

L. H. MAIER.
 AUTOMATIC MUSICAL INSTRUMENT.
 APPLICATION FILED JUNE 4, 1910.

992,018.

Patented May 9, 1911.

Fig. 2.

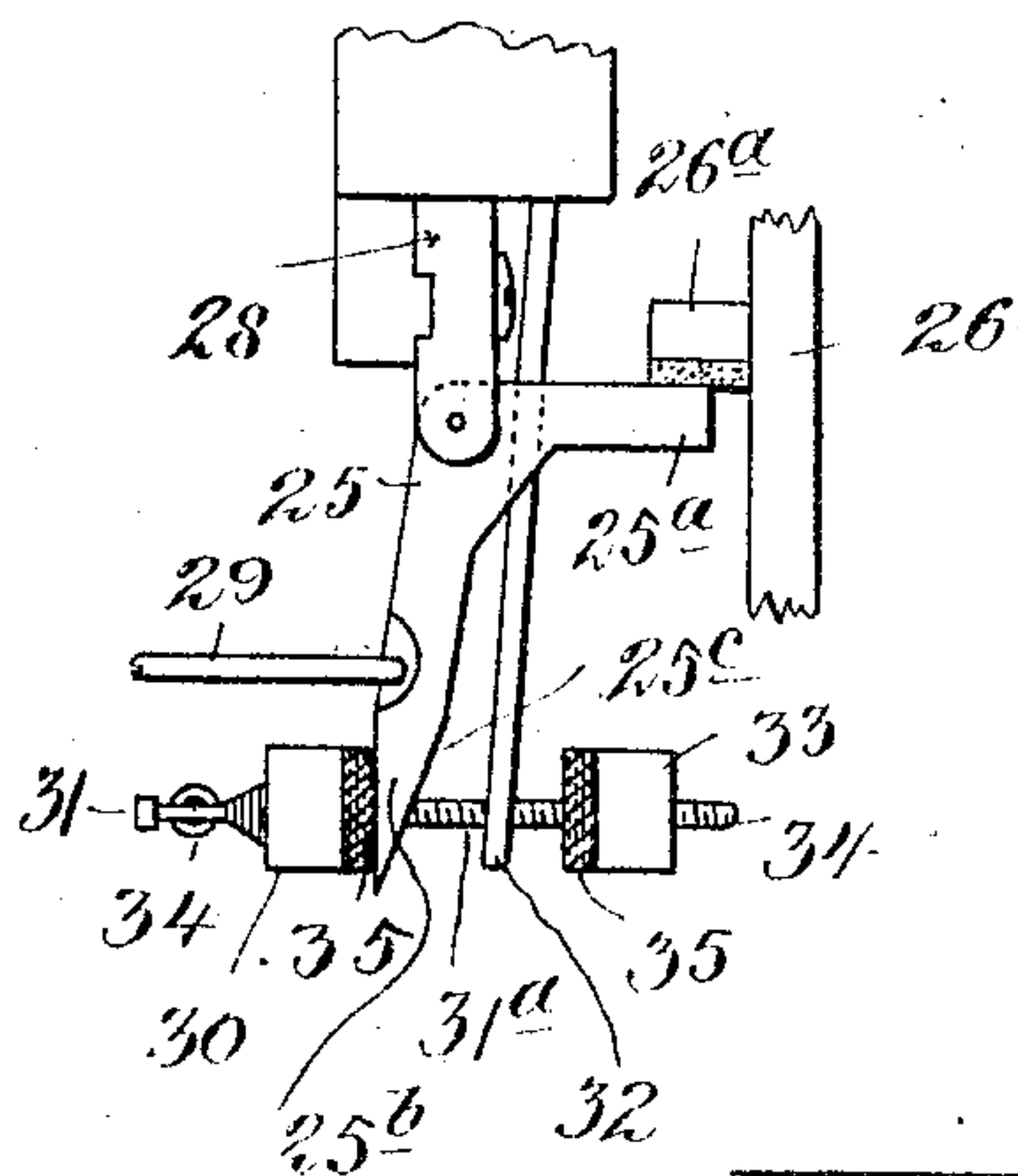


Fig. 3.

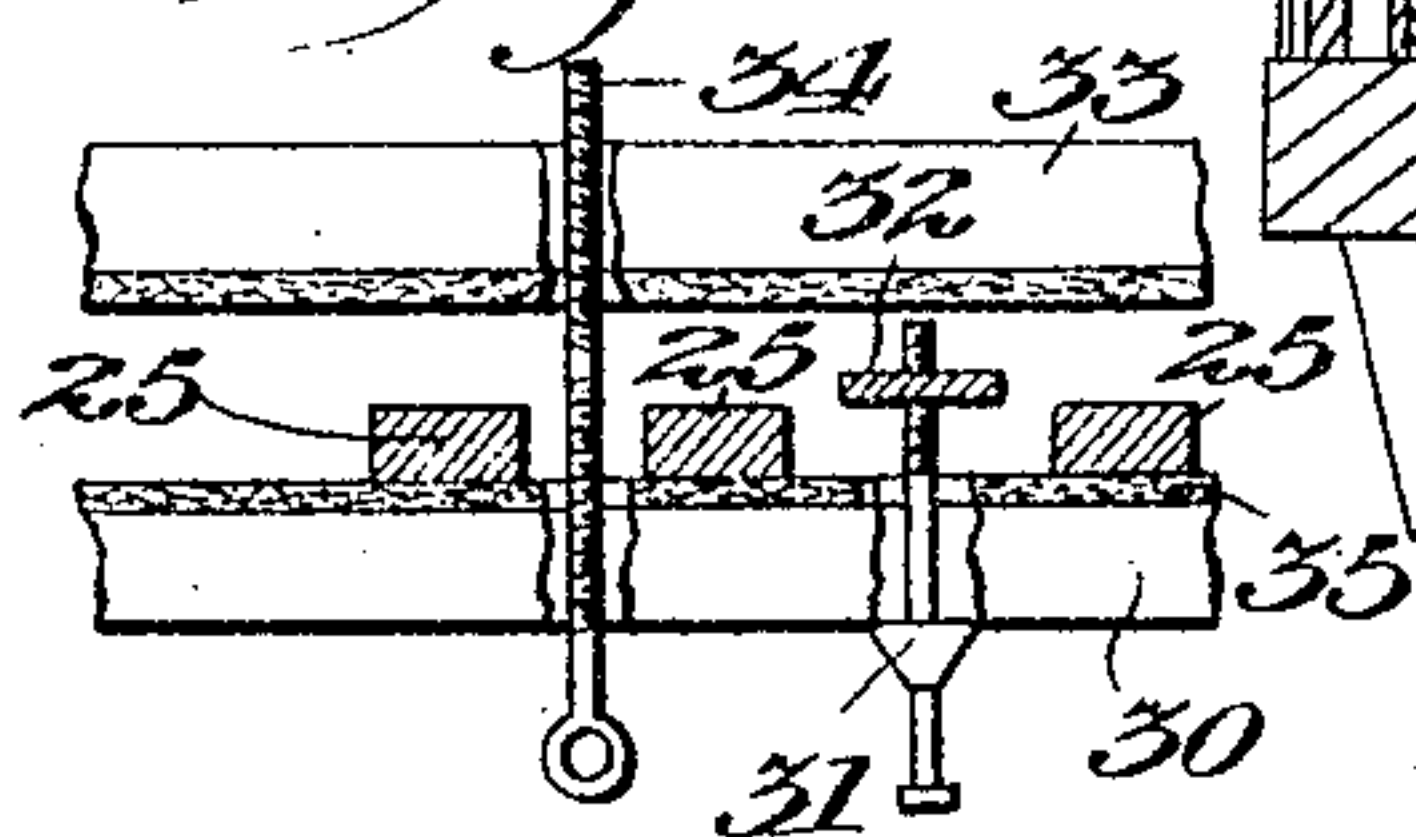
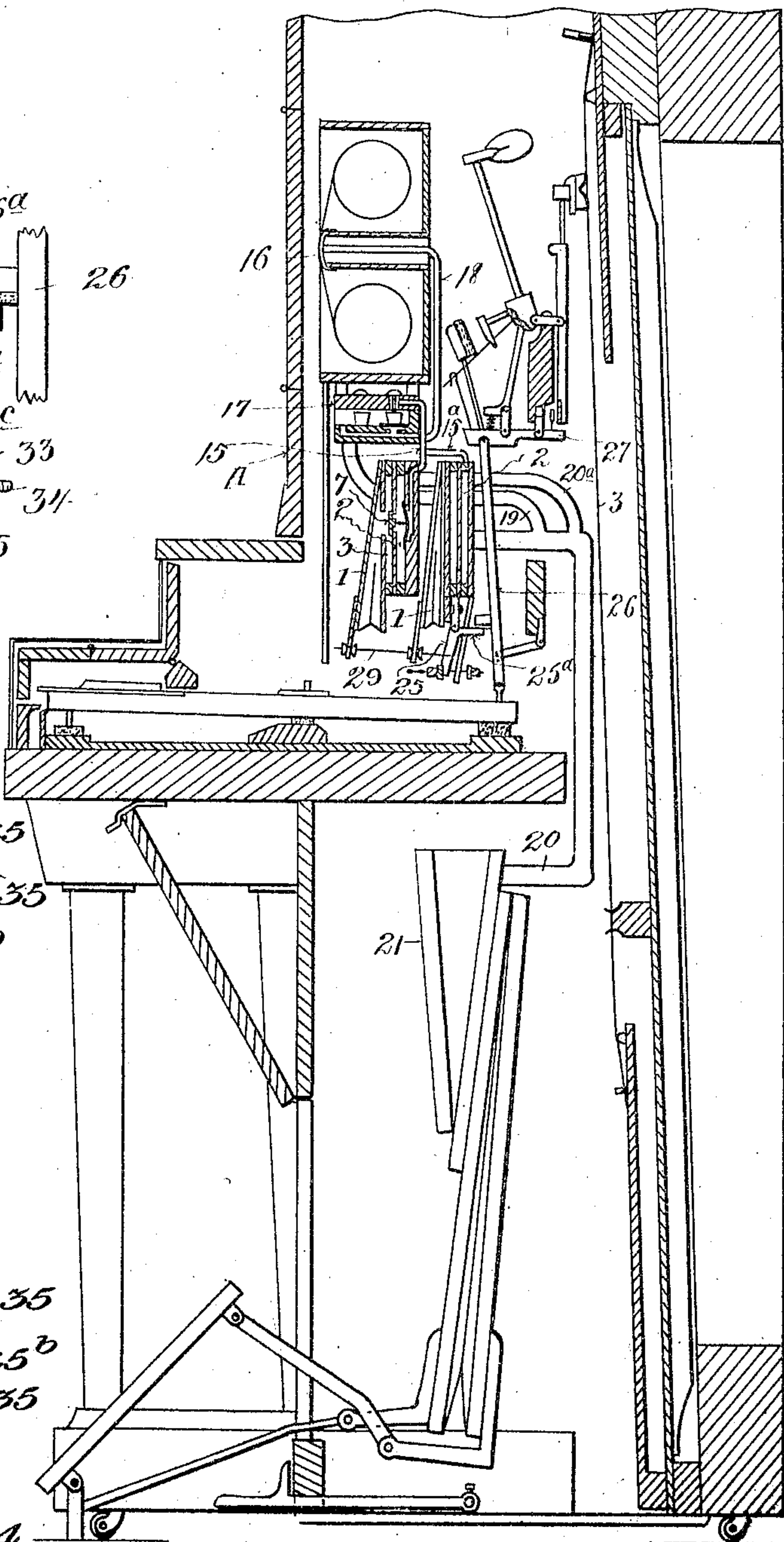
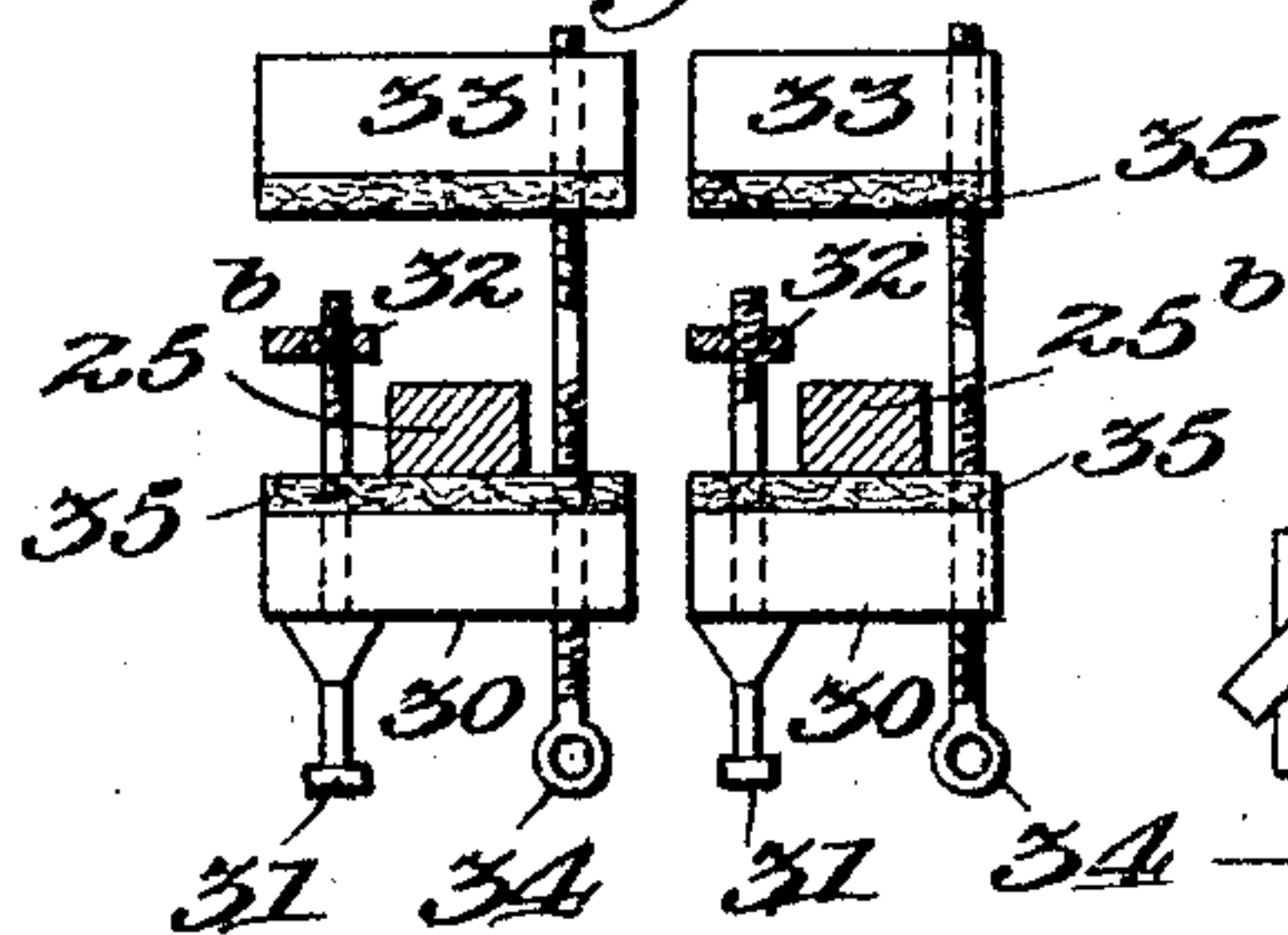


Fig. 1.

Fig. 4.



Witnesses:
 C. W. Benjamin
 Mary J. Wright

Inventor
 L. H. Maier
 By J. F. Bourne Attorney

UNITED STATES PATENT OFFICE.

LOUIS H. MAIER, OF NEW YORK, N. Y.

AUTOMATIC MUSICAL INSTRUMENT.

992,018.

Specification of Letters Patent.

Patented May 9, 1911.

Original application filed November 22, 1909, Serial No. 529,254. Divided and this application filed June 4, 1910. Serial No. 564,910.

To all whom it may concern:

Be it known that I, LOUIS H. MAIER, a citizen of the United States, and resident of New York city, borough of the Bronx, in the county of New York and State of New York, have invented certain new and useful Improvements in Automatic Musical Instruments, of which the following is a specification.

10 This application is a division of my application filed November 22, 1909, Serial No. 529,254 for automatic musical instruments, and the object of this invention is to provide an improved arrangement of player mechanism with respect to the action of the musical instruments.

My invention comprises novel details of improvement and combinations of parts that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming part hereof, wherein,

Figure 1 is a vertical section of a player piano embodying my improvements, Fig. 2 is an enlarged detail view partly in section illustrating the action operating levers; Fig. 3 is a partly broken detail plan view, and Fig. 4 is a detail plan view illustrating individual stops.

30 At A is indicated a piano provided with pneumatics 1 and chests 2 which may be constructed as set forth in my said application Serial No. 529,254, or in any suitable or well known manner. The pneumatics and their corresponding chests 2 are secured within the piano frame in front of the strings 3 and the abstracts 26 of the action, the chests being supported in any suitable manner, the relative positions of the pneumatics of each bank or tier of pneumatics being such that pneumatics of one bank align substantially with the spaces between the pneumatics of the adjacent bank, and the pneumatics are shown supported so that their movable boards hang downwardly. It will be understood that by making pneumatics sufficiently narrow and long and staggering the valves 7 and their seats with respect to the chest all the pneumatics may be placed upon one chest. At 25 is a lever for each pneumatic, the end 25^a of which is adapted to act upon a projection 26^a from the abstract 26 of the corresponding whippen 27 to lift the abstract and operate the corresponding jack and hammer when the

pneumatic is collapsed. The levers 25 are pivoted upon suitable hangers or flanges 28 supported in any desired manner. The movable board of each pneumatic is connected with the corresponding lever 25 by a rod 29.

I have shown means for independently regulating the relation of lever 25 to the projection 26^a of the corresponding abstract, and for limiting the stroke of the lever 25 by the pneumatic. For this purpose the lower end 25^b of lever 25 is adapted to bear against an individual stop or rail 30, the lever being maintained against stop 30 by the weight of abstract 26 or the expansion of pneumatic 1, or by both of them, the normal inactive position of the parts being shown in Fig. 2. Stop or rail 30 is provided with a screw 31 adapted to turn freely in said stop and provided with threads 31^a meshing in threads in a hanger 32 suitably supported, whereby when said screw is turned stop 30 will be moved to the right or left in Fig. 2 to adjust lever 25 with respect to projection 26^a. To limit the thrust of lever 25 by pneumatic 1, I provide a stud or rail 33 provided with a screw 34 which has right and left threads, one thread meshing in threads in stop 33 and the other thread meshing in threads in stop 30, whereby the distance between stops 30 and 33 may be regulated with respect to lever 25. The lower end of lever 25 is shown beveled downwardly at 25^b and 25^c so as to contact with stops 30 and 33 substantially flatwise in different positions of said stops. Felt or the like 35 may be provided upon stops 30 and 33 to be engaged by lever 25. Stops 30 and 33 may be arranged individually for each lever 25 (see Fig. 4), or may be of sufficient length to apply to any desired number of levers 25 simultaneously, as, for instance, the stops 30 and 33 may be rails to extend the length of the piano and provided with several screws 31 and 34 whereby the rails may be adjusted and bent as required by means of the rotation as required of the screws, see Fig. 3.

By means of my improvements stop 30 may be adjusted by screw 31 without thereby changing the relation of stops 30 and 33 to each other, as screw 31 does not engage stop 33, whereby the operative position of lever 25 with respect to projection 26^a may be made for each such lever and projection,

so as to take up any lost motion between any such lever and projection. By operating screw 34 which connects both stops 30 and 33, the stops 33 may be adjusted toward or from stop 30, to regulate the thrust of lever 25.

The arrangement is advantageous in that adjustment may be made for any lever 25 without removing any of the parts from the piano, and during such adjustment both stops 30 and 33 will move equally, and thereby maintain their previous relative positions by reason of said stops being connected together by screw 34 independent of screw 31 which meshes in hanger 32, thereby not disturbing the previous arrangement of the stops for the throw of lever 25, and yet when such adjustment for lever 25 is desired it is regulated by the independent operation of screw 34 for any lever to adjust stops 30 and 33 toward or from each other.

Having now described my invention what I claim is:—

1. The combination of a piano action, a plurality of pneumatics, a plurality of levers corresponding to the pneumatics, means to operate the corresponding mechanism of the action by the levers, means to operate the levers by the corresponding pneumatics, stops on opposite sides of the levers and means for independently adjusting said stops with respect to each other, and means to adjust opposed stops conjointly with respect to the corresponding lever.

2. The combination of a piano action, a plurality of pneumatics, a plurality of levers corresponding to the pneumatics, means to operate the corresponding mechanism of the action by the levers, means to operate the levers by the corresponding pneumatics, stops on opposite sides of the levers, means to adjust a stop with respect to a corre-

sponding lever, and means connecting an opposite stop with the first named stop for adjusting said stops with respect to each other.

3. The combination of a piano action, a lever, means to operate the corresponding mechanism of the action by the lever, stops on opposite sides of the lever, and means for independently adjusting said stops with respect to each other and means to adjust said stops conjointly with respect to said lever.

4. The combination of a piano action, a lever, means to operate the corresponding mechanism of the action by the lever, stops on opposite sides of the lever, means to adjust one of the stops toward or from the lever, and means connecting the other stop with the first named stop for adjusting said stops with respect to each other.

5. The combination of a piano action, a lever, means to operate the corresponding mechanism of the action by the lever, a stop adjacent the lever, a hanger, a screw connecting the stop with the hanger, a second stop on the opposite side of the lever, and a screw connecting said stop with the first named stop.

6. The combination of a piano action, a lever, means to operate the corresponding mechanism of the action by the lever, stops on opposite sides of the lever, adjustable means connecting said stops for adjusting one with respect to the other, and means for adjusting both of said stops simultaneously.

Signed at New York city, in the county of New York, and State of New York, this 26th day of May, A. D. 1910.

LOUIS H. MAIER.

Witnesses:

WILLIAM A. W. GRIER,
T. F. BOURNE.