W. R. WEAVER.

COMBINED ORGAN AND PIANO.

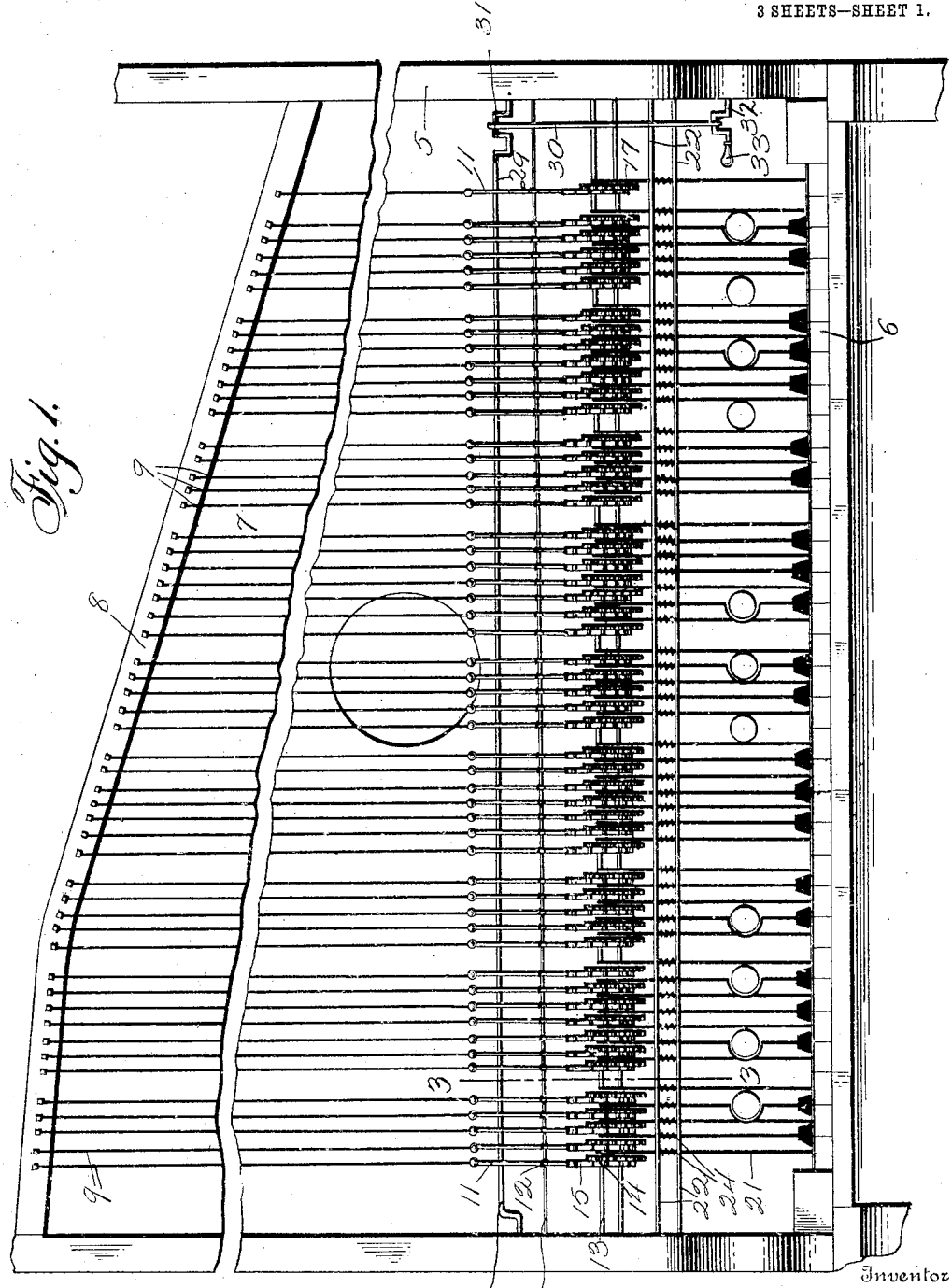
APPLICATION FILED OCT. 26, 1908.

954,659.

Patented Apr. 12, 1910.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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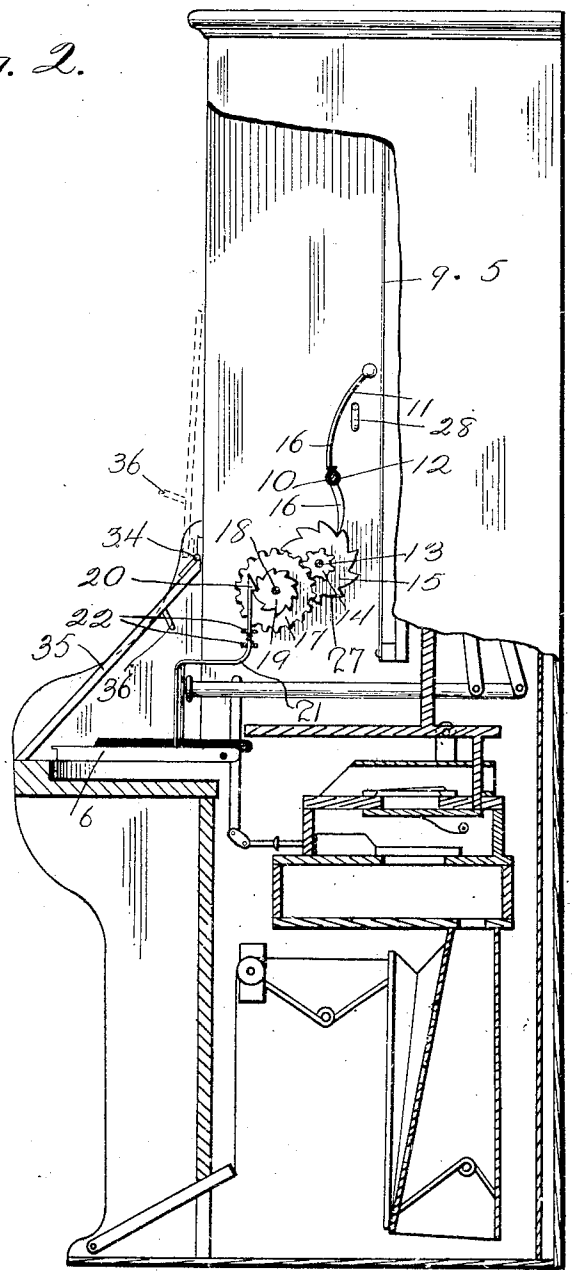
3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

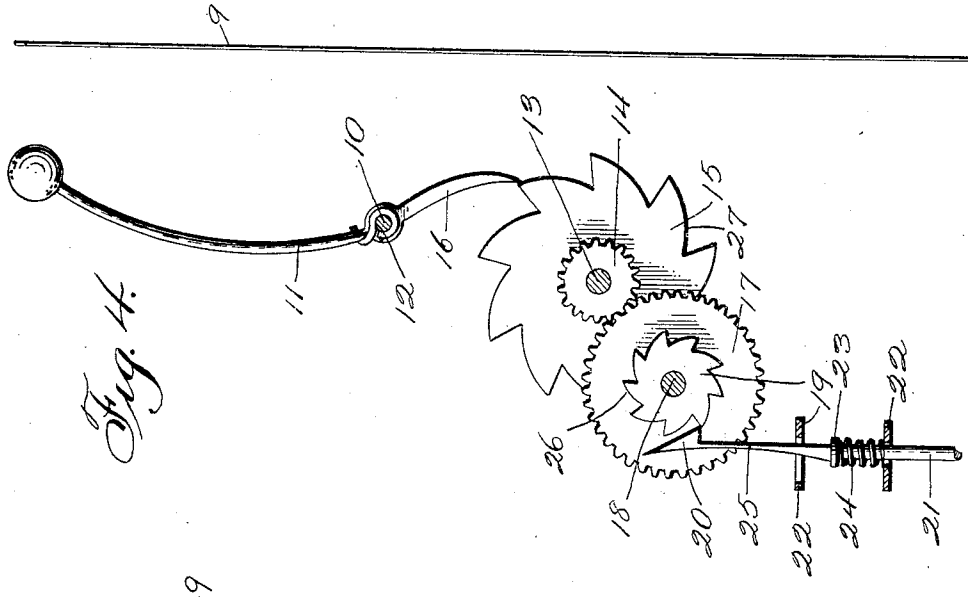

Fig. 4.

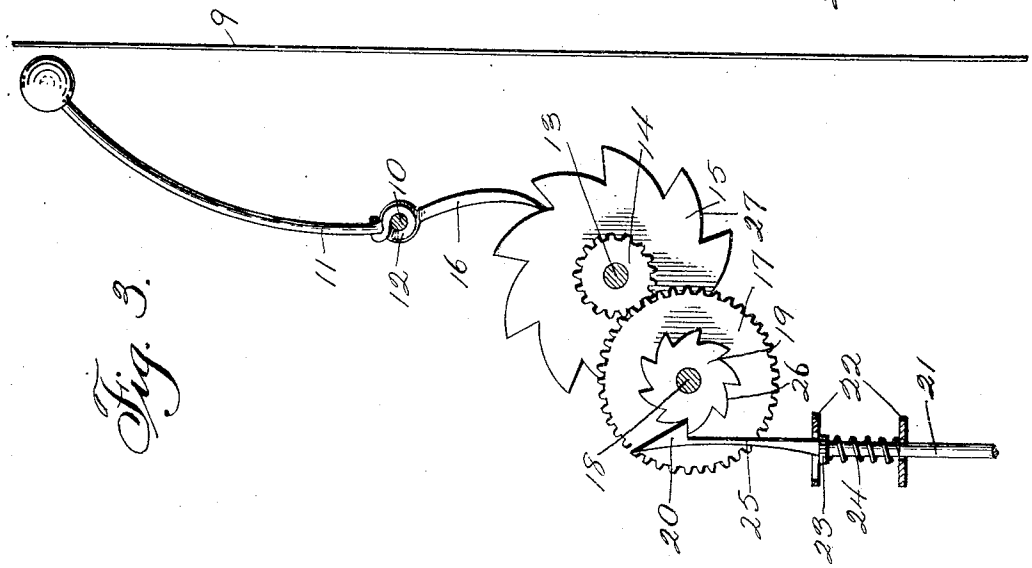

Fig. 3.

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UNITED STATES PATENT OFFICE.

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COMBINED ORGAN AND PIANO.

954,659. Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed October 26, 1908. Serial No. 459,595.

To all whom it may concern:

Be it known that I, WILLIAM R. WEAVER, a citizen of the United States, residing at Ducktown, in the county of Polk, State of Tennessee, have invented certain new and useful Improvements in Combined Organs and Pianos; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to a combined organ and piano and more particularly to the class of mechanism for producing the tone and a musical vibration imitative of a piano or the like instrument which may be operated either simultaneously with or independently of the organ and controlled from the key board of the instrument.

Another object of the invention is the provision of an attachment for organs comprising a series of tuned strings, the same being mounted in the frame of the organ, a plurality of striker members or hammers adapted to contact with the strings, mechanism actuated by the keys of the organ to operate the striker members or hammers whereby tones and musical vibrations imitative of a piano can be produced at the will of the operator.

A further object of the invention is the provision of an attachment for organs which includes mechanism for producing tones or musical vibrations imitative of a piano and mechanism operative at the will of the operator whereby the attachment will be either set into action simultaneously with the organ or the latter can be operated independently thereof.

In the drawings accompanying and forming part of this specification is illustrated the preferred form of embodiment of the invention which to enable those skilled in the art to practice the said invention will be set forth at length in the following description while the novelty of the invention will be included in the claims succeeding said description. However, it is to be understood that changes, variations and modifications may be made such as come properly within the scope of the claims without departing from the spirit of the invention.

In the drawings: Figure 1 is a front view of the mechanism as applied to an organ, with its casing broken away. Fig. 2 is a side elevation of an organ the frame thereof being broken away to show the attachment, and hinged cover. Fig. 3 is a sectional view on the line 3—3 of Fig. 1. Fig. 4 is a similar view with the striker member in a shifted position.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

In the drawings the numeral 5 designates the organ provided with the usual mechanism the latter not being shown as it forms no part of the present invention, and mounted in the front of the organ are the pivotal keys 6 and above the latter is suitably mounted a sound board 7 comprising a harp-shaped frame 8 upon which are mounted strings 9 corresponding in number to the number of keys 6 and adapted to be tuned so as to harmonize with the reeds of the organ controlled by the respective keys. The said strings 9 are connected on the frame 8 by the usual pegs and tuning pins.

Mounted in the organ casing transversely of the frame 8 a distance removed from the strings 9 is a shaft 10 supporting a plurality of striker members or hammers 11 which latter are mounted for oscillating movement on the said shaft, it being of course understood that one of such striker members or hammers is provided for each string. Fixed to the shaft 10 and acting upon the striker members or hammers 11 are springs 12 which latter serve to move the said striker members or hammers.

Below the shaft 10 is a shaft 13 on which is loosely mounted a series of pinions 14 having tappet wheels 15 the latter adapted to operate the lower tripping extremities 16 of the striker members or hammers 11 so as to set the same into action.

In mesh with the pinions 14 are gear wheels 17, the latter rotatably supported by a shaft 18 and formed on one side of the gear wheels are spur wheels 19 the same adapted to be engaged by hook terminals 20 of vertical rods 21 slidably mounted in guide openings formed in a pair of spaced supporting bars 22 which latter are suitably mounted in the organ casing. Each of said rods 21 is formed with a collar 23 forming a bearing for one end of a resetting spring 24 the opposite end of which has its bearing against the lowermost supporting bar 22. The upper ends of the rods 21 formed with the hook terminals 20 are reduced as at 25 to permit yielding of the said hook ter-

minals 20 so as to override the cam faces 26 and to engage the teeth of the spur wheels 19 as the rods 21 are reset by the springs 24. The lower ends of the rods 21 are connected to the keys 6 in such a manner that when said keys are depressed to sound the organ reeds, the spur wheels are given a part turn on the shaft 18 and this movement is communicated by the gear wheels 17 in mesh with the pinions 14 to the tappet wheels 15 whereby the striker members or hammers are actuated to sound the strings of the instrument.

The tappet wheels 15 are formed with cam teeth 27 engaged by the trip members 16 of the striker members or hammers 11 so that when the tappet wheels are rotated the striker members or hammers are thrown away from the strings and when the trip extremities 16 ride off of the cam teeth 27 the springs 12 throw the striker members or hammers against the strings thereby producing the necessary musical vibrations or tones. The gear wheels 17 are of increased size with respect to the pinions 14 in order that the tappet wheels 15 may turn a sufficient distance to properly actuate the striker members or hammers. The cam teeth 27 of the tappet wheels will effect the movement of the trip extremities 16 to draw back the striker members or hammers a sufficient distance from the strings so that when the said trip extremities ride from the cam teeth 27 of the tappet wheels they will strike the strings with enough force to properly sound the same.

The mechanism for throwing the attachment out of operation whereby the organ can be played independently of the same consists of a bar 28, having offset ends 29, pivotally mounted in the end wall of the casing 5 so that the bar 28 can be eccentrically moved into and out of the path of movement of the striker members or hammers 11. This bar 28, is operated or moved by a link 30, one end of which is pivotally connected to a crank 31 formed in the said bar 28, and its opposite end pivotally connected to a crank 32, formed on a manually operable crank shaft 33, mounted at one end of the organ casing above the plane of the keys.

It is apparent that by gripping and turning the hand crank shaft 33 in one direction on its longitudinal axis it will cause the eccentric movement of the bar 28 so as to block or prevent the striker members or hammers 11 from striking against the strings 9 of the instrument and by a reverse movement of the said lever 33 the bar 28 will be moved so as to not interfere with the action of the striker members or hammers 11 whereby the same may be brought against the strings 9 and thereby effect or produce the musical vibrations or tones.

To the front panel of the organ casing 5 is connected by hinges 34 a drop cover or lid 35 which is adapted when lowered to inclose the key board and when elevated will stand upright at the front of the casing 5 and the inner face thereof is provided with a rest 36 forming a rack for sheet music when the said lid or cover is in an upright position. It is noted that the lid or cover when lowered will not interfere with the mechanism disposed above the key board.

What is claimed is—

1. A musical instrument comprising a sounding board, tuned strings on said board, hammers pivotally mounted in said instrument and adapted to strike the strings, springs acting upon the hammers to move the same in contact with the strings, tappet-toothed members rotatably mounted in the instrument and adapted to move the hammers away from the strings, gears having connection with said tappet members, a key board, spur wheels adapted to actuate the gears and rods connected to the keys of the key board and having yieldable hook terminals to act upon the spur wheels to move the same upon depressing said keys.

2. A musical instrument comprising a sounding board having tuned strings thereon, hammers pivotally mounted in the instrument and adapted to strike the strings, the said hammers being provided with trip terminals, a shaft horizontally mounted in the instrument in front of the said board, pinions rotatable upon said shaft and having cam-toothed wheels integral therewith to engage the trip terminals of the hammers for moving the same away from the strings, gears meshing with the pinions, spur wheels connected to the gears, a key board, rods connected to the keys of the key board and having hook terminals to engage the spur wheels, and spring means normally holding the hook terminals of the rods in elevated position for engagement with the spur wheels.

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

WILLIAM R. WEAVER.

Witnesses:
JOHN BROCK,
J. M. CARVER.