

J. H. LUDWIG.
MUSIC SPOOL ADJUSTING AND TRANSPOSING DEVICE.
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981,776.

Patented Jan. 17, 1911.

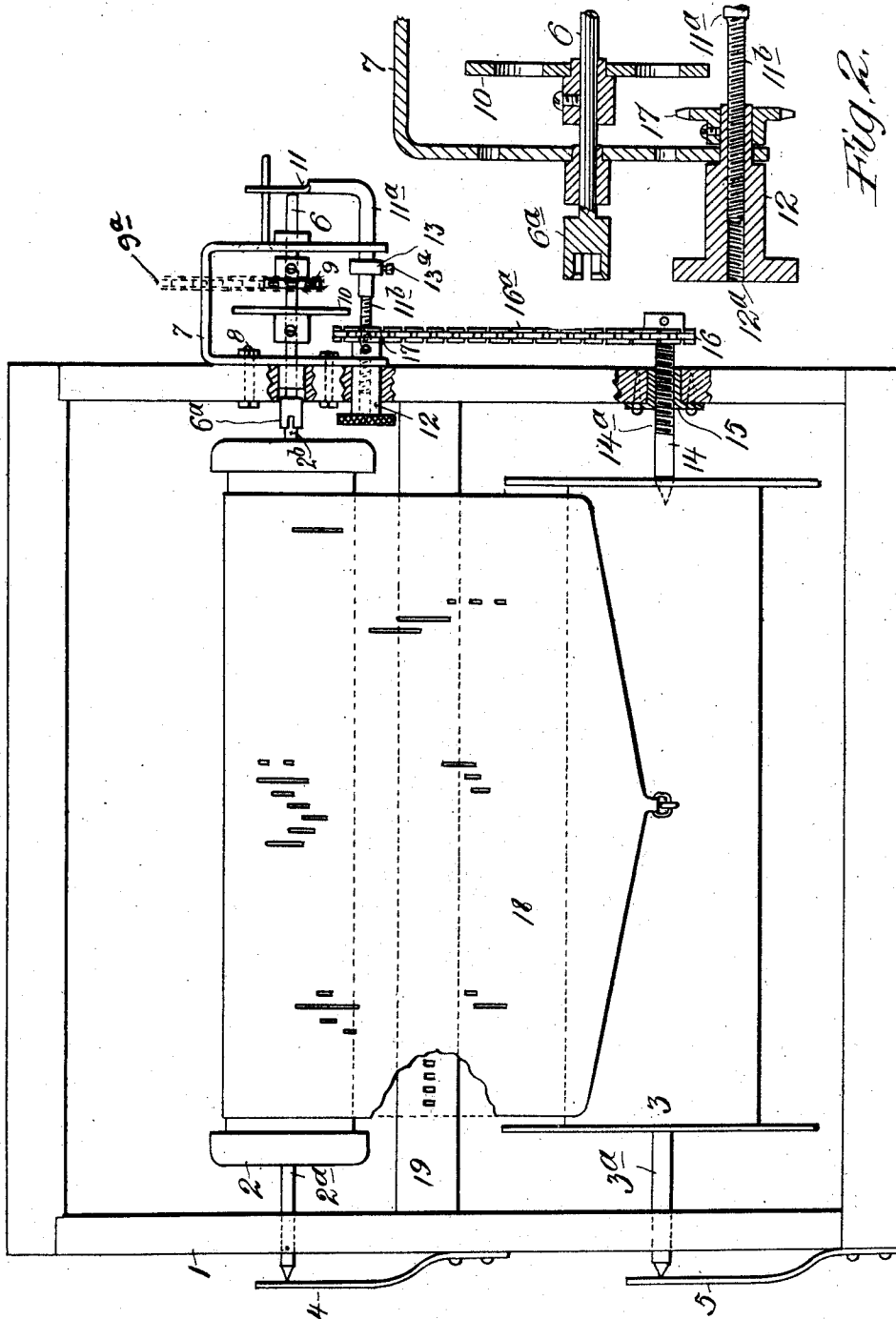


Fig. 2.

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Fig. 1.

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MUSIC-SPOOL ADJUSTING AND TRANSPOSING DEVICE.

981,776.

Specification of Letters Patent.

Patented Jan. 17, 1911.

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To all whom it may concern:

Be it known that I, JOHN H. LUDWIG, a citizen of the United States, and resident of New York city, borough of the Bronx, in the county of New York and State of New York, have invented certain new and useful Improvements in Music-Spool Adjusting and Transposing Devices, of which the following is a specification.

The object of my invention is to provide improved and efficient means for regulating music rolls simultaneously in player pianos, self playing musical instruments, and the like, to bring the music sheet correctly in alinement with the orifices of the tracker bar or bridge, and also to enable transposing of the musical composition by shifting the perforated or slotted music sheet one or more notes to the right or left as may be desired.

In carrying out my invention I provide supports for the music spools or rolls, and means for simultaneously shifting both spools or rolls longitudinally equally and simultaneously by a simple manipulation of the parts, whereby the music sheet will be adjusted to the desired extent across the tracker bar in a direction transverse to the winding of the sheet upon the take-up roll.

My invention also comprises novel details of improvement and combinations of parts that will be more fully hereinafter set forth and then pointed out in the claims.

Figure 1 is a partly broken view of my improvements, and Fig. 2 is an enlarged detail sectional view of part thereof.

The numeral 1 indicates a suitable receptacle or frame within which the music spools or rolls 2, 3 are suitably journaled. I have shown the pivots 2^a, 3^a of the music spools as supported to slide in bearings on frame 1, which pivots at their ends bear against springs 4, 5 that are carried by said frame, and adapted to push the music spools and said pivots to the right in Fig. 1.

At 6 is a shaft for spool 2 provided at its inner end with a suitable coupling 6^a for connection with the usual winged-pivot 2^b of the spool. Shaft 6 is shown supported in suitable bearings in a frame 7, attached to frame 1 as by screws or bolts 8. Shaft 6 is shown provided with a sprocket wheel 9 to receive chain 9^a for rotating said shaft and spool 2 from any usual motor, and shaft 6 is shown provided with a disk 10 to coact with any suitable brake. Shaft 6 is mounted to slide longitudinally in its bearings and

is adapted to be engaged by a pusher or finger 11 which is shown supported to slide in suitable bearings in frame 7. Pusher or finger 11 is shown in the form of a bent wire having its horizontally disposed portion 11^a provided with suitable threads 11^b meshing in internal threads 12^a in a rotative shaft 12 that is shown journaled in bearings in frames 1 and 7. A collar 13 on the pusher 11^a may be suitably adjusted by screw 13^a to limit the movement of said pusher by shaft 12. Thus, as shaft 12 is rotated by the fingers of the operator, pusher 11 will be moved as desired to the right or left. As spring 4 pushes spool 2 to the right in Fig. 1, shaft 6 will be maintained against pusher 11. When pusher 11 is moved to the left spool 2 will be correspondingly adjusted, and when pusher 11 is moved to the right spring 4 will push spool 2 to the right, shaft 6 remaining in contact with pusher 11.

To cause both spools 2 and 3 to be adjusted simultaneously and correspondingly to the right or left I provide the pivot 14 of spool 3 with threads 14^a meshing in threads in a nut 15 secured to frame 1, pivot 14 also being provided with a sprocket wheel 16 receiving a chain 16^a that passes around sprocket wheel 17 secured upon shaft 12. The ratio of the sprocket wheels 16, 17 and the relation of threads 14^a to threads 11^b and 12^a are such that, when shaft 12 is rotated to move pusher 11 to the right or left the simultaneous rotation of pivot 14 will cause the latter to move to the right or left a distance equal to the corresponding movement of pusher 11, and as spring 5 pushes pivot 3^a toward the right both spools 2 and 3 will be simultaneously adjusted to the right or left a corresponding distance. When the spools are adjusted upon their respective pivots and the apertured or slotted music sheet 18 is connected with the spools in usual manner, so that the music sheet will travel over the tracker bar or bridge 19, the desired transverse adjustment of the music sheet may be readily effected by merely rotating shaft 12 to the right or left, whereby both spools 2 and 3 will be correspondingly shifted to cause the music sheet to be adjusted lengthwise of the tracker. By this means proper and accurate adjustment of the music sheet with respect to the orifices of the tracker may be made according to the key of the musical composition, and, furthermore, the music sheet may be

thus adjusted along the tracker as desired for transposition of the musical composition to any desired key. By this means accurate rendering of the musical composition may be effected, as the music sheet can at all times and under all conditions of the atmosphere be adjusted into proper alignment with the orifices of the tracker.

Having now described my invention what I claim is:—

1. The combination of a pair of spools, means for rotatively and slidably supporting said spools, spring means normally pressing said spools simultaneously in the same direction, supports for the opposite ends of said spools, a shaft, slidable means operated by said shaft for adjusting the supporting means of one of said spools in the direction of its axis, and means operated by said shaft for adjusting the supporting means of the other spool in the same direction as the first named spool.

2. The combination of a pair of spools, means for pivotally and slidably supporting said spools at corresponding ends, a slidable shaft at the opposite end of one of said spools, a pusher to operate said shaft, a shaft to operate said pusher, a pivot for the corresponding end of the other spool, and means operated by said shaft for moving said pivot coextensively with the movement of said pusher.

3. The combination of a pair of rotative spools, means for pivotally and slidably supporting said spools at corresponding ends, a slidable shaft at the opposite end of one of said spools, a pusher to operate said shaft, a shaft connected by screw threads with said pusher, a pivot for the corresponding end of the other spool, a nut supporting said pivot, said pivot having threads meshing with said nut, and gearing connecting said shaft with said pivot.

4. The combination of a shaft rotatively and slidably supported, a pusher to coact with said shaft, a rotative shaft, means connecting said shaft and pusher for sliding

the latter by the rotation of said shaft, a pivot having threads, a nut receiving said threads, and gearing connecting said shaft and pivot.

5. The combination of a shaft, means for slidably and rotatively supporting the same, a pusher having a portion adapted to slide said shaft and provided with threads, and a shaft having threads meshing with the threads of said pusher and means to support said shaft.

6. The combination of a shaft, means for slidably and rotatively supporting the same, a pusher having a portion adapted to slide said shaft and provided with threads, a shaft having threads meshing with the threads of said pusher, a pivot provided with threads, a nut receiving said pivot, and gearing connecting said shaft and pivot.

7. The combination of a shaft, means for rotatively and slidably supporting said shaft, a pusher having a portion extending parallel to said shaft and slidably supported, said pusher having a portion extending in line with the end of said shaft, said pusher being provided with threads, and a shaft having threads meshing with the threads of the pusher.

8. The combination of a shaft, means for rotatively and slidably supporting said shaft, a pusher having a portion extending parallel to said shaft and slidably supported, said pusher having a portion extending in line with the end of said shaft, said pusher being provided with threads, a shaft having threads meshing with the threads of the pusher, a pivot provided with threads, a nut receiving said threads, and gearing connecting said shaft and pivot.

Signed at New York city, in the county of New York, and State of New York, this 16th day of November, A. D. 1909.

JOHN H. LUDWIG.

Witnesses:

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