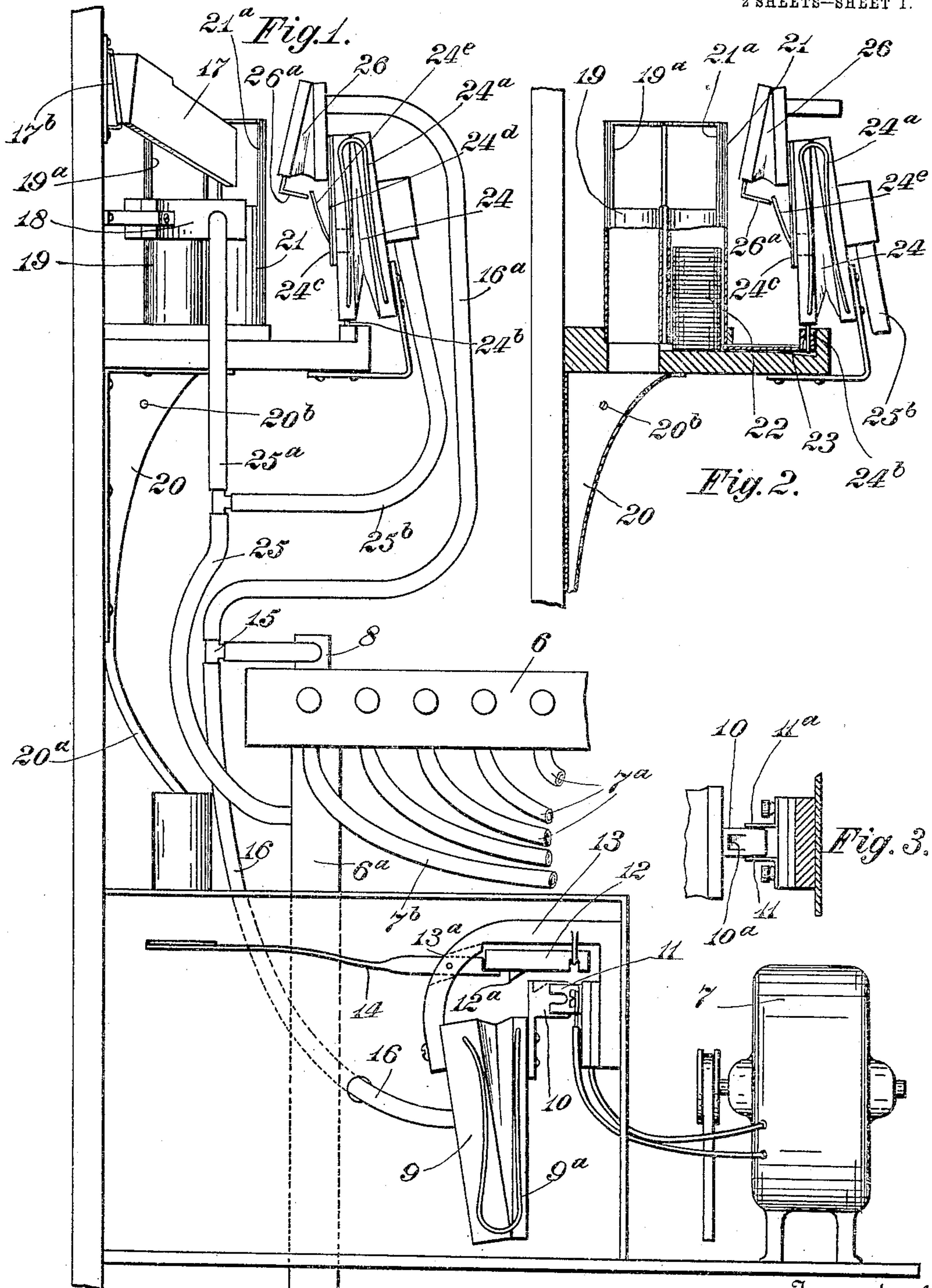


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 COIN CONTROLLED PNEUMATICALLY OPERATED MUSICAL INSTRUMENT.
 APPLICATION FILED FEB. 1, 1909.

962,534.

Patented June 28, 1910.

2 SHEETS—SHEET 1.



Witnesses
 Benj. Finkel
 Ada B. Garbbs

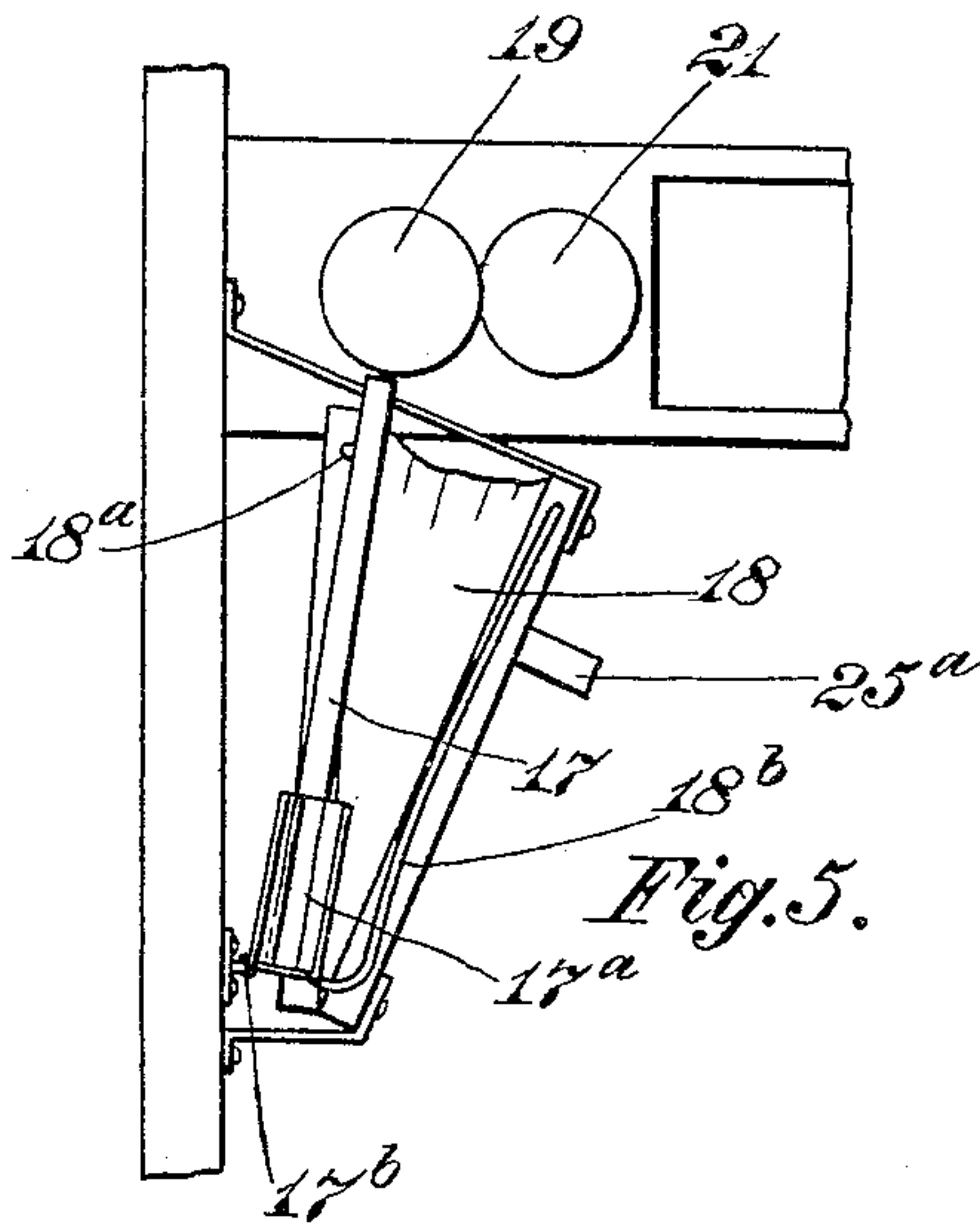
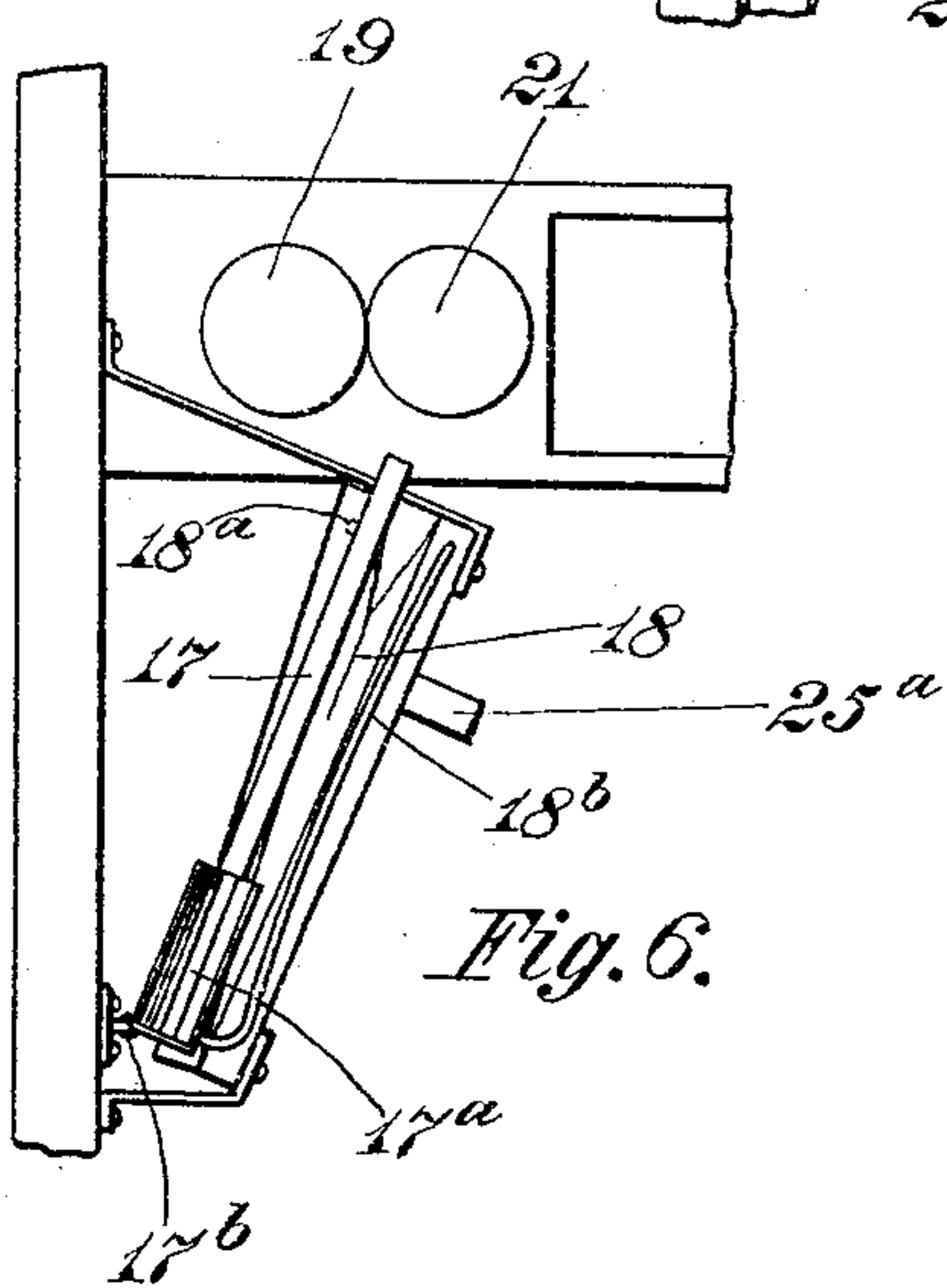
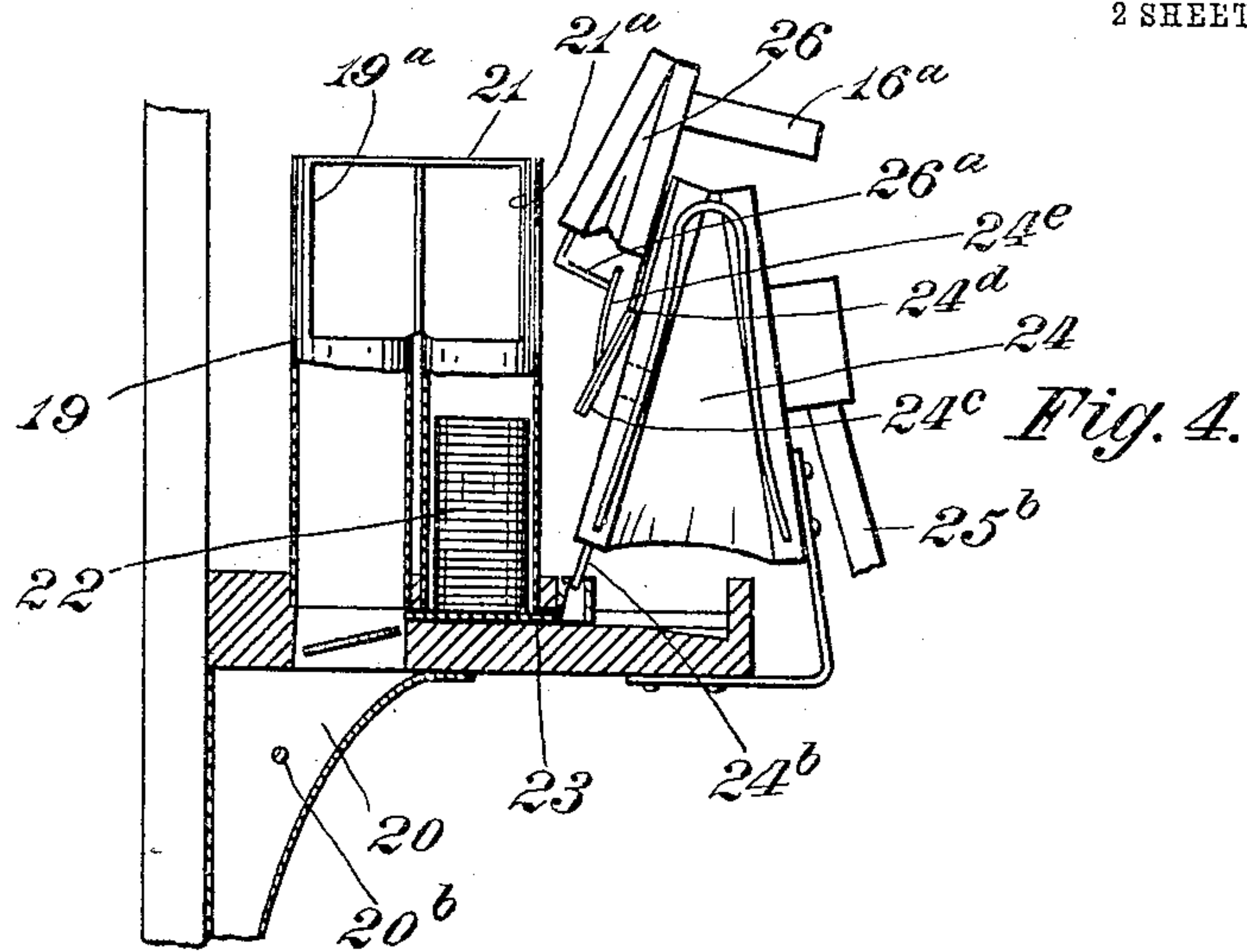
Inventors
 Thornton I. Shannon
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UNITED STATES PATENT OFFICE.

THORNTON I. SHANNON AND FRED M. GARNETT, OF COLUMBUS, OHIO.

COIN-CONTROLLED PNEUMATICALLY-OPERATED MUSICAL INSTRUMENT.

962,534.

Specification of Letters Patent. Patented June 28, 1910.

Application filed February 1, 1909. Serial No. 475,318.

To all whom it may concern:

Be it known that we, THORNTON I. SHANNON and FRED M. GARNETT, citizens of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Coin-Controlled Pneumatically-Operated Musical Instruments, of which the following is a specification.

The object of this invention is generally to provide improved means whereby a coin controlled pneumatically operated musical instrument can be caused to play a plurality of distinct compositions in regular succession without the necessity of manually supplying, immediately prior to the desired reproduction, a coin therefor, it being provided, however, that a coin shall be automatically supplied from a magazine which can be at first charged with, a desired number of coins in close succession to later be automatically severally discharged at proper intervals to cause the desired reproductions of the composition.

It is not new with us, as a general proposition, to provide a coin magazine from which coins can be automatically fed in the intervals between the reproductions to cause the operation of the mechanism, hence our invention is embodied in a special construction, an example of which is shown in the accompanying drawings and pointed out in the following description and claims.

In said drawings—Figure 1 is a front elevation of the mechanism containing our invention, the parts being in that position when the mechanism is operating. Fig. 2 is a detail partly in section of the magazine and the mechanism for feeding or ejecting the coin therefrom. Fig. 3 is a horizontal section and plan on the line $x-x$ looking down and illustrating an electric circuit closer for the motor. Fig. 4 is a view like Fig. 2 showing the position of the parts after the ejection of a coin from the magazine. Fig. 5 is a detail in plan view showing the chute through which the coins are manually supplied, said chute being in its normal or initial position, that is, the position when the playing mechanism is at rest. Fig. 6 is a similar view showing the said coin chute moved to that position where its discharge end is directed toward the magazine.

Like characters of reference designate corresponding parts.

The character 6 designates the vacuum chamber, and the character 7 designates an electric motor for operating a pump for creating a vacuum in said chamber by suction through a pipe 6^a, all as usual and well understood. The vacuum chamber is furnished with pipes 7^a leading to devices for operating the keys or hammers of the musical instrument, said devices being caused to operate by a moving sheet of perforated paper, all as usual. The vacuum chamber also has a pipe 7^b to operate valve at 8 to cause the operation of pneumatic at the completion of the playing of a composition for the purpose of cutting out the motor and feeding a fresh coin to the machine if there be any in the magazine as hereinafter set forth.

9 designates the pneumatic for effecting the closing of the circuit that operates the motor. This pneumatic is furnished with a spring 9^a to expand the pneumatic when air is admitted to it. Said pneumatic 9 carries a "knife" circuit closer 10 that is pushed between and withdrawn from contacts 11 and 11^a, from which contacts suitable conductors lead to the motor. The upper edge of the aforesaid knife circuit closer is provided with notch 10^a that is engaged by a tooth 12^a on a gravity detent lever 12 fulcrumed in a bracket 13 above the pneumatic when the latter is contracted by the withdrawal of air from it.

14 designates a lever pivoted in the bracket 13 and having its short arm projecting under the detent lever 12 and its long arm reaching to the path of a coin falling from a chute, as hereinafter described. The long arm of the lever 14 has a limited movement upward by reason of the stop 13^a and the weight of the lever 12 is made just sufficient to hold said long arm in its uppermost position. The tooth 12^a is positioned to automatically engage the notch 10^a when the knife 10 is withdrawn from circuit closing position by the contraction of the pneumatic carrying it. The pneumatic 9 is controlled by the valve at 8 through one branch of a T-pipe 15 and a tube 16.

17 designates a coin guide or chute into which the coin is first deposited. This consists of a short tube rectangular in cross-section with a flared mouth or slot at the end of one of its longitudinal edges, as seen at 17^a, through which the coins are passed into

the guide. The said coin guide is inclinedly hinged at 17^b to the frame of the instrument so as to be capable of being swung by a pneumatic 18 with which it is connected by a pin 18^a. The pneumatic 18 has a spring 18^b normally tending to distend it. In the distended condition of the pneumatic 18 the coin guide 17 is directed toward an opening 19^a in a chamber 19, and a coin passing into said chamber falls thence through a chute 20 and a guide tube 20^a, after which it strikes the lever 14 lifting the tooth 12^a out of the notch 10^a. In the contracted condition of the pneumatic 18 the discharge end of the coin guide 17 is directed toward an opening 21^a in the upper end of a chamber or magazine 21. Coins passed into said magazine are stacked, as seen at 22, and are discharged therefrom by means of a sliding ejector plate 23, which is reciprocated by a pin 24^b on the movable head of a pneumatic 24. The sliding ejector works against the lowermost coin in the magazine, the lower end of which is elevated just enough off its support or is horizontally slotted to permit the ejection of one coin only at a time. The coin when ejected from said magazine falls into the chute 20 and operates the lever 14 with the consequence as before described with reference to a coin discharged into the chamber 19. The upper end of the chute 20 is provided with a cross pin 20^b to turn the coins edgewise down as they are descending in the chute. The pneumatic 24 is furnished with a spring 24^a tending to hold it normally expanded and with the sliding ejector withdrawn from under the coins. The pneumatics 18 and 24 are both connected with the suction pipe 6^a by suitable branch pipes or tubes 25^a and 25^b respectively, connected with a common pipe 25 opening into the suction pipe 6^a. The pneumatic 24 has an external valve 24^c hinged at 24^d, and projecting upwardly from the outer side of said valve and to a point beyond the hinge 24^d is a finger 24^e. Fixed to the movable head of the pneumatic 24 is a smaller pneumatic 26 having on its relatively movable head a bent finger 26^a adapted, when the pneumatic carrying it is contracted, to press upon the finger 24^e beyond the hinge 24^d and tilt the said valve 24^c to open position. This operation admits air to the pneumatic 24 and permits the spring 24^a to quickly expand the pneumatic 24, thereby operating the coin ejector to push out a coin. See Fig. 4. The small pneumatic 26 is connected with the T-pipe 15 by a branch 16^a.

The music sheet (not shown but well understood) is provided with a perforation beyond and between the perforations for causing the rendition of the composition.

When the first coin is deposited in the machine it is passed through the chamber 19 and chute 20, and striking the end of the

lever 14 raises the detent lever 12 and releases the circuit closing knife 10, which closing the circuit starts the motor. The power thus generated operates the pump to exhaust air from the chamber 6 and pipe 6^a, whereupon the instrument plays the first composition in the perforated music sheet. During this time the pneumatics 18 and 24 are contracted withdrawing the coin ejector and placing the chute into position for the depositing of coins into the magazine. After the completion of the first composition the valve at 8 is operated by the perforation for that purpose in the music sheet, whereupon the pneumatics 9 and 26 are contracted, the former cutting out the motor and the latter opening the valve 24^c and admitting air to the pneumatic 24 to permit the spring of that pneumatic to eject a coin from the magazine to thus repeat the operation automatically. In this way a series of different compositions can be performed without the necessity of manually supplying a coin for the rendition of each.

What we claim and desire to secure by Letters Patent is:

1. In a coin controlled pneumatically operated musical instrument, the combination of mechanism for starting the operation of the instrument, a coin conductor to said mechanism, a coin magazine associated with said conductor, a coin guide, and means for shifting the coin guide from the coin conductor to the coin magazine.

2. In a coin controlled pneumatically operated musical instrument, the combination of mechanism for starting the operation of the instrument, a coin conductor to said mechanism, a coin magazine associated with said conductor, a coin guide, and pneumatically operated means for shifting the coin guide from the coin conductor to the coin magazine.

3. In a coin controlled pneumatically operated musical instrument, the combination with means for automatically starting the operation of the instrument by the deposit of a coin therein, a coin magazine, a coin ejector for said magazine, a pneumatic provided with a valve, said pneumatic being pneumatically operated to move the ejector in one direction, a spring to operate said ejector in the opposite direction, and a pneumatic for opening said valve to admit air to the pneumatic carrying it.

4. In a coin controlled pneumatically operated musical instrument, the combination with means for automatically starting the operation of the instrument by the deposit of a coin therein, a coin magazine, a coin ejector for said magazine, a pneumatic provided with a spring and a valve, said pneumatic being pneumatically operated to withdraw the ejector from the magazine, and a pneumatic for opening said valve to admit

air to the first mentioned pneumatic to permit the spring to operate the ejector to eject a coin.

5 5. A device of the character described, comprising a coin chute, a releasing lever, a magazine, means for conveying a coin from the chute either to the lever or to the magazine, and means for conveying a coin from the magazine to said lever.

10 6. A device of the character described, comprising a coin chute, a releasing lever, a magazine, a switch for conveying a coin from the chute either to the lever or to the magazine, and an ejector for conveying a
15 coin from the magazine to said lever.

7. A device of the character described, comprising a coin chute, a coin tube, a coin magazine, means for connecting the chute either to the tube or to the magazine, a releasing lever below the tube, and a coin
20 ejector at the bottom of the magazine.

8. A device of the character described, comprising a coin chute, a coin magazine adapted to communicate therewith, a coin
25 ejector at the bottom of said magazine, and a releasing lever below said ejector.

9. A device of the character described,

comprising a coin chute, a coin tube, a coin magazine, a coin switch adapted to connect the tube either with the tube or magazine, 30 and means for discharging a coin from the magazine.

10. A device of the character described, comprising a coin chute, a coin tube, a coin magazine, a coin switch adapted to connect 35 the chute either with the tube or magazine, a coin ejector at the bottom of the magazine, a pneumatic means for actuating the switch and ejector.

11. A device of the character described, 40 comprising a perforated support, a coin tube and a coin magazine mounted thereon, the tube being alined with the support-perforation, a coin chute adapted to communicate either with the tube or magazine, a releasing 45 lever below the support-perforation, and an ejector at the bottom of the magazine adapted to convey a coin from said magazine to said support-perforation.

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