J. R. HAMILTON.

MOTOR GONG.

APPLICATION FILED MAY 20, 1916.

1,343,365. **Patented June 15, 1920.**

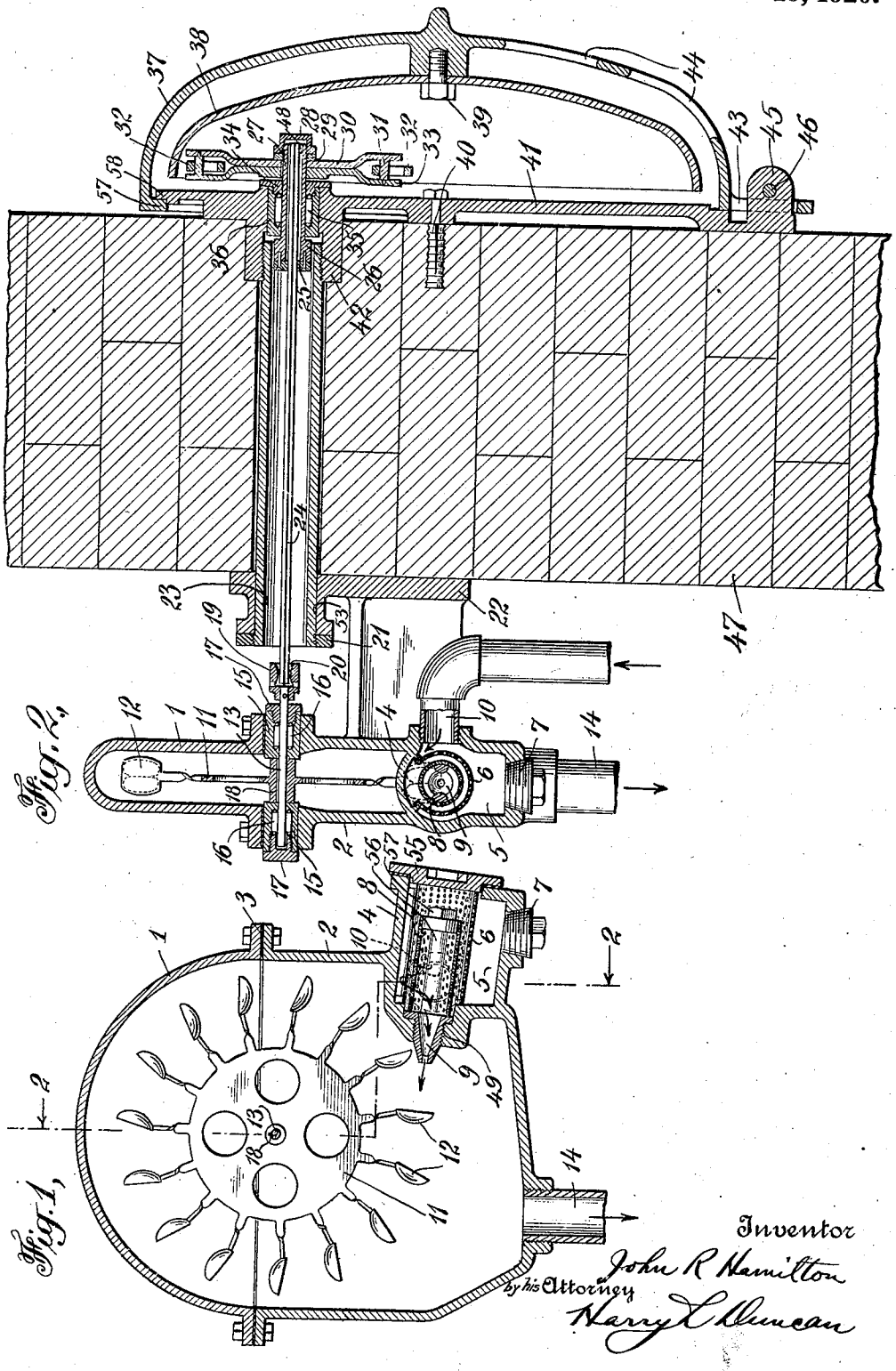


Fig. 2.

Fig. 1.

Inventor
John R Hamilton
by his Attorney
Harry L Duncan

UNITED STATES PATENT OFFICE.

JOHN R. HAMILTON, OF YONKERS, NEW YORK, ASSIGNOR TO AUTOMATIC SPRINKLER COMPANY OF AMERICA, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

MOTOR-GONG.

1,343,365. Specification of Letters Patent. Patented June 15, 1920.

Application filed May 20, 1916. Serial No. 98,756.

To all whom it may concern:

Be it known that I, JOHN R. HAMILTON, a citizen of the United States, residing at Yonkers, county of Westchester, State of New York, have made a certain new and useful Invention Relating to Motor-Gongs, of which the following is a specification, taken in connection with the accompanying drawing, which forms part of the same.

This invention relates especially to water motors and connected alarm gongs used particularly in connection with automatic sprinkler apparatus so as to produce a loud bell alarm when the apparatus comes into action in the event of fire or otherwise and supplies a jet or stream of water to operate the motor.

In the accompanying drawing showing in a somewhat diagrammatic way an illustrative embodiment of this invention,

Figure 1 is a transverse section through the water motor; and

Fig. 2 is a section taken substantially along the line 2—2 of Fig. 1.

In the illustrative embodiment shown in the drawings the motor may comprise a sectional casing in which the casing cover 1 is joined to the motor casing 2 at a point substantially above the bearings of the motor so that they are not in any way disturbed when the casing is removed and consequent derangement or cramping of the bearings is prevented. These two casing members are of course rigidly secured together as by bolts and a tight joint may be made between them as by the packing 3 indicated. The motor shaft 13 may be mounted in suitable bearings within the lower section or motor casing 2, these bearings 15 comprising, if desired, anti-friction or roller bearing members 16 to minimize friction and which may be conveniently held in position as by the bearing caps 17 screwed in place. The wheel 11 may be rigidly mounted on this motor shaft as by the key 18 engaging the shaft and the wheel hub, and buckets 12 similar to the Pelton type may be arranged on the wheel so as to coöperate most advantageously with the motor nozzle such as 9, preferably arranged in somewhat upwardly inclined position adjacent the bottom of the casing where it is not only supported by the permanently mounted section of the casing, but is also more likely to maintain its continued clear and effective condition. The nozzle as indicated may be readily screwed into the threaded nozzle hole 49 in the casing by turning the nut 57 on the extension arms 56 formed on this nozzle which may have mounted in connection therewith the cylindrical or other screen 8, removing any dirt or impurities from the motive fluid before it enters the nozzle to act on the wheel and finally discharge from the casing through the waste pipe 14. If desired, a suitable perforated shield guide, such as 6, may be secured to the removable cap 55 or otherwise mounted substantially annularly around this screen within the nozzle casing 4 forming the nozzle drain chamber 5. The supply pipe 10 may communicate with the chamber at any convenient point preferably adjacent the supporting wall as indicated so that the water or other motive fluid passes up around the shield guide and then through the screen before entering the nozzle, particles of dirt or the like thus being more certainly deflected into the chamber below from which they may be removed when the plug 7 is taken out.

It is desirable to provide for the reliable and accurate support and alinement of the motor in connection with the gong or other mechanical alarm device which is usually mounted on the outside of the outer wall 47 of the building. This may be effected by securing the gong support 41 to the outer face of this wall as by suitable expansion bolts and shields, such as 40, and rigidly securing to the gong support an alining connector tube 23 which may as indicated be screwed into the bearing collar 42 on the support. This alining connector tube which as indicated may extend entirely through the wall may thus provide a substantially rigid alining projection with which may coöperate the apertured collar 53 formed on the motor bracket 22 connected with motor casing as indicated. The motor bracket may be secured on the connector tube in any desired way as by the securing or holding nut 21 so as to permanently lock these parts in position and insure the alinement of the motor with the connected operating mechanism of the gong.

The hammer devices of any suitable construction may, if desired, comprise the coöperating members 30, 33 joined as by the riveted or otherwise connected hammer pins 31 which also serves to support the hammers

32 which are preferably of the ring form indicated to coöperate most advantageously with the gong 38 at its upper portion. When the hammer arms are rotated at full speed the hammers are thrown outward by centrifugal force so as to give an energetic blow to the gong every time the hammer comes into coöperation therewith, while at the same time the weight and rebound action tend to effectively clear the hammers from the gong and prevent their deadening the alarm signal produced. Also this type of hammer mechanism especially where it cooperates with the upper part of the gong allows the mechanism and connected motor to start and attain practically full speed before the hammers engage the gong at all or exert in this way any retarding action on the motor or driving connections. If desired, the hammer arms may be rigidly secured in any suitable way to the tubular gong shaft 27 as by a threaded nut 29 cooperating therewith and this shaft may be mounted to coöperate with antifriction bearing rollers 35 in the bearing 36 mounted in the bearing collar 42 as indicated. The inner end 26 of this shaft may have screwed or otherwise secured thereto the coupling washer 25 having a square or other non-circular aperture therein so as to accommodate the alarm shaft 24, the inner end of which may engage a coupling 19 pinned or otherwise rigidly mounted on the motor shaft 13 and having a similarly shaped non-circular aperture 20 therein preferably so formed as to allow a limited angular displacement of the alarm shaft with respect to the motor shaft so as to give some universal joint action in connection therewith.

In assembling the device the gong support may be put in place on the outside of the wall and then the motor bracket and connected parts secured to the alining connector tube as above indicated, and then the square alarm shaft may be inserted from the outside of the building and after it is inserted in the aperture 20 this shaft may be cut off to length so as to be substantially flush with the outer end of the gong shaft and then permanently held in place as by the cap 28 which may be screwed on the gong shaft to permanently hold these parts in operative position, the outer end of the alarm shaft fitting loosely within the aperture 48 in the gong shaft. The gong 38 may be permanently secured as by the bolt 39 to the perforated gong casing 44 which is put in place by locking its alining or locking projections 57 around the cooperating projections 58 on the gong support adjacent the upper end thereof. The gong and casing may be permanently held in position as by bringing a suitable locking aperture 43 over the locking lug 45 formed at the bottom of the gong support, these parts being held in position by a pin or other locking device 46 which if desired may be padlocked in position.

This invention has been described in connection with a number of illustrative embodiments, parts, forms, sizes, proportions, materials and arrangements, to the details of which disclosure the invention is not of course to be limited, since what is claimed as new and what is desired to be secured by Letters Patent is set forth in the appended claims:

1. In motor alarm devices, a motor casing, a motor shaft supported in bearings in said motor casing, an alarm support adapted to be mounted on the wall of a building, an alining connector tube secured to said alarm support adapted to extend through the wall of the building, a motor bracket connected to said motor casing and having an apertured alining collar to coöperate with said alining connector tube and be secured thereto to support said motor casing and maintain it in alinement with said alarm support, a tubular alarm shaft mounted in said alarm support and extending within said connector tube, a coupling on said motor shaft and a coöperating coupling on said alarm shaft, a non-circular ended connector shaft connecting said couplings, an alarm casing and means to removably support said alarm casing on said alarm support.

2. In motor alarm devices, a motor and a connected motor shaft, an alarm support adapted to be mounted on a wall of a building, a tubular alining connector secured to said alarm support and adapted to extend through the wall of the building, a motor bracket connected to said motor and having an apertured alining collar to coöperate with said alining connector and be secured thereto to support and maintain said motor in alinement with said alarm support, an alarm shaft mounted on said alarm support and extending within said connector to coöperate with the alarm and a coupling connecting device between said motor shaft and said alarm shaft.

3. In motor alarm devices, a motor and a connected motor shaft, an alarm support adapted to be mounted on a wall of a building, an alining connector secured to said alarm support and adapted to extend through the wall of a building, a motor bracket connected to said motor and adapted to coöperate with said alining connector and be secured thereto to support and maintain said motor in alinement with said alarm support, an alarm operating device mounted on said alarm support and a coupling connecting device between said motor shaft and said alarm.

4. In motor alarm devices, a motor casing, a motor shaft supported in bearings in

said motor casing, an alarm support adapted to be mounted on a wall of a building, a tubular alining connector secured to said alarm support to extend through the wall of the building, a motor bracket connected to said motor casing and having an alining member to coöperate with said alining connector and be secured thereto to maintain said motor casing in alinement with said alarm support, an alarm shaft mounted in said alarm support and extending within said connector to operate with the alarm device and a coupling connecting device between said motor shaft and said alarm shaft.

5. In motor alarm devices, a motor casing, a motor shaft supported in bearings in said motor casing, an alarm support adapted to be mounted on a wall of a building, an alining connector secured to said gong support to extend through the wall of the building, a motor bracket connected to said motor casing and having an alining member to coöperate with said alining connector and be secured thereto to maintain said motor casing in alinement with said alarm support, an alarm shaft mounted in said alarm support and a coupling connecting device between said motor shaft and said alarm shaft.

6. In motor alarm devices, an alarm support, an alarm shaft mounted in said alarm support, alarm operating devices connected to said alarm shaft to coöperate with the upper part of the gong, a motor detachably connected to said alarm shaft, a perforated alarm casing an alarm member mounted within said alarm casing to coöperate with said operating devices and means comprising interlocking projections to removably support said alarm casing on said alarm support.

7. In motor alarm gongs, a motor and connected motor shaft, a gong support adapted to be mounted on the outside of a building, an alining connector tube secured to said gong support adapted to extend through the wall of the building, a motor bracket connected to said motor and having an apertured alining collar to coöperate with said alining connector tube and be secured thereto to support said motor casing and maintain it in alinement with said gong support, a tubular gong shaft mounted in said gong support and extending within said connector tube, hammer arms and connected hammers loosely mounted on said gong shaft to coöperate with the upper part of the gong, a coupling on said motor shaft and a coöperating coupling on said gong shaft, a non-circular alarm shaft connecting said couplings, a cap on the end of said gong shaft to hold said alarm shaft in longitudinal position, a gong and means comprising interlocking projections to removably support said gong on said gong support.

8. In motor alarm gongs, a motor and connected motor shaft, a gong support adapted to be mounted on the outside of a building, an alining connector tube secured to said gong support adapted to extend through the wall of the building, a motor bracket connected to said motor and having means to coöperate with said alining connector tube and be secured thereto to support said motor casing and maintain it in alinement with said gong support, a gong shaft mounted in said gong support and extending within said connector tube, hammer arms and connected hammers loosely mounted on said gong shaft to coöperate with the upper part of the gong, alarm shaft connecting said gong shaft and said motor shaft, a gong and means to support said gong on said gong support.

9. In water motor alarm gongs, a sectional motor casing, a motor and connected motor shaft supported in bearings in the lower section of said motor casing, a gong support adapted to be mounted on the outside of a building, an alining connector tube secured to said gong support and adapted to extend through the wall of the building, a motor bracket connected to said motor casing and adapted to be secured to said alining connector tube to support said motor casing and maintain it in alinement with said gong support, a gong shaft mounted in said gong support and extending within said connector tube, hammer arms and connected members mounted on said gong shaft to cooperate with the gong, a coupling on said motor shaft and a coöperating coupling on said gong shaft, a non-circular ended alarm shaft connecting said couplings, and a gong.

JOHN R. HAMILTON.

Witnesses:
RALPH E. SATTELY,
W. B. PALMER.