

G. P. BRAND.
MECHANICAL MUSICAL INSTRUMENT.
APPLICATION FILED JUNE 17, 1909.

990,831.

Patented May 2, 1911.

2 SHEETS—SHEET 1.

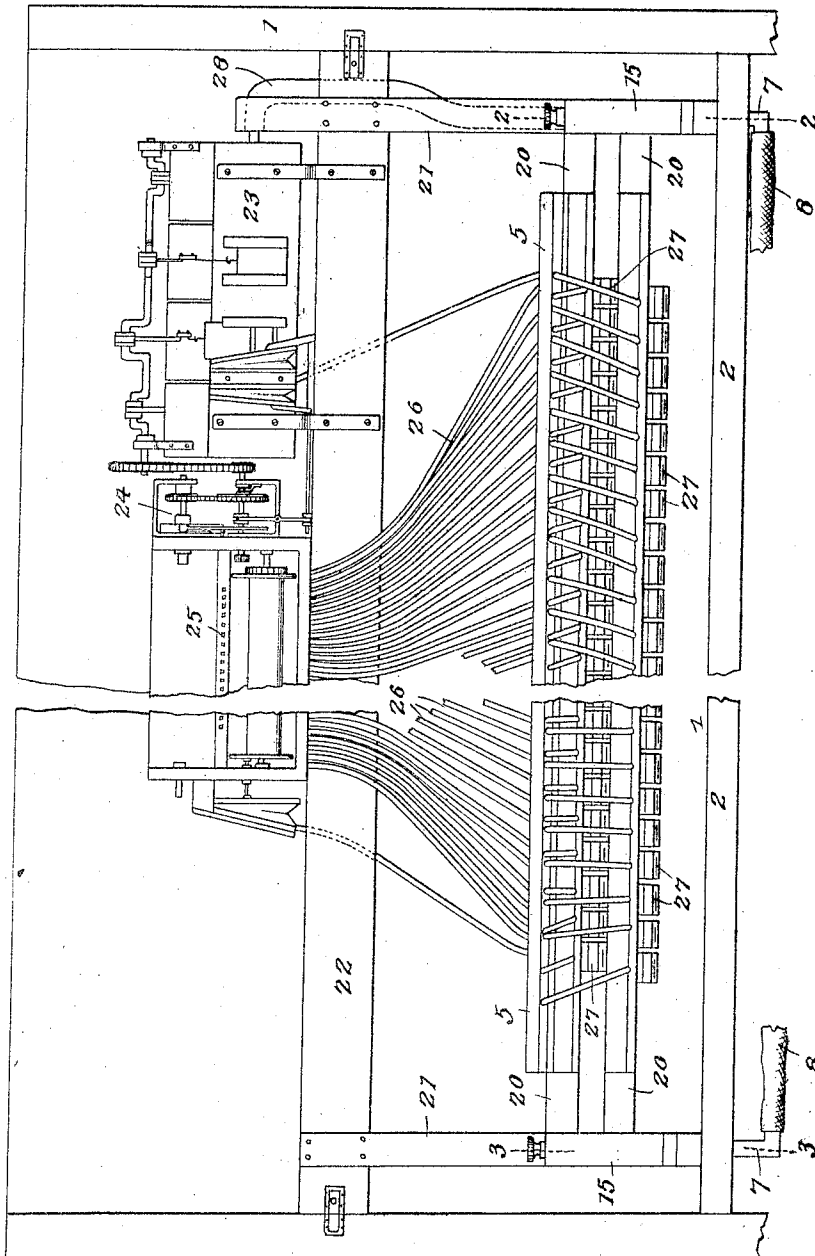


Fig. 1.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

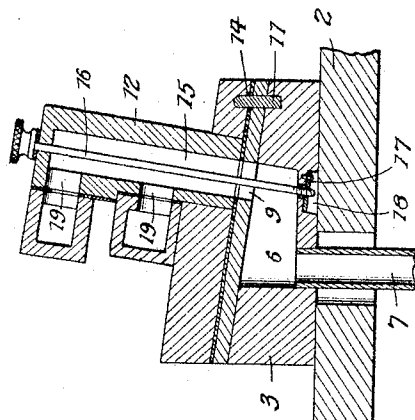


Fig. 5.

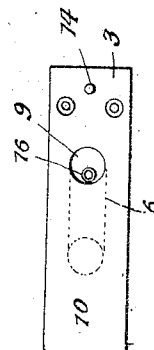


Fig. 2.

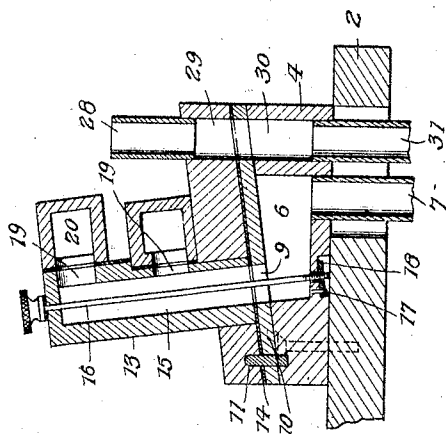
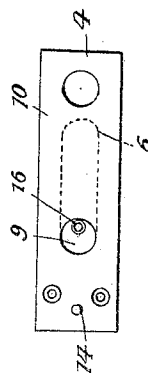


Fig. 4.



WITNESSES

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GEORGE P. BRAND, OF NEW YORK, N. Y.

MECHANICAL MUSICAL INSTRUMENT.

990,831.

Specification of Letters Patent.

Patented May 2, 1911.

Original application filed July 22, 1907, Serial No. 384,881. Divided and this application filed June 17, 1909. Serial No. 502,753.

To all whom it may concern:

Be it known that I, GEORGE P. BRAND, a citizen of the United States of America, and resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Mechanical Musical Instruments, of which the following is a specification.

This invention relates to certain new and useful improvements in auto-pneumatic pianos and it has for its objects among others to provide for more compact arrangement of the parts, to facilitate the removal and replacement thereof and to give access to the interior of the piano.

The invention consists in the particular construction and arrangement of parts hereinafter described and claimed, distinguishing features of which are an upper removable frame upon which are mounted the motor, rewind mechanism, actuating pneumatics and chest work, which latter is formed with coupling blocks adapted to be secured to intermediate port blocks communicating with the tension chest, and exhaust mechanism.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a front elevation of the parts essential to an understanding of my invention, certain parts being broken away substantially centrally and only the necessary portions of the piano frame being shown. Fig. 2 is a vertical section upon the plane of the line 2—2 of Fig. 1, looking toward the left. Fig. 3 is a vertical section upon the plane of line 3—3 of Fig. 1, looking toward the right. Fig. 4 is a view of the upper face of the intermediate port block shown in Fig. 2. Fig. 5 is a view of the upper face of the intermediate port block seen in Fig. 3.

Like numerals of reference indicate like parts throughout the several views.

Referring to the drawings, 1, 1 represent the usual side or end members of an upright piano, and 2 the key bed thereof. Rigidly attached to said key bed 2, near the opposite extremities thereof, are the intermediate port blocks 3 and 4, shown in section in Figs. 2 and 3. These intermediate port blocks 3 and 4 form an integral and permanent part of the piano frame, and are the means by and through which communication is established between the valve chest works 5 above, and the tension chest or exhaust mechanism (not shown) below, thus each intermediate port block 3 and 4 is formed with a chamber 6 in the body thereof which communicates through the conduit 7 and the flexible tube 8 with a tension chamber of the tension chest, which is not necessary to show or describe herein.

A port 9 is formed in the face plate 10 of each intermediate port block 3 and 4, and a dowel pin 11 projects upward from said face plate for the purpose of centralizing the valve chest blocks 12 and 13 upon and with relation to the intermediate port blocks 3 and 4, said dowel pins fitting in holes 14 formed for their reception in the under side of said valve chest blocks, as seen clearly in Figs. 2 and 3. Thus, the passages 15 in said valve chest blocks are made to register accurately with the ports 9 in the intermediate port blocks 3 and 4. The valve chest blocks are secured to the intermediate port blocks by thumb screws 16 which engage with nuts 17 countersunk in suitable openings 18 in the port blocks and preferably secured thereto in any suitable manner, as seen clearly in Figs. 2 and 3.

The passages 15 in the valve chest blocks communicate through ports 19 with the valve chests 20 attached to and extending between said valve chest blocks, as will be seen upon reference to Figs. 5 and 7, thus, also, rigidly connecting said valve chest blocks together. Uprights 21 are attached rigidly to the rear sides of the valve chests 20 and support a cross bar 22, as seen clearly in Fig. 1, which is, in turn, rigidly secured

to said uprights. The valve chest blocks, the valve chests and said cross bar 22 thus constitute practically the integral detachable upper frame which may be quickly and conveniently attached to or detached from the intermediate port blocks by means of the thumb screws 16. Mounted upon the said cross bar 22 is the motor 23, the rewind mechanism 24, the tracker-bar 25 and the mechanism for controlling the music sheet, which mechanism may be of any well-known or approved form of construction. In any event, the tracker-bar communicates through the usual tubing 26 with the primary valves which control the secondary valves by which the playing pneumatics 27 are actuated in a well-known way.

The motor is connected by tubing 28 with a port 29 in the valve chest block 13, which port 29 coincides with the port 30 in the intermediate port block 4, as shown clearly in Fig. 2, the latter port communicating through suitable tubing 31 with the ordinary governor interposed between the motor and the high tension chamber of the tension chest in the usual manner.

The lower portion of the mechanism may be of any suitable form, a satisfactory form being shown in my application Serial No. 384,881, filed July 22, 1907, from which the subject-matter of this application is divided out.

It will be seen that by a simple manipulation of the thumb screws 16, the upper frame, with all of its connections, may be removed or replaced without disturbing or connecting or disconnecting tubing or parts other than the valve chest blocks with relation to the intermediate port blocks. Thus, the upper frame, as a whole, with its connections, may be quickly and easily removed or replaced whenever desired to give access to the interior of the piano, and this may be accomplished without the uncoupling of pipes or tubing.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed as new is:—

1. In a piano of the character designated, the combination with a frame, actuating pneumatics, chest work and connections including the tracker bar, rewind mechanism and motor all mounted thereon and removable as a whole, of valve chest blocks rigidly attached to and communicating with the chest work, intermediate port blocks secured on the piano frame and connected with the tension chest, means for centralizing said valve chest blocks on the intermediate port blocks, and means independent of said centralizing means and removably inserted

through passages in the valve chest blocks for securing the valve chest blocks to the intermediate port blocks.

2. In a piano of the character designated, the combination with a frame, actuating pneumatics, chest work and connections including the tracker bar, rewind mechanism and motor all mounted thereon and removable as a whole, of valve chest blocks rigidly attached to and communicating with the chest work, intermediate port blocks secured on the piano frame connected with the tension chest, means for centralizing said valve chest blocks on the intermediate port blocks, and means independent of said centralizing means for securing the valve chest blocks to the intermediate port blocks, said securing means being passed through the valve chest blocks and the intermediate port blocks and means permanently held in said intermediate port blocks for engaging said securing means.

3. In a piano of the character designated, the combination with a frame, actuating pneumatics, chest work and connections including the tracker bar, rewind mechanism and motor all mounted thereon and removable as a whole, of valve chest blocks rigidly attached to and communicating with the chest work, intermediate port blocks secured on the piano frame connected with the tension chest, means for centralizing said valve chest blocks on the intermediate port blocks, means independent of said centralizing means for securing the valve chest blocks to the intermediate port blocks, said securing means being passed through the valve chest blocks and the intermediate port blocks, and means permanently held within a depression in the intermediate port blocks and secured against upward movement for detachable engagement with said securing means.

4. In a piano of the character designated, an intermediate port block, a valve chest block, means for centralizing the valve chest block upon the port block, a valve chest supported by and in communication with the interior of the valve chest block, and means for detachably connecting the valve chest block with the intermediate port block and for securing an air-tight joint therebetween, said means cooperating with the centralizing means.

5. In a piano of the character designated, the combination with a piano frame, a motor and a governor, of a port block forming a permanent part of the piano frame at each side of the frame and each provided with a port, and valve chest blocks having passages coincident with said ports, a valve chest attached to and extending between the valve chest blocks and communicating with said ports, face plates on said intermediate port

blocks having ports coincident with the ports in the intermediate port blocks for connection with said motor and with said governor, means for centralizing the valve chest blocks on the intermediate port blocks, and means passed through the passages of the valve chest blocks and the coincident ports of the intermediate port blocks and de-

tachably engaged with means within the intermediate port blocks.

Signed by me at Washington, D. C., this 17th day of June 1909.

GEORGE P. BRAND.

Witnesses:

E. H. BOND,

CHAS. E. RICHMOND.