S. AUSTIN.

SIGNAL HORN.

APPLICATION FILED JULY 18, 1912.

1,066,461. Patented July 8, 1913.

Fig. 1

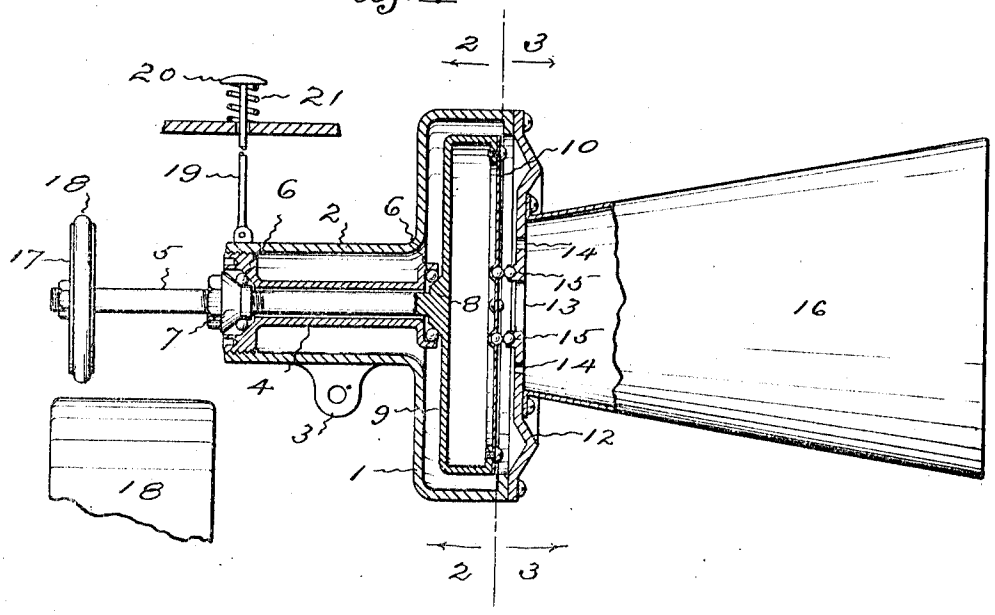


Fig. 2

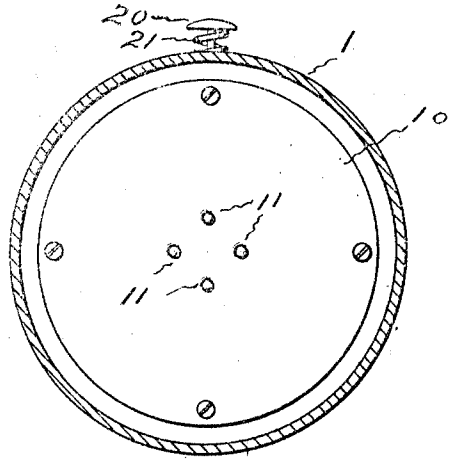
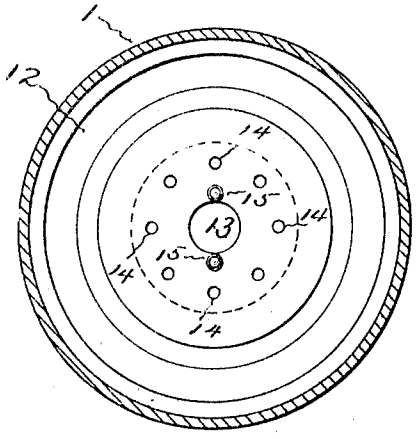


Fig. 3



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UNITED STATES PATENT OFFICE.

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SIGNAL-HORN.

1,066,461. Specification of Letters Patent. Patented July 8, 1913.

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To all whom it may concern:

Be it known that I, SAMUEL AUSTIN, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Signal-Horns, of which the following is a specification.

This invention relates to a signal or alarm horn for automobiles and motor boats, of the class in which the sound is produced by mechanically vibrating a metallic drum head.

The object of this invention is to provide a very simple and cheap horn of this nature, which can be readily applied to any of the various types of automobiles and motor boats in common use, in such position that when it is desired to sound a signal or give a warning alarm, the horn can be instantly brought into operative connection with the engine fly wheel or similar rotating part that is turned by the engine, and caused to throw out a loud, pleasing and carrying sound. This object is attained by mounting a drum with a metallic head on a rotatory shaft that can be driven from an engine fly wheel or similar part, the drum head having projections that when the drum is rotated, intermittently engage with fixed projections in such manner as to cause the head to be violently vibrated and throw out the desired sound waves through the amplifying bell or horn.

Figure 1 of the accompanying drawings shows a horn which embodies this invention, with the casing and drum cut in central longitudinal section. Fig. 2 shows a transverse section on the plane indicated by the dotted line on Fig. 1, looking in the direction indicated by the arrows 2. Fig. 3 shows a similar section on the same plane, looking in the direction indicated by the arrows 3.

The casing 1 of the horn may be cast to shape of iron, brass, or any other suitable metal. This casing is circular and is open at the front. Projecting from the back of the casing is a hollow hub 2. Extending from the hub there may be a bracket 3, by means of which the device can be pivotally connected to any convenient part of the vehicle adjacent to the engine or motor by which it is to be operated. Screwed into the threaded end of the hub is a sleeve 4, and rotating in this hub is a spindle 5. The form of device shown has anti-friction bearings 6 interposed between the ends of the sleeve and the spindle cones to provide for the free rotation of the spindle. The outer cone 7 is preferably movable on the spindle in order that the bearings may be properly adjusted, and the sleeve may be turned more or less in or out of the hub for correctly locating the spindle. The inner bearing cone 8 is formed at the center of the back of the drum 9. Secured across the front of the drum is a metallic plate 10, which desirably has secured to its front face four hard steel balls 11.

Fastened over the front of the casing is a cover plate 12. This plate has a central opening 13 and numerous perforations 14. Secured to the inner side of this plate, adjacent to the central opening, are two hard steel balls 15. These balls on the inner face of the cover plate are located in the path of the balls on the front face of the drum head so that when the drum is rotated, the balls will intermittently engage and violently vibrate the drum head. The sound amplifying bell or horn 16 is secured to the front of the cover plate.

On the outer end of the spindle is a pulley 17. This pulley may be provided on its periphery with a friction facing or band 18 of leather or any other suitable material which will increase its traction on the surface of the part which is utilized to drive it and rotate the spindle. The device is mounted on a vehicle so that the rim of the pulley will be adjacent to the surface of the engine fly wheel 18 or similar rotating part. The device may be moved for bringing the periphery of the pulley into contact with the periphery of the fly wheel by any suitable mechanism. A rod 19 and pedal 20 are shown as illustrating one manner of accomplishing this, and a spring 21 is illustrated in such position as to lift the pedal and move the device so as to carry the periphery of the pulley away from the periphery of the fly wheel.

The spindle bearing is adjusted by turning the outer cone, and the bearing sleeve is turned in the hub for adjusting the drum so that the balls carried by the head will make the proper contact with the fixed balls carried by the cover plate. When the pulley is brought into frictional engagement and is rotated by the fly wheel, the drum is driven at a high speed, and as the balls

carried by the drum head engage with the balls held by the cover plate, the drum head is vibrated in such manner as to throw out a loud, yet pleasing sound. This sound has large volume and is toned by the drum formation of the rotating part, and also by the openings through the cover plate from the drum chamber in the casing to the interior of the sound amplifying horn.

The invention claimed is:

1. A signal horn having a casing, a spindle supported by the casing, a drum located in the casing and rotated by the spindle, said drum having a resilient metallic head with outwardly extending impact projections, and a plate attached to the casing, said plate having projections in the path of the impact projections on the drum head.

2. A signal horn having a casing, a spindle supported by the casing, a drum located in the casing and rotated by the spindle, said drum having a resilient metallic head with outwardly extending impact projections, a plate attached to the casing, said plate having projections in the path of the impact projections on the drum head, and a horn secured to and projecting from the cover plate.

3. A signal horn having a casing, a sleeve adjustably supported by the casing, a spindle extending through said sleeve, a drum located in the casing and attached to the spindle, said drum having a resilient metallic head with outwardly extending impact projections, and a plate attached to the casing, said plate having projections in the path of the impact projections on the drum head.

4. A signal horn having a casing, a sleeve adjustably supported by said casing, a spindle extending through said sleeve, adjustable bearings between the spindle and sleeve, a drum located in the casing and attached to the spindle, said drum having a resilient metallic head with outwardly extending impact projections, and a plate attached to the casing, said plate having projections in the path of the impact projections on the drum head.

5. A signal horn having a casing, a drum with a resilient metallic head provided with impact projections located within the casing, means for rotating said drum, and fixed projections extending into the path of the impact projections carried by the drum head.

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