

No. 711,674.

Patented Oct. 21, 1902.

E. C. PHILLIPS.  
MECHANICAL MUSICAL INSTRUMENT.

(Application filed Dec. 19, 1900.)

(No Model.)

3 Sheets—Sheet 1.

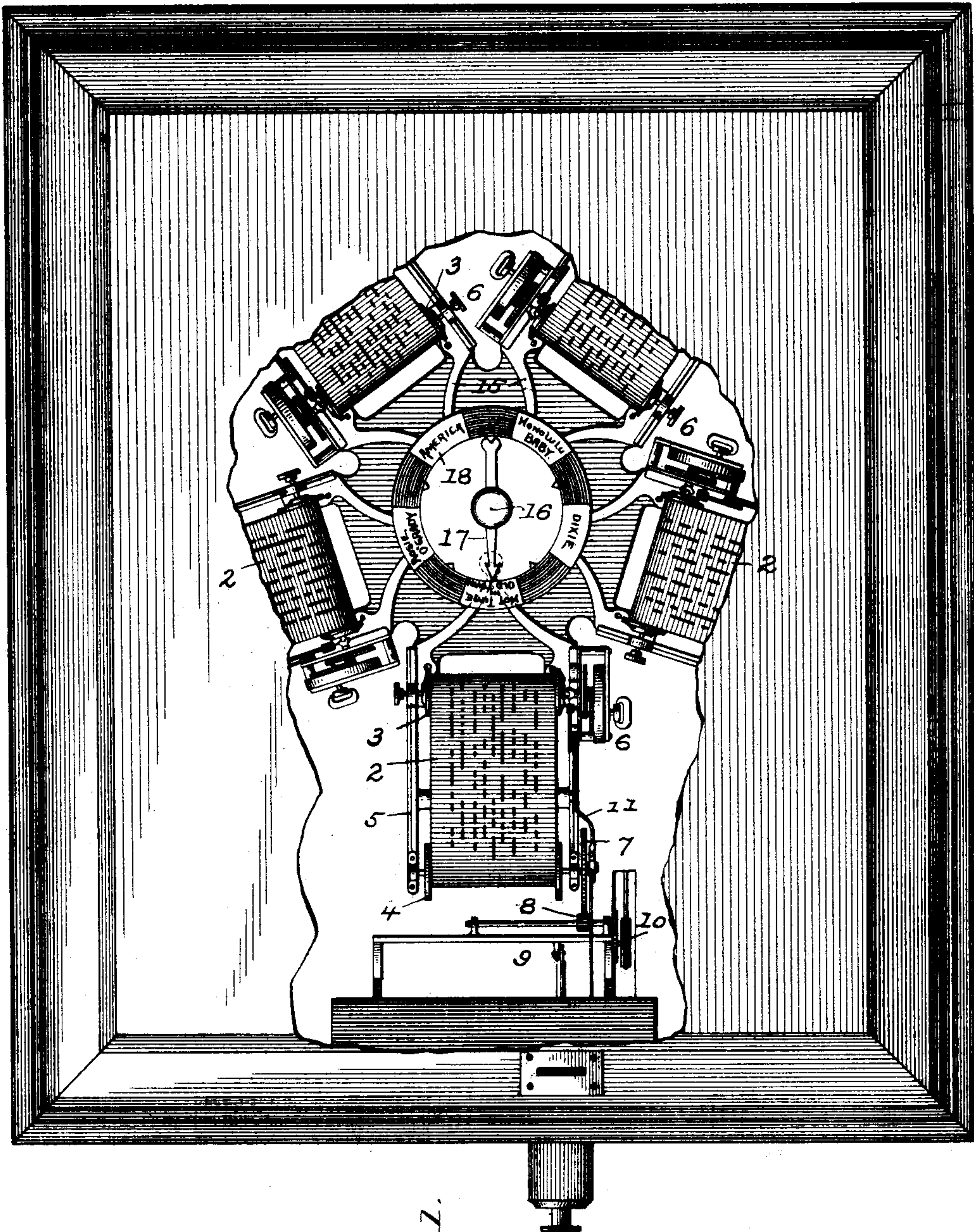


Fig. 1.

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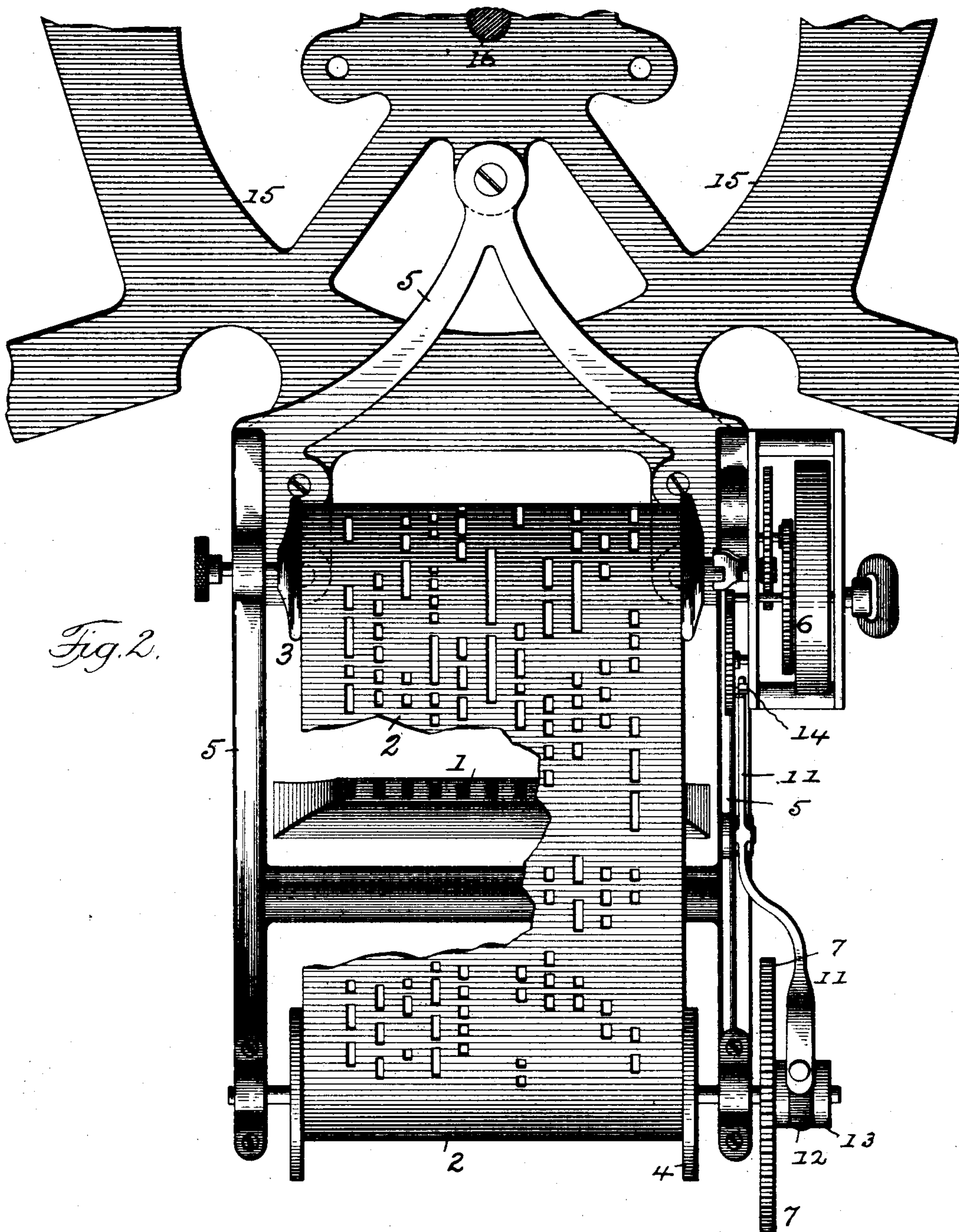


Fig. 2.

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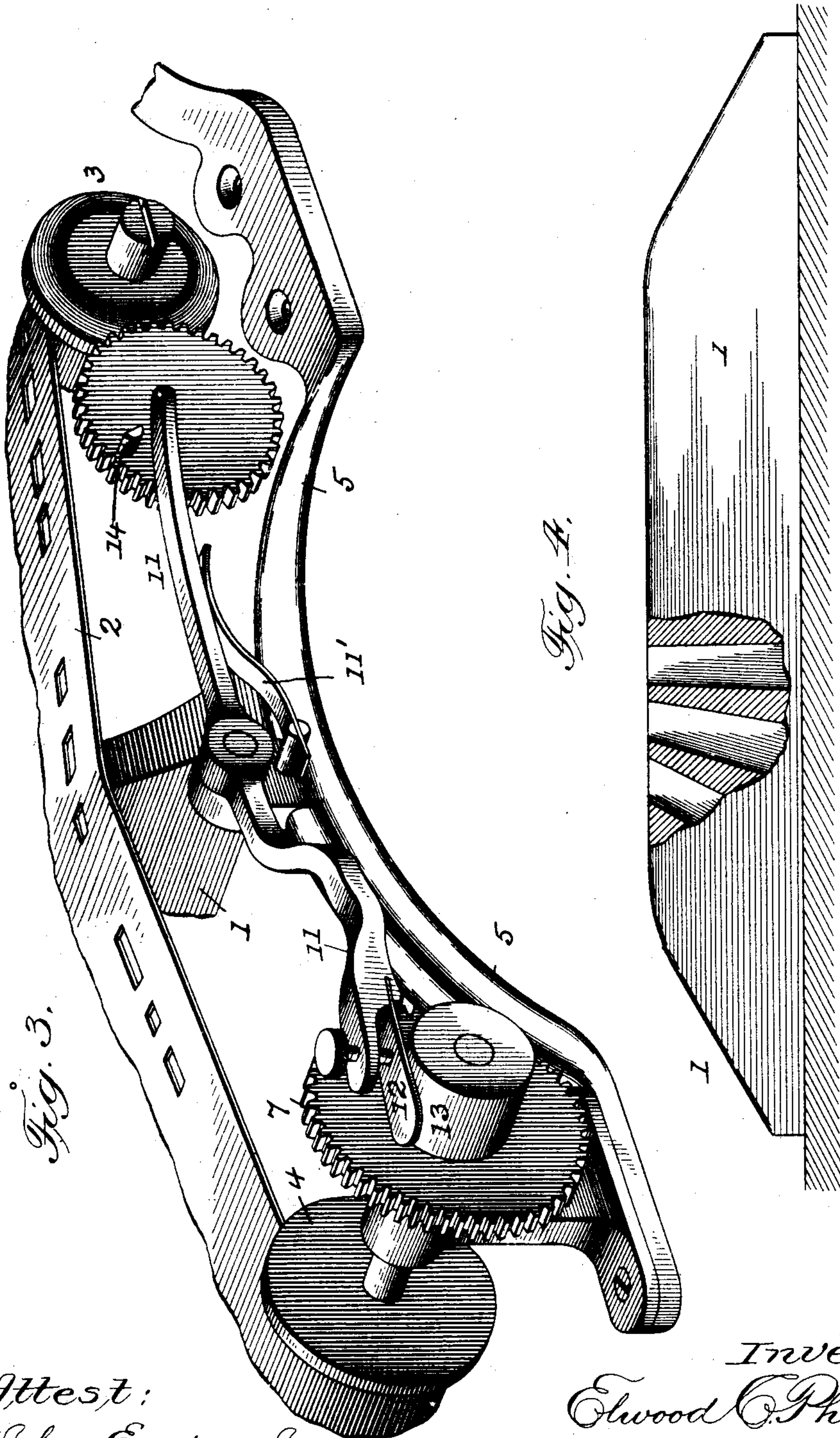
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# UNITED STATES PATENT OFFICE.

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## MECHANICAL MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 711,674, dated October 21, 1902.

Application filed December 19, 1900. Serial No. 40,467. (No model.)

*To all whom it may concern:*

Be it known that I, ELWOOD C. PHILLIPS, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mechanical Musical Instruments, of which the following is a specification.

The present invention relates to that class of mechanical musical instruments in which a perforated web passes over series of musical sound-orifices to control the same in the production of a musical piece or air.

The object of the present improvement is, in the main, to provide a simple and efficient multiplex carrier for mechanical musical instruments in which a series of the music-sheets and their individual winding and unwinding rolls are supported by said carrier and are capable of a movement in a common or concentric plane, so as to be brought in turn in playing connection with the stationary orificed inlet bar or rail of the musical instrument and with which the operator is enabled to shift said carrier and bring into playing position any desired music-roll.

A further object of the present improvement is to provide a simple and automatic means for regulating the movement of the individual rewinding mechanisms in the operation of the same immediately succeeding the shift of the carrier to bring a fresh mechanism into playing position.

I attain such objects by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a mechanical musical instrument, with parts broken away to illustrate the arrangement of the present invention; Fig. 2, an enlarged detail plan view of one of the individual carrying mechanisms for the perforated music strip or band; Fig. 3, a fragmentary perspective view of the same; Fig. 4, a detail elevation, partly in section, of orificed inlet bar or rail of the musical instrument.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents the usual tracker rail or board of a mechanical musical instrument, formed with the usual series of orifices individual to the series of note-producing reeds of such instrument, and

in the present invention this bar or rail will have its ends beveled or chamfered off, as shown in Figs. 3 and 4, so as to permit of the perforated music sheet or band moving in a lateral manner over the same without liability to catching or tearing; 2, the perforated music sheet or band adapted to move over the inlet bar or rail 1 and by means of its series of perforations to uncover said inlet-orifices in the bar 1 to produce the desired notes in proper sequence; 3, the carrying drum or roll upon which the music sheet or band 2 is wound ready for use; 4, the winding or receiving roll upon which the music-sheet is wound in a positive manner during an active use to uncover in proper sequence the inlet-orifices to the music-reeds.

5 is the supporting-frame for the rolls and music-sheet, and in which said rolls are journaled in any usual manner.

6 is a train of spring-impelled rewinding-gears, connected to the carrying-roll 3 and adapted to rewind the music sheet or band upon said roll ready for reuse.

7 is a spur-wheel carried by the shaft of the winding-roll 4 and which as the music-sheet carrier of the present invention moves into an active or playing position is adapted to move into operative engagement with a driving-pinion 8, the arrangement being such that the driving-pinion 8 is common in turn to the series of individual spur-wheels 7 of the series of individual carriers of the present invention.

9 is a sliding frame carrying the shaft of the driving-pinion 8, which sliding frame is connected with any usual nickel-in-the-slot contrivance, so that the said frame, with the driving-pinion 8, can be moved into operative engagement with the spur-wheel 7 of the winding-roll 4.

10 is an intermediate driving mechanism connecting the shaft of the driving-pinion 8 with a source of power that is adapted to impart continuous rotation to said driving-pinion 8.

11 is a lever pivoted centrally on the frame 5, one arm of which carries a friction-shoe, hereinafter described, while the other arm projects into the path of an operating-stud to receive an intermittent movement, as hereinafter described.

12 is an elastic friction or brake shoe at-



tached at one end of the lever 11 and adapted to have intermittent frictional engagement with a friction disk or rim 13 on the shaft of the winding-roll 4, as hereinafter set forth.

5 14 is a tappet or lateral projection carried by one of the gear-wheels of the train of spring-impelled rewinding-gears 6, heretofore described. Such gear-wheel will be the slow-speed wheel of the train or series and will be  
10 arranged to make less than one revolution in a rewinding operation of said train of gears.

With the described construction and arrangement of parts the tappet 14 will have active engagement with the brake-carrying  
15 lever 11 to hold the brake-shoe 12 out of contact with the rim 13 during the major portion of the time in which the music-sheet is being unwound and during the major portion of the time in which such sheet or web is  
20 being rewound and will only release the said lever to render the brake-shoe operative as the rewinding operation nears its end, at which time the tappet will leave said lever and permit the brake-shoe to engage the rim  
25 13 and check the momentum of the roll 4. By such means the excessive momentum acquired by the roll 4 in the rewinding operation is checked and the liability to a tearing and damage to the music sheet or web is pre-  
30 vented in a very efficient manner.

11 is a spring tending to force the lever and friction-shoe 12 into frictional engagement with disk or rim 13 of the winding-roller 3.

In the present invention a cluster of inde-  
35 pendent carriers, as above described, are symmetrically arranged upon a common frame 15, mounted on a shaft 16, and which shaft is provided with a hand or pointer 17, by means of which the desired tune can be  
40 brought into playing position.

18 is a stationary dial or indicator for guiding the person manipulating the apparatus in the selection of the desired tune.

Having thus fully described my said inven-  
45 tion, what I claim as new, and desire to secure by Letters Patent, is—

1. In a mechanical musical instrument, the combination with a tracker-board, of a series  
50 of independent traveling webs mounted on rollers, said rollers being journaled on a frame which has lateral movement and is adapted to bring the webs successively into operative position over the tracker-board, substantially as set forth.

55 2. In a mechanical musical instrument, the combination with a tracker-board, of a series of independent traveling webs mounted on rollers, said rollers being journaled on a revoluble frame which has lateral movement over  
60 the tracker-board and is adapted to bring said web successively into operative position, substantially as set forth.

3. In a mechanical musical instrument, the combination with a tracker-board, of a series  
65 of independent traveling webs mounted on rollers, said rollers being journaled on a frame which has lateral movement and is adapted

to bring the webs successively into operative position over the tracker-board, and a spring-impelled rewinding mechanism for each trav-  
70 eling web, substantially as set forth.

4. In a mechanical musical instrument, the combination with a tracker-board, of a series of independent traveling webs mounted on  
75 rollers, said rollers being journaled on a revoluble frame which has lateral movement over the tracker-board and is adapted to bring said webs successively into operative position, and a spring-impelled rewinding mechanism for each traveling web, substantially  
80 as set forth.

5. In a mechanical musical instrument, the combination with a tracker-board, of a series of independent traveling webs mounted on  
85 rollers, said rollers being journaled on a frame which has lateral movement and is adapted to bring the webs successively into operative position over the tracker-board, a spring-impelled rewinding mechanism for each travel-  
90 ing web, and a brake device adapted to engage a web-carrying roll and automatically controlled by the rewinding mechanism, substantially as set forth.

6. In a mechanical musical instrument, the combination with a tracker-board, of a series  
95 of independent traveling webs mounted on rollers, said rollers being journaled on a revoluble frame which has lateral movement over the tracker-board and is adapted to bring said webs successively into operative posi-  
100 tion, a spring-impelled rewinding mechanism for each traveling web, and a brake device adapted to engage a web-carrying roll and automatically controlled by the rewinding mechanism, substantially as set forth.  
105

7. In a mechanical musical instrument, the combination of a tracker-board, a revolving  
110 power-shaft, a series of independent traveling webs mounted on rollers, said rollers being journaled on a frame, which has lateral movement and is adapted to bring the webs successively into operative position over the tracker-board and the carrying-rollers into  
115 operative engagement with the power-shaft, substantially as set forth.

8. In a mechanical musical instrument, the combination of a tracker-board, a revolving  
120 power-shaft, a series of independent traveling webs mounted on rollers, said rollers being journaled on a revoluble frame which has lateral movement over the tracker-board and is adapted to bring said webs successively into operative position and said carrying-rollers into operative engagement with the  
125 power-shaft, substantially as set forth.

9. In a mechanical musical instrument, the combination of a tracker-board, a revolving  
130 power-shaft, a series of independent traveling webs mounted on rollers, said rollers being journaled on a frame which has lateral movement and is adapted to bring the webs successively into operative position over the tracker-board, and the carrying-rollers into  
operative engagement with the power-shaft,



and a spring-impelled rewinding mechanism for each traveling web, substantially as set forth.

10. In a mechanical musical instrument, the combination of a tracker-board, a revolving power-shaft, a series of independent traveling webs mounted on rollers, said rollers being journaled on a revoluble frame which has lateral movement over the tracker-board and is adapted to bring said webs successively into operative position and said carrying-rollers into operative engagement with the power-shaft, and a spring-impelled rewinding mechanism for each traveling web, substantially as set forth.

11. In a mechanical musical instrument, the combination of a tracker-board, a revolving power-shaft, a series of independent traveling webs mounted on rollers, said rollers being journaled on a frame which has lateral movement and is adapted to bring the webs successively into operative position over the tracker-board, and the carrying-rollers into operative engagement with the power-shaft, a spring-impelled rewinding mechanism for each traveling web, and a brake device adapted to engage a web-carrying roller and automatically controlled by the rewinding mechanism, substantially as set forth.

12. In a mechanical musical instrument, the combination of a tracker-board, a revolving power-shaft, a series of independent traveling webs mounted on rollers, said rollers being journaled on a revoluble frame which has lateral movement over the tracker-board and is adapted to bring said webs successively into operative position and said carrying-rollers into operative engagement with the power-shaft, a spring-impelled rewinding mechanism for each traveling web, and a brake device adapted to engage a web-carrying roller and automatically controlled by the rewinding mechanism, substantially as set forth.

13. In a mechanical musical instrument, the combination with a tracker-board, of a series of independent traveling webs mounted on rollers, said rollers being journaled on a frame which has lateral movement and is adapted to bring the webs successively into operative position over the tracker-board, a spring-impelled rewinding mechanism for each traveling web, a tappet carried by said mechanism, and a friction device having operative engagement with said tappet and with one of the web-carrying rollers, substantially as set forth.

14. In a mechanical musical instrument, the combination with a tracker-board, of a series of independent traveling webs mounted on rollers, said rollers being journaled on a revoluble frame which has lateral movement over the tracker-board and is adapted to bring said webs successively into operative position, a spring-impelled rewinding mechanism for each traveling web, a tappet carried by said mechanism, and a friction

device having operative engagement with said tappet and with one of the web-carrying rollers, substantially as set forth.

15. In a mechanical musical instrument, the combination of a tracker-board, a revolving power-shaft, a series of independent traveling webs mounted on rollers, said rollers being journaled on a frame which has lateral movement and is adapted to bring the webs successively into operative position over the tracker-board, and the carrying-rollers into operative engagement with the power-shaft, a spring-impelled rewinding mechanism for each traveling web, a tappet carried by said mechanism, and a friction device having operative engagement with said tappet and with one of the web-carrying rollers, substantially as set forth.

16. In a mechanical musical instrument, the combination of a tracker-board, a revolving power-shaft, a series of independent traveling webs mounted on rollers, said rollers being journaled on a revoluble frame which has lateral movement over the tracker-board and is adapted to bring said web successively into operative position and said carrying-rollers into operative engagement with the power-shaft, a spring-impelled rewinding mechanism for each traveling web, a tappet carried by said mechanism, and a friction device having operative engagement with said tappet and with one of the web-carrying rollers, substantially as set forth.

17. In a mechanical musical instrument the combination of a tracker-board, a traveling web mounted on rollers, a frame on which said rollers are journaled, means for unwinding said web, a spring-impelled rewinding mechanism for said web, a tappet carried by said mechanism and a friction device having operative engagement with said tappet and with one of the web-carrying rollers, substantially as set forth.

18. In a mechanical musical instrument, the combination with a tracker-board one end of which is beveled, of a series of independent traveling webs mounted on rollers, said rollers being journaled on a frame which has lateral movement and is adapted to bring the webs successively into operative position over the tracker-board, substantially as set forth.

19. In a mechanical musical instrument, the combination with a tracker-board the respective ends of which are beveled, of a series of independent traveling webs mounted on rollers, said rollers being journaled on a frame which has lateral movement and is adapted to bring the webs successively into operative position over the tracker-board, substantially as set forth.

Signed by me at Chicago, Illinois, this 4th day of May, 1900.

ELWOOD C. PHILLIPS.

Witnesses:

ROBERT BURNS,  
HENRY A. NOTT.