

No. 689,899.

Patented Dec. 31, 1901.

W. K. MENNS.
CLOCK CASE.

(Application filed May 10, 1900.)

(No Model.)

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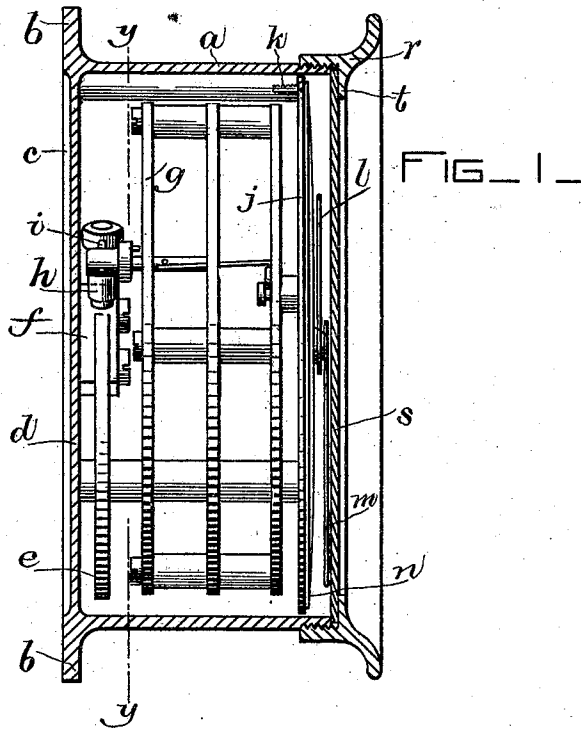
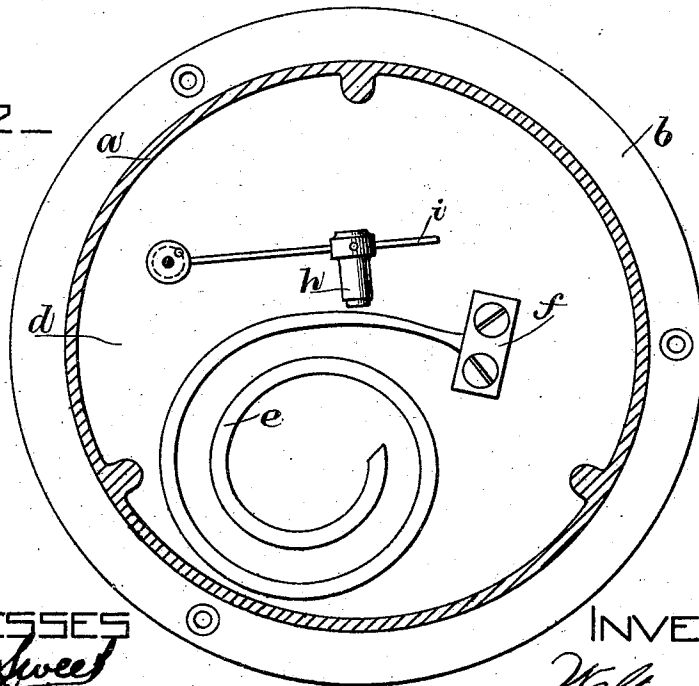


FIG. 2



WITNESSES

E. G. Sweet
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INVENTOR

Walter K. Menns
By Chas. J. Howe,
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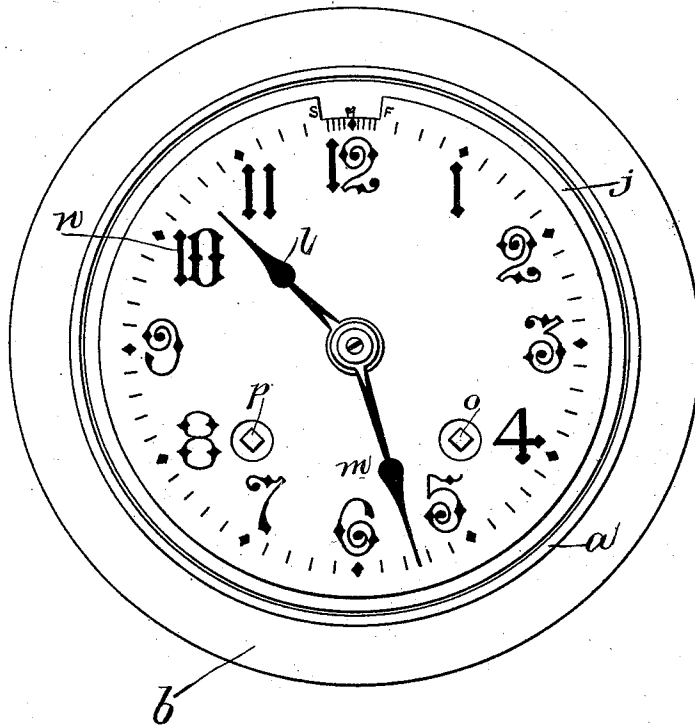
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FIG. 3.



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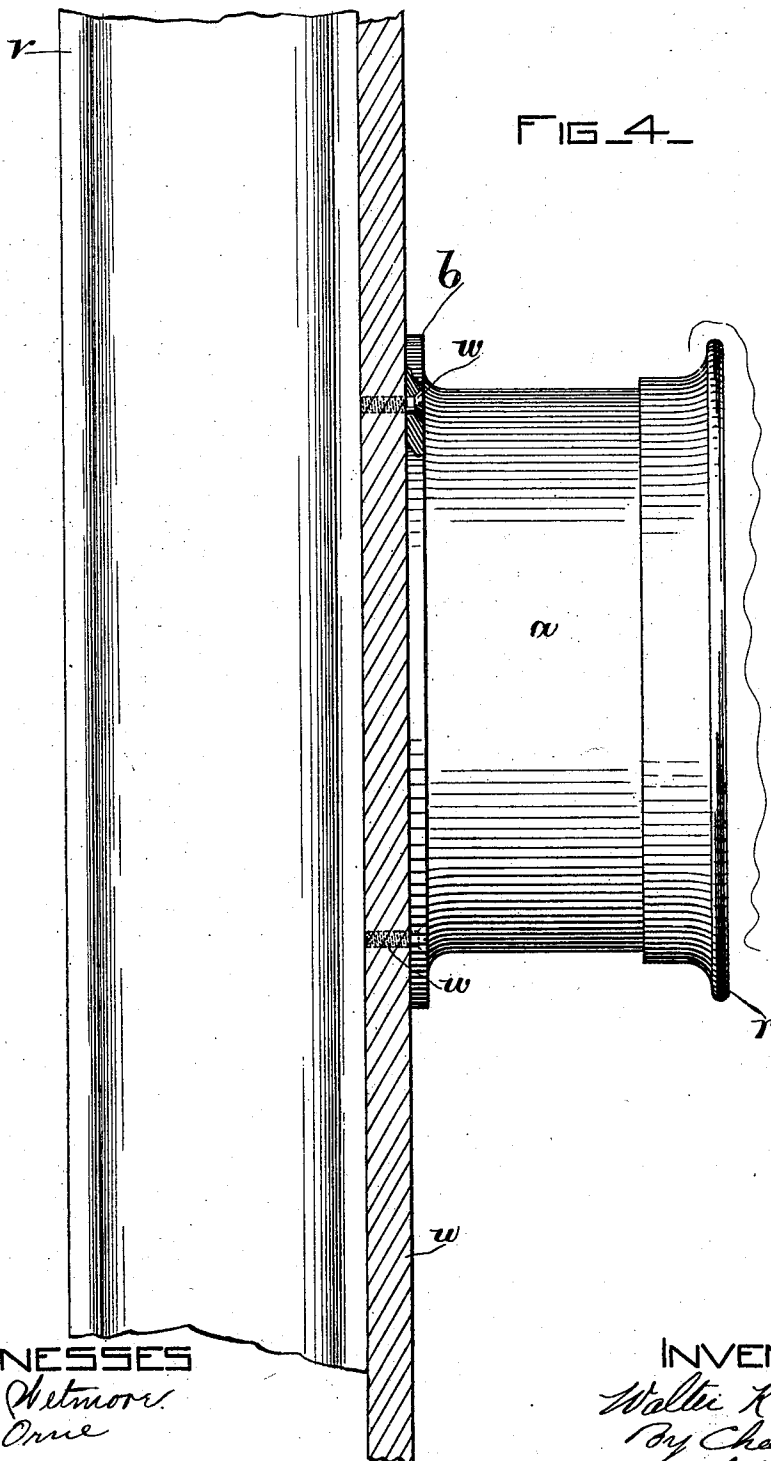
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

WALTER K. MENNS, OF CHELSEA, MASSACHUSETTS, ASSIGNOR TO CHARLES
H. PEARSON, OF BROOKLINE, MASSACHUSETTS.

CLOCK-CASE.

SPECIFICATION forming part of Letters Patent No. 689,899, dated December 31, 1901.

Application filed May 10, 1900. Serial No. 16,217. (No model.)

To all whom it may concern:

Be it known that I, WALTER K. MENNS, a subject of the Queen of Great Britain, residing in Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Clocks, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relating to clocks, concerns particularly constructions of the case that entirely incloses the time and striking mechanism, but without interfering with the utility of the several time-indicating devices.

The bell and hammer of striking-clocks in common constructions when within the case (usually in such arrangements of wood) are only capable of making sounds that are audible for very limited distances unless the cases be perforated to allow the sound egress, and for this reason the bell is often put outside of the case and the stem of the actuating-hammer passes from within through a slot in the case of the clock. When a bell is used within such a case, but little effect is produced by sound conduction therethrough, as the point of attachment of such a bell has little or no vibration, so the bell only affects the inclosed air. Closed cases of wood or other material that may be similarly joined and which are liable to be checked or warped at the joints or elsewhere by changes of temperature or humidity or perforated by insects are not dust-proof, neither will such cases exclude noxious gases, nor the atmosphere at sea, so in any event the delicate mechanism of the timepiece may be susceptible to injury.

The demands of the sea trade in particular for a closed clock-casing have been only imperfectly met, and as many parts of the world frequented by shipping teem with innumerable varieties of insect life, from the intrusions of which nothing accessible is secure, and as it is necessary to oil a clock, the additional incentive of food is offered these voracious pests, which once inside the case may become entangled in the more delicate portions of the mechanism, and thereby, in addition to the lack of oil, injuriously affect the operation of the timepiece. To meet this matter, I make my case of two separable pieces, the body of the case being a short cylinder with one in-

tegral head, all made of metal or other like substance and having no openings except for the admittance of the movement, which opening is closed by a tightly-fitting bezel in which is sealed a glass face, so that the inclosed space may be secure from extraneous injurious influences. The gong is made of wire, so as to take but little space, and is fastened inside to the head of the body of the case, which may be advantageously formed with a projecting flange for rigid attachment to a partition, and the head of the body is preferably undercut, so no part of the case may rest loosely against the partition to interrupt the vibrations. An essential idea is to hold some sound-conducting portion of the case to which the gong is attached in close contact with a sonorous support. This might be accomplished if only a projection from the case (which might be just opposite the point of attachment of the gong) were to be held by some means in firm contact with the support. Upon a piece of wire is positioned the metal head of the hammer, the face of which consists of a piece of leather inserted in a cavity in the head. Leather is so soft in its usual condition that but little volume of sound can be obtained from a hammer so faced, so I burn or char the exposed face, which hardens the leather, and with a hammer so faced sufficient volume of sound is obtained and the timbre is of exceptionally desirable character.

My invention hence comprises an imperious case that entirely incloses the time-movement and striking mechanism, although such portions as necessary are accessible by means of suitable joints of the parts for usual care, and to economize space, while still preserving the efficiency of the device, a gong made of stout wire is adopted, which has the ability to transmit its vibrations to its point of attachment to the case, and as the case is adapted to rest rigidly against a sonorous support the vibrations will thereby be augmented and widely diffused; and the invention further consists of the devices and their combinations, that will be more particularly described.

In the drawings, Figure 1 is a vertical section of a clock-case, showing a way of supporting a gong and movement. Fig. 2 is a

cross-section of Fig. 1 on line $y y$ to show hammer and gong. Fig. 3 is a front view without the bezel. Fig. 4 is a side view of the case and its support.

5 The body a of the case is cylindrical, formed with flange b for securing it to a support, and it is preferably undercut at c , so the head or diaphragm d may freely vibrate. The support for the clock may be the partition u , secured to the iron shapes v , and the clock is fastened to the partition, as by screws w , to insure firm contact of the clock and partition, so sound-vibrations originating within the clock-case may be reinforced and diffused by the said partitions. The gong e is made from stout wire of sufficient length to sound the pitch desired, coiled, so as to occupy but little space, and fastened in a block f , secured to the diaphragm. The position of the movement in the case is indicated by its frame of parallel plates, separated by studs and secured to each other by screws or otherwise, the rear plate g of the frame carrying the hammer h , which may be adjustably positioned on the wire i , so as to properly sound the gong. The frame of the movement is fastened in any usual manner to a disk j , attached to the case, as by screws k , threaded in bosses cast on the inside of the case, as appears in Figs. 1 and 2, and which serves to support the movement clear of the case, so as not to dampen any sonorous vibrations thereof. Hands l and m , moving over a dial n , attached to the disk j , serve to visually indicate the time. Extending through

the dial n , so as to be easily accessible, are the squared arbors o and p of the time and striking winding-drums.

A screw-bezel r is threaded to the body a , and a glass face s is permanently cemented to the inwardly-projecting flange t , so that when the threads have been waxed and the bezel screwed to the body the interior of the case is sealed hermetically.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

In a clock, a metal diaphragm extending entirely across the back of the clock-case, cylindrical metal sides integral with the diaphragm so that there are neither holes nor joints in the case-body, a flange extending backward from the diaphragm and beyond the cylindrical sides; a movement-frame attached near the front of the case to bosses cast on the cylindrical sides; a hammer and means for actuating it carried by the movement-frame; a metal bezel screw-threaded to the cylindrical sides and a glass face cemented to the bezel, both bezel and glass being without perforations so as to hermetically inclose the movement, substantially as described.

In testimony whereof I have hereunto subscribed my name.

WALTER K. MENNS.

Witnesses:

B. M. WETMORE,
E. C. SWEET.