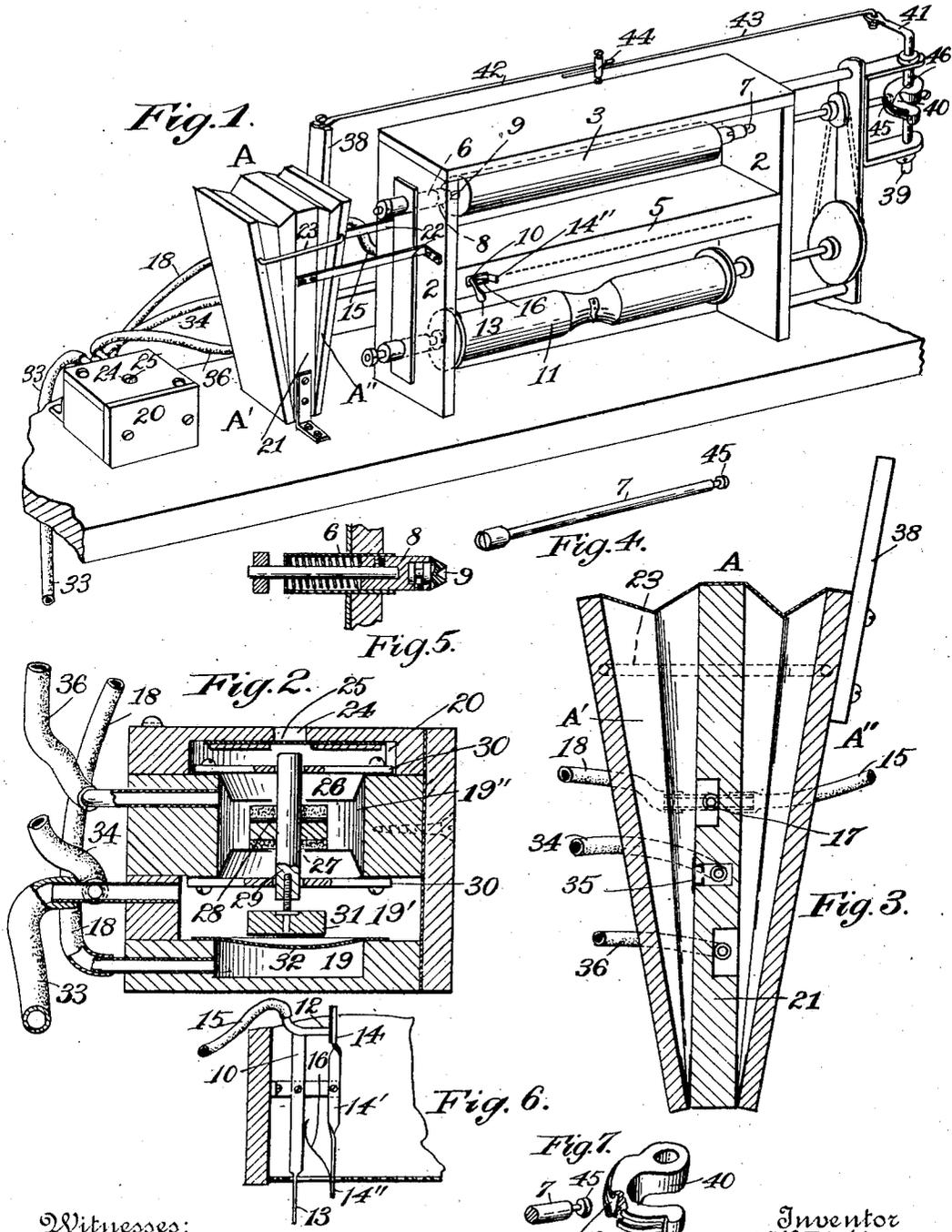


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 PNEUMATIC SHEET CONTROLLING MECHANISM.  
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Patented June 2, 1914.



Witnesses:  
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Fig. 7.  
 7 45  
 46  
 Inventor  
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 By his Attorney *E. Need*

# UNITED STATES PATENT OFFICE.

JOSEPH W. DICKINSON, OF CRANFORD, NEW JERSEY, ASSIGNOR TO THE SCHUBERT PIANO COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

PNEUMATIC SHEET-CONTROLLING MECHANISM.

1,098,890.

Specification of Letters Patent.

Patented June 2, 1914.

Application filed February 28, 1912. Serial No. 680,399.

*To all whom it may concern:*

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

This invention relates to pneumatic mechanism for automatic player instruments, such as automatic pianos, and more particularly relates to improved pneumatic mechanism for controlling the movement of sheets or webs, such for instance as perforated music sheets, the object of the invention being to provide an improved mechanism of this character simple in its construction and positive in its operation and effective in use, and by means of which the music sheet will be automatically maintained in its proper position relatively to the tracker board so that the perforations will coincide or track with the corresponding apertures of the tracker board or bar at all times during the playing of the musical instrument, and which mechanism may also be readily adjusted to correspond with different widths of music sheets, the present organization being in part an improvement upon that shown and described in my prior application Serial No. 622,812, filed April 22, 1911.

One of the objects of the present improvement is to provide a pneumatic sheet-controlling means in which, on the cessation of the pumping operation the music sheet will not be moved to one side or the other by the further action of the pneumatics, but will remain in the position in which it was when the traveling movement of the sheet ceased.

Another object of the present improvement is the provision of an improved pneumatically controlled sheet-guiding mechanism so constructed that the necessity of providing two ports, one at each end of the tracker bar, or two valve-controlled ports, one at each side of the music sheet, is avoided, the present mechanism being so organized and constructed that one port will do the work of two, so that should that edge of the sheet opposite to the port be mutilated the operation of the mechanism will not be interfered with. In other words, where ports are provided at each end of the tracker bar for engagement by the traveling

web, or where valve-controlled levers are located at each side of the sheet for engagement thereof by the edge of the sheet, it follows that if one edge of the sheet is torn or mutilated the mechanism will be operated prematurely at times, although the perforations therein might be in perfect register with the tracker bar perforations, and the sheet so be thrown out of register, but by the present mechanism it is not necessary that both edges of the sheet shall be in perfect condition.

In the drawings accompanying and forming part of this specification, Figure 1 is a perspective view of this improved mechanism as the same may be applied to a piano forte; Fig. 2 is a sectional view of the valve box or chamber; Fig. 3 is a sectional view of the two pneumatics; Fig. 4 is a detail view of the sliding bearing member; Fig. 5 is a sectional view of the spring-controlled bearing member; Fig. 6 is a detail view of the movable valve; and Fig. 7 is a detail view illustrating the connection between the sliding bearing member and the cam.

Similar characters of reference indicate corresponding parts throughout the figures of the drawings.

The present improvement is particularly adapted for self-playing instruments, and in the present embodiment thereof is shown constructed for such purpose. The music rolls are preferably carried by a suitable casing or support 2 of any desired construction. The music roll 3 carrying the record or sheet which is to travel over the perforated tracker board 5 is located between a pair of bearing members 6 and 7 carried at opposite ends of the casing. The bearing member 6, fixedly secured at one side of the casing, includes a spring-pressed plunger 8 having a socket 9 for the reception of one end of the shaft of the music roll 3. The bearing member 7 comprises a shiftable or sliding rod having a clutch connection with the opposite end of the shaft of the music roll 3. The spring-pressed plunger 8 acts to maintain the music roll shaft in engagement with the sliding rod 7, and this is the main purpose of such spring-actuated plunger. The take-up roll 11 is suitably supported at the opposite side of the tracker board, and these two rolls are operated by suitable driving mechanism, which, as it

does not differ from mechanisms well known for this purpose, further description thereof is deemed unnecessary.

Carried by the casing 2 is a movable valve-controlled port comprising a pivotally secured lever 10 having at its inner end a port 12 and at its forward end a thumb-piece or handle 13 by means of which this port may be shifted. Closing this port is a valve 14, which is likewise carried by a pivoted lever 14' the forward end 14'' of which is in position to be engaged by the edge of the music sheet and projects outside of the casing. These two levers are maintained in proper coöperative relation by means of a spring 16. By shifting the port, and with which the valve moves, various widths of sheets may be used in the apparatus or transposition of the key of the music readily accomplished. To this port 12 a tube 15 is connected which leads to a pneumatic A, it being connected to one end of a T-shaped coupling 17 which opens into a pneumatic A', the opposite end of the T being connected by a flexible tube 18 with a chamber 19 of a valve box or chamber 20. The pneumatic A is made up of the pneumatic A' hereinbefore described and the pneumatic A'', one at each side of a partition or rigid portion 21, which is secured at its lower end to any suitable support, preferably adjacent to the tracker board casing. In the present instance this partition is braced by a suitable brace 22 from such casing. The two pneumatics A' and A'' are connected together by a bracket 23 so that they will move in unison; in other words, one will contract while the other is expanding.

The valve chamber or box 20 has an opening 24 at one part, as at its top, which may be covered with a suitable porous material 25 to permit the passage of atmospheric air into the box. Within the box is provided a pair of ports 26 and 27 formed in any suitable manner, and for closing these ports a valve 28 is provided adapted to move from one to the other and carried by a rod 29 suitably guided by cross members 30. The lower end of this rod is provided with a head or button 31 adjustably secured thereto in position adjacent to a diaphragm 32 located above and forming the top of the chamber 19. From the foregoing it will be observed that by this construction three chambers are provided in the valve box, one, 19, hereinbefore described and which is connected by the tube 18 with the pneumatic A', this tube connecting with the valve box below the diaphragm, another, 19', above this diaphragm and which is in communication through a tube 33 with the main pumping bellows and also in communication by means of a tube 34 with the pneumatic A'. In this instance, however, the commu-

nication with the pneumatic A' is by means of a small bleeder hole 35. The third chamber, 19'', is in communication with the chamber 19' when the valve 28 is raised, but cut off therefrom when the valve is down and seated, and this chamber 19'' is in communication with the pneumatic A'' by means of a tube 36. It will be observed that when the valve 28 cuts off communication between the chambers 19' and 19'' the chamber 19'' is open to the admission of atmospheric air through the opening or port 24, so that such air will pass through the tube 36 into the pneumatic A'', but that when the valve 28 is raised the admission of such atmospheric air is cut off to the chamber 19'' and therefore cut off from the tube 36 and the pneumatic A'', and such chamber 19'' is thus thrown into communication with the chamber 19' so that the suction of the main bellows will be exerted in the pneumatic A'' through the tube 36, chamber 19'' and chamber 19' through tube 33 leading to such main pumping bellows.

Secured to the pneumatic A'' is an arm or projection 38. Suitably supported at one end of the casing 2 is a cam 40, which cam is so constructed that it will always engage the end of the sliding bearing member or rod 7, in engagement with which the spring-pressed plunger 8 hereinbefore described acts to maintain the music roll shaft 3. The rock shaft is provided with a crank arm 41, and this crank arm is connected with the projection 38 by means of an adjustable member shown as comprising a pair of rods 42 and 43, the inner ends of which overlap and which are fastened together by means of some suitable adjusting device 44, whereby the rods may be adjusted lengthwise as occasion may require.

In operation, when the movable or adjustable port 12 is closed and the sheet traveling over the tracker bar, the main pumping bellows exerts its suction through the tube 33 in the chamber 19' of the valve box and simultaneously, through the tube 34, to the pneumatic A' through the bleeder hole 35, at which time, by reason of the fact that the valve 28 is seated and closes the port 27, the pneumatic A'' is open to atmospheric air through the tube 36, port 26 and port 24, and consequently the pneumatic A' may gradually close while the pneumatic A'' will gradually open. This movement of the pneumatics will oscillate the rock shaft and thereby rock the cam so as to shift the sliding rod 7 and thereby the music roll and its music sheet to the left, which shifting movement of the sheet will cause the edge thereof to engage with the part 14'' of the valve lever 14' to shift such valve lever and move the valve 14 thereof away from the port 12 slightly, thereby admitting atmospheric air through the tube 15 to the pneumatic A'

through the port of the T-shaped coupling 17 thereof, which port is larger than the bleeder hole 35 and consequently overbalances the suction being exerted on the pneumatic A'. At the same time the atmospheric air passing into the movable port 12 and through the tube 15 to the pneumatic A' will also pass through the tube 18 in communication with the chamber 19 of the valve box below the diaphragm 32, causing the same to rise into engagement with the head 31 of the valve rod 29, thereby lifting the valve 28 so as to close the port 26 between the port 24 and the tube 36 and opening the port 27 between such tube 36 and the lower chamber 19', thus permitting the suction from the main pumping bellows to operate through such tube 36 on the pneumatic A'', thereby contracting the same while the pneumatic A' is opening, which action of the pneumatics moves the rocker cam in the opposite direction to that hereinbefore described, which causes the music roll to move to the right so that the edge of the sheet will permit the valve 14 to close the port 12, at which time the sheet will have been properly trued so that the perforations thereof will register with the perforations in the tracker bar.

From the foregoing it will be observed that the sheet is thus positively maintained in its proper registering position on the tracker bar at all times by being shifted either to the right or to the left as occasion may require, and this by means of a single port at one side of the sheet edge.

In the present improvement it is preferred to have a positive connection between the rocking cam and the shaft of the music roll, so that the necessity of providing means for normally pushing the music roll sheet in one direction is avoided, and so that the spring-actuated plunger may be only under sufficient pressure to properly maintain the music roll in position between its bearings in the usual way so that the music roll may be readily removed and replaced, and therefore in the present improvement I have shown the end of the bearing rod 7 provided with a T-shaped end 45 located in a similarly formed slot 46 of the cam, whereby as the cam moves in one direction or the other the bearing rod 7 will be shifted accordingly and therefore will positively shift the music roll lengthwise in one direction or the other. Various means for connecting the rocking cam with the shaft of the music roll may be provided, but that herein shown will be sufficient for the purpose.

When the sheet is properly trued the valve 14, as hereinbefore stated, closes the port 12, cutting off the passage of atmospheric air to the pneumatic A' and to the chamber 19 through the tube 18, whereupon the valve 28 seats itself to close the port 27 and open

the port 26, when the operation first described again takes place.

From the foregoing it will also be observed that by the provision of a pair of pneumatics operating in the manner described the action of one counterbalances that of the other, so that they will be maintained in equilibrium to properly maintain the sheet in its correct position relatively to the tracker bar, and that, furthermore, when the pumping of the apparatus is stopped the music sheet will remain in its proper position without being moved in one direction, as to the right, as is frequently the case in mechanisms of this kind. Furthermore, it will be observed that both pneumatics are governed by a single port, so that the necessity of duplicating such ports, whatever be their construction or location, is obviated.

While it is preferred to have a positive connection between the rocker cam and the sliding bearing rod 7, which, as hereinbefore stated, may be of various forms, this positive connection could be dispensed with—so long as some provision was made for keeping the rocker cam in engagement with the shaft or the shaft in engagement with the rocker cam, as by means of a spring, and for this purpose the spring plunger could be used. It is therefore apparent that the various details may be more or less changed, and that the valve box and its connections with the pneumatics could likewise be somewhat varied without departing from the gist of this invention and the spirit and scope thereof.

I claim as my invention:

1. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including a plurality of pneumatics having connection with suction-creating means, and a single port controlled by the traveling sheet for controlling the entire operation of said pneumatics.

2. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including a plurality of pneumatics connected together for simultaneous movement in the same direction and having connection with suction-creating means, and a single port controlled by the traveling sheet or web for controlling the operation of said pneumatics in opposite directions.

3. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including a plurality of pneumatics having

connection with suction-creating means, and a single adjustable port controlled by the traveling sheet or web for controlling the operation of said pneumatics in different directions.

4. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including a plurality of pneumatics having connection with a suction-creating means, and a single port located away from the sheet or web to be guided and controlled by means in engagement with such sheet for controlling the entire operation of said pneumatics.

5. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including a plurality of pneumatics having connection with suction-creating means, and a single adjustable port located away from the sheet or web to be guided and controlled by means in engagement with such sheet for controlling the operation of said pneumatics.

6. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including a plurality of pneumatics having connection with suction-creating means, and a pivotally supported lever carrying a port and controlled by means in engagement with the sheet or web to be guided for controlling the operation of said pneumatics.

7. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including a plurality of pneumatics having connection with suction-creating means, a pivotally supported lever carrying a port, and a pivotally supported lever carrying a valve controlling said port and in position for engagement with the sheet or web for controlling the operation of said pneumatics.

8. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including a plurality of pneumatics having connection with a suction-creating means, a pivotally supported lever carrying a port in communication with said pneumatics and located away from the sheet or web to be guided, and a pivotally supported lever having a valve controlling said port and in position to be engaged by the sheet or web for controlling the operation of said pneumatics.

9. A music sheet guiding mechanism including a tracker board and comprising means including a pair of pneumatics operative to move the sheet thereby to preserve registration thereof with the tracker bar, and means for controlling the operation of said means and including a single adjustable port opening to the atmosphere and located away from the sheet, one and the same port controlling the operation of both of said pneumatics.

10. A music sheet guiding mechanism comprising means operative to move the sheet laterally to preserve the proper position thereof and means including a pair of pneumatics movable in unison for controlling the operation of said means and comprising a lever carrying a port opening to the atmosphere, and a lever carrying a valve for controlling said port and having a part thereof in position to be engaged by the sheet.

11. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including a plurality of pneumatics having connection with suction-creating means, a single movable port and a valve lever in engagement with the sheet or web to be guided for controlling said port and thereby by one and the same port the operation of said pneumatics at all times.

12. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including a port in position to be controlled by a traveling web or sheet, a pair of pneumatics in communication with said port, a valve box carried independently of and apart from said pneumatics in communication with each of said pneumatics, a valve in said box, and means connecting said box with suction creating means.

13. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including a port, a valve closing said port and adapted to be operated by a traveling sheet or web, a pair of pneumatics in communication with said port, a valve box carried independently of and apart from said pneumatics in communication with each of said pneumatics, a valve in said box, and means connecting said box with suction-creating means.

14. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the

sheet perforations with those of the tracker and including a pivotally supported lever carrying a port, a pivotally supported lever carrying a valve for closing said port and adapted to be operated by a traveling sheet or web, a pair of pneumatics connected for simultaneous movement in the same direction in communication with said port, a valve box in communication with each of said pneumatics, a valve in said box, and means connecting said box with suction-creating means.

15. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including means for shiftably supporting one of said perforated parts, a single cam in positive engagement with a part of said supporting means for shifting it in opposite directions pneumatically operated means for operating said cam, and means for controlling the operation of said pneumatically operated means.

16. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including means for shiftably supporting a sheet roll, a cam in engagement with a part of said supporting means, pneumatically operated means for operating said cam, and means for controlling the operation of said pneumatically operated means and comprising a shiftable member in engagement with the sheet, and a single port controlled by said member for governing the movement of the sheet supporting means in opposite directions.

17. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including means for shiftably supporting a sheet roll, a cam in engagement with a part of said supporting means, pneumatically operated means for operating said cam, and means for controlling the entire operation of said pneumatically operated means and comprising a shiftable member in engagement with the sheet and a single adjustable port controlled by said shiftable member.

18. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including means for shiftably supporting a sheet roll, a single cam having a positive connection with a part of said supporting means for shifting it in opposite direc-

tions, pneumatically operated means for operating said cam, and means for controlling the operation of said pneumatically operated means.

19. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including means for shiftably supporting a sheet roll, a cam in engagement with a part of said supporting means, and a single-port controlled pneumatically operated means for shifting said cam alternately in different directions.

20. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including means for shiftably supporting a sheet roll, a cam in engagement with a part of said supporting means, pneumatically operated means for operating said cam, a single port located away from the sheet and in communication with said pneumatically operated means for controlling the entire operation thereof, and shiftable means for controlling said port and in position to be operated by the sheet.

21. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including means for shiftably supporting a sheet roll, a cam in engagement with a part of said supporting means, a plurality of pneumatics connected with said cam, and a single port controlled by a traveling sheet for controlling the entire operation of said pneumatics.

22. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including a sliding shaft for supporting a sheet roll, a single cam having a positive connection with said shaft, pneumatic means for operating said cam to shift the shaft in opposite directions, and means for controlling the operation of said pneumatic means.

23. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including means for shiftably supporting a sheet roll, a cam in engagement with a part of said supporting means, a pair of pneumatics in connection with said cam for operating it in opposite directions, an adjustable lever projecting through the tracker

bar and carrying a port in communication with one of said pneumatics, and a shiftable lever adapted to be engaged by the sheet and having a valve for closing said port.

5 24. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker  
10 and including means for shiftable supporting a sheet roll, a cam in engagement with a part of said supporting means, a pair of pneumatics in connection with said cam for operating it in opposite directions, an adjustable lever carrying a port in communication with one of said pneumatics, a shiftable  
15 lever adapted to be engaged by the sheet and having a valve for controlling said port, said levers projecting through the tracker bar and  
20 a valve box carrying a valve in communication with said pneumatics and having communication with suction-creating means.

25 25. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including means for shiftable supporting  
30 a sheet roll, a cam in engagement with a part of said supporting means, a pair of pneumatics in connection with said cam for operating it in opposite directions, an adjustable lever carrying a port in communication with one of said pneumatics, a shiftable  
35 lever adapted to be engaged by the sheet and having a valve for controlling said port, a valve box carrying a valve, said valve box having a chamber in communication with said port and with one of said pneumatics, a  
40 diaphragm for said chamber and also having another chamber in communication with suction-creating means and with the same pneumatic and another chamber in communication with the other pneumatic and with  
45 an opening to the atmosphere, said valve being operative by the diaphragm to cut off communication at a predetermined time between said last two chambers and at another time communication from one of said chambers  
50 to the atmosphere.

26. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the  
55 sheet perforations with those of the tracker and including means for shiftable supporting a sheet roll, a single cam in engagement with a part of said supporting means, pneumatically operated means adjustably connected with said cam, and means for controlling the operation of said pneumatically  
60 operated means.

27. An apparatus of the character described having a perforated tracker bar for  
65 the passage thereover of a perforated sheet,

means for preserving the registration of the sheet perforations with those of the tracker and including means for shiftable supporting a sheet roll, a cam in engagement with a part of said supporting means, pneumatically operated means for operating said cam, and shiftable means projecting through the tracker bar and in engagement with the sheet and controlled thereby for controlling the operation of said pneumatically operated  
70 means. 75

28. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the  
80 sheet perforations with those of the tracker and including means for shiftable supporting a sheet roll, a cam in engagement with a part of said supporting means, pneumatically operated means for operating said cam  
85 and comprising a pair of pneumatics movable simultaneously in the same direction, and shiftable means adapted to be operated by the sheet for controlling the entire operation of said pneumatics and including a  
90 single port.

29. An apparatus of the character described having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the  
95 sheet perforations with those of the tracker and including means for shiftable supporting a sheet roll, a cam in engagement with a part of said supporting means, pneumatically operated means for operating said cam  
100 and comprising a pair of pneumatics movable simultaneously in the same direction, shiftable means adapted to be operated by the sheet for controlling the operation of said pneumatics, a valve box carried independently of and apart from said pneumatics having a plurality of chambers in communication with said pneumatics and with suction-creating means, and a valve  
105 in said box for simultaneously cutting off communication between one of said chambers and the pneumatics and for opening another of said chambers to the atmosphere.

30. An apparatus of the character described having a perforated tracker bar for  
115 the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including means for shiftable supporting a sheet roll, a cam in engagement with  
120 a part of said supporting means, pneumatically operated means for operating said cam, and a single port controlled by the entire traveling sheet for controlling the entire operation of said pneumatically operated  
125 means.

31. An apparatus of the character described, having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the  
130

sheet perforations with those of the tracker bar and including a plurality of pneumatics connected together for simultaneous movement in the same direction and having connection with suction creating means, a swinging member, a port carried thereby, a swinging member, and a valve carried thereby for controlling said port, said valve being controlled by the traveling sheet or web and the said port controlling the operation of all of said pneumatics at all times.

32. A music sheet guiding mechanism comprising a perforated tracker bar for the passage of a perforated music sheet thereover, means operative to move said tracker bar and sheet one relatively to the other and including a plurality of pneumatics movable in unison and a single port controlled by the sheet for controlling the operation of all of said pneumatics in all of their movements.

33. A music sheet guiding mechanism comprising a perforated tracker bar for the passage of a perforated music sheet thereover, means operative to move said tracker bar and sheet one relatively to the other and including a plurality of pneumatics movable in unison, a single port for controlling the operation of all of said pneumatics in all of their movements, means for adjustably carrying said port, a valve for controlling it, and means shiftably carrying said valve and in engagement with the sheet.

34. A music sheet guiding mechanism comprising a perforated tracker bar for the passage of a perforated music sheet thereover, means including a plurality of pneumatics movable in unison for shifting the sheet and the tracker bar one relatively to the other, and means for controlling the operation of said means to preserve the proper position thereof and comprising a lever carrying a port, a lever carrying a valve for closing said port and having a part thereof in position to be engaged by the sheet, one and the same port controlling all of said pneumatics.

35. An apparatus of the character described, having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and including means for shiftably supporting the sheet and the tracker bar one relatively to the other, a cam in engagement with a part of said supporting means, and a single-port controlled pneumatically operated means for shifting said cam in different directions and thereby the said supporting means.

36. An apparatus of the character described, having a perforated tracker bar for the passage thereover of a perforated sheet,

means for preserving the registration of the sheet perforations with those of the tracker and including means for shiftably supporting the sheet and the tracker bar one relatively to the other, a cam in engagement with the part of said supporting means, and a single-port controlled pneumatically operated means for shifting said cam in different directions and thereby the said supporting means and comprising a plurality of pneumatics movable in unison.

37. A music sheet guiding mechanism comprising a perforated tracker bar, sheet winding means carrying a perforated music sheet, means for shifting one of the parts relatively to the other thereby to insure the registration of the sheet perforations with those of the tracker bar and including a plurality of pneumatics movable in unison, means for controlling said pneumatics and comprising a single swinging port and a swinging valve for controlling said port and in engagement with the sheet and movable thereby and a valve box having flexible conduit connection with the pneumatics and with said port.

38. A music sheet guiding mechanism comprising a perforated tracker bar, sheet winding means carrying a perforated music sheet, means for shifting one of the parts relatively to the other thereby to insure the registration of the sheet perforations with those of the tracker bar and including a plurality of pneumatics movable in unison, means for controlling said pneumatics and comprising a single swinging port and a swinging valve for controlling said port and in engagement with the edge of the sheet and movable thereby for maintaining the pneumatics in their balanced position when the web is in its normal tracking position, and a valve box having flexible conduit connection with the pneumatics and with said port.

39. An apparatus of the character described, having a perforated tracker bar for the passage thereover of a perforated sheet, means for preserving the registration of the sheet perforations with those of the tracker and comprising means operative to shift one of the perforated members relatively to the other and consisting of a single-port controlled pneumatically operated means consisting of a plurality of pneumatics operative in unison and a valve box having a flexible conduit connection with said pneumatics and port.

Signed at New York city, N. Y., this 27th day of February, 1912.

JOS. W. DICKINSON.

Witnesses:

ROBERT SIEFSY,  
ARTHUR KATZ.