

No. 772,225.

PATENTED OCT. 11, 1904.

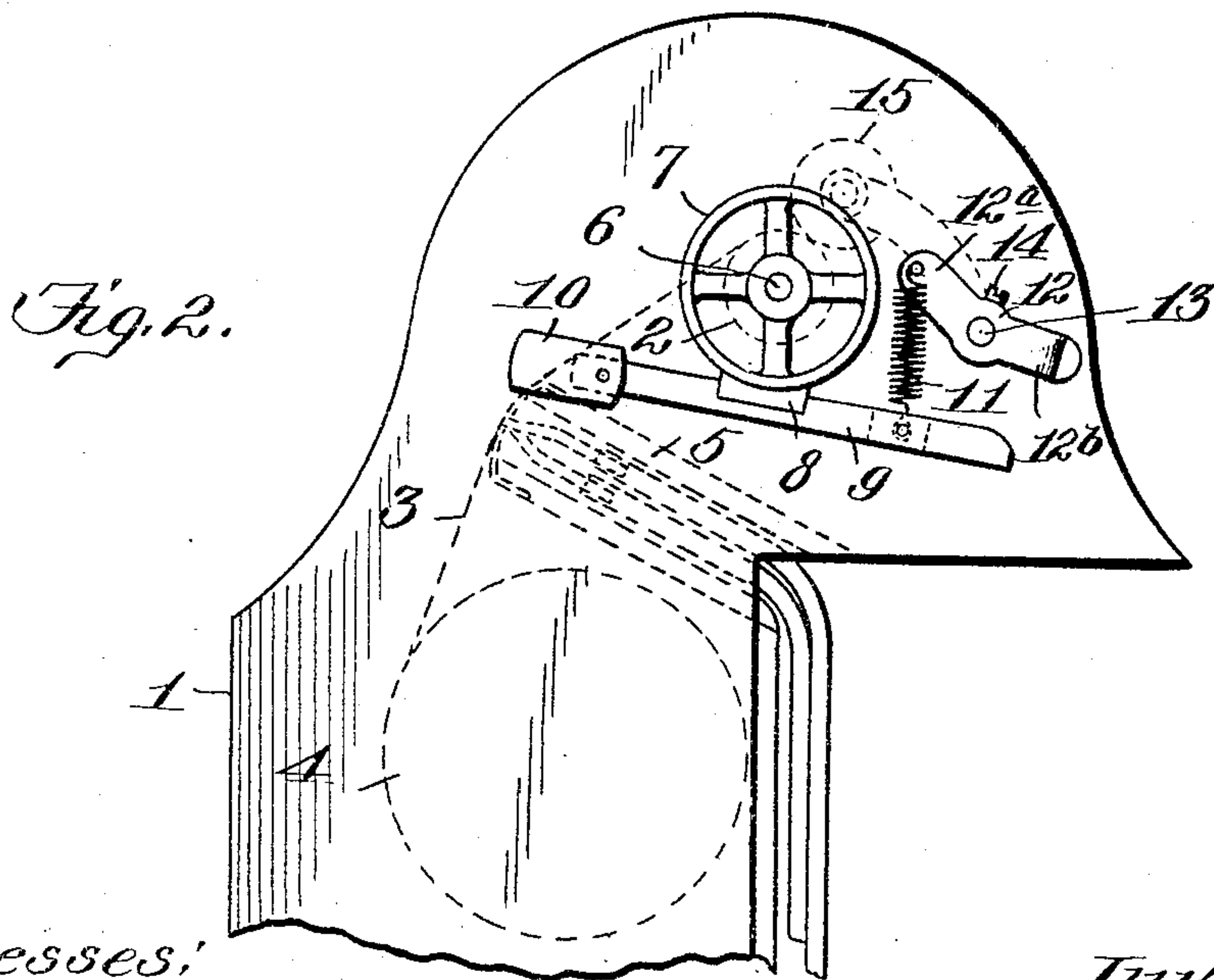
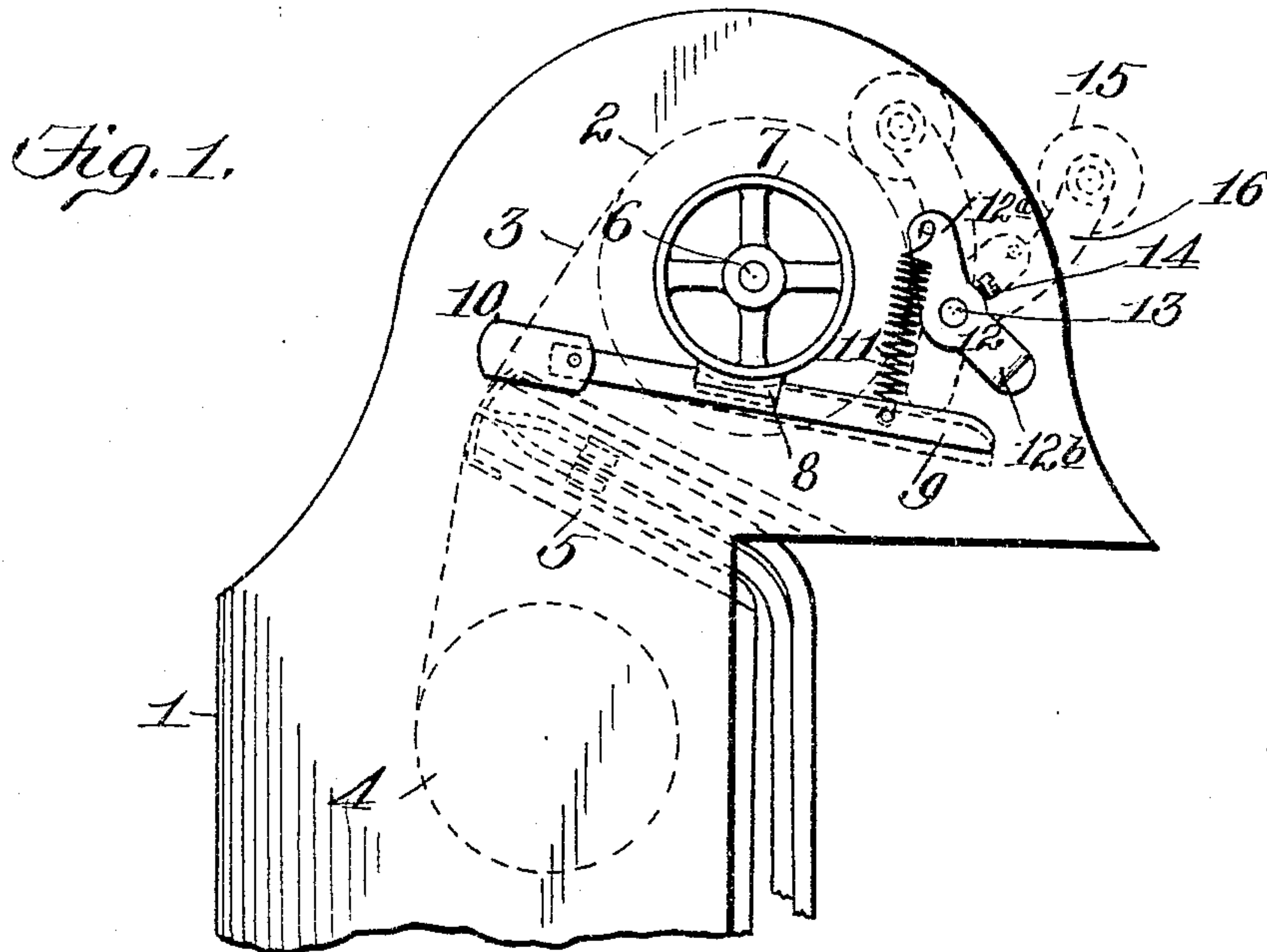
J. H. DICKINSON.

MUSIC SHEET FEED CONTROLLING MECHANISM.

APPLICATION FILED JUNE 24, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:  
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James L. Norris, Jr.

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2 SHEETS—SHEET 2.

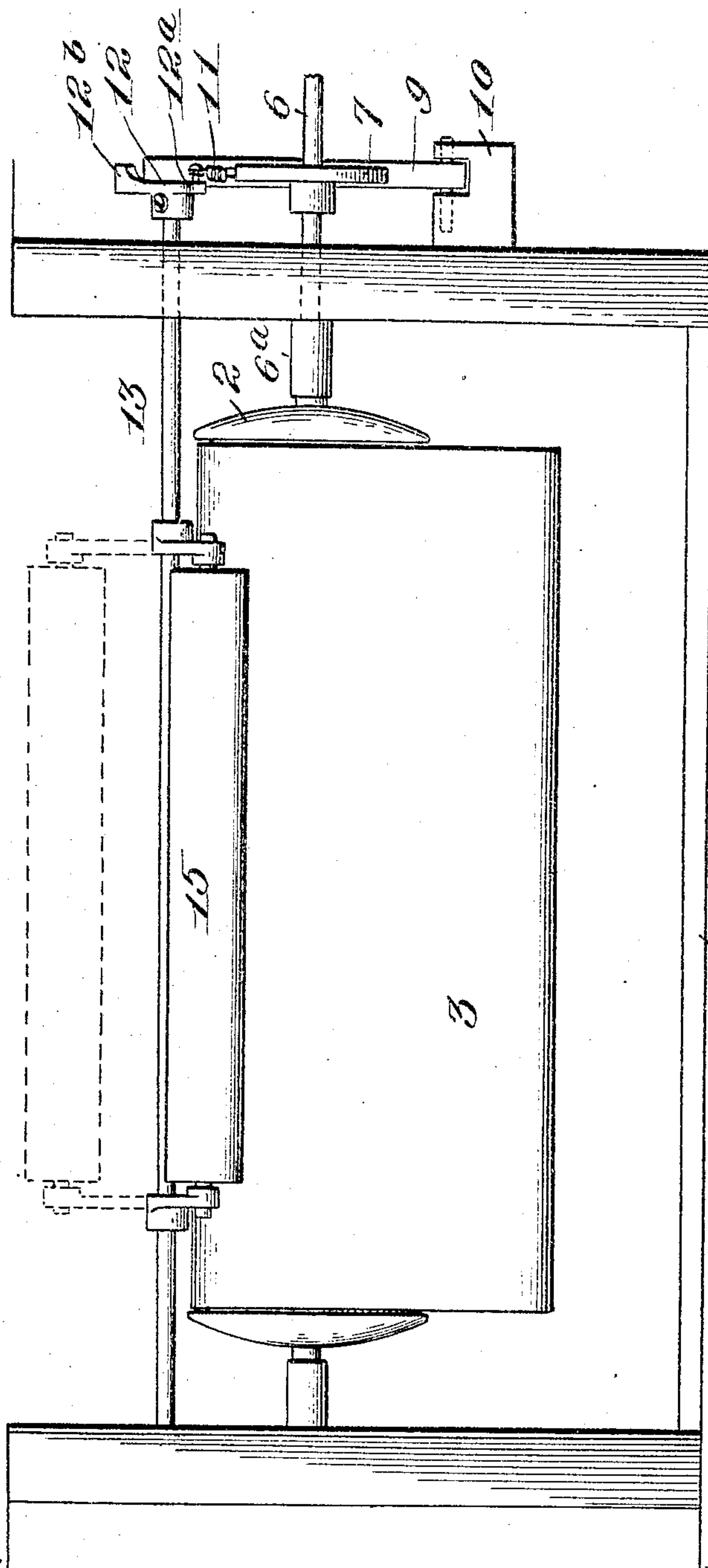


Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## MUSIC-SHEET-FEED-CONTROLLING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 772,225, dated October 11, 1904.

Application filed June 24, 1904. Serial No. 213,999. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH H. DICKINSON, a citizen of the United States, residing at Garwood, in the county of Union and State of New Jersey, have invented new and useful Improvements in Music-Sheet-Feed-Controlling Mechanism, of which the following is a specification.

My invention relates to mechanism for imposing a graduated or compensating resistance to the movement of perforated music-sheets in mechanical musical instruments or instrument-players.

It is found that in the practical operation of mechanical musical instruments or instrument-players the tension on the perforated music-sheet in being drawn off of the music-roll by the take-up roll increases progressively as the paper on the music-roll is drawn off, and this results in a faulty feed of the paper across the tracker-board. This objection is overcome by my invention, by means of which a variable resistance is imposed upon the rotation of the music-roll, such resistance being greatest when the maximum amount of music-sheet is upon the music-roll and decreasing gradually as the paper is drawn off, thus compensating for the tendency hereinbefore referred to and insuring an even feed in a straight line and under normal tension across the tracker-board.

With the foregoing object in view my invention consists in the mechanism hereinafter described, reference being made to the accompanying drawings for purposes of illustration.

That which I regard as new will be set forth in the accompanying clauses of the claim.

In the accompanying drawings, illustrating that which I consider the best-known embodiment of my invention, Figure 1 is a side elevation, partly in section. Fig. 2 is a similar view with the parts in different position, and Fig. 3 is a plan view.

In the said drawings the reference-numeral 1 designates a fragment of the casing of a musical instrument or instrument-player; 2, the music-roll, carrying a sheet of perforated music 3, from which music-roll said music-

sheet is drawn by a take-up roll 4, which winds the sheet upon itself. 5 designates a tracker-board across which the music-sheet passes, as is well known. These parts may be of any usual or known construction, arranged in any desired manner. They are illustrated in the drawings generally and conventionally, as the particular details of arrangement or construction thereof is not concerned in my invention.

A shaft 6 is rotatably mounted in the casing 1 and is provided with a sleeve or coupling 6<sup>a</sup>, of any suitable type, adapted to receive an end pintle of the music-roll in such manner that the music-roll and said shaft will rotate in unison in the operation of the apparatus. Upon this shaft is mounted a brake-wheel 7, constituting an element of the variable or compensating resistance mechanism. Coöperating with this wheel is a brake-shoe 8, carried by a movable arm 9, which is pivoted to a suitable bracket member 10, carried by the casing. The free end of the arm 9 is connected by a suitable spring 11 with one member 12<sup>a</sup> of a crank-arm 12, mounted on a rock-shaft 13 in any suitable way—such, for instance, as by means of a set-screw 14. A follower 15 is secured upon this rock-shaft in such manner that it will under the influence of the spring 11 follow down upon the roll of music-paper as the latter is unwound from the music-roll. This follower is shown in the form of a roller carried in arms 16, fixedly mounted upon the rock-shaft.

The coöperative arrangement of parts described results in the following mode of operation: Initially, as shown in Fig. 1 of the drawings, the follower-roll rests upon the surface of the music-sheet upon the music-roll, causing the rock-shaft to assume that position in which the crank-arm and the spring connection of the latter with the movable arm carrying the brake-shoe will cause the brake-shoe to engage the brake-wheel with the maximum contemplated efficiency, as illustrated in Fig. 1.

As the music-sheet is drawn off from the music-roll onto the take-up roll the diameter



of the roll of paper upon the music-roll decreases, and the follower-roll is caused by the spring 11 to follow down thereupon throughout the entire rewinding of the music-sheet.

5 As this following down of roll takes place the crank-arm gradually assumes, say, the position shown in Fig. 2 of the drawings. Thus tension of the spring is gradually weakened, and consequently the efficiency or force of the  
10 engagement of said brake-shoe with the brake-wheel gradually reduced. In this manner the otherwise differential tension which would ensue upon the unwinding of the music-sheet is compensated for and an even tension and  
15 regularity of movement of the music-sheet throughout the operation secured.

After the music-sheet has been entirely drawn off of the music-roll and wound upon the take-up roll it is usual, as is well known,  
20 to rewind it upon the music-roll, and during this rewinding the instrument, otherwise, is caused to remain inactive. This rewinding or rerolling of the music-sheet upon the music-roll is accomplished with much greater  
25 speed than the movement of the sheet in its traverse over the tracker while a piece of music is being played, and in such rewinding or rerolling the considerations of evenness of tension and regularity of movement are not  
30 of importance. To render as easy and expeditious as possible the rewinding or rerolling of the music-sheet, the variable or compensating resistance mechanism may be thrown out of operation. This may be accomplished  
35 by the operator taking hold of the follower-roll and swinging it out into the position shown in dotted lines in Fig. 1, the crank-arm 12 being made to pass centers, as it were, and assume the position also shown in dotted  
40 lines in said figure, in which position of the parts the member 12<sup>a</sup> of the crank-arm engages the carrying-arm and forces it into and holds it in the dotted-line position illustrated,

in which position it is entirely out of engagement with the brake-wheel.

Having thus described my invention, what I claim is—

1. In a mechanical musical instrument or instrument-player, the combination with a music-roll, of a brake-wheel operatively connected to the music-roll to rotate in unison therewith, an arm pivotally mounted at one end and provided intermediate its ends with a brake-shoe adapted to coact with the brake-wheel, a rock-shaft, a crank mounted on said shaft, a spring connecting the free end of the pivoted arm to said crank, and a follower mounted on the rock-shaft, under the influence of said spring, and adapted to follow down upon the roll of paper on the music-roll, substantially as described.

2. In a mechanical musical instrument or instrument-player, the combination with a music-roll, a brake-wheel operatively connected to said roll to move in unison therewith, an arm pivoted at one end, a brake-shoe arranged on said arm intermediate the ends of the latter and adapted to coact with the brake-wheel, a rock-shaft, a two-armed crank mounted on said shaft, a spring connecting one arm of said crank with the free end of the pivoted arm, a follower mounted on the rock-shaft, under the influence of the spring, and adapted to follow down upon the roll of paper on the music-roll, the other arm of the crank being adapted when the follower is in inactive position to engage and withdraw the brake-shoe from the brake-wheel, substantially as described.

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

JOSEPH H. DICKINSON.

Witnesses:

W. C. MANSFIELD,  
E. C. THOMPSON.