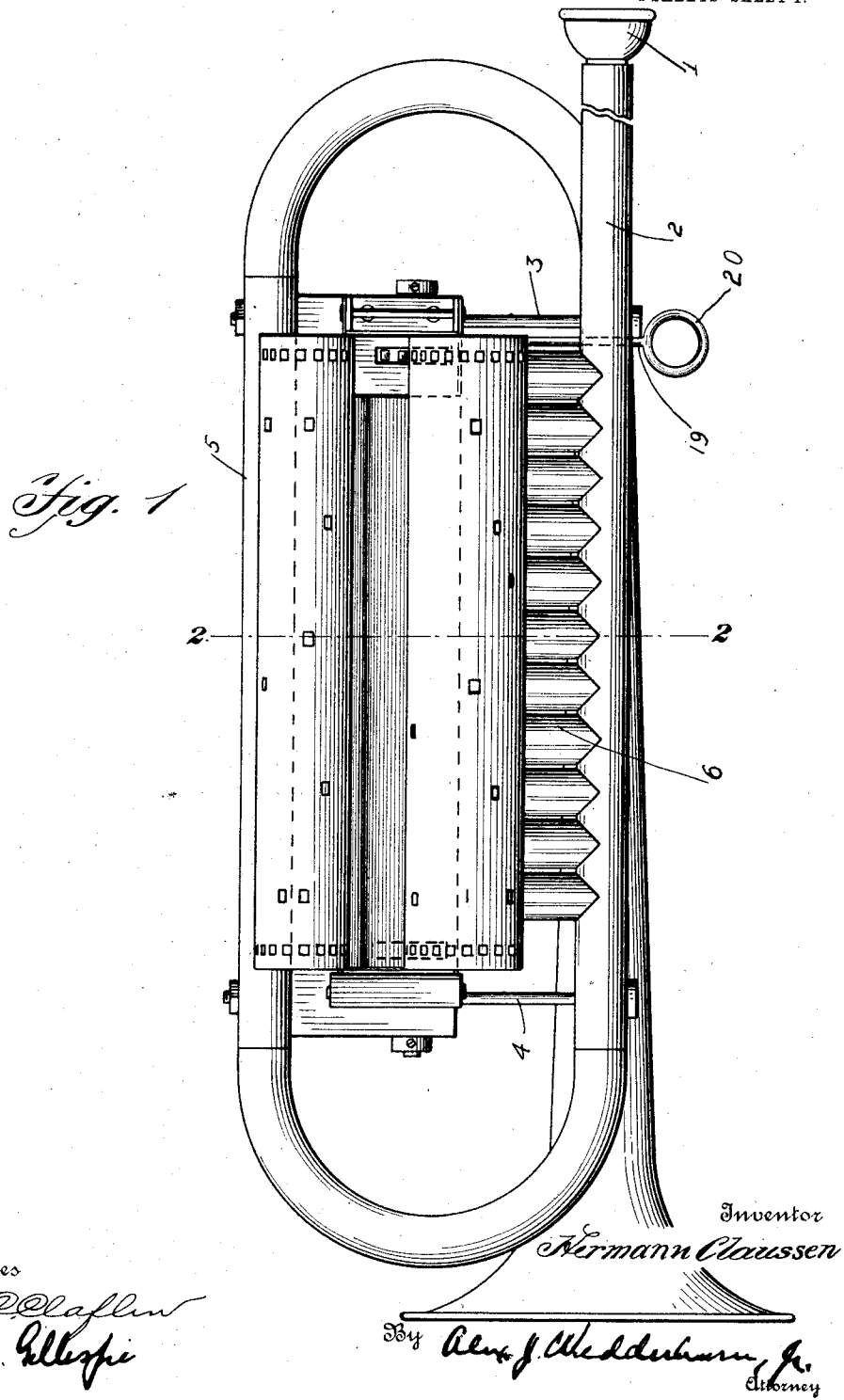


H. CLAUSSEN.
MUSICAL INSTRUMENT.
APPLICATION FILED SEPT. 25, 1909.

1,010,724.

Patented Dec. 5, 1911.
4 SHEETS-SHEET 1.

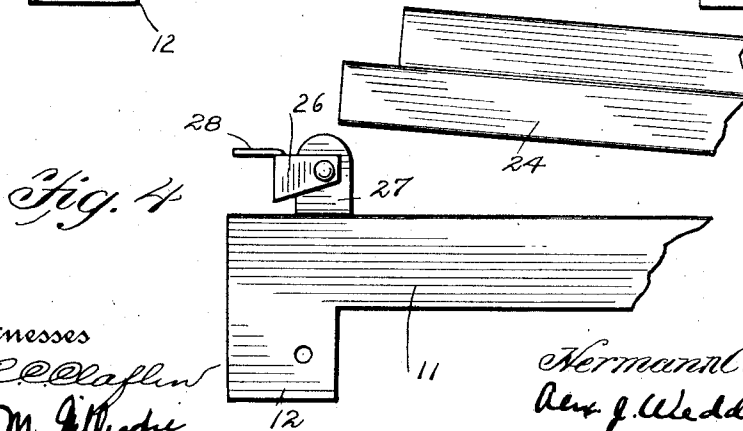
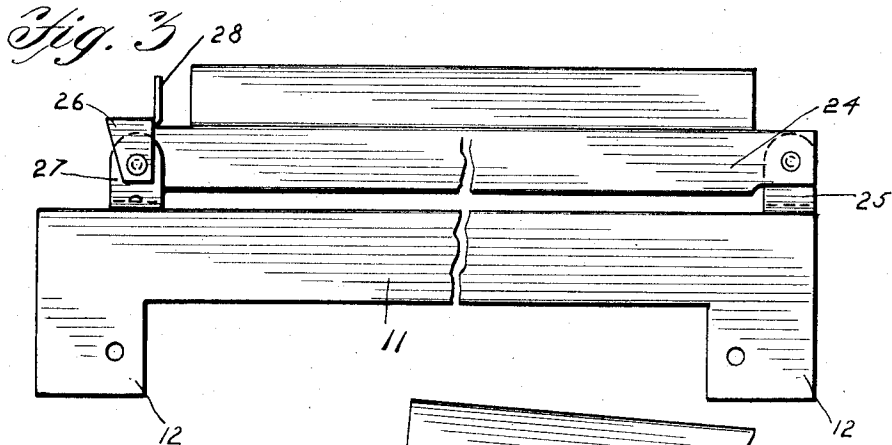
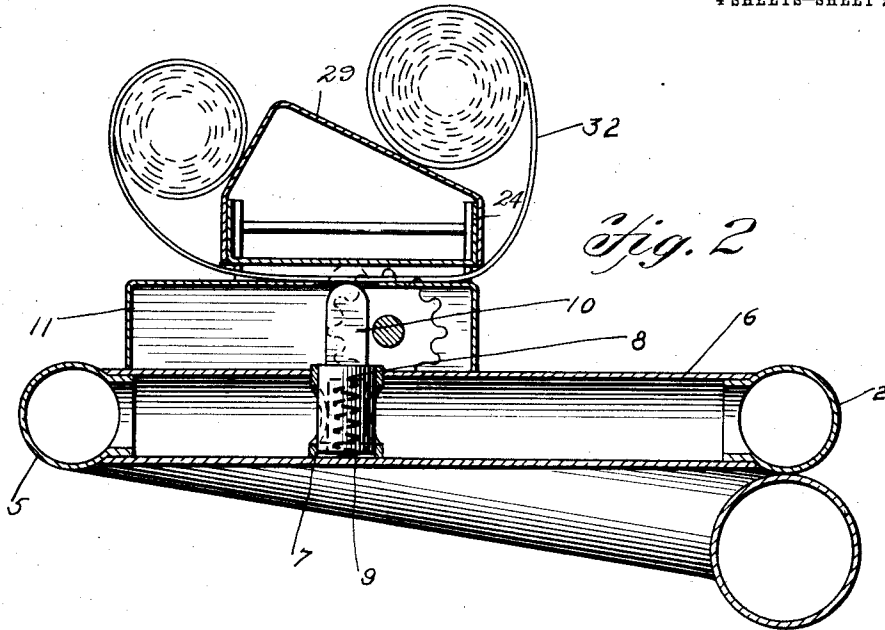


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4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

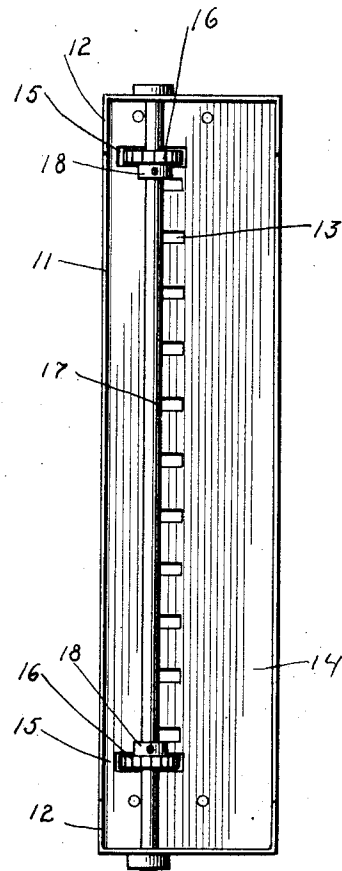
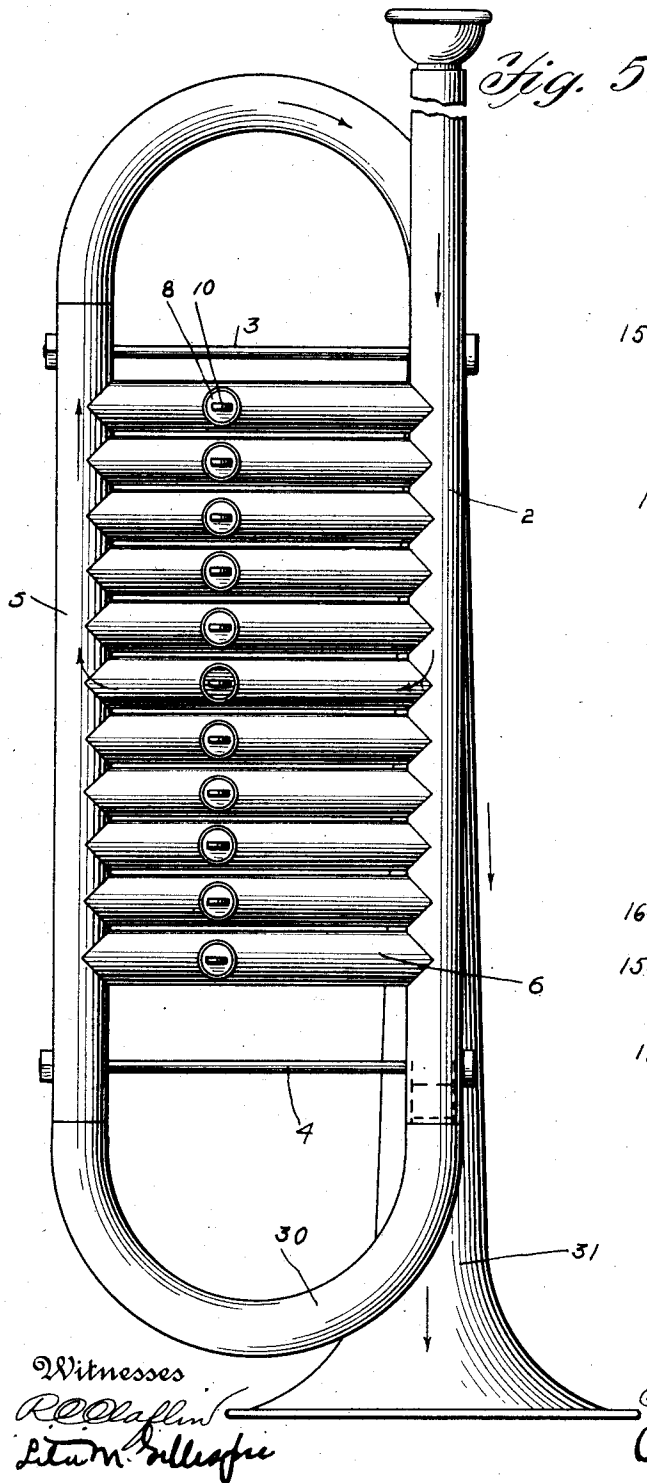


Fig. 6

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4 SHEETS—SHEET 4.

Fig. 10

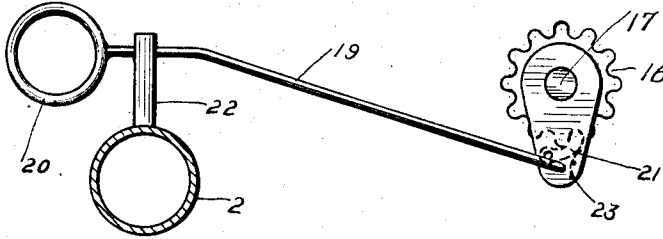


Fig. 7

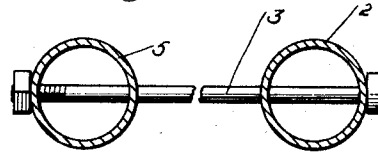


Fig. 11

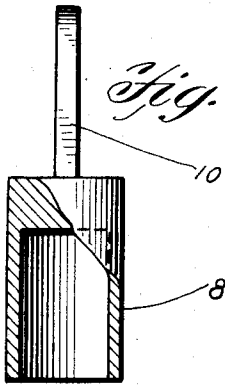


Fig. 8

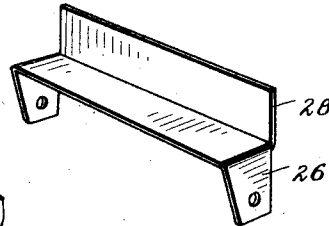
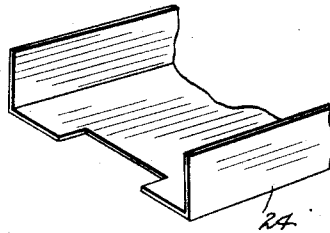


Fig. 9



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UNITED STATES PATENT OFFICE.

HERMANN CLAUSSEN, OF BROOKLYN, NEW YORK.

MUSICAL INSTRUMENT.

1,010,724.

Specification of Letters Patent.

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Application filed September 25, 1909. Serial No. 519,577.

To all whom it may concern:

Be it known that I, HERMANN CLAUSSEN, citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Musical Instruments, of which the following is a specification.

This invention relates to improvements in musical instruments and refers particularly to a mouth instrument having means for automatically operating the note articulating keys.

One of the objects of the invention is the provision of a mouth operated musical instrument having a perforated musical roll and means whereby the roll is caused to operate the keys of the instrument without the player being compelled to act individually on such keys.

Another object of the invention is the provision of mouth or wind operated musical instruments with means for operating the note articulating keys for the production of a predetermined piece of music, which will require little skill to operate.

Another object of the invention is the construction of means adapted to be applied to mouth operated or wind operated musical instruments of different kinds, such as cornets, flutes, reeds, and other instruments, whereby perforated musical rolls can be removably connected with the instruments and caused to operate the key valves thereof for the articulation of notes of a predetermined arrangement.

With the above and other objects in view the invention comprises certain combinations, constructions, and arrangements of parts, clearly illustrated in the accompanying drawings, in which,

Figure 1 is a top plan view of an instrument provided with the improvements, Fig. 2 is a transverse sectional view thereof, taken on line 2—2 of Fig. 1, Fig. 3 is a detail view, on an enlarged scale, of means for removably holding the tracker and roll in position, Fig. 4 is a detail side elevation at one end thereof, Fig. 5 is a plan view of the instrument with the roll and roll operating mechanism removed, Fig. 6 is a detail bottom plan view of the tracker and a part of the roll operating mechanism, Fig. 7 is a detail transverse sectional view of the tubes of the instrument showing the connecting means therefor, Fig. 8 is a detail perspective

view of a locking member for holding the roll presser member in position, Fig. 9 is a detail perspective view of one end of a roll presser member, Fig. 10 is a detail view, partly in section, showing the means for manually imparting motion to the roll, and Fig. 11 is a detail view, partly in section of one of the valve keys.

Referring to the accompanying drawings 1 denotes a mouth piece, which is preferably removably connected to the wind tube 2. This tube is connected by means of tie rods 3 and 4 with the wind tube 5, which is placed substantially parallel with the tube 2. The ends of the tie rods 3 and 4 are passed through openings in the tubes 2 and 5 and are suitably secured thereagainst by means of nuts and heads formed on said tie rods, or by clips embracing said tubes.

The confronting sides of the tubes 2 and 5 are formed with openings, which are suitably spaced apart from each other, and the openings in the tube 2 are placed opposite the openings in the tube 5. These openings are connected by means of transverse valved tubes or pipes 6, eleven tubes or pipes being shown in the drawings, though any number, equal to the number now employed on finger operated wind instruments, or greater than this number may be employed. The transverse pipes or tubes 6 are provided with pockets or valve chambers 7, in which valve keys 8 are operatively arranged. The valve keys 8 are each formed with cylindrical lower ends, which receive spiral springs 9, adapted to hold the keys normally upward of the valve casings or pockets 7. The valve keys are also provided with arms 10, which have rounded upper ends, adapted to contact with the key operating music sheet or roll. The arms or keys 10 of the valves 8 are formed with flat sides and are arranged in parallel relation with each other. When the valves 8 are held in the casings 7 with the bottom of the valves contacting with the bottom of the casings air cannot pass the valves. The valves 8 are released from their closing positions by the music roll or sheet, which is formed with a series of slots or openings, for the reception of the arms 10. When air is forced through the mouth piece and the music sheet or roll is moved over the tracker board the arms or keys in register with the slots or openings of the music sheet or roll will be momentarily released and the

valves will be alternately forced to and from their interrupting positions in the pipes 6, thus producing various tones.

The key or valve operating mechanism 5 embraces means for holding the operating music sheet roll in position over the keys and means for operating the roll, together with the usual tracker and an attachment whereby the music roll will be caused to roll 10 up after its work has been done.

A tracker frame 11 having depending legs 12, adapted to be supported by the tie rods 3 and 4 is positioned between the tubes 2 and 5, over the transverse pipes 6, with the 15 openings 13 of the tracker board 14 placed directly over the keys 10. The board 14 is formed with end openings 15, adapted to receive gear or operating wheels 16, which are mounted on the shaft 17, by means of 20 collars 18, through which set screws extend. The shaft 17 is operated by means of a rod 19, having a finger ring 20 thereon, which rod is provided with a dog or pawl 21, engaging with the teeth of one of the wheels 25 16, and working on an arm fixed on the tube 2. By reciprocating the rod 19 the dog or pawl 21 is brought into engagement with various teeth of the wheels 16, the dog or pawl being engaged by a spring 23, which 30 tends to hold the rod 19 outwardly.

On the tracker board 14 a roll presser member 24 is movably arranged. One end of the presser plate or member 24 is supported pivotally by upstanding ears 25 and 35 the other end is adapted to be removably locked by means of a latch 26, which is pivotally supported by ears 27. The latch 26 is provided with an arm 28, whereby the same can be readily operated. On the presser 40 plate or member 24 a roll guide 29 is arranged. This guide is formed into the substantially arched shaped device and is adapted to allow the two ends of a music sheet or roll of stiff material having a tendency 45 to curl to curl or roll on the sides thereof. When one end is being unwound the other will roll up on the guide, as indicated in Fig. 2.

The tubes 2 and 5 are preferably connected 50 by a removable union 30, of U-shaped outline, and the tube 5 is preferably provided with a discharge horn 31, which is removably connected thereto in the usual manner.

In playing the instrument the mouth piece 55 is used in the ordinary manner and air is forced under pressure into the tube 2. The number of valve keys that are operated depends on the number of slots or openings in the roll 32, which control the action of said 60 keys. The union 30 may be used as desired for

affording passage for the air from the tube 2 to the tube 5, or the ends of the tubes 2 and 5 may be closed so that no air will pass 65 through the union 30. When the union 30 is in place the pressure of the air passing through the pipes 2 and 5 will be varied by the transverse blasts of air created in the pipes 6 by the opening of the key valves 70 through the movement of the music roll over the arms thereof. The transverse air blasts will thereby vary the pitch of the air coming from the horn 31, and consequently the pitch of the notes articulated.

The roll operating mechanism and the 75 note articulating mechanism can be applied to any kind of a mouth instrument, such as a cornet, flute, reed instrument, or any instrument having a series of finger operated keys or valves controlling the articulation 80 of the notes. By means of the improvements an instrument can be made whereby any person can operate the most difficult of musical instruments without any special skill, such as required to operate the ordi- 85 nary instruments.

Having described my invention I claim:—

1. A musical instrument comprising a plurality of wind pipes, pipes transverse to said wind pipes connected to the wind pipes, 90 valves in the transverse pipes controlling the passage of air between the wind pipes, key arms on the valves, a tracker board for the key arms, a perforated music sheet or roll adapted to move over the tracker board, 95 and control the keys and valves, and springs within the valves for pressing the arms against the sheet or roll.

2. A musical instrument comprising a series of wind pipes, a music sheet or roll op- 100 erating mechanism, a series of valves controlling the sounding of the pipes, and an arched guide adapted to allow a music sheet or roll to curl secured in position over the pipes in combination with a perforated 105 music sheet or roll.

3. In a musical instrument, a series of pipes, wind pipes connected thereto, valves in the first pipes, springs in the valves, arms on the valves, a tracker board mounted in a 110 frame, a roll presser movably supported on the frame of the tracker board, a roll having perforations movable over the tracker board, wheels for moving the roll, a pawl and a rod operating said pawl, said pawl having con- 115 nection with one of the wheels.

In testimony whereof I affix my signature, in presence of two witnesses.

HERMANN CLAUSSEN.

Witnesses:

ANDREW G. KING,
GEORGE H. KUGLER.