

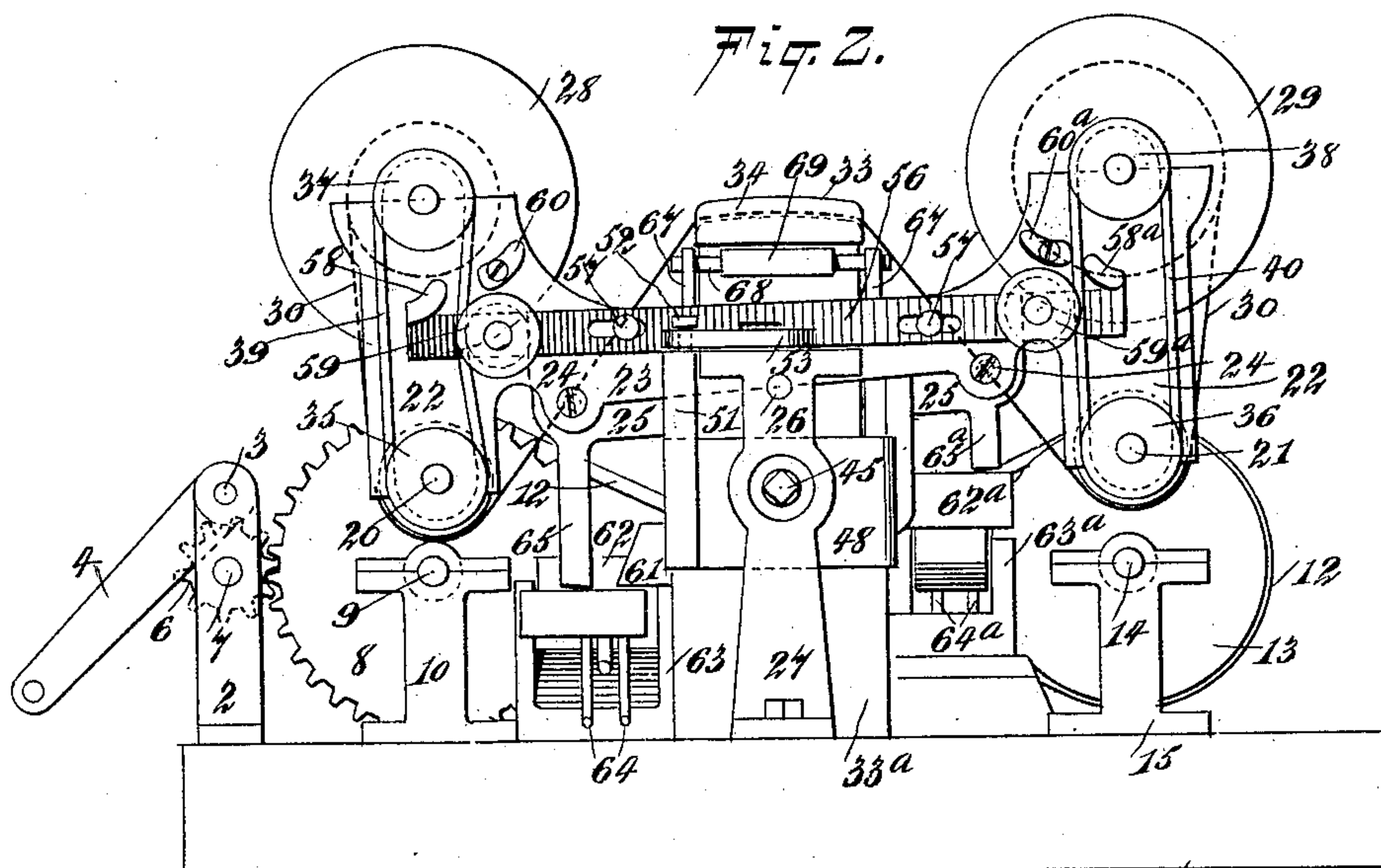
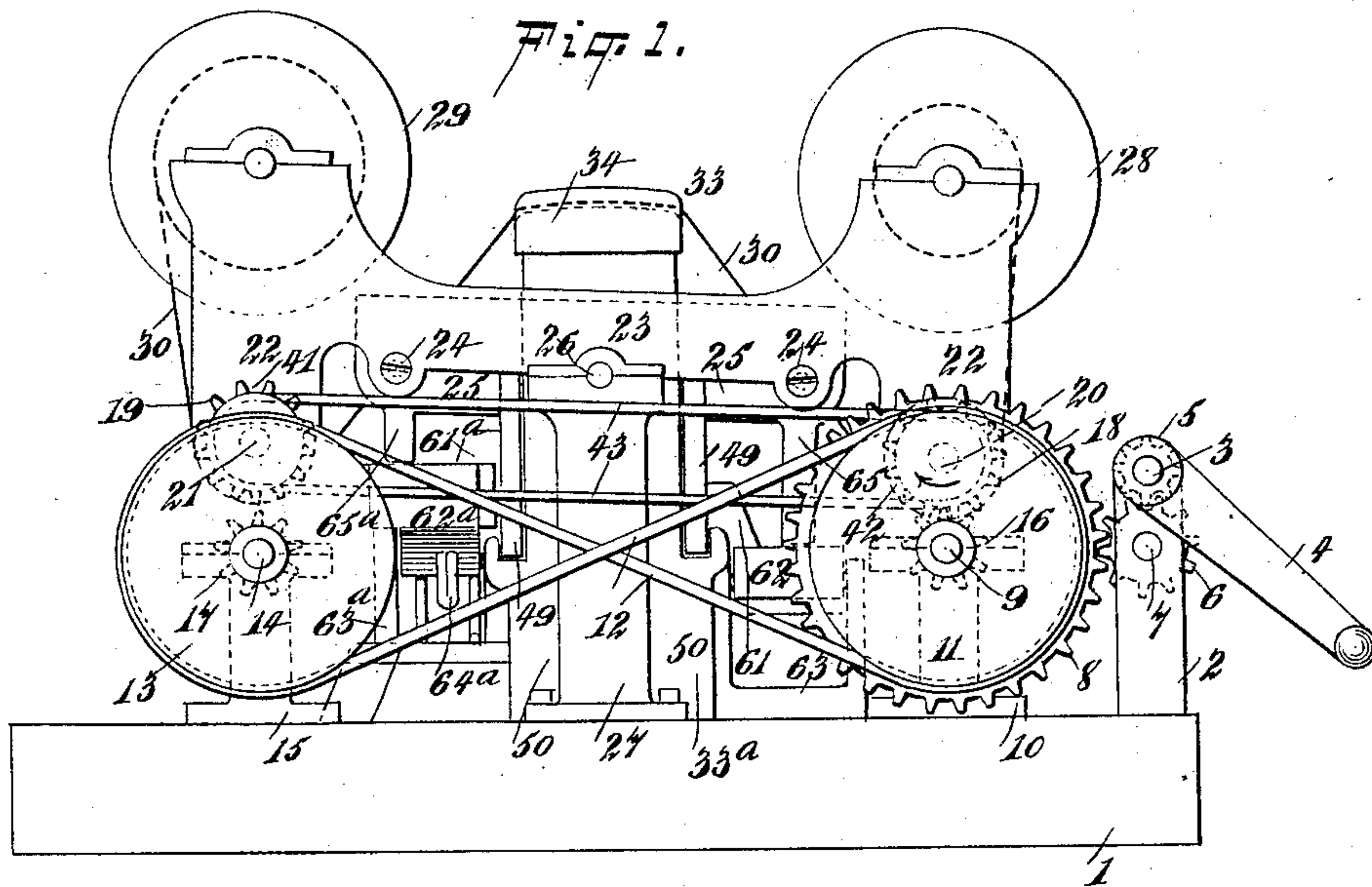
(No Model.)

3 Sheets—Sheet 1.

F. P. CERICOLA.
MUSICAL INSTRUMENT.

No. 567,079.

Patented Sept. 1, 1896.



WITNESSES:

William P. Gaebel.
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INVENTOR

F. P. Cericola.
BY Munn & Co.

ATTORNEYS.

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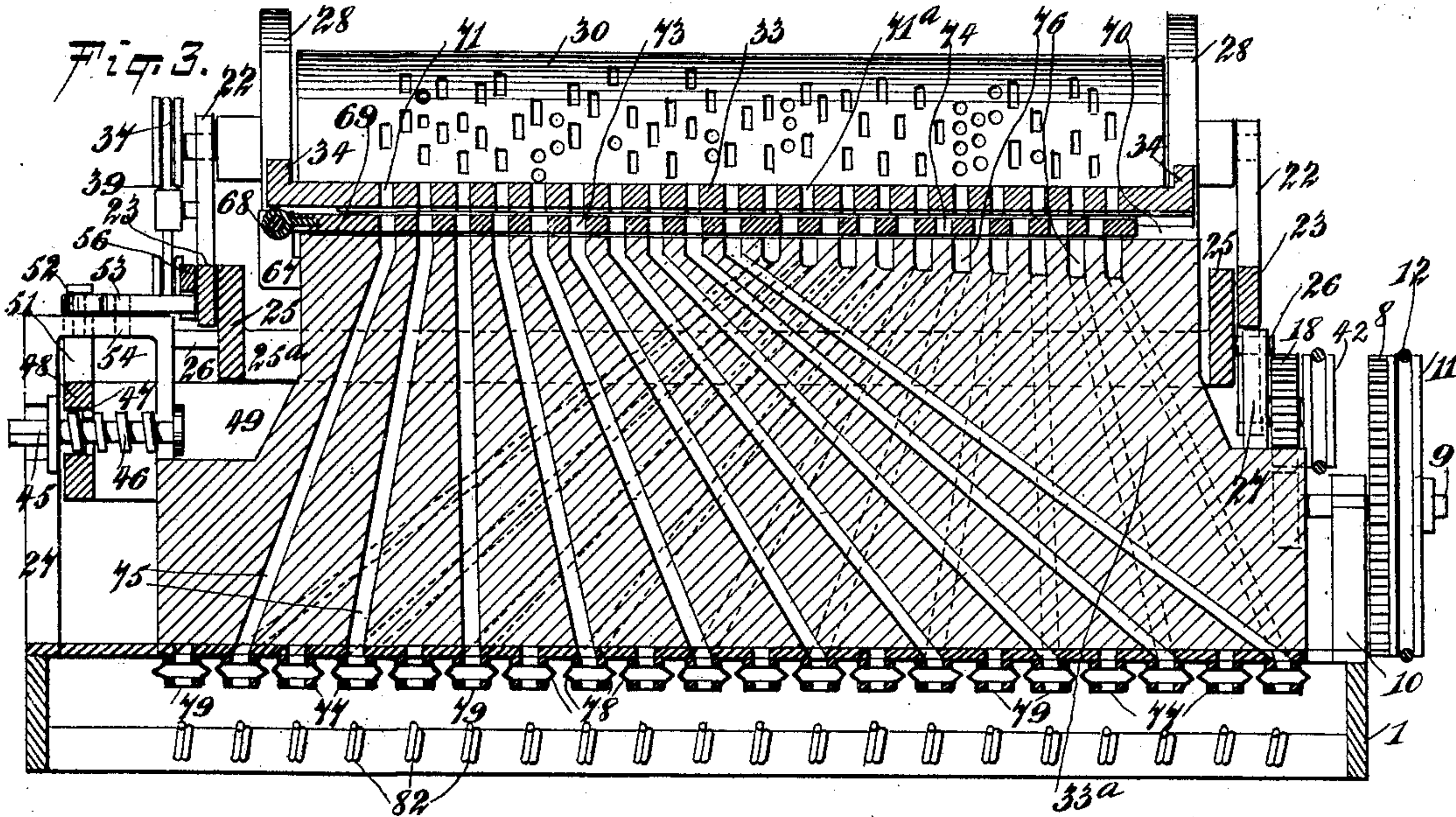
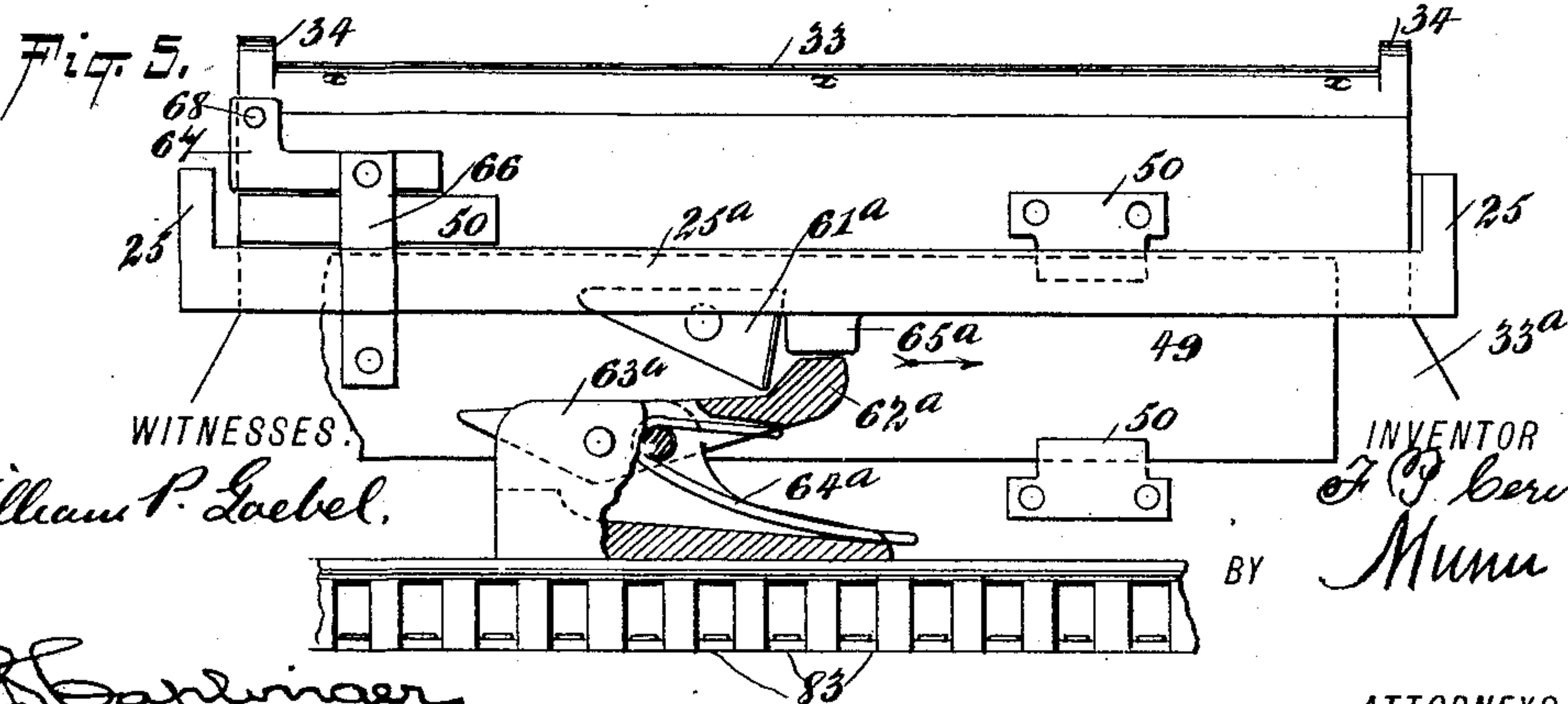
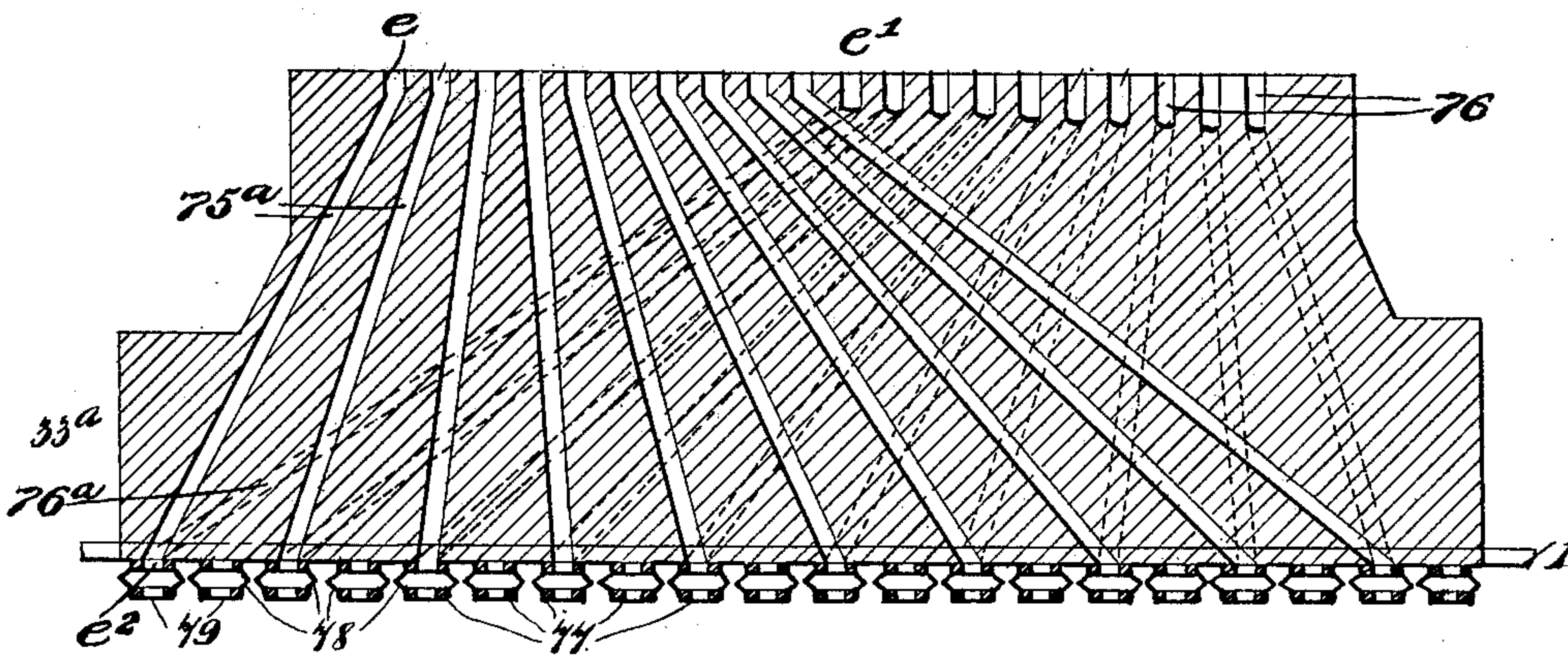


Fig. 4.



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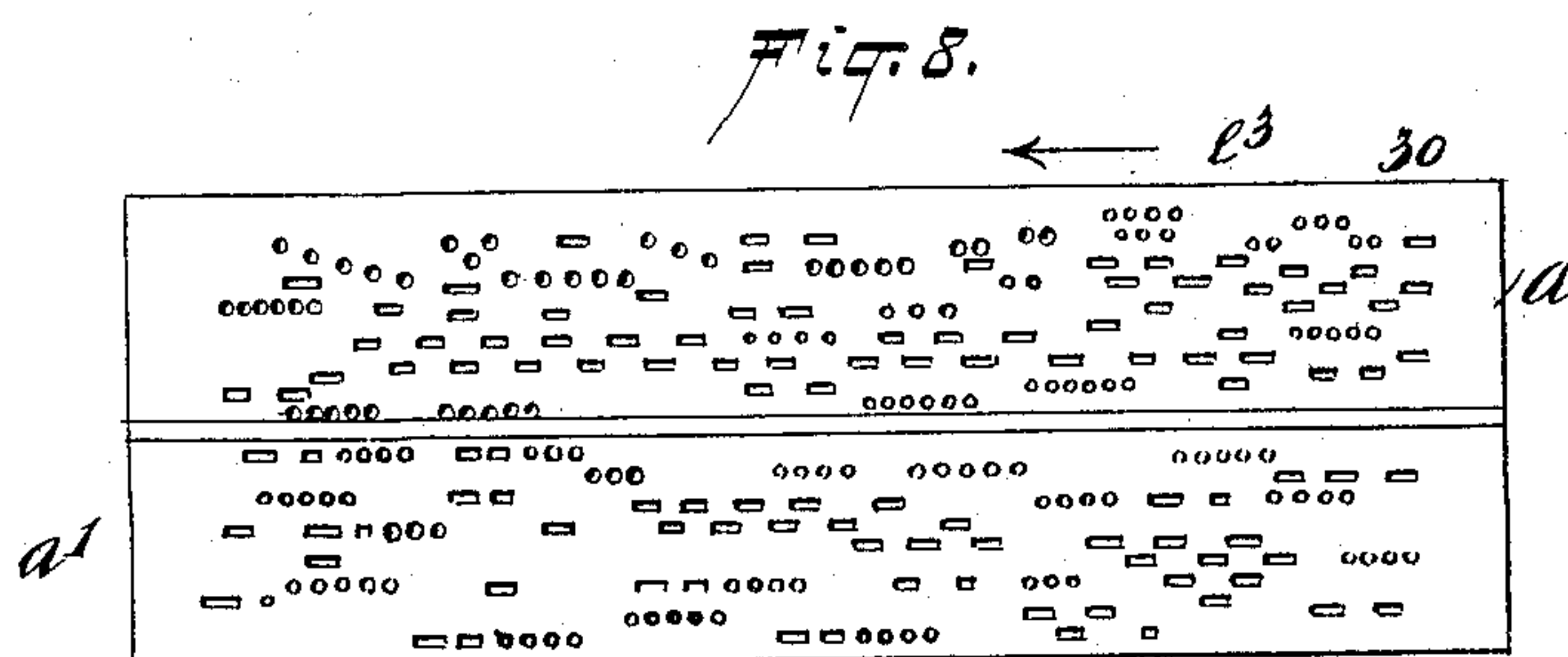
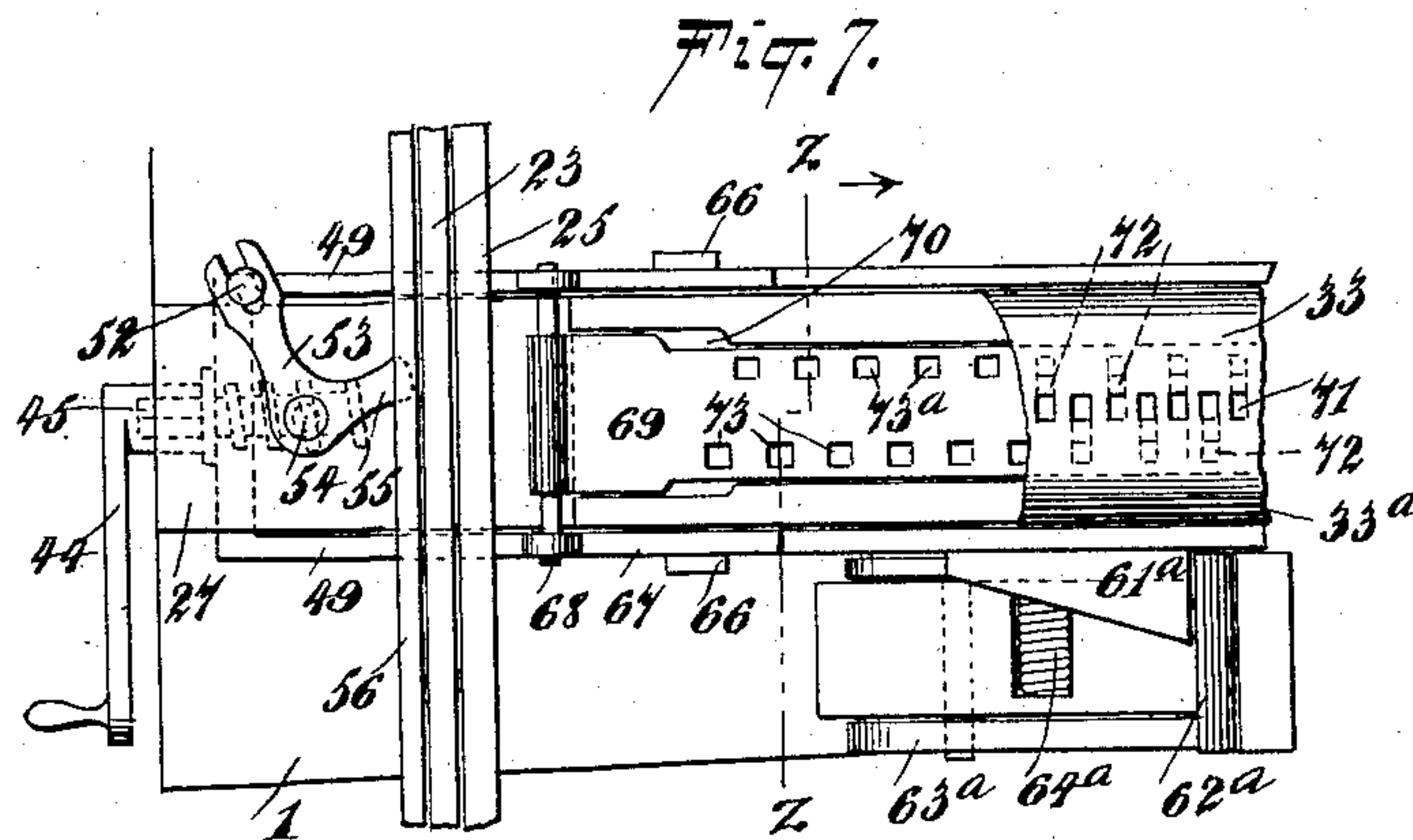
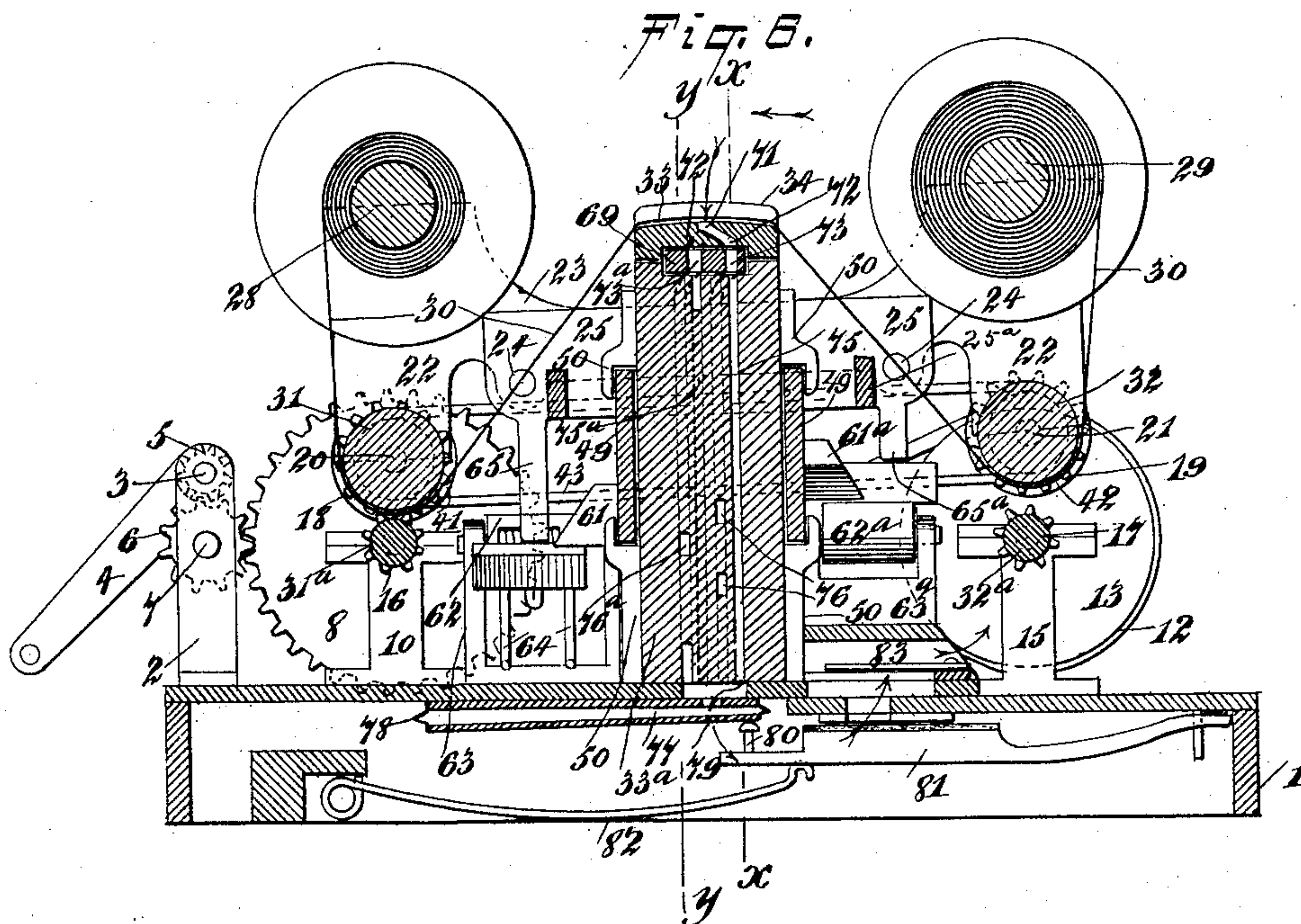
(No Model.)

3 Sheets—Sheet 3.

F. P. CERICOLA.
MUSICAL INSTRUMENT.

No. 567,079.

Patented Sept. 1, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANCESCO PAOLO CERICOLA, OF BROOKLYN, NEW YORK.

MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 567,079, dated September 1, 1896.

Application filed November 23, 1895. Serial No. 569,927. (No model.)

To all whom it may concern:

Be it known that I, FRANCESCO PAOLO CERICOLA, a subject of the King of Italy, now residing at Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Musical Instrument, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in musical instruments, and especially that class of such instruments as are adapted for automatic playing, being actuated by a strip of paper fed over a barrel and provided with perforations adapted to coincide with ducts formed in the barrel, so as to bring into operation the different reeds; and the object of the invention is to provide a device of this character of a simple and inexpensive nature which shall be adapted for repeating airs or portions thereof indefinitely, and provided with means for feeding the perforated paper sheet in a substantially uniform and continuous manner.

The invention consists, in part, in a musical instrument of this character having a barrel provided with two sets or series of ducts leading to a common series or set of reeds or equivalent devices for playing, a valve for placing one or the other of said series of ducts out of action while the other series or set is in use, a music-sheet having two series of apertures, mechanism to move the music-sheet in opposite directions, and means actuated from the music-sheet-moving mechanism for reversing the piston of the valve when the movement of the music-sheet is reversed, and, in part, in certain improvements in the strip of paper employed for actuating the reeds or equivalent devices, whereby one side or one half of said strip is provided with perforations adapted to control one series or set of ducts in the barrel and the other side or half of said sheet is provided with similar perforations arranged to control the other set or series of ducts in the barrel.

The invention also contemplates certain novel features of the construction, combination, and arrangement of the various parts of the improved musical instrument, whereby certain important advantages are attained and the device is made simpler, cheaper, and otherwise better adapted and more convenient

for use than various other similar devices heretofore employed, all as will be hereinafter set forth. The novel features of the invention will be carefully defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is an end view of the instrument, the casing being removed, so as to show the various operating parts. Fig. 2 is a similar view of the opposite end of the instrument. Fig. 3 is a sectional view taken longitudinally through the barrel of the instrument in the plane indicated by the line *xx* in Fig. 6. Fig. 4 is a somewhat similar view taken in the plane indicated by the line *yy* in Fig. 6. Fig. 5 is a fragmentary detail view showing certain of the operating parts of the instrument to be hereinafter referred to. Fig. 6 is a section taken transversely through the instrument in the plane indicated by the line *zz* in Fig. 7. Fig. 7 is a fragmentary plan view showing one end of the barrel of the instrument, the face-plate thereof being broken away to show the construction of the underlying parts; and Fig. 8 is a view drawn to a small scale and showing a fragment or section of the music-sheet.

In the views, 1 indicates the base of the instrument, wherein is mounted a bellows (not shown) in the usual way, and on said base, at one end of the same, is arranged a standard 2, in the upper end of which is journaled a short shaft 3, provided with a crank 4, adapted to be turned by the hand in playing, and said shaft is also provided with a spur-wheel 5, meshing with a pinion 6, also journaled on a stud 7 on the standard 2, and meshing with a large spur-wheel 8, mounted on a shaft 9, extending longitudinally on the base 1, along one side thereof, being journaled at its ends in standards 10, as clearly seen in the drawings. On the extremity of the shaft 9, adjacent to the spur-gear 8, is fixed a pulley 11, over which passes a belt 12, crossed at its central portion and arranged to pass around a similar pulley 13, fixed on the end of a shaft 14, extending longitudinally along the opposite side of the base 1 and journaled at its ends in standards 15 on said base.

On the respective shafts 9 and 14 are mounted pinions 16 and 17, arranged to mesh with spur-wheels 18 and 19, mounted, respectively, on shafts 20 and 21, journaled in the lower ends of vertical arms 22, formed on opposite extremities of the end bars of a frame 23, secured by means of screws 24 to a rocking frame comprising end pieces 25, connected by side bars 25^a, extending longitudinally of the base, said rocking frame being provided at opposite ends with short pivots or trunnions 26, mounted to turn in bearings in the upper ends of standards 27 at opposite ends of the central portion of the base 1.

At the upper ends of the arms 22 of the frame 23 are journaled reels 28 and 29, respectively, extending longitudinally of the instrument and adapted to receive upon them the music-sheet 30, consisting of a strip of paper having its opposite ends secured in any way to said reels and adapted to be wound upon one and simultaneously wound off the other, the central portion of the said strip between said reels being carried down, as seen in the sectional view Fig. 6, around rollers 31 and 32, fixed on the shafts 20 and 21, respectively, and also extending longitudinally of the instrument, between which rollers the said music-sheet is carried up, as seen in Fig. 6, over a face-plate 33 of the barrel 33^a of the instrument, which face-plate is provided at opposite ends with raised shoulders 34, forming guides to prevent movement of said music-sheet laterally or endwise of said barrel.

On the ends of the respective shafts 20 and 21 opposite to the end of the instrument at which the pulleys 11 and 13 are located are fixed small pulleys 35 and 36, and on the adjacent ends of the spindles or shafts of the reels 28 and 29 are fixed similar pulleys 37 and 38, respectively, and over the said pulleys, at the upper and lower ends of the respective vertical arms 22 of the frame 23, are arranged to pass belts 39 and 40.

On the respective shafts 9 and 14 are mounted rollers 31^a and 32^a, arranged under the respective rollers 31 and 32 on the frame 23, and the respective rollers 31 31^a and 32 32^a at opposite sides of the instrument are adapted to engage opposite sides of the music-sheet when the frame 23 is rocked, so as to feed said sheet from one reel to the other, the pinions 16 and 18 being in engagement to wind the sheet 30 from the reel 29 onto the reel 28 when the said frame 23 is rocked or tilted to the position seen in the drawings, the pinions 17 and 19 being at this time out of engagement, and these last-named pinions 17 and 19 are adapted to be engaged when the frame 23 is rocked in the opposite direction, so as to wind the sheet of paper off the reel 28 and on the reel 29.

On the ends of the respective shafts 20 and 21, at the lower ends of the arms 22 of the frame 23, are fixed pulleys 41 and 42, respectively, over which pulleys passes an endless belt or band 43, connecting said pulleys, so that the shafts 20 and 21 are caused to turn

in unison, whereby it will be seen that when the gear-wheels 16 and 18 are engaged to drive the shaft 20 from the shaft 9 the shaft 21 is also driven, and when the gear-wheels 17 and 19 are engaged so as to drive the shaft 21 from the shaft 14 the shaft 20 will be driven, but in a direction opposite to that in which it was before driven.

At the end of the instrument opposite to the crank 4 is arranged a crank 44, adapted to be operated by hand, and having a square socket fitting the squared end 45 of a screw 46, collared in the standard 27 at one end of the instrument, as clearly indicated in Fig. 3, and engaging a nut 47 in the adjacent end piece 48 of a slide comprising two side bars 49, mounted in guides 50, arranged on opposite sides of the barrel of the instrument, the construction being such that when said screw 46 is turned by means of the crank 44 said side bars 49 are caused to move longitudinally of the barrel, which barrel extends along the central portion of the instrument, as clearly seen in Figs. 1 and 2, wherein said barrel is indicated by the reference-character 33^a. On the end bar 48 of the slide is mounted an upright finger 51, to which is pivoted at 52, as clearly seen in Fig. 7, one arm of an elbow-lever 53, fulcrumed at 54 on the bracket 27 and arranged to play in a horizontal plane, the opposite end 55 of said lever being arranged to engage a recess at the central part of a slide-bar 56, having slots formed in it and engaged by guide-pins 57 on one end of the frame 23, as clearly seen in Fig. 2. At its opposite ends the slide-bar 56 is provided with clutch shoes or surfaces 58 and 58^a, projecting from it and arranged, respectively, between the opposite strands of the respective bands or belts 39 and 40, and said slide-bar also carries, adjacent to its opposite ends, rollers or pulleys 59 and 59^a, arranged, as seen in Fig. 2, upon the sides of the inner strands of the respective bands 39 and 40, opposite to the clutch shoes or surfaces 58 and 58^a. The ends of the frame 23 are also provided with clutch shoes or surfaces 60 and 60^a, projecting from them above the rollers or pulleys 59 and 59^a. By this construction it will be seen that when the slide-bar 56 is moved to the left, as indicated in Fig. 2, the pulley or roller 59 will be caused to engage the band or belt 39, so as to tighten the same about the pulleys 37 and 35 and prevent slipping of the band, and at the same time the band 40 is engaged between the clutch-shoes 58^a and 60^a at the opposite end of the frame 23 and securely held against movement, whereby it will be seen that the shaft 9, the gear 16 on which is at this time in engagement with the gear 18 on the shaft 20 in the position of the parts shown, will communicate its movement to the reel 28, so as to wind the music-sheet thereon, the reel 29, from which the music-sheet is being unwound, being at this time held against too free movement.

On the side bars 49 are arranged wedge-

shaped cams or projections 61 and 61^a, respectively, the inclined faces of which are oppositely directed and are adapted to engage spring-dogs 62 and 62^a, pivotally mounted in brackets 63 and 63^a on opposite sides of the barrel 33^a of the instrument and normally held in an upwardly-pressed position, as will be readily understood, by means of springs 64 and 64^a, connected to them and engaging the lower portions of said brackets, the heads of said dogs 62 and 62^a being arranged in position to engage the under sides of the depending lugs or projections 65 and 65^a, centrally located on the side bars 25^a of the rocking frame 25 above mentioned. As shown in the drawings, the lug 65^a is shorter than the lug 65, for the reason that the dog 62^a is arranged upon the reed-board of the instrument, and consequently is higher up than the dog 62.

At the ends of the side bars 49, adjacent to the actuating-screw 46 thereof, are arranged upwardly-extending arms 66, the upper ends of which are connected to horizontal brackets 67, in the bent ends of which are pivoted the opposite ends of a shaft or pintle 68, to which is connected the end of the sliding valve 69 of the instrument, which, as will be clearly understood by inspection of Figs. 3, 6, and 7, plays longitudinally of the barrel 33^a, being arranged in a space 70, formed between the upper face of said barrel and the face-plate 33 thereof.

In the face-plate 33 of the barrel 33^a are formed two sets of openings 71 and 71^a, alined with each other and extending along the central portion of said face-plate, one set being arranged at each end of said face-plate and occupying one-half of the length thereof, and the lower ends of alternate openings in the said series are carried in opposite directions, as clearly seen at 72 in dotted lines in Figs. 6 and 7, in a position to coincide with the openings formed in the sliding valve 69. The said openings in the sliding valve 69 are formed in two sets, one set being arranged at each end of the said valve, corresponding in position to the two series of openings 71 and 71^a in the face-plate of the barrel, and each set of openings in the said valve 69 is formed in two rows, the set in the left-hand end in Figs. 3 and 4 being formed in rows 73 and 73^a, arranged along opposite sides of said valve, the openings 73^a being between the openings 73 in position to coincide with the oppositely-directed lower ends 72 of the openings 71 at the left-hand end of the face-plate 33 of the barrel 33^a, and the openings 74 at the right-hand end of said valve are similarly divided into two series correspondingly arranged with respect to the lower ends of the openings 71^a at the right-hand end of the face-plate 33.

In the barrel 33^a are formed ducts to communicate with the openings in the face-plate. These ducts are also divided into two sets, each set being divided into two rows, the

two rows of ducts at the left-hand end of the barrel, as shown in the drawings, being numbered 75 and 75^a, respectively, while the rows of ducts at the right-hand end of the barrel are numbered 76 and 76^a. The respective rows 75, 75^a, 76, and 76^a are arranged in different vertical planes, as clearly indicated in Fig. 6, the upper ends of the rows 75 and 76 being alined longitudinally of the barrel, to effect which the upper ends of the ducts 76 are bent somewhat laterally, as will be readily understood, so that the said ducts 75 and 76 are arranged to correspond with the rows of openings 73 and 74, extending along one side of the sliding valve 69. The rows 75^a and 76^a are similarly alined at their upper ends along the opposite side of the barrel 33^a, in position to coincide with the openings along the opposite side of said valve 69. The lower ends of these ducts communicate with openings formed in the upper parts of pneumatic keys 77, each of which is constructed in an elongated form, as seen in Fig. 6, with flexible side walls 78, the under sides of said keys being provided with vents 79, of less area than the openings through which the ducts communicate with the said keys, and each key is held normally in a collapsed condition by engagement of a pin or stud 80, held on a reed-valve 81, suitably located below the base 1 of the instrument, and normally pressed upward by means of a spring 82 in position to close the flow of air through the corresponding reed 83 in the reed-board.

The pneumatic keys and valves are arranged in the vacuum-chest of the instrument, and air is exhausted from said chest by means of the bellows, (not shown,) these being of the usual construction, and by this arrangement it will be seen that the bellows will exhaust the air from the pneumatic keys, but that when a perforation in the music-sheet registers with one of the ducts in the barrel which is not closed by the valve the air will be drawn through said duct into the key, so as to inflate the same and move the valve 81 against the force of its spring, so as to sound the reed. When the crank 44 is turned, the screw 46 thereon will serve to slide the side bars 49 of the slide endwise, carrying with them the valve 69, the position of which will be reversed, so as to open the series of ducts in the barrel which were before closed, and when the slide is moved endwise it will be seen that by reason of the engagement of the pin 52 with the elbow-lever 53 the slide-bar 56 will be moved endwise, so as to disengage the clutch members from one of the straps 39 40 and engage the other clutch members with the other of said straps 39 40. At the same time, the cams 61 61^a being secured to the side bars 49 of the slide, it will be evident that one of said cams will be caused to ride up on one of the dogs 62 62^a, while the other cam will be moved in the opposite direction. In this way the rocking frame will be tilted, so that the position of

the gearing at opposite ends thereof will be reversed and the reel which was before actuated will not be driven and the reel which was not before actuated will be driven, but in such a way as to cause the music-sheet to move in a direction opposite to that in which it moved before.

As shown in Figs. 3 and 4, there are twenty of the pneumatic keys 77 in the instrument, and consequently there will be twenty reeds in the reed-board, one controlled by each key, although a greater or less number of reeds may be used, as will be apparent, and each set or series of ducts in the barrel and of openings in the sliding valve 69 and in the face-plate of the barrel comprises twenty ducts or openings, corresponding to the respective reeds and pneumatic keys. For example, referring to Fig. 4, the pneumatic key e^2 at the left-hand end of the barrel 33^a communicates by way of a duct 75^a, as shown at e in said figure, with the first opening in the row of openings 73 at the left-hand end of the sliding valve 69 and with the corresponding perforation or opening 71 at the left-hand end of the face-plate 33 of the barrel, and said key e^2 also communicates with the lower end of the duct 76^a, extending up, as indicated at e' in Fig. 4, and arranged to communicate with the first opening of the series of openings 74 at the right-hand end of the sliding valve 69 and with the corresponding opening 71^a in the face-plate of the barrel.

The openings in the sliding valve 69 are so arranged that when said valve is slid in one direction, for example, so as to stand in the position shown in Figs. 3 and 7, the set or series of ducts 75 and 75^a at the left-hand end of the barrel will be placed in communication with the openings 71 at the left-hand end of the face-plate 33, while the set or series of openings 76 and 76^a at the right-hand end of the barrel may be cut off from communication with the openings 71^a at the right-hand end of the face-plate, and the pneumatic keys 77, connected to said last-named series of ducts 76 and 76^a, will be prevented from operating, by reason of the supply of air through said ducts being cut off. Consequently only the ducts 75 and 75^a will serve to convey air to said pneumatic keys to operate the reeds. When the sliding valve 69 is moved in the opposite direction, this condition is reversed, and the ducts 76 and 76^a serve to convey air to said keys 77, while the supply of air to the ducts 75 and 75^a is completely cut off.

The strip of paper or music-sheet employed in connection with the instrument constructed as above described is shown in Fig. 8, and consists of a sheet having its opposite sides divided into longitudinal spaces corresponding to the several notes, each side being formed with a number of notes corresponding to the full number of notes in the reed-board of the instrument. As shown in said Fig. 8, the strip 30 is made of a width corresponding

to the length of the face-plate 33 of the barrel and is divided into two halves a a' , one half corresponding to each set or series of openings 71 and 71^a in the said face-plate; and to control the flow of air through the ducts in the barrel and the openings in the face-plate thereof said strip 30 is provided with perforations suitably arranged, as clearly shown. By this arrangement it will be seen that when either one of the perforations in the side a' of the sheet 30 (premising that this side of said sheet is arranged to pass over the left-hand end of the face-plate 33, as seen in Fig. 3) comes to be over the corresponding opening in said face-plate, air will be drawn by the bellows (not shown) through the corresponding duct at the left-hand end of the barrel, thereby causing the pneumatic key to expand and open the corresponding reed 83 in the reed-board, so as to sound the same.

For convenience in repeating the airs or parts thereof contained on the music-sheet 30 I prefer to arrange one part of the air upon one side of said strip, for example, upon the side a , and the remaining portion thereof upon the other side, a' , of the strip. When this arrangement is followed, the crank 4 will be turned so as to wind the strip 30 over the face-plate 33 in one direction, for example, as indicated by the arrow e^3 in Fig. 8, until one-half of the air has been played, whereupon the crank 44 is manipulated so as to shift the driving mechanism of the strip 30, and simultaneously to shift the sliding valve 69, so as to bring the ducts 76 and 76^a at the opposite side of the barrel into operation, whereupon the strip 30 will move in the direction indicated by the arrow e^4 in Fig. 8, and the perforations in the side a' of the said strip will serve to control the flow of air to the said ducts 76 and 76^a, so as to play the remainder of the air. When the end of the tune has been reached, it will be evident that the crank 44 may be manipulated so as to return the parts to their original positions, whereupon the first portion of the air will be again played, and this operation may be continued indefinitely.

By the construction of the device as above described it will be seen that the music-strip is fed evenly and uniformly through the instrument by being engaged between the respective rolls 31 31^a and 32 32^a, and the music-sheet being made in the form of a strip may be of indefinite length, while at the same time any air or portion of an air may be conveniently repeated without changing said strip.

It will also be obvious from the above description that the device is susceptible of considerable modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the exact form of the device herein shown and described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A musical instrument having sounding devices, a barrel having two series of air-ducts one series being at each end of the barrel, keys each connected with two air-ducts of different series and operatively connected to the sounding devices, and a valve controlling the ducts in the barrel, substantially as set forth.

2. In a musical instrument, the combination of a base, sounding devices, a barrel controlling the sounding devices, an operating-shaft, reels adapted to be connected to opposite ends of a music-sheet, belts connecting the reels to the driving-shaft, for alternately driving the reels in opposite directions, and a clutch and belt-tightener adapted for alternate operation and arranged to engage each of the said belts, the belt-tightener of one belt being arranged to tighten that belt when the clutch of the other belt is in operation, substantially as set forth.

3. A musical instrument having sounding devices and provided with a barrel having two series of ducts operatively connected to the sounding devices, one series of ducts being at each end of the barrel, in combination with a valve to control the ducts of the barrel and arranged to place one series of ducts out of operation when the other series is in operation, and a movable music-strip having two series of perforations, one at each side, said music-sheet being arranged to pass over the barrel and having its series of perforations arranged to control the respective series of ducts in the barrel, substantially as set forth.

4. In a musical instrument, the combination of a series of sounding devices, a barrel having two series of ducts arranged respectively at opposite ends of the barrel, each series being adapted to operate the series of sounding devices, and a valve arranged to control the ducts of the barrel, substantially as set forth.

5. In a musical instrument, the combination of a base, sounding devices thereon, a barrel having two series of ducts, each series controlling the sounding devices, a valve controlling the ducts of the barrel, an operating-shaft reels adapted to be connected to opposite ends of a music-sheet, devices for driving the reels alternately in opposite directions from said shaft, and means for alternately throwing said devices into and out of operation and for simultaneously reversing the position of the valve, substantially as set forth.

6. In a musical instrument, the combination of a base, sounding devices thereon, a barrel having two series of ducts each series controlling the sounding devices, a valve controlling the ducts of the barrel, an operating-shaft, reels adapted to be connected to opposite ends of a music-sheet, devices for driving said reels in opposite directions from said shaft, and mechanism for alternately throw-

ing said devices into and out of operation, said mechanism being connected to and arranged to reverse the position of the valve when the movement of the reels is reversed, substantially as set forth.

7. In a musical instrument, the combination of a base, sounding devices thereon, a barrel having two series of ducts, each series controlling the sounding devices, a valve controlling said ducts, an operating-shaft, reels adapted to be connected to opposite ends of the music-sheet, belts connecting the reels to the operating-shaft, and arranged to drive said reels alternately in opposite directions, and mechanism for placing the respective belts alternately out of operation and for simultaneously reversing the position of the valve, substantially as set forth.

8. In a musical instrument, the combination of a base, sounding devices thereon, a barrel having two series of ducts, each series controlling the sounding devices, a valve controlling the ducts, an operating-shaft, reels adapted to be connected to opposite ends of a music-sheet, belts connecting the reels to the operating-shaft and arranged for alternately driving the reels in opposite directions, a clutch and belt-tightener adapted for alternate operation and arranged to engage each of the belts, and means for actuating said clutch and belt-tightener and for simultaneously reversing the position of the valve, substantially as set forth.

9. In a musical instrument, the combination of a base, sounding devices, a barrel having two series of ducts each series controlling the sounding devices, a valve controlling the ducts an operating-shaft, reels adapted to be connected to opposite ends of a music-sheet, belts connecting the reels to the driving-shaft and adapted to alternately drive the reels in opposite directions, a slide-bar, a clutch and belt-tightener comprising devices carried by the slide-bar, said clutch and belt-tightener being adapted for alternate operation and being arranged to engage each of the belts, and means for reversing the position of the valve when the slide-bar is moved, substantially as set forth.

10. In a musical instrument, the combination of a base, sounding devices, a barrel having two series of ducts each series controlling the sounding devices, a valve controlling the ducts an operating-shaft, reels adapted to be connected to opposite ends of a music-sheet, belts connecting the reels to the driving-shaft and adapted to alternately drive the reels in opposite directions, a slide-bar, a clutch and belt-tightener adapted for alternate operation and arranged to engage each belt, the belt-tightener of one belt being arranged to tighten that belt when the clutch of the other belt is in operation, said clutches and belt-tighteners comprising parts carried on the slide-bar, and means for reversing the position of the valve when the slide-bar is moved, substantially as set forth.

11. In a musical instrument, the combination of a base, sounding devices thereon, a barrel having two series of ducts, each series controlling the sounding devices, a valve to
5 control the ducts, reels adapted to be connected to opposite ends of a music-sheet, an operating-shaft, gearing for driving the reels alternately in opposite directions from said shaft, a rocking frame controlling the engage-
10 ment of the gearing, a slide-bar mounted on the base, means for moving the slide, said slide being connected to the valve and adapted to operate the same, and means actuated from the slide for operating the rocking frame, sub-
15 stantially as set forth.

12. In a musical instrument, the combination of a base, sounding devices thereon, a barrel having two series of ducts, each series controlling the sounding devices, a valve con-
20 trolling the ducts, an operating-shaft, a rocking frame, reels adapted to be connected to opposite ends of a music-sheet, gearing for driving said reels in opposite directions from the shaft, said gearing being controlled by
25 the rocking frame, a slide-bar mounted on the base and connected to and arranged to move the valve, means for moving the slide, and wedges carried on the slide and opera-
30 tively connected to the rocking frame, to actuate the same when the slide is moved, substantially as set forth.

13. In a musical instrument, the combination of a base, sounding devices thereon, a barrel having two series of ducts, each series
35 controlling the sounding devices, a valve controlling the ducts of the barrel, an operating-shaft, reels adapted to be connected to opposite ends of a music-sheet, gearing for driving the reels alternately in opposite direc-
40 tions from the shaft, a slide mounted on the base and connected to the valve, to operate the same, and means actuated by the movement of the slide to control said gearing, substan-
tially as set forth.

45 14. In a musical instrument, the combination of a base, sounding devices thereon, a barrel having two series of ducts, each series controlling the sounding devices, a valve con-
trolling the ducts of the barrel, an operating-
50 shaft reels adapted to be connected to opposite ends of a music-sheet, gearing for driving the reels alternately in opposite directions, a slide guided longitudinally on the barrel and connected to and arranged to move
55 the valve, a screw-shaft for operating the slide, and means actuated by the slide for controlling the gearing between the reels and operating-shaft, substantially as set forth.

60 15. In a musical instrument, the combination of a base, sounding devices thereon, a barrel having two series of ducts, each series controlling the sounding devices, a valve con-
trolling the ducts of the barrel, an operating-
65 shaft, reels adapted to be connected to opposite ends of a music-sheet, a rocking frame, gearing controlled by the said frame for driving the reels alternately in opposite direc-

tions from said shaft, a slide having an actuating device and connected to and arranged
70 to operate the valve, spring-actuated devices arranged to hold the rocking frame in its opposite positions, and means actuated by the movement of the valve, for placing one or the other of said spring-actuated devices out of operation, substantially as set forth. 75

16. In a musical instrument, the combination of a base, sounding devices thereon, a barrel having two series of ducts each series controlling the sounding devices, a valve con-
80 trolling the ducts of the barrel, reels adapted to be connected to opposite ends of a music-sheet, a rocking frame, devices for driving the reels alternately in opposite directions from said shaft, said devices being controlled by the rocking frame, a slide having means
85 for actuating it and connected to and arranged to move the valve, spring-actuated devices arranged to hold the rocking frame in its opposite positions, and wedges carried on the valve on the slide and arranged when the
90 same is moved to place one or the other of said spring-actuated devices out of operation, substantially as set forth.

17. In a musical instrument, the combination of a base having sounding devices, a bar-
95 rel having ducts to control the sounding devices and having a removable face-plate, a slide adapted for endwise movement relatively to the barrel, and a valve arranged between the barrel and the face-plate thereof
100 and adapted for endwise movement, said valve having a pivotal connection with the slide and being adapted to be raised when the face-plate is removed, substantially as set forth. 105

18. In a musical instrument, the combination of a base, sounding devices thereon, a barrel having ducts controlling the sounding
110 devices, a face-plate arranged over the barrel, a valve arranged between the barrel and the face-plate and adapted for movement, said valve controlling the flow of air through the ducts of the barrel, and an actuating device for the valve, said device having a pivotal connection with the valve, whereby when the
115 face-plate is removed the valve may be raised, substantially as set forth.

19. In a musical instrument, the combination of a base, sounding devices thereon, a barrel having two series of ducts, each series
120 controlling the sounding devices, a valve to control the ducts of the barrel, reels adapted to be connected to opposite ends of a music-sheet, an operating-shaft, a rocking frame, devices for driving the reels alternately in
125 opposite directions from said shaft, said devices being controlled by the movement of the rocking frame, an actuating device for the valve, and means actuated from said device for moving the rocking frame, substan-
130 tially as set forth.

20. In a musical instrument, the combination of a base, sounding devices thereon, a barrel having two series of ducts, each series

controlling the sounding devices, a valve controlling the ducts of the barrel, an operating-shaft, reels adapted to be connected to opposite ends of a music-sheet, a rocking frame,
5 devices for driving the reels alternately in opposite directions from the shaft, said devices being controlled by the movement of the rocking frame, spring-actuated devices for holding the rocking frame in its opposite

positions, and an actuating device for the valve, arranged when operated to place one or the other of said spring-actuated devices out of operation, substantially as set forth.

FRANCESCO PAOLO CERICOLA.

Witnesses:

J. D. CAPLINGER,
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