



July 22, 1924.

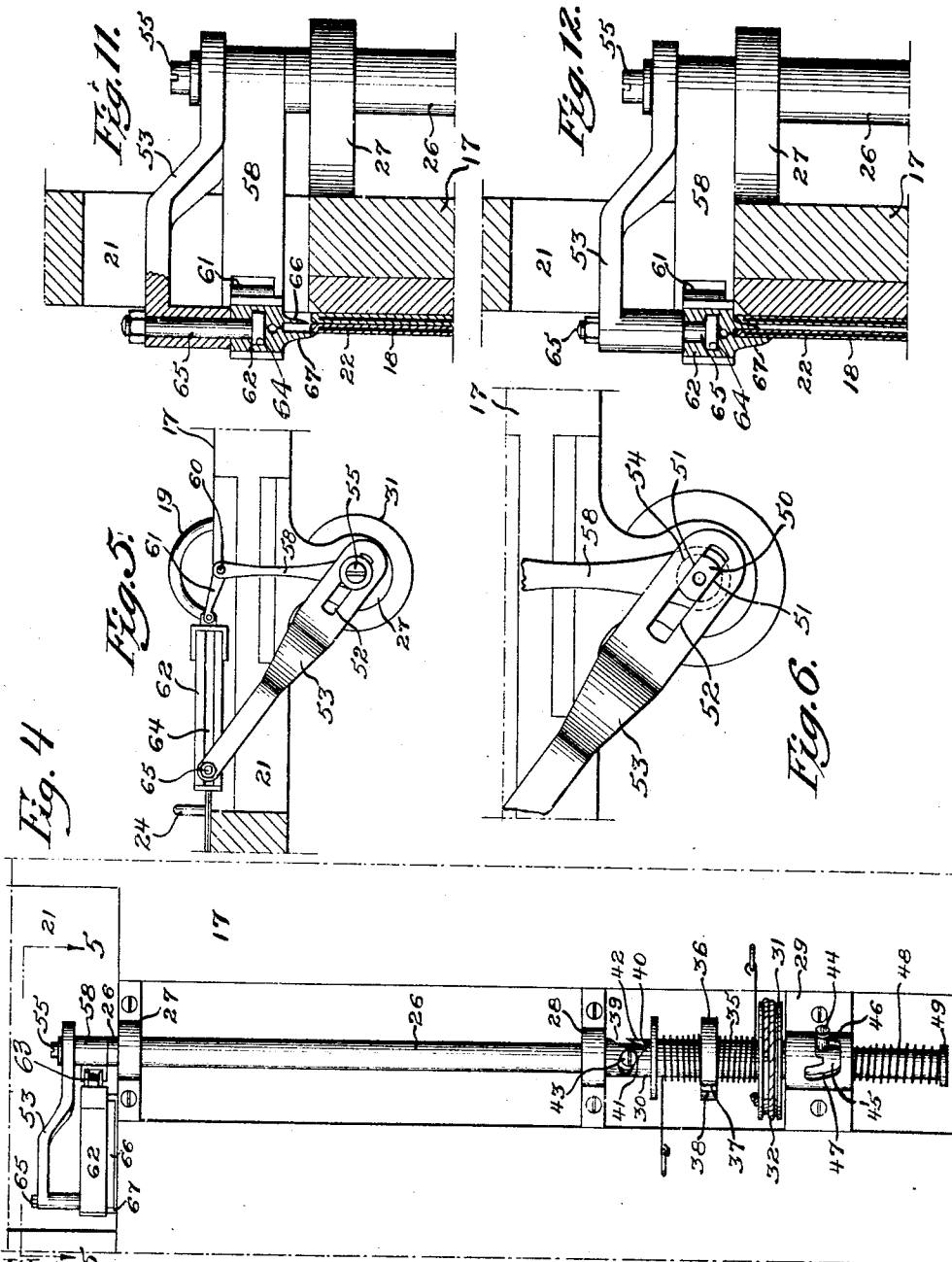
1,502,176

J. D. CONTI

SHEET TURNING DEVICE

Filed Feb. 23, 1921

3 Sheets-Sheet 2



Witnesses,  
 Spencer W. Megonegal,  
 Thequater B. Coppie

Fig. 4.

by

Inventor,  
 John D. Conti,  
 Joshua R. Hottel  
 his Attorney.

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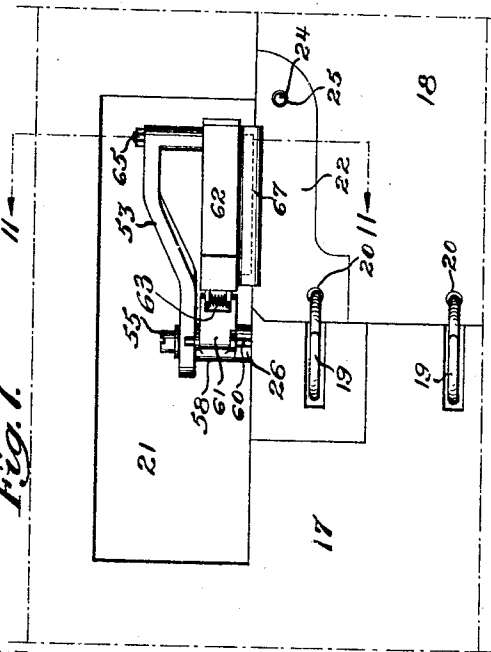
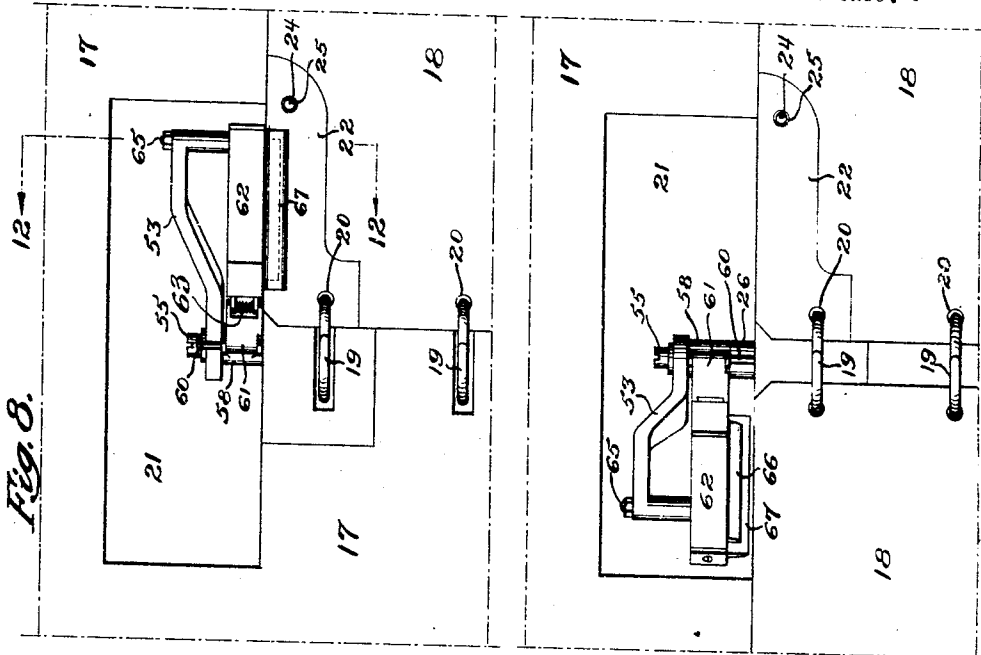
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3 Sheets-Sheet 3



Witnesses,  
 Spencer W. Meonagal,  
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 by Joshua R. Hottel  
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# UNITED STATES PATENT OFFICE.

JOHN D. CONTI, OF PHILADELPHIA, PENNSYLVANIA.

## SHEET-TURNING DEVICE.

Application filed February 23, 1921. Serial No. 447,026.

*To all whom it may concern:*

Be it known that I, JOHN D. CONTI, a subject of the King of Italy, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Sheet-Turning Devices, of which the following is a specification.

One object of my invention is to provide an improved device which will be especially serviceable for musicians for the purpose of turning sheets of music; the device being constructed so that the musicians can turn the sheets without using his hands and without interruption during the rendition of a musical selection.

Another object is to so construct my improved device that it will be positive in its action and will not injure the sheets during the turning action.

A still further object is to construct my improved device in such manner that it will be automatically adjustable so as to be used in connection with various numbers of sheets and will always operate to turn the outermost sheet from a position at one side of a hinged support to a position at the opposite side of said support.

These objects, and other advantageous ends which will be described hereinafter, I attain in the following manner, reference being had to the accompanying drawings in which

Figure 1 is a front elevation of a sheet-music stand having my invention applied thereto,

Figure 2 is a side elevation of Figure 1,

Figure 3 is an enlarged fragmentary section taken on the line 3—3 of Figure 1,

Figure 4 is a fragmentary rear view looking in the direction of the arrow *x* in Figure 3,

Figure 5 is a fragmentary sectional plan view taken on the line 5—5 of Figure 4,

Figure 6 is a fragmentary plan view showing how the main swinging arm is slidably keyed to an actuating shaft with the extreme upper portion removed to reveal the slidable connection,

Figure 7 is a fragmentary front view showing certain of the parts of my invention in a normal position ready to be moved to turn a sheet,

Figure 8 is a view of the same general character as shown in Figure 7 with the car-

rier having been moved into a separating position between the outermost sheet and the sheet to the rear thereof,

Figure 9 is a fragmentary sectional plan view showing the sheet being turned from the position shown in Figure 8,

Figure 10 is an elevation showing the position of the carrier after the sheet has been turned; said carrier moving upwardly to clear the top of the turned sheet so as to permit the return movement of the carrier into the position shown in Figure 7,

Figure 11 is a fragmentary section taken on the line 11—11 of Figure 7, and

Figure 12 is a section taken on the line 12—12 of Figure 8.

Referring to the drawings, 13 represents a sheet-music stand having a hollow post or standard 14; said standard being supported by feet 15; the upper end of the standard having braces 16 secured to a supporting board or desk 17 for the sheets 18 of music. These sheets, in the form of my invention illustrated, are secured to the desk 17 by means of split rings 19 which extend through holes 20 in the sheets 18; the rings 19 being secured to the desk in any suitable manner and capable of being opened to permit the sheets to be removed therefrom or other sheets substituted or added. The desk 17 is mounted in an inclined position and above the level of the sheets 18 has an aperture 21. The sheets 18 are preferably provided at their upper left hand corners, viewed from Figure 1, with hoods 22 which are preferably made of very thin sheet metal folded over the top edges 23 of the sheets so as to provide a reinforcement and serve as a relatively stiff indestructible portion for engagement with a carrier which forms a part of my invention; the hoods each having at least one of the holes 20 through which a ring 19 extends. The desk 17 is preferably provided with a lug 24 adapted to engage through the sheets and hoods; the sheets and hoods each having a hole 25 adjacent its upper surface and spaced from the holes 20 so as to serve as an additional support for proper alignment of the top edges 23 of the sheets.

An actuating rod 26 is rotatably mounted in bearings 27, 28 and 29 which are secured to the rear of the desk 17 and a sleeve 30 is freely rotatable on the shaft 26 and is positioned between the bearings 28 and 29

so that the bearings 28 and 29 take up thrust for the opposite ends of the sleeve 30 as will be obvious from the following description.

The sleeve 30 has a curved actuating wheel 5 or pulley 31 to which is secured one end of a cable 32; said cable passing over a guide pulley 33 and extending down through the inside of the hollow standard 14. The lower end of the cable 32 is connected to a treadle 34. The sleeve 30 has a torsion spring 35 wound thereon at opposite sides of a collar or flange 36; the coils of the torsion spring at opposite sides of said flange being wound in opposite directions; the flange 15 36 serving as means of attachment for a portion 37 of the spring between the coils; said flange having a notch 38 to admit said portion 37 of the spring. The opposite ends of the spring are secured to the rear of the desk as clearly shown in Figure 4.

The sleeve 30 has a cam slot 39 formed therein; said cam slot at its lower portion having a notch 40 and from the notch 40, the cam slot extends upwardly in the form of a V so as to provide a surface 41 slanting upwardly in one direction and a surface 42 slanting upwardly in an opposite direction. The shaft 26 has a pin 43 projecting therefrom into the cam slot 39 and another pin 30 44 which projects into the slot 45 in the bearing 29, all as clearly shown in Figure 4. The slot 45 provides an abutting edge 46 at one side and an abutting edge 47 at the opposite side; said abutting edges being adapted to be engaged by the pin 44. The slot 35 45 is of sufficient height to permit the pin 44 to move up and down during an upward and downward movement of the shaft as prescribed by the cam slot 39 during the action of the device.

A spring 48 engages between the lower flanged end 49 of the shaft 26 and the lower edge of the bearing 29 and serves to impart a downward movement to the shaft 26 45 when allowed to do so by the action of the cam slot 39 and pin 43.

The upper end 50 of the shaft 26 above the bearing 27 is cut away to provide two parallel sides 51 as shown in Figure 6. This end portion 50 extends through a slot 52 in a main swing arm 53; the main swing arm resting on the shoulder portion 54 provided by the cutting away of the portion 50. The portion 50 extends slightly above 55 the top surface of the main swing arm 53 and a screw cap 55 is screwed into the top of the portion 50 so as to prevent the swing arm from lifting completely off of the portion 50 but at the same time permitting 60 said swing arm to slide on the part 50 to the extent of the length of the slot 52 if necessary. The portion 56 of the shaft 26 from which the part 50 projects, is slightly less in diameter than the remaining part of the shaft so as to provide a shoulder 57 as shown

in Figure 3. The portion 56 is adapted to freely rotate in an auxiliary arm 58 which projects into the aperture 21 of the desk and at its forward end is bifurcated as shown at 59, the furcations of which have holes 70 through which a fixed pin 60 in the desk 17 extends; the bifurcated portion 59 of said auxiliary arm being adapted, during the action of the device, to move upwardly and downwardly on the pin 60 and the pin 60 is 75 mounted substantially concentric with the axes of the rings 19 which secure the sheets 18 to the desk; said position being clearly illustrated in Figures 3 and 5.

A combined adjusting and guiding finger 80 61 is positioned between the furcations of the auxiliary arm 58 and has a hole through which a pin 60 extends. This finger 61, however, is capable of freely swinging on the pin 60 as a pivot. The outer end of the finger 85 61 is hinged to a carrier 62; the hinge including a spring 63 which tends to move the carrier 62 and finger 61 in straight alignment, which action however is prevented due to sheet-engaging portions with the sheets 18 as will hereinafter be described.

The top of the carrier 62 includes an elongated undercut slot 64 in which a headed pin or extension 65 of the main swing lever 53 extends; it being noted that the swing 95 lever 53 is connected to the carrier 62 through the medium of the pin and slot connection just described. The lower portion of the carrier 62 has a sheet-separating portion 66 in the form of a thin elongated 100 blade and a depending portion 67 which serves to abut the outer surface of the hood 22 of the sheet which is to be turned. This portion 67 is also illustrated in the form of a blade of greater depth than the separating 105 blade 66; the blades 66 and 67 being spaced apart a distance equal to the thickness of each one of the hoods 22. In other words, when the inner surface of the blade 67 is in engagement with the outer surface of the sheet to be turned, the blade 66 will be directly above the parting of said hood and the hood immediately to the rear thereof as clearly shown in Figure 11; the drawings 115 only showing two sheets attached to the desk.

It will now be understood that in view of the connection between the finger 61 and the carrier 62 that it will always be possible for the blades 66 and 67 to assume positions 120 parallel with the hood of the outermost sheet which is to be turned since the finger 61 is capable of swinging into various positions to accommodate various numbers of sheets; considering also the fact that the main 125 swing arm has the pin and slot connection with the carrier 62.

To operate the device and considering that the parts are in their normal positions, as shown in Figures 1, 2, 3, 4, 5, 7 and 11, a 130

downward movement of the treadle 34 will pull the cable 32 and cause the pulley 31 to be partially operated so as to impart a rotatable movement to the sleeve 30. This action will initially permit the spring 48 to move the shaft 26 downward owing to the fact that the pin 43 will engage lower portions of the surface 41 of the cam slot 39 and this downward movement of the shaft 26 will continue until the pin 43 engages in the lower notch 40 of said cam slot 39. During this downward movement of the shaft 26 the sheet-separating blade 66 will move to separate the sheet which is to be turned from the sheet immediately to the rear thereof in a manner shown in Figures 8 and 12; it being noted that when the shaft 26 moves downwardly as just described, it will pull down with it the main swing arm 53, the auxiliary arm 58 and the finger 61 and since the carrier 62 is secured to the finger 61 and swing arm 53, the carrier will be lowered bodily and in a position parallel with the outer sheet. A continued downward movement of the treadle 34 will rotate the shaft 26 through the medium of the pin 43 which is held in the notch 40 of the cam slot 39 and this action will cause the swing arm 53 to swing the carrier 62 as shown in Figure 9; it being noted that the finger 61 will follow the swinging action and the sheet will be turned. During the latter part of the swinging movement, the pin 44 will engage the edge 47 of the bearing slot 45 and stop the rotatable movement of the shaft 26 and cause the pin 43 to ride up on the surface 42 of the cam slot 39 so as to free the blade 66 and 67 of the top edge of the turned sheet. Figure 10 shows the parts in this latter mentioned position. It will be noted that during this turning movement of the sleeve, the spring 35 will be wound under tension and when the treadle 34 is released, the spring 35 will turn the sleeve 30 in an opposite direction causing the cable to be re-wound on the pulley 31 and during this latter action, the pin 43 will be moved down and the shaft 26 will be consequently lowered and then raised to move the carrier into such position that the blade 67 will engage the outer surface of the sheet next to be turned and the blade 66 will be positioned at a level above the top of said latter mentioned sheet.

By the provision of the spring connection as above described it is obvious that when the blade 67 is in its normal position abutting the outer surface of the sheet next to be turned that said blade is always under tension. For example if there were no sheets on the desk, the blade 67 would move directly against the outer surface of the desk and the blade 67 would move into the aperture 21. Furthermore, as previously

stated, the finger 61 due to its hinge and pivot mounting will adjust itself and the adjacent end of the carrier to suit the thickness of a pack of the sheets and allow for a follow up action as the pack of sheets to be turned becomes gradually thinner as the sheets are subsequently turned.

While I have described my invention as taking a particular form, it will be understood that the various parts of my invention may be changed without departing from the spirit thereof, and hence I do not limit myself to the precise construction set forth, but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claims.

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

1. A sheet turning device including a desk; a shaft mounted on the desk; an auxiliary arm pivotally mounted on the shaft; a carrier pivotally connected with the auxiliary arm and having abutting and supporting blades adapted to engage a sheet; a swingable arm carried by the shaft and engaging with the carrier, and means for imparting longitudinal and rotary movement to the shaft to cause the blades to engage and turn a sheet.

2. A sheet turning device including a desk, an actuating shaft, a carrier supported from the shaft and having abutting and separating blades spaced apart and adapted to engage a sheet; a swingable arm carried by the shaft; a pin and slot connection between the swinging arm and the carrier, and means for imparting longitudinal and rotary movement to the shaft to cause the blades to engage and turn a sheet.

3. A sheet turning device including a desk, an actuating shaft, a carrier supported from the shaft and having abutting and separating blades spaced apart and adapted to engage a sheet; a pin on the desk; an auxiliary arm pivotally mounted on the shaft and having a bifurcated end through which the pin passes; and a guiding finger hinged to the carrier and pivoted on the pin between the furcations.

4. A sheet turning device including a desk, an actuating shaft, a carrier supported from the shaft and having abutting and separating blades spaced apart and adapted to engage a sheet; a pin on the desk; an auxiliary arm pivotally mounted on the shaft and having a bifurcated end through which the pin passes; a guiding finger hinged to the carrier and pivoted on the pin between the furcations; and a spring adapted to keep the carrier and finger in alignment.

5. A sheet turning device including a desk; an actuating shaft mounted for rotary

and longitudinal movement; a pin extending from the shaft; a sleeve rotatably mounted on the shaft but secured against longitudinal movement relatively to the desk; a cam 5 carried by the sleeve having upwardly diverging faces; a pin extending from the shaft and engaging with the cam surface whereby rotation of the sleeve will cause upward movement of the pin and shaft; 10 means for imparting rotary movement to the sleeve; means for restoring the sleeve to its idle position; a carrier supported from the shaft and having abutting and separating blades, and means carried by the shaft to 15 cause the blades to engage and turn a sheet.

6. A sheet turning device including a desk, an actuating shaft mounted for rotary and longitudinal movement; pins extending from the shaft; a sleeve rotatably mounted 20 on the shaft but secured against longitudinal movement relatively to the desk and provided with a cam slot having upwardly diverging faces adapted to be engaged by one of the pins and a slot having abutting 25 faces adapted to be engaged by the other pin and limit the movement of the shaft; a spring normally holding the shaft in its downward position; means for imparting rotary motion to the sleeve; means for restoring the sleeve to its idle position; a carrier 30 supported from the shaft and having abutting and separating blades, and means

carried by the shaft to cause the blades to engage and turn a sheet.

7. A sheet turning device including a desk; a shaft mounted on the desk; an auxiliary arm pivotally mounted on the shaft; a carrier pivotally connected with the auxiliary arm and having abutting and supporting blades adapted to engage a sheet; a 40 swingable arm carried by the shaft and having a slot and pin connection with the carrier, and means for imparting longitudinal and rotary movement to the shaft to cause the blades to engage and turn a sheet. 45

8. A sheet turning device including a desk; a shaft mounted on the desk; an auxiliary arm pivotally mounted on the shaft; a carrier pivotally connected with the auxiliary arm and having abutting and supporting 50 blades adapted to engage a sheet; a swingable arm mounted to swing with the shaft and slidable thereon, said arm having a slot and pin connection with the carrier and means for imparting longitudinal and 55 rotary movement to the shaft to cause the blades to engage and turn a sheet.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN D. CONTI.

Witnesses:

A. CLEMENTS,  
P. PROSPERO.