No. 632,029. Patented Aug. 29, 1899.

# T. F. SMITH.

## CHIME.

(Application filed Feb. 27, 1899.)

(No Model.)

Fig. 1.

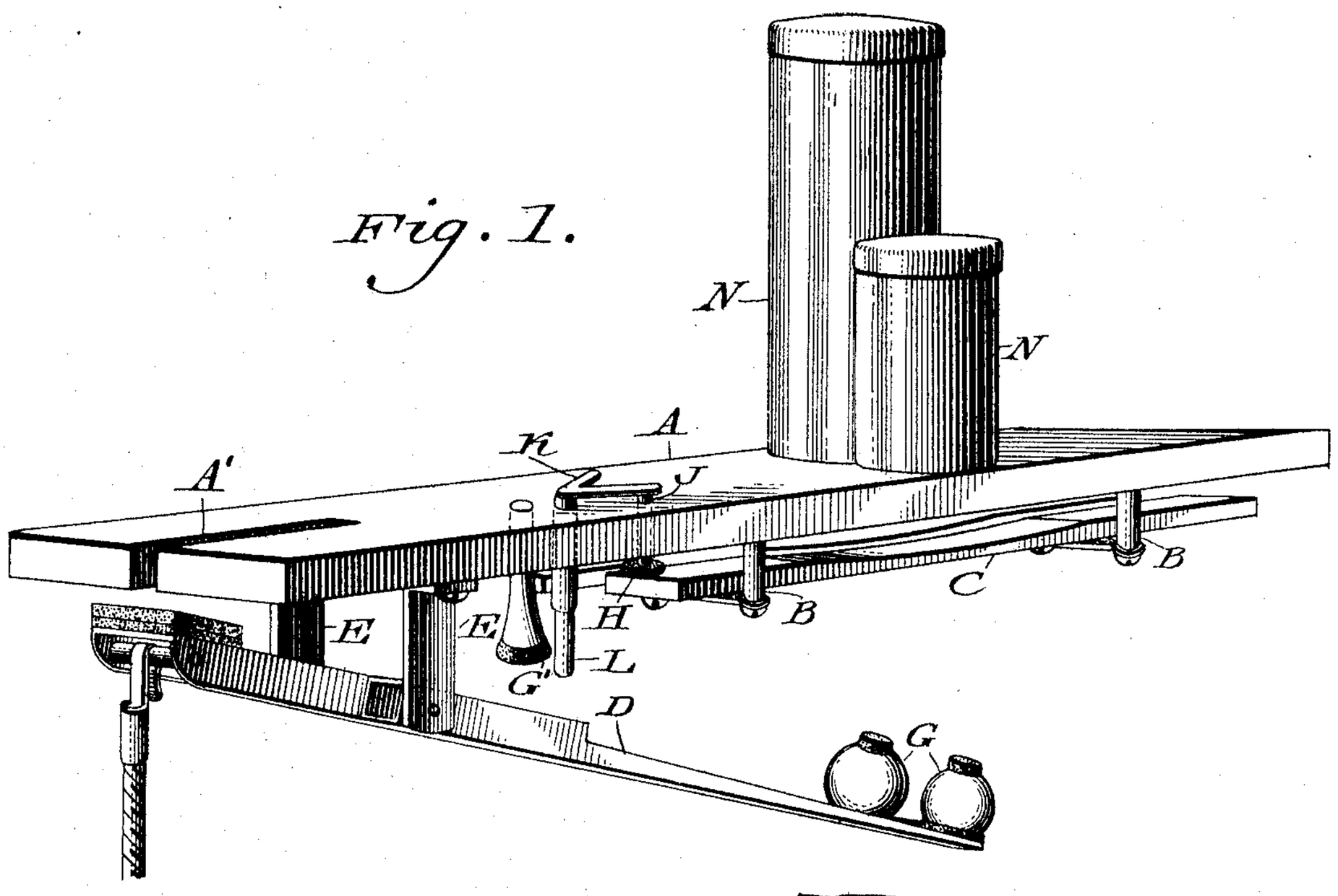



Fig. 2.




Fig. 3.

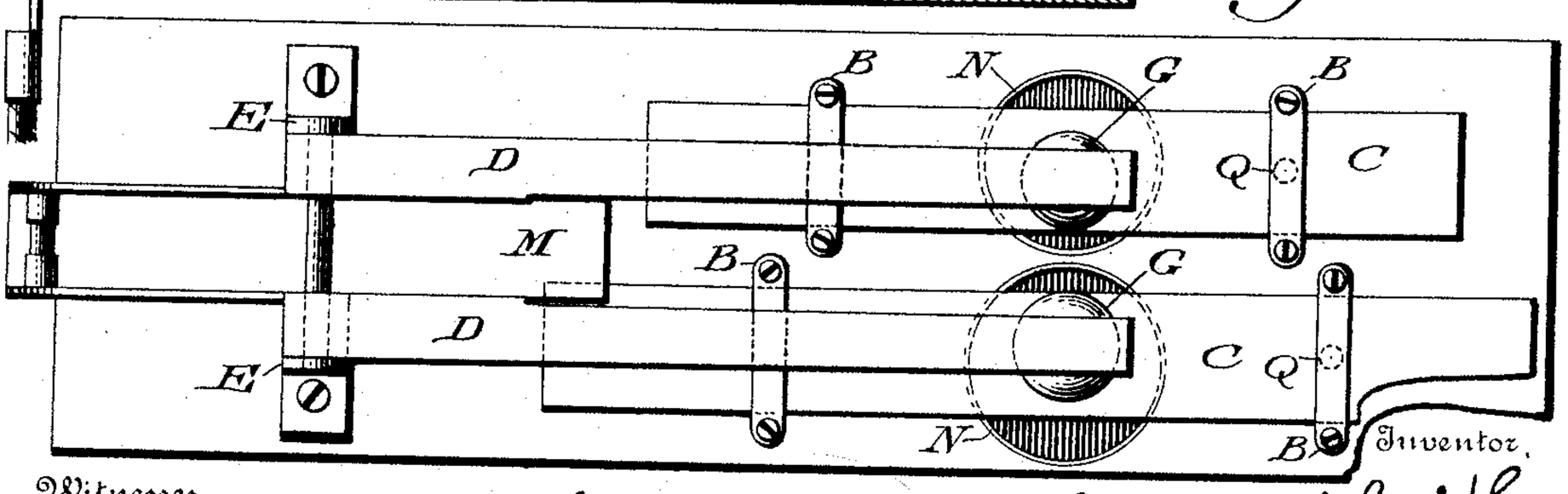
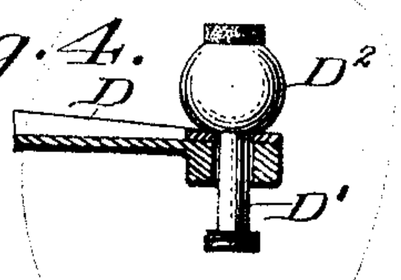



Fig. 4.

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# UNITED STATES PATENT OFFICE.

THEODORE F. SMITH, OF LAFAYETTE, INDIANA.

## CHIME.

SPECIFICATION forming part of Letters Patent No. 632,029, dated August 29, 1899.

Application filed February 27, 1899. Serial No. 706,930. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE F. SMITH, a citizen of the United States, residing at Lafayette, in the county of Tippecanoe, State of Indiana, have invented a new and useful Improvement in Chimes, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of improvements in chimes embodying attuned plates and means for striking the same, more particularly in octaves or chords, also means for imparting sharp and distinct blows to said plates, a damper for the plates, and means for increasing the resonance or volume of sound emitted.

It also consists of details of construction, as will be hereinafter set forth.

Figure 1 represents a perspective view of a resonating chime embodying my invention. Fig. 2 represents a vertical section thereof. Fig. 3 represents a bottom plan view thereof. Fig. 4 represents a vertical section of a portion of a modification.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a board or support from which depend the hangers B, forming shelves for sustaining the attuned plates C thereon.

D designates levers which are mounted on the brackets or bearings E on the under side of the board A and having connected with them between their ends the elastic arms F, to which are attached the hammers G, it being noticed that the plates C and hammers G are so disposed that when the levers are operated said hammers are caused to strike said plates, as will be hereinafter more fully described.

Depending from the board A is the stop G′, which is in the path of the levers D when the latter ascend, so as to be engaged by the same and thus limit the ascent of said levers.

H designates dampers located over the plates C and carried by the vertical pins J, the latter being freely fitted in openings in the support A and connected at top by the cross-bar K, from which depends the stem L, which passes through said support and terminates below the same, so that it may be engaged by the tongue M on the levers D when the latter are raised, whereby the dampers may be lifted from the plates C.

Rising from the support A are cylinders or tubes N, forming resonators, which are located over the openings P in the support A above the plates C for increasing the volume of sound and adding tone to the same.

The operation is as follows: The levers are operated, whereby the long limbs of the same are quickly raised and as they reach the stop G′ their advance is abruptly ended, the damper being also lifted clear of the plates C, but the arms F owing to their inertia continue to ascend, whereby the hammers G smartly strike said plates and cause the same to emit their musical sound with clearness and distinctness. The levers are then let go, whereby they lower, and the dampers return to their normal portion in contact with the plates, thus ending the vibrations thereof. The portions of the lever D below the arms now support the latter and the hammers thereon, preventing sagging of said arms and causing the hammers when at rest to occupy a uniform distance from the plates.

The plates are retained on the hangers B by means of pins Q, whereby they are prevented from shifting, and rest between cushions or pads R, whereby the best effect of sound is produced when the plates are struck.

Attention is particularly directed to the employment of a plurality of plates involving a plurality of hammers and levers which are operated in unison as one, so as to cause a simultaneous or comparatively simultaneous action on the hammers, which are in octaves, chords, or other tones, as desired, it being understood that the number of plates will be increased and properly attuned in accordance with the musical scale for playing purposes, as is evident.

In Fig. 4 I show the lever D, having a vertical stem D′ freely fitted in an opening thereon, said stem carrying the hammer $D^2$, whereby when the lever is raised said hammer leaves its seat by inertia, guided by said stem, and so strikes its plate, after which it drops by gravity.

In order to attach the support A to a beam-frame, &c., I provide the same with the slot

A' for the reception of a bolt or other fastening, as is evident.

In referring to the attuned plates C, I do not limit myself to metal or any shape of the same, as any suitable material or bells, bars, &c., capable of emitting musical sound may be employed for my purpose.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a chime, an attuned plate, a support therefor, a hammer for striking said plate, an elastic arm carrying said hammer, and a swinging lever carrying said arm, the inner end of said arm being secured to said lever intermediate of the ends of the latter leaving a portion of said lever beneath said arm as the support of the same when at rest.

2. In a chime, an attuned plate, a hammer, a lever carrying the latter, a resonator and a support common to said plate, lever and resonator, said plate having an opening therein between said resonator and plate and said hammer being on the side of the plate opposite to said resonator.

3. An attuned plate, a support therefor, a damper on said plate, a sliding stem secured to said damper and guided in said support, a stop pendent from said support, a lever having its bearings on said support and a hammer on said lever and having a movement independent of the same, said lever and hammer being beneath said plate, and said lever being provided with a tongue which is adapted to engage said sliding stem.

4. In a chime, an attuned plate, a lever, a hammer carried by said lever adapted to strike said plate, a support, having said lever mounted thereon, pins depending from said support, and a hanger on said pins, said plate resting on said hanger between said pins, and the latter having cushions thereon above and below said plate.

5. In a chime, a support, an attuned plate thereon, a lever, bearings for said lever, an elastic arm connected with said lever, a hammer on said arm, a damper on said plate having a depending stem, and a stop on said support, said stem and stop being in the path of said lever, and said elastic arm having motion independent of the lever that carries it.

6. In a chime, a support, an attuned plate thereon, a lever mounted on said support, an elastic arm on said lever a hammer on said elastic arm adapted to strike said plate, and a damper for said plate, and a stop for said lever in the path of the latter in its motion to said plate said lever extending under the elastic arm beyond the place of connection of the inner end of the latter with said lever and having said arm and hammer rest thereon when in normal position.

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