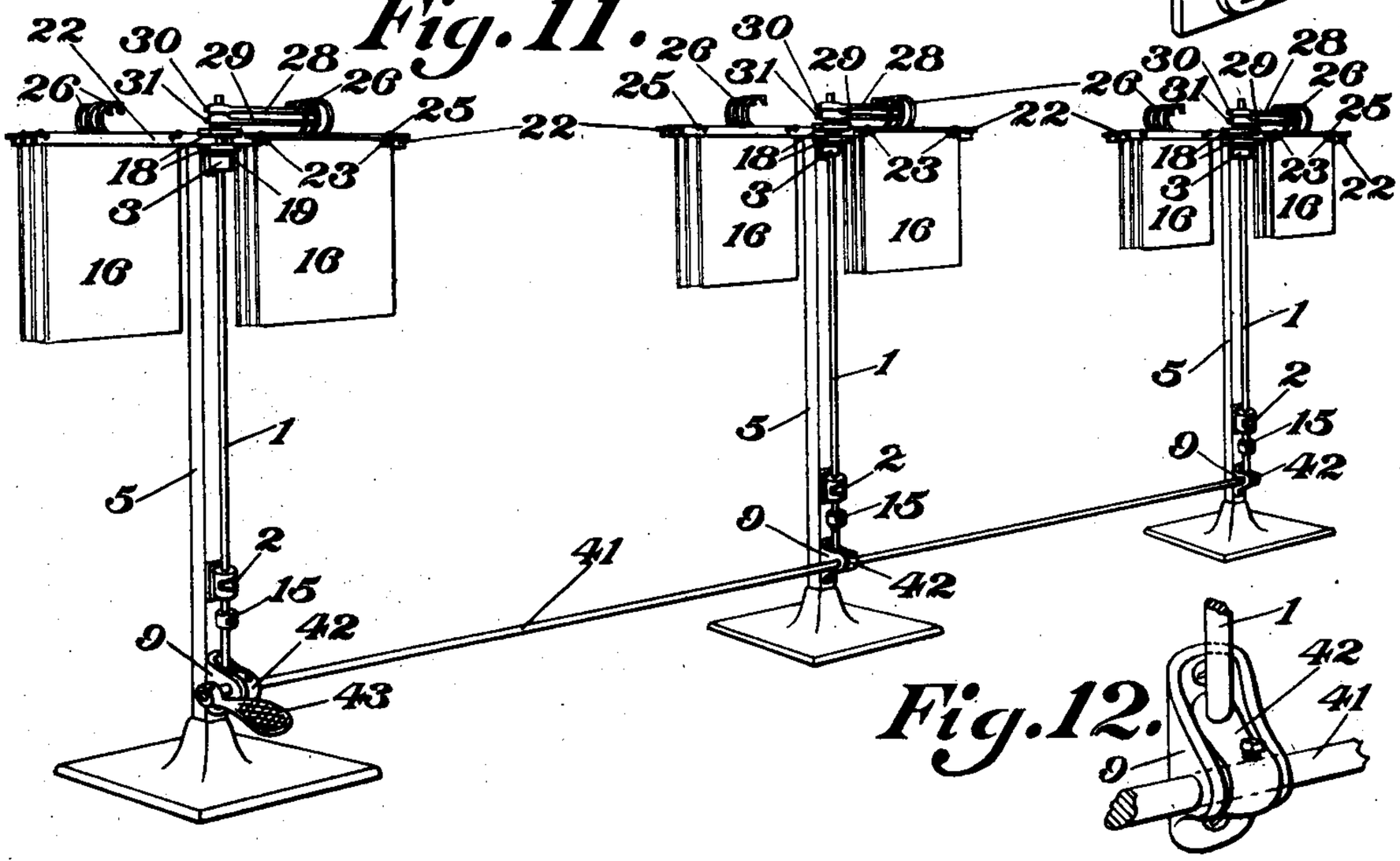

Fig. 12.

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4 SHEETS—SHEET 4.

Fig. 13.

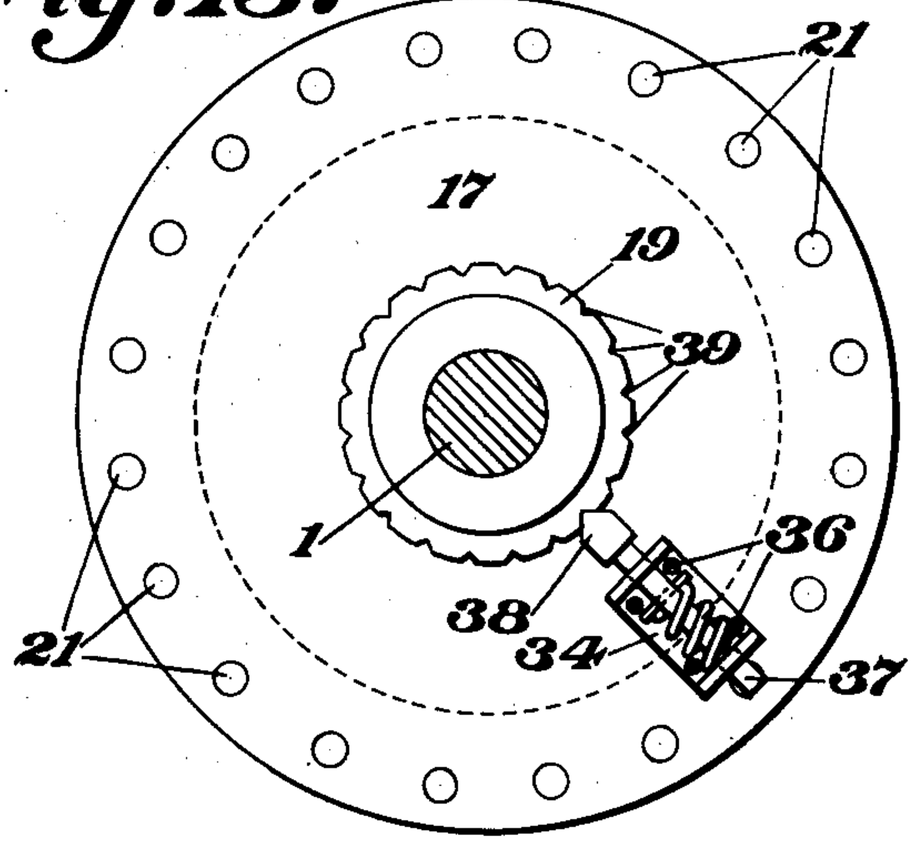


Fig. 14.

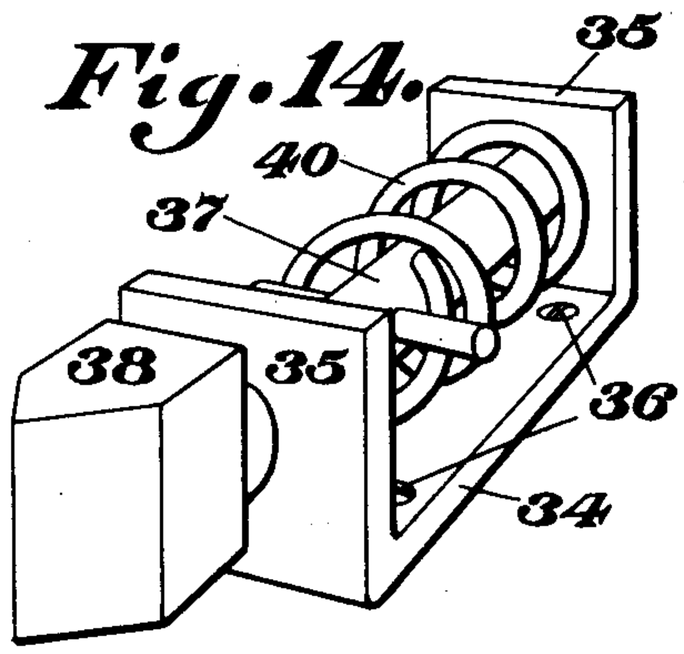


Fig. 15.

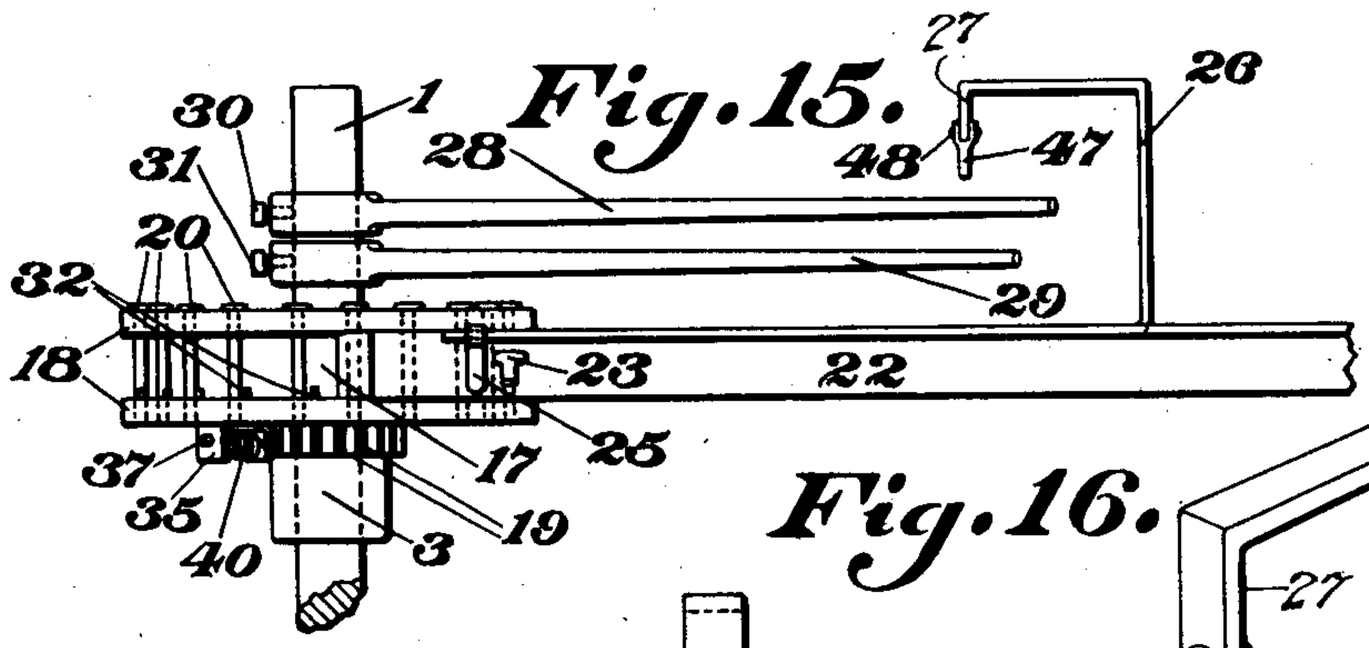


Fig. 16.

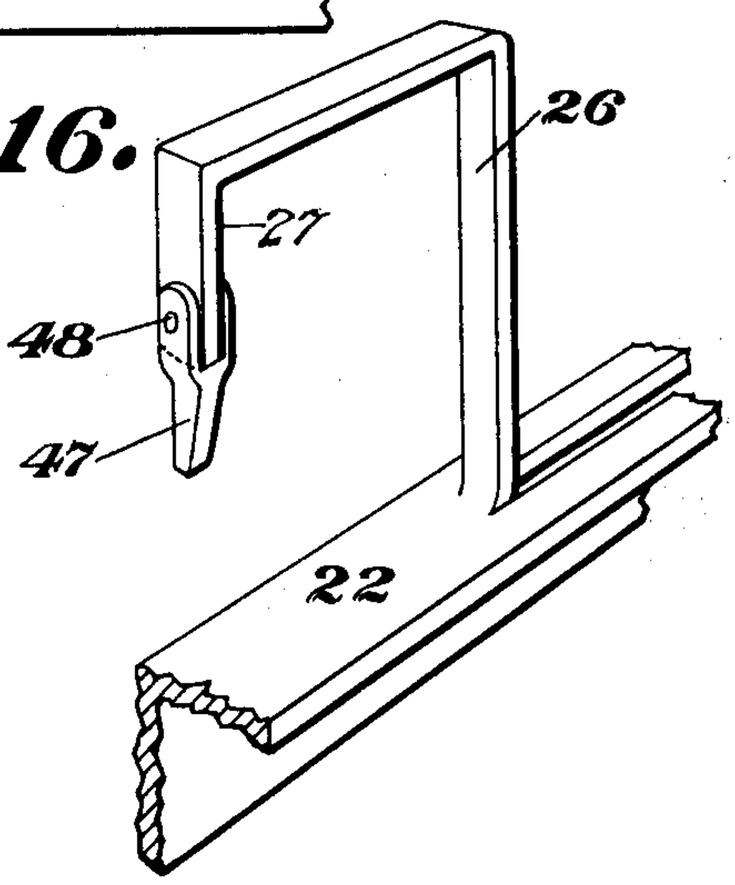
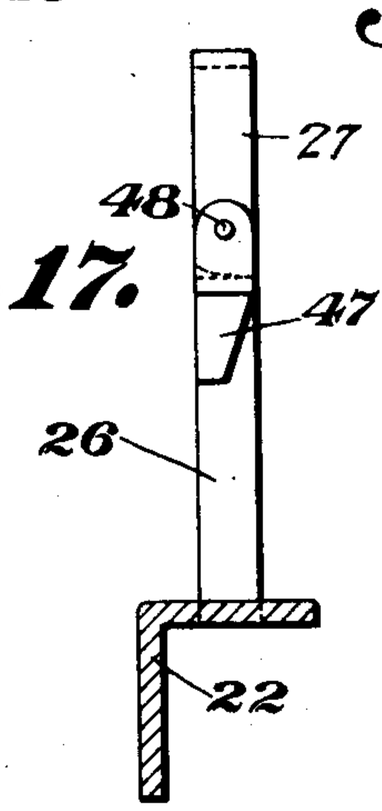


Fig. 17.



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UNITED STATES PATENT OFFICE.

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MEANS FOR TURNING THE PAGES OF SHEET-MUSIC.

998,265. Specification of Letters Patent. Patented July 18, 1911.

Application filed November 19, 1910. Serial No. 593,150.

To all whom it may concern:

Be it known that I, EMIL J. SCHLEICHER, a citizen of the United States, residing at the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Means for Turning the Pages of Sheet-Music, of which the following is a specification.

Ordinarily performers on pianos, organs, and other musical instruments have to remove their hands from the instruments on which they are performing, when it is necessary to turn the pages of music from which they are playing. This inconvenience is obviated by the present invention, which has for its object to provide an apparatus for turning the pages of sheet music without the necessity of the performer having to remove his hand or hands from the musical instrument that he is playing.

In the accompanying drawings forming part of this specification, in which like numbers of reference denote like parts wherever they occur, Figure 1 is a front elevation of a portion of a piano having an apparatus embodying this invention attached thereto; Fig. 2 is a side elevation of same; Fig. 3 is a top plan view, on an enlarged scale, showing the normal position of the arms for turning the sheets of music; Fig. 4 is a front elevation of same; Fig. 5 is a sectional view, on an enlarged scale, on the line 5—5, Fig. 4; Fig. 6 is a perspective view of the sleeve containing a cam slot for rotating the operating shaft; Fig. 7 is a perspective view of a sheet-supporting member; Fig. 8 is a perspective view of an alternate form of sheet-supporting member; Fig. 9 is a perspective view of an adjustable member for supporting a sheet of music; Fig. 10 is a perspective view of a detachable member for holding a sheet of music in place on a sheet-supporting member; Fig. 11 is a perspective view of a plurality of music-stands having these apparatuses attached thereto and connected to operate simultaneously; Fig. 12 is a perspective view of a member that is attached to the drive shaft, Fig. 11, and adapted to actuate one of the operating shafts; Fig. 13 is a bottom plan view of the revoluble support having an anti-spin device attached thereto; Fig. 14 is a perspective view of the anti-spin device; and Figs. 15, 16, and 17 are detailed views of a sheet-supporting member bearing an alternative form of means to allow the operating arms to return to their initial positions.

The operating shaft or rod 1 extends through sleeves 2 and 3 that may be secured either to a piano or organ 4, as depicted in Figs. 1 and 2, or to a music-stand 5, as depicted in Fig. 11. Shaft 1 is preferably disposed vertically, and passes either through an opening between two adjacent keys 6 of the key-board, or through an opening in one of said keys, when the apparatus is attached to a piano or organ. A pedal 7 that is pivotally attached at 8 to bracket 9 is arranged so that one end thereof extends beneath the lower end of shaft 1, and, when said pedal is depressed, same forces said shaft upwardly. Shaft 1 bears a pin 10 that normally rests in the bottom of a slot 11 in sleeve 2. Said slot is preferably arranged to extend vertically in said sleeve and communicates with the lower end of an inclined slot 12. A slot 13, which is preferably arranged vertically in sleeve 2, connects the upper end of slot 12 with the lower end of an inclined slot 14. When the pedal 7 is depressed to the full extent of its movement, the shaft 1 is raised and thereby causes pin 10 to travel through slots 11, 12, 13, and 14 in the order mentioned, and, when the pressure is released from said pedal, a weight 15 that is fastened to shaft 1 causes same to descend, whereby pin 10 returns through slots 14, 13, 12, and 11 to its initial position. Slot 12 inclines in the opposite direction from slot 14, so that, when the pin 10 travels upwardly through the former, shaft 1 is caused to rotate clockwise, Fig. 3, but when said pin travels upwardly through slot 14, said shaft is caused to rotate counter-clockwise. When it is desired to turn a page 16, the player presses the pedal downwardly so as to raise shaft 1 until pin 10 travels upwardly through slots 11 and 12, whereby said page is turned forwardly in the manner hereinafter described. After pin 10 reaches the upper end of slot 12, pressure is released from pedal 7, thereby allowing shaft 1 to descend to its normal position so that the next page 16 can be turned forwardly, when pedal 7 is again depressed. If, however, a piece of music contains marks of repetition that make it necessary to turn a page 16 backwardly after same has been turned forwardly, as just described, the player keeps his or her foot upon the pedal

7 in order to hold the pin 10 in the upper end of slot 12. When the player is ready to repeat the part marked for repetition, the pedal 7 is depressed further so as to cause pin 10 to travel upwardly through slots 13 and 14 in order to turn said page backwardly, in the manner hereinafter described, after which, pressure is released from pedal 7, with the result that shaft 1 descends to its initial position so that said page can be turned forwardly, when said pedal is again depressed.

A wheel or spool 17 is loosely mounted on shaft 1, and bears a pair of annular flanges 18. A circular member 19 that is secured to sleeve 3 by any suitable means supports wheel 17 and contains an opening to allow shaft 1 to pass therethrough. The flanges 18 of wheel 17 are connected by a plurality of pins or bolts 20 that pass through apertures 21 in said flanges, said pins or bolts being preferably spaced at equal distances apart. The pins 20 support a plurality of members 22 that are arranged to extend outwardly from wheel 17. Said members 22 are formed of sheet metal, wire, or other suitable material, and, in practice, it is preferable to use about half as many members 22 as the number of pins 20. Each member 22 is preferably similar in cross-sectional configuration to an angle-iron and is capable of rotating through approximately 180 degrees about its supporting pin 20. Said member 22 is provided with a button 23 or plurality of same to support a page or sheet 16, said page having a perforation 24 or plurality of such perforations to fit over said button or buttons. Said page 16 is held in place by means of a clamp 25 or plurality of such clamps, and is thereby prevented from being blown off the button or buttons 23, said clamps being capable of sliding longitudinally on said member 22. An arm 26 borne by member 22 extends upwardly therefrom, and is bent so that its end 27 occupies a position to be engaged either by arm 28 or by arm 29 in the manner hereinafter described, said arms 28 and 29 being adjustably mounted on shaft 1 by means of set-screws 30 and 31, respectively. The arms 28 and 29 diverge from shaft 1 and are located above wheel 17, the arm 28 being located at a higher elevation than arm 29 and normally occupying a position at a lower elevation than the ends 27 of arms 26. Said arms 28 and 29 normally extend from the right-hand side of shaft 1, as depicted in Fig. 3, and, when said shaft is raised and rotated, as hereinabove described, said arms rise and rotate therewith.

The lower flange 18 of wheel 17 bears a plurality of pins or projections 32 that are preferably equal in number to pins 20. Said pins 32 are located adjacent pins 20 and are so arranged relative to members 22 that the particular member 22, which supports the front page 16 on the right-hand side of shaft 1, Fig. 5, is held by one of said pins 32 in position to hold the end 27 of its arm 26 normally in a plane between the ends of arms 28 and 29. When the pin 10 is raised in slot 11, as hereinabove described, the shaft 1 and arms 28 and 29 are raised until the arm 28 reaches the level of the lower extremity of end 27 of arm 26 borne by the member 22 on the right-hand side of shaft 1. While the pin 10 travels upwardly through slot 12, the shaft 1 and arms 28 and 29 rotate clockwise, Fig. 3, whereby the arm 28 engages the end 27 of arm 26 of the front member 22 on the right-hand side of shaft 1 and causes said member to rotate toward the left on its pin 20. As the pin 10 approaches the upper end of slot 12, a corner or projection 33 of said member 22 engages a flange 18 of wheel 17, as shown in the dotted line position, Fig. 5, and thereby causes said wheel to rotate clockwise through part of a revolution so as to cause said member 22 to occupy a position on the left-hand side of shaft 1, and, also, to cause a pin 20 to move the next following member 22 to the forward position on the right-hand side of shaft 1. The pedal 7 is then released and the shaft 1 and arms 28 and 29 return to their initial positions. As the pin 10 returns toward the lower end of slot 12 the arm 28 engages the front side of the end 27 of arm 26 borne by the front member 22 on the right-hand side of shaft 1, and for this reason said end 27 is bent rearwardly to allow said arm to pass beneath same, said arm 28 being preferably resilient for this purpose. Thus the arm 28 moves to its normal position behind said end 27 so as to be in position to engage said end, when shaft 1 and arms 28 and 29 are again raised and rotated as just described. After a page 16 has been turned forwardly as just described and it is desired to turn same backwardly for any reason, the player keeps his or her foot upon pedal 7 after said page has been turned forwardly, so as to prevent shaft 1 and arms 28 and 29 from returning to their normal positions. When the player is ready to turn said page backwardly, the pedal 7 is depressed further so as to cause the pin 10 to travel upwardly through slots 13 and 14. When the pin 10 is raised in slot 13, as hereinabove described, the shaft 1 and arms 28 and 29 move upwardly until arm 28 moves out of engagement with end 27 of arm 26 borne by the member 22 on the left-hand side of shaft 1 and the arm 29 reaches the level of the lower extremity of said end 27. While the pin 10 travels upwardly through slot 14, the shaft 1 and arms 28 and 29 rotate counter-clockwise, Fig. 3, whereby arm 29 engages the end 27 of said arm 26 and causes said member 22 to rotate toward the right

on its pin 20. As the pin 10 approaches the upper end of slot 14, the member 22 engages a pin 32 and thereby causes wheel 17 to rotate counter-clockwise, until said member reaches the forward position on the right-hand side of shaft 1. Pedal 7 is then released and shaft 1 and arms 28 and 29 return to their initial positions, as hereinabove described, so as to be in position to turn said page forwardly again, when pedal 7 is depressed.

A plate 34 having a pair of depending lugs 35 is fastened to the lower side of wheel 17 by means of screws 36 or the like. A rod or plunger 37 extends through openings in lugs 35 and bears a V-shaped end 38. A plurality of notches 39 are formed in the periphery of member 19, and form seats for the V-shaped end 38 of rod 37, said end 38 being pressed toward said member by means of a spring 40 or the like. The notches 39 are spaced at predetermined distances apart so that, when wheel 17 is rotated by turning a page 16 forwardly or backwardly as hereinabove described, the V-shaped end 38 of rod 37 moves from one notch 39 and seats in another notch adjacent thereto, so as to limit the movement of said wheel and to prevent same from spinning.

In Fig. 11 a plurality of music-stands 5 having these apparatuses attached thereto are depicted. A shaft 41 extends through openings in brackets 9 and bears a plurality of arms 42 that are arranged to extend beneath the shafts 1. A pedal 43 is secured to shaft 41 and, when same is depressed, said shaft rotates and thereby causes the arms 42 to raise the shafts 1 simultaneously whereby each shaft 1 causes a page 16 to turn forwardly or backwardly, as hereinabove described. By this arrangement several pages 16 can be turned simultaneously, which renders the apparatus very useful for bands and orchestras.

In Fig. 8 an alternative form of member 22 is depicted that contains a slot 44 extending longitudinally thereof. A pair of members 45 is slidably mounted in slot 44 and affords means for supporting different sizes of pages 16, each of said members 45 being provided with a button 46 to support a page.

In Figs. 15, 16, and 17 instead of bending the end 27 of arm 26 in order to allow arm 28 to return to its normal position, as hereinabove described, a member 47 is pivoted at 48 to said end 27, said member 47 being capable of rotating only in one direction, *i. e.*, clockwise, Fig. 17. When the arm 28 moves a member 22 from the right-hand side of shaft 1 to the left-hand side of same, the lower corner of end 27 prevents said member from rotating by the engagement of arm 28 with said member 47, but, when arm 28 returns to its initial position and engages the member 47 borne by the arm 26 of member 22 occupying a forward position on the right-hand side of shaft 1, said arm 28 trips said member. Said member 47 is so arranged relative to arm 29, that, when said arm moves a member 22 from the left-hand side of shaft 1 to the right-hand side of same, said arm 29 presses the side of the end 27.

The operation of the apparatus is as follows: The pages 16 are hung upon the buttons 23 on members 22, as hereinabove described, so that the forward member 22 on the right-hand side of shaft 1, Fig. 1, supports the first page 16. When it is desired to turn the first page 16 forwardly, *i. e.* from the right-hand side of shaft to the left-hand side of same, the player presses the pedal 7 downwardly until the pin 10 travels upwardly through slots 11 and 12, whereby shaft 1 and arms 28 and 29 rise and rotate clockwise, Fig. 3, with the result that arm 28 turns the first page 16 forwardly in the manner hereinabove described. After the first page is turned forwardly, the player releases the pedal 7 and thereby allows shaft 1 and arms 28 and 29 to return to their initial positions, so that arm 28 can turn the second page forwardly, when said pedal is again depressed. This operation is continued until the desired number of pages are turned. If it is desired to turn a page 16 backwardly, the player keeps his or her foot upon the pedal 7 in order to prevent shaft 1 and arms 28 and 29 from returning to their initial position after said page has been turned forwardly. When the player is ready to turn said page backwardly, the pedal 7 is depressed further in order to cause shaft 1 and arms 28 and 29 to rise and rotate counter-clockwise, Fig. 3, whereby said arm turns said page backwardly, in the manner hereinabove described, after which said pedal is released, with the result that shaft 1 and arms 28 and 29 return to their initial positions to allow arm 28 to turn said page forwardly, when said pedal is again depressed.

I claim:

1. In an apparatus of the character described, the combination of a hollow support having a cam slot, a shaft extending through said support, a pin projecting from said shaft into said slot and adapted to control the movement of said shaft, and a pivoted member for actuating said shaft, part of said slot being inclined to rotate said shaft in one direction when the pivoted member is depressed and another part of said slot being oppositely inclined to positively rotate said shaft in the opposite direction when the pivoted member is further depressed.

2. In an apparatus of the character described, the combination of a pair of hollow

supports, an upright shaft extending through said supports, a member loosely journaled on said shaft, page-supporting means attached to said member, a pivoted member adapted to raise said shaft, means borne by one of said supports adapted to control the movement of said shaft, and means operated by said shaft adapted to actuate said page-supporting means.

3. In an apparatus of the character described, the combination of a shaft, a spool loosely mounted thereon, a page-supporting member pivoted to said spool, an arm rigidly borne by said shaft and operating independent of said member to actuate said page-supporting member, and means for actuating said shaft to cause said arm carried thereby to operate said page-supporting member.

4. In combination with a shaft, a spool loosely mounted thereon, a page-supporting member pivoted to said spool, a pair of arms borne by said shaft to rotate therewith and operating independent of said member, said arms extending on opposite sides of said page-supporting member, and means for actuating said shaft whereby in one movement thereof one of said arms rotates said member in one direction and on the reverse movement the other arm rotates said member in the opposite direction.

5. In combination with a shaft, and a member loose thereon, a plurality of movable page supporting members carried by said shaft member, means rigidly borne by said shaft and operating independent of said page supporting members to actuate the latter, and means to operate said shaft and thereby cause said means thereof to operate said page-supporting members.

6. In an apparatus of the character described, the combination of a shaft, a spool loosely mounted thereon, a plurality of page-supporting members pivoted to the flanges of said spool, a pair of arms borne by said shaft, and means for actuating said shaft, one of said arms engaging on one side of the members to rotate said members in one direction and the other engaging on the opposite sides of the members to rotate said members in the opposite direction.

7. In an apparatus of the character described the combination of a revoluble support, a shaft adapted to rotate and to move vertically, a pair of arms borne by said shaft and diverging therefrom, page-supporting means pivoted to said support, and means for actuating said shaft, said page supporting means being engageable between said arms whereby one of said arms rotates said page-supporting means in one direction and the other rotates said page-supporting means in the opposite direction.

8. In an apparatus of the character described, the combination of a revoluble support, a shaft adapted to rotate and to move vertically, a pair of arms borne by said shaft and diverging therefrom, a page-supporting member pivoted to said support, a projection borne by said member for engagement with said arms, and means for actuating said shaft, one of said arms being adapted to rotate said member in one direction and the other being adapted to rotate said member in the opposite direction.

9. In combination with a shaft having rotatable and vertical movement, a series of movable page supporting members, means carried by the shaft to engage on opposite sides of said members to actuate the same, and means to operate the shaft to move the same vertically to bring said engaging means thereof to engage with said page supporting members and synchronously therewith to rotate the shaft to effect a turning of said engaging means and therewith the page supporting members.

10. In an apparatus of the character described, the combination of a revoluble support, a shaft extending therethrough to rotate and to move vertically, page-supporting members pivoted to said support, means borne by said shaft to actuate said members separately, means borne by said support to hold said members separately in position to be engaged by said actuating means, and means for actuating said shaft.

11. In an apparatus of the character described, the combination of a revoluble support, a shaft extending therethrough to rotate and to move vertically, page-supporting members pivoted to said support, means borne by said shaft to actuate said members separately, means borne by said members to rotate said support, and means borne by said support to hold said members separately in position to be engaged by said actuating means, and means for actuating said shaft.

12. In an apparatus of the character described, the combination of a revoluble support, a shaft extending therethrough to rotate and to move vertically, page-supporting members pivoted to said support, means borne by said shaft to actuate said members separately, means borne by said members to rotate said support, and means borne by said support to hold said members separately in position to be engaged by said actuating means, means for actuating said shaft, and means for limiting the movement of said support.

13. In an apparatus of the character described, the combination of a shaft, a support loosely mounted thereon, a member pivoted to said support, means borne by said member adapted to support a page, and means operated by said shaft and engaging on opposite sides of said page supporting means to actuate said member to turn said page.

14. In combination with a rotatable and

vertically movable shaft, a support loosely mounted on the shaft, page supporting means pivoted to the support, means carried by the shaft and rotatable therewith to engage said page supporting means, and means to simultaneously raise and rotate said shaft to bring said means for engaging the page supporting means in engagement with the latter to rotate same.

15. In combination with a rotatable and vertically movable shaft, a movable page supporting member, means carried by the shaft, to engage said page supporting member and normally out of contact therewith, and means to raise and rotate the shaft to bring said means for engaging the page supporting means in engagement with the latter to actuate same.

16. In combination with a rotatable and vertically movable shaft, a movable page supporting member, means carried by the shaft to engage and actuate said member when the shaft is moved vertically, and means including a depressible element to raise and rotate said shaft.

17. In combination with a rotatable and vertically movable shaft, a movable page supporting member, means carried by the shaft to engage and actuate said member, and depressible means to raise and rotate said shaft, said depressible means when actuated to a predetermined extent effecting a turning of said member in one direction and when further depressed effecting a positive turning of said member in the opposite direction.

18. In combination with a rotatable and vertically movable shaft, a member loosely mounted thereon, a page supporting member pivoted to said loose member, an arm projecting from said page supporting member, a pair of arms carried by said shaft to engage on opposite sides of the first named arm, and means to operate the shaft to effect a raising thereof to bring the pair of arms to engage said first named arm and to subsequently rotate the shaft to effect turning of the page supporting member.

19. In combination with a movable page supporting member, means formed to engage on opposite sides of said member, said member and means being movable one with respect to the other and being normally free of engagement with one another, and means to effect a relative sliding and rotating movement of the parts to cause the same to engage and to turn the page supporting member.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

EMIL J. SCHLEICHER.

Witnesses:
GEORGE G. ANDERSON,
GLADYS WALTON.