

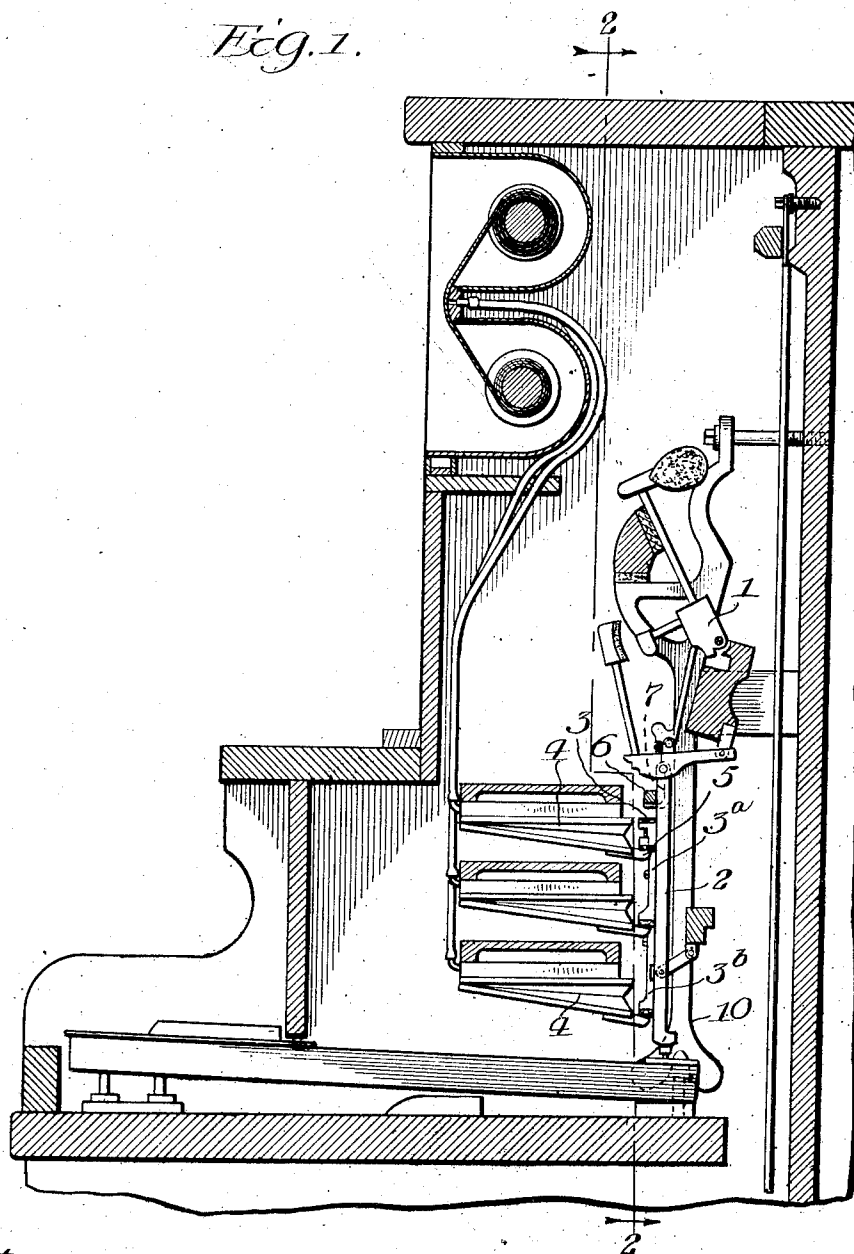
A. P. GUSTAFSON.
MECHANICAL MUSICAL INSTRUMENT.
APPLICATION FILED DEC. 11, 1911.

1,047,797.

Patented Dec. 17, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

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A. Lyda Jones

Inventor:
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2 SHEETS-SHEET 2.

Fig. 2.

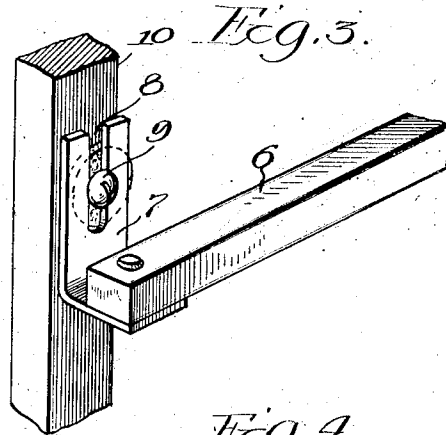
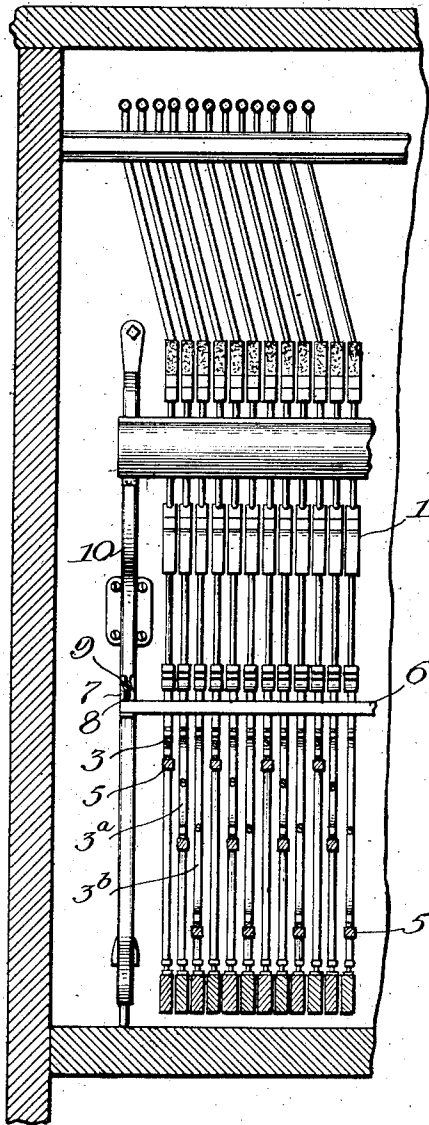
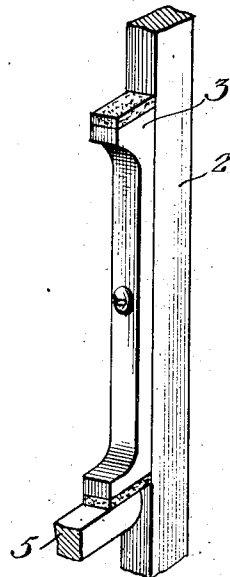


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

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MECHANICAL MUSICAL INSTRUMENT.

1,047,797.

Specification of Letters Patent.

Patented Dec. 17, 1912.

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To all whom it may concern:

Be it known that I, ADOLPH P. GUSTAFSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Mechanical Musical Instruments, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to piano actions, and more particularly to actions for automatic piano players.

Prominent objects of my invention are to provide a simple, practical and effective instrument of the class specified, to arrange to produce substantially uniform blows on the part of the various striking mechanisms of the instrument, and to provide simple and effective mechanism for accomplishing that purpose; and to obtain the foregoing and other desirable and useful results in a simple and expeditious manner.

In the arrangement hereinafter set forth for carrying out my invention, I employ an adjustable bar or member, and means by which it limits or equalizes the extent of movement on the part of the pneumatic actuating mechanism.

I will explain my invention more in detail by reference to the accompanying drawings, in which—

Figure 1 is an end section, showing a piano action and my invention applied thereto; Fig. 2 is a section on line 2—2 of Fig. 1; Fig. 3 is a detail perspective of the adjustable bar showing it held in place, and Fig. 4 is a perspective of one of the abutment blocks, attached to the sticker.

Referring more particularly to the drawings, I show the usual piano action 1, having the usual stickers or sticker fingers 2—2, upon which I mount blocks 3—3^a—3^b, which serve as stops to limit the upward movement of the sticker 2. These blocks 3—3^a—3^b are of different length to accommodate the setting of the pneumatics 4 in rows, and they have their uppermost faces in alinement with each other, but have their lowermost faces offset or staggered so as to compensate for the offset or staggered position of the pneumatics 4 which engage said blocks 3—3^a—3^b through the medium of the fingers 5.

I further provide a longitudinally extending bar 6 which is positioned above the blocks 3—3^a—3^b, and in close proximity thereto, to serve as a means for arresting the throw of the sticker fingers 2 by virtue of the blocks 3—3^a—3^b coming in contact therewith when actuated by the pneumatics 4. This bar 6 extends across the width of the piano, so that it serves as a stop for all of the action. The bar 6 has the further provision of means whereby it can be bodily raised or lowered, which conveniently consists of arms or clips 7 provided with slots 8 through which the screw 9 passes into the standards 10 of the piano action. It will thus be seen that by loosening the screws 9 the bar can be either raised or lowered according to the adjustment required.

It will be evident that after the blocks 3—3^a—3^b and the bar 6 have been positioned properly, to give the piano hammers the desired extent of throw, they will always have such a throw, and will not be changed by various factors, as for instance, the dropping of some of the pneumatic levers lower than others and so on.

It will further be evident that this will, in no way affect the accentuation of a note or series of notes in accordance with the well known practice. Thus it will be obvious that a single instrumentality, such as the longitudinally extending bar, by acting as a stop or means for limiting the throw of a plurality or all of the actions, makes an exceedingly simple construction, rendering unnecessary a large number of devices to accomplish this result, only one or a few being necessary for each action.

While I have herein shown and described one embodiment of my invention, it will be obvious that modifications can be resorted to without departing from the spirit of my invention.

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

1. The combination of a plurality of piano action units having stickers, a block attached to each of said stickers and running lengthwise thereof, said blocks having abutments at each end, striking pneumatics for operating said stickers arranged in a plurality of tiers, said pneumatics having means for contacting with the abutments at the lower end of said blocks, and a horizontal bar mounted alongside of said stickers

and above the upper ends of said blocks to limit the throw of said stickers, said blocks being mounted with their upper ends at equal distances from said bar and extending downwardly for such distances as are required by the positions of the striking pneumatics.

2. The combination of a piano action unit having its sticker 2 provided with a block 3, extending lengthwise of said sticker, having its upper and lower ends forming abutments and pneumatic means for actuating said piano action unit.

3. The combination of a series of piano action units having their stickers 2 provided with blocks 3, extending lengthwise of said stickers and having their upper and lower ends forming abutments, said blocks being of different lengths, and pneumatic means for actuating said piano action units.

4. The combination with the piano action units of a horizontally disposed bar 6, means for securing said bar in adjusted fixed position, blocks 3—3 of different length, on the stickers of said piano action units, the upper ends of said blocks 3 being in alinement and adapted to engage said bar and their lower ends being adapted to serve as abutments, and striking pneumatics arranged in rows one above the other and having their swinging members adapted to engage the lower ends of said blocks 3.

5. The combination with the piano action units and with the striking pneumatics 4 of blocks 3—3 mounted on the stickers of the piano action units adapted to engage said pneumatics and a bar 6 to engage said blocks.

6. The combination with reciprocating members provided with blocks 3, and a bar 6 extended across said members and adapted to engage said blocks 3, the bar 6 being above the blocks 3 and engaging their upper ends, and pneumatics having their swinging members provided with means for engaging the lower ends of the blocks 3.

7. The combination with a series of striking pneumatics arranged in rows one above the other, of a series of reciprocating striking members adapted to be actuated by said pneumatics, blocks 3 carried by said reciprocating members and having their lower ends adapted to engage said striking pneumatics, said blocks being of different lengths to accommodate the different rows of pneumatics, a horizontally disposed bar 6 extended across said reciprocating members and adapted to engage the upper ends of said blocks 3, and means for securing said bar in adjusted fixed position.

8. The combination with a series of stickers in a piano action, of blocks attached to said stickers having abutments at each end, an adjustable bar normally fixed in position mounted above the abutments at one end of said blocks, and pneumatically operating devices adapted to contact with the abutments at the other end of said blocks to actuate said stickers.

In witness whereof, I hereunto subscribe my name this 2nd day of December, A. D. 1911.

ADOLPH P. GUSTAFSON.

Witnesses:

A. LYDA JONES,
A. S. DENNISON.