T. P. BROWN.

TRACKER MECHANISM FOR MUSICAL INSTRUMENTS.

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Fig. 1

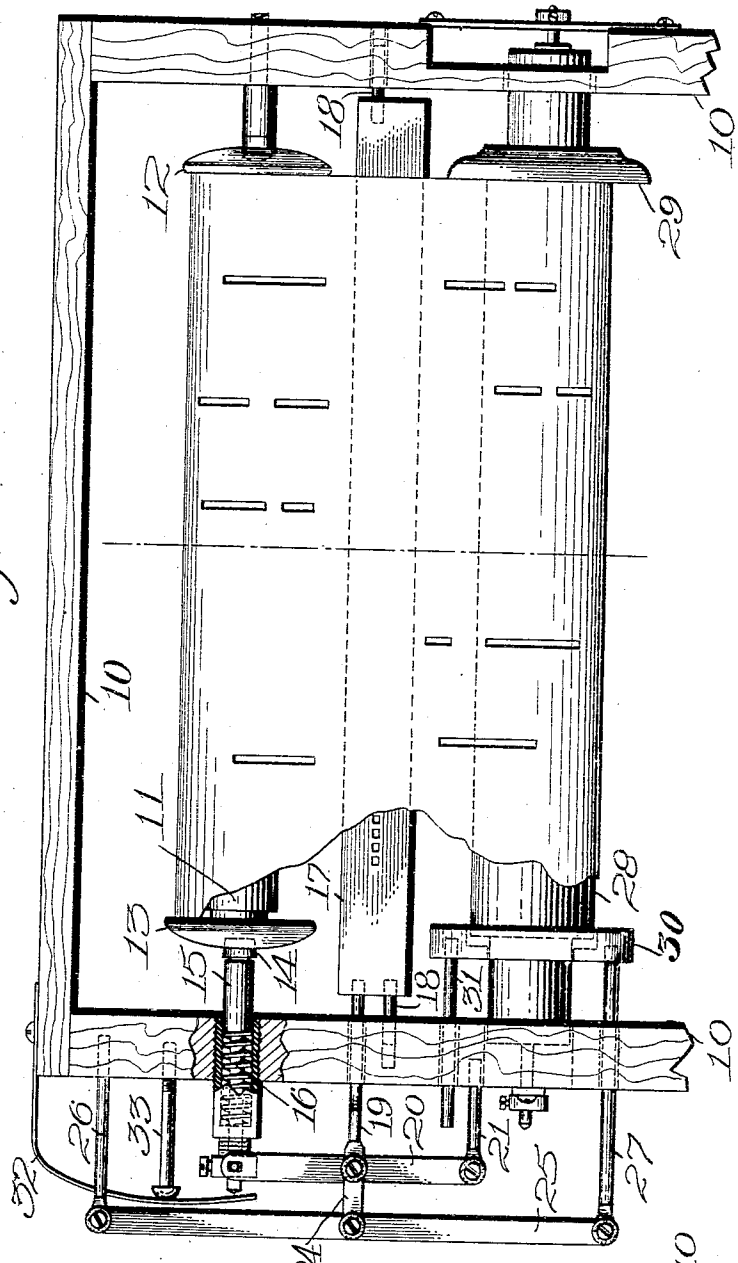
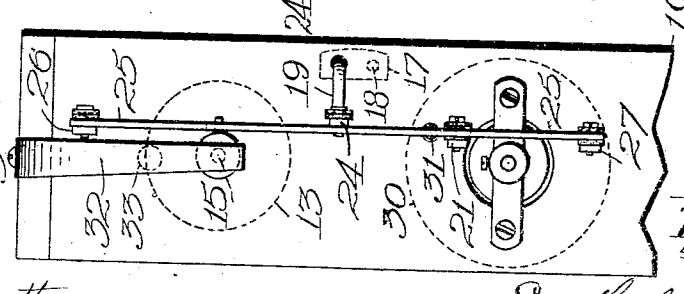


Fig. 2.



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TRACKER MECHANISM FOR MUSICAL INSTRUMENTS.

939,387. Specification of Letters Patent. Patented Nov. 9, 1909.

Application filed April 9, 1909. Serial No. 488,816.

To all whom it may concern:

Be it known that I, THEODORE P. BROWN, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Tracker Mechanism for Musical Instruments, of which the following is a specification.

This invention relates to a tracker mechanism for pneumatic musical instruments. Many devices have been provided for automatically shifting the music roll or tracker back and forth by means of pneumatic devices controlled by channels in the tracker coming at or near the edges of the paper so as to keep the paper in proper position with respect to the tracker, but these devices generally have been of a complicated nature involving several pneumatic connections, and have not operated satisfactorily in practice as a general thing.

The principal object of this invention is to provide an exceedingly simple mechanical arrangement for keeping the tracker and music sheet central with respect to each other, without the use of any pneumatic connections for controlling the operation; also to provide for keeping the take-up roll or spool exactly in track with the music roll or spool so that the paper will be wound properly upon it.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which—

Figure 1 is a front elevation of a tracker box showing one form in which this invention can be embodied, and Fig. 2 is an end view of the same.

The invention is shown as applied to a tracker box 10 having a music roll or spool 11 having two flanges 12 and 13, the flange 12 being fixed on the roll which is mounted to rotate in a fixed longitudinal position with respect to the tracker box. By a fixed position it is meant that although it is adjusted at the time of manufacture it is intended to remain fixed after the instrument is put on the market. The flange 13 is shown as longitudinally slidable on the music roll and as being engaged by a center 14 mounted on a longitudinally movable rod 15 which is provided as usual with a spring 16 for forcing it against the flange 13 so that this flange is yieldingly pressed toward the stationary flange. It will be understood of course that any other means may be employed for yieldingly forcing the flange in this direction so that the position of this flange will be fixed by the width of the paper music sheet.

The tracker 17 is made longitudinally movable and supported on studs 18 and 19 at its ends projecting into or through passages in the tracker box which guide these studs. The stud 19 extends through the end of the tracker box on which is located the rod 15 and is pivotally connected to the center of a lever 20 which is pivoted at one end to the rod 15 and at the other to a stationary bracket 21 on the tracker-box. From this construction it will be seen that the tracker has exactly half the motion of the flange 13 so that as the center line of the space between the two flanges 12 and 13 moves to the left or right, half the distance which the flange 13 itself moves, the tracker accordingly will move in the same direction a distance exactly equal to the distance through which the center line of the music sheet moves. In other words, the motion of the tracker is in the same direction as that of the flange 13 and of half the length of that motion. In this way the center of the tracker is kept constantly in registration with the center of the roll and the paper music sheet is caused to pass over the tracker centrally. This is accomplished without the use of pneumatic devices for moving the tracker or music roll, and by means of very simple mechanism which can be made at very small expense and has no parts that are likely to get out of order in use.

The stud 19 has a projecting end 24 to which is pivoted the center of a lever 25. This lever 25 is pivoted to a fixed stud 26 at one end, and at the other to a sliding rod 27 which extends through a perforation in the tracker-box so that it moves twice as far

as the tracker. The take-up roll or spool 28 is shown as provided with a fixed flange 29 maintaining a uniform longitudinal position in registration with the flange 12 after the instrument is manufactured, and with a movable flange 30 on the other end. This flange 30 is fixed to the rod 27, and to a similar guide rod 31 extending through the tracker-box. It will be seen that when the music sheet is applied to the roll 11 and the flange 13 settles back against the edge of the music sheet the flange 30 will accompany it an equal distance so that these two flanges will always remain with their inner edges in alinement. This is due in the form shown to the fact that both levers 20 and 26 are pivoted at their centers, but many other combinations of levers could be employed with the same results. The short rod 31 will engage the lever 20 to afford a positive stop.

The spring 16, provides all the resistance to the left hand motion of the rod 15 that is necessary or desirable when playing, but in order to provide more resistance when the rod is pushed back by hand to insert a music sheet and to return the flange to the edge of the sheet a spring 32 is shown in position to bear on the end of the rod 15 at such times. Otherwise it is prevented from engaging the rod 15 by an adjustable stop 33. This spring promptly returns the parts to playing position but only the light spring 16 bears on the rod when the rolls are rotating.

While I have illustrated and described a preferred embodiment of the invention I am aware that many modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all the details of construction shown and described, but

What I do claim is:—

1. In a musical instrument, the combination with a tracker constructed in one piece and movable longitudinally as a whole, a music roll having a movable flange at one end and resilient means for normally moving said flange toward the center of the roll, of means connected with said resilient means for automatically moving the entire tracker bodily when the movable flange is moved in either direction a distance equal to half the distance through which said movable flange moves and in the same direction, whereby the center of the tracker always will be half way between the flanges of said spool and the tracker channels will always remain the same distance apart.

2. In a musical instrument, the combination with a longitudinally movable tracker, and a music roll having a movable flange, of resilient means for normally and yieldingly moving said flange toward the center of the roll, and a lever pivoted to said resilient means, whereby the lever will be moved positively whenever the flange moves in either direction, said lever being connected with the tracker, for moving it.

3. In a musical instrument, the combination with a longitudinally movable tracker, and a music roll having a movable flange, of resilient means for normally and yieldingly moving said flange toward the center of the spool, and a lever connected with the tracker at its center, pivoted to said resilient means at one end, and pivoted at a stationary point at the opposite end, whereby the lever will move with the flange, and the tracker will be moved half as far as said flange.

4. In a musical instrument, the combination with a movable tracker, a music roll, and a take-up roll, each of said rolls having a movable flange, of means for moving the tracker automatically when the movable flange on the music roll is moved, a distance equal to half the distance through which said movable flange moves in the same direction, and means operated directly by the movable flange on the music-roll for simultaneously moving the movable flange on the take-up roll.

5. In a musical instrument, the combination of a longitudinally movable tracker, a music roll, and a take-up roll, each of said rolls having a fixed flange at one end and a yielding longitudinally movable flange at the other, and means controlled by the movable flange on the music roll, for keeping the center of the tracker in line with a line half way between the flanges on the music roll and take-up roll, said means comprising a rod yieldingly engaging the movable flange on the music roll, a lever pivoted at one end to a stationary object and at the other to said rod, and pivotally connected at a point half way between the ends to the tracker, and a lever fixed at one end, connected at the other end with the movable flange on the take-up roll and connected at its center with the center of the first named lever.

6. In a musical instrument, the combination of a longitudinally movable tracker, a music roll having a fixed flange at one end and a yielding longitudinally movable flange at the other, and means controlled by the movable flange on the music roll for keeping the center of the tracker in line with a line half way between the flanges on the music roll, said means comprising a rod yieldingly engaging the movable flange on the music roll, a lever pivoted at one end to a stationary object and at the other to said rod, and pivotally connected at a point half way between its ends directly to the tracker.

7. In a musical instrument, the combina-

tion of a music roll, and a take-up roll, each of said rolls having a fixed flange at one end and a yieldingly longitudinally movable flange at the other, a rod yieldingly engaging the movable flange on the music roll, a lever pivoted at one end to a stationary object and at the other to said rod, and a lever fixed at one end, connected at the other end with the movable flange on the take-up roll and connected at its center with the center of the first named lever.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

THEODORE P. BROWN.

Witnesses:
A. E. FAY,
C. FORREST WESSON.