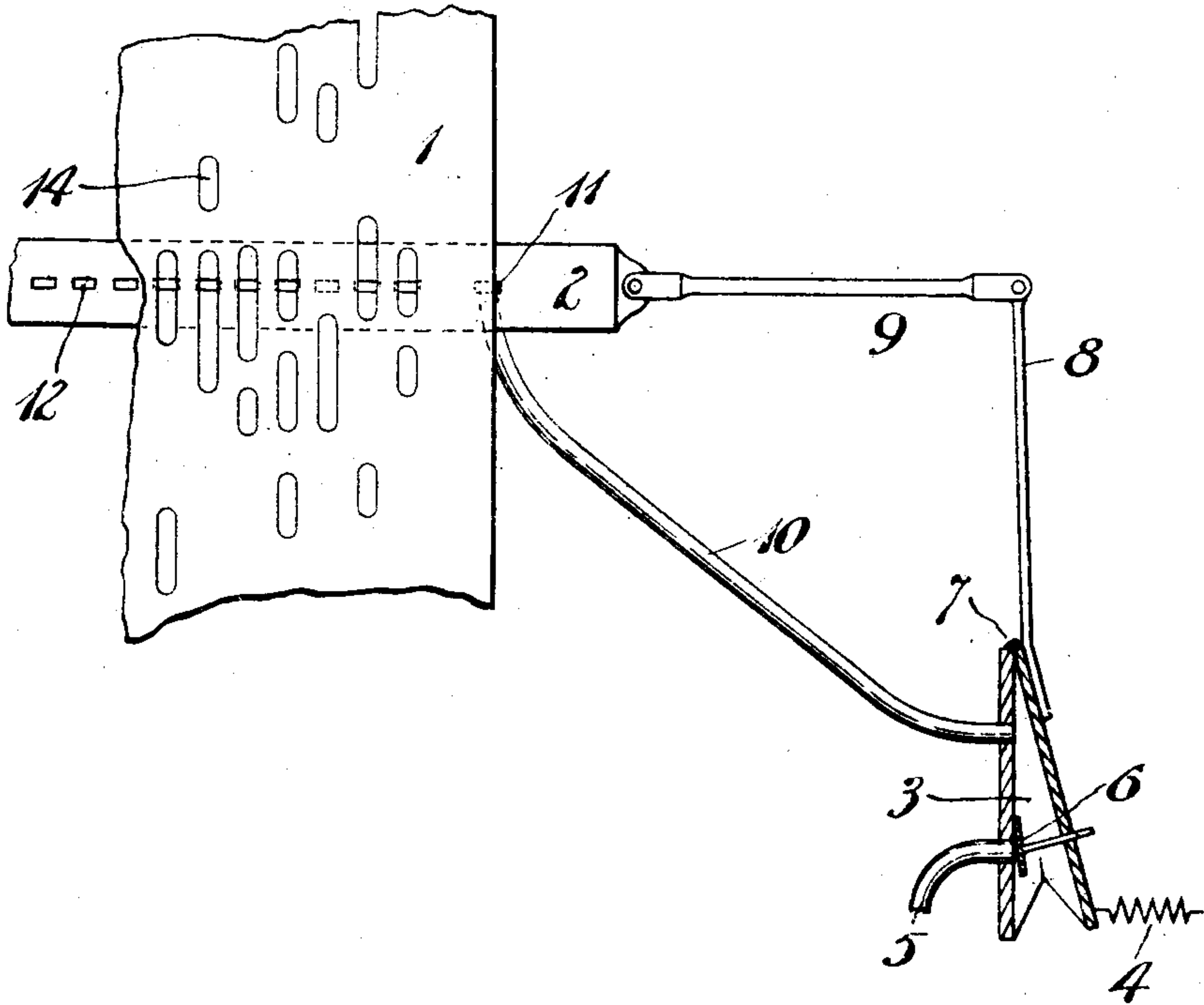


No. 869,818.

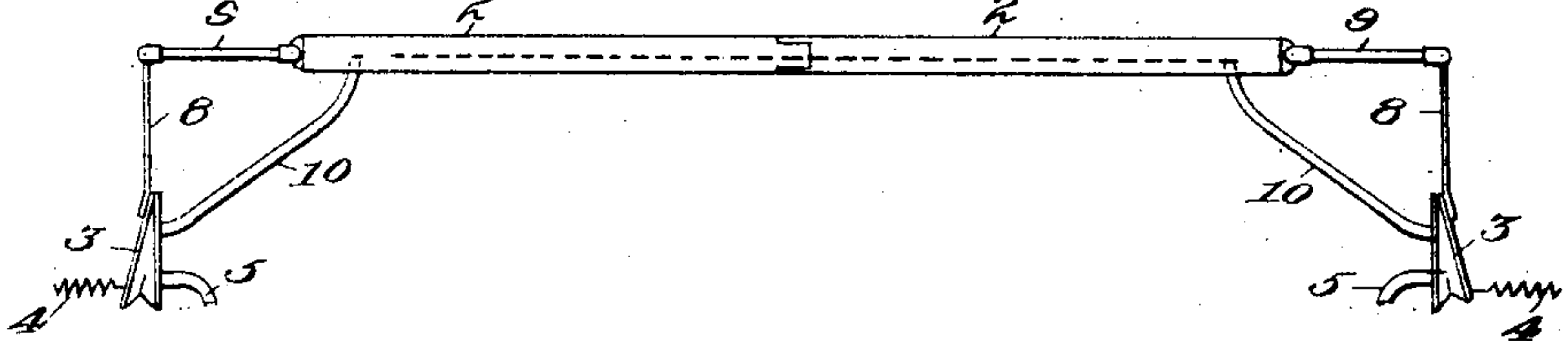
PATENTED OCT. 29, 1907.

W. A. WATSON.  
AUTOPNEUMATIC MUSIC PLAYING INSTRUMENT.  
APPLICATION FILED MAR. 21, 1907.

*Fig. 1.*



*Fig. 2.*



Witnesses:

*Charles Reed*  
*Langdon Morr.*

Inventor:

W. A. WATSON.

By his Attorneys  
*Paulus Bernier & Melville*

# UNITED STATES PATENT OFFICE.

WILLIAM A. WATSON, OF MEDFORD, MASSACHUSETTS, ASSIGNOR TO EMERSON PIANO COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

## AUTOPNEUMATIC MUSIC-PLAYING INSTRUMENT.

No. 869,818.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed March 21, 1907. Serial No. 363,536.

To all whom it may concern:

Be it known that I, WILLIAM A. WATSON, a citizen of the United States, residing at Medford, Middlesex county, Massachusetts, have invented certain new and useful Improvements in Autopneumatic Music-Playing Instruments, of which the following is a full, clear, and exact description.

My invention relates to improvements in auto-pneumatic music playing instruments, the object of the invention being to provide means for guaranteeing the alinement of the tracker-board openings with the perforations in the music record.

As is well known, music sheets swell and shrink with different atmospheric conditions, and sometimes this swelling and shrinking occurs to such a degree that it results in the imperfect playing of the instrument. To compensate for this, therefore, I provide the improved alining means.

In the accompanying drawings Figure 1 is a diagrammatic view of one end of a tracker-board having my invention applied thereto and showing a portion of a note sheet. Fig. 2 is a plan view on a relatively reduced scale showing both ends of the tracker-board and the regulating apparatus.

1 represents a perforated note sheet.

2—2 represent two shiftable parts of a tracker-board suitably connected at their ends so as to be adjustable relatively to each other to compensate for swelling and shrinking of the note sheet. These two ends are, of course, in line and are held in suitable guide-ways, so that they may move toward or away from each other, as the necessities demand.

3 is a governing pneumatic of any well-known type, the movable back thereof being normally distended by means of the spring 4.

5 is the exhaust in communication with the main exhaust of the instrument, with which this appliance is connected.

6 is the regulator valve, controlled in the usual manner by the movement of the pneumatic.

7 is the fulcrum of the pneumatic back. 8 is a lever arm connected to said back.

9 is a link connecting the lever arm 8 with the outer end of one section of the tracker-board 2.

10 is a duct, one end of which opens at the tracker-board, as shown at 11, while the other end opens into the pneumatic 3.

The tracker-board is provided with the usual note openings 12, while the music sheet is provided with the usual perforations 14.

In the form shown, the edge of the note sheet is shown as partially opening the duct 11 leading to the

pneumatic. If the instrument is in operation, the degree to which the pneumatic is distended depends upon the degree of freedom with which air passes through said pneumatic. The normal action of the spring 4 is to open the pneumatic, and the connection of the pneumatic with the tracker end 2 is such as to move it in a direction to push the perforation 11 under the sheet. Should the perforation extend entirely under the sheet 1, the exhaust would tend to collapse the pneumatic 3, which would, by reason of its connection with the tracker end 2, move the same outwardly so as to expose more or less of the perforation when beyond the edge of the sheet.

The governing apparatus is so adjusted, that the exposure of a slight portion of the opening 11 will relieve the tension in the pneumatic, so that the spring 4 will operate to hold the tracker-board so that only said slight exposure will occur. Under these conditions the perforations 14 will be in correct alinement relatively to the ducts 12 in the tracker.

From the foregoing it will be seen that as the paper swells and shrinks the governing pneumatic will operate to still preserve the same relative position of the tracker to the perforations therein, relatively to the sheet and the perforations therein. As shown in Fig. 2, one of these automatic regulating devices is provided at each end of the tracker-board to move the separate sections thereof as required.

What I claim is,—

1. In an auto-pneumatic music playing instrument, a tracker board having ducts therein, a perforated note sheet arranged to traverse said tracker board, means to preserve the relative alinement of the perforations in the said sheet and tracker board to compensate for the swelling and shrinking of said note sheet, said means including a pneumatic operatively connected with one end of the tracker board, a duct in the tracker board adjacent to the margin of the note sheet, an exhaust extending through said pneumatic and to said last mentioned duct, and a throttle for said exhaust controlled by said pneumatic.

2. In an auto-pneumatic music playing instrument, a tracker board having ducts therein, a perforated note sheet arranged to traverse said tracker board, means to preserve the relative alinement of the perforations in the said sheet and tracker board to compensate for the swelling and shrinking of said note sheet, said means including a pneumatic operatively connected with one end of the tracker board, a duct in the tracker board adjacent to the margin of the note sheet, an exhaust extending through said pneumatic and to said last mentioned duct, and a throttle for said exhaust controlled by said pneumatic, said note sheet partially but never completely closing said last mentioned duct.

WILLIAM A. WATSON.

Witnesses:

HENRY F. GOODNOW,  
FLORENCE N. LEYSER.