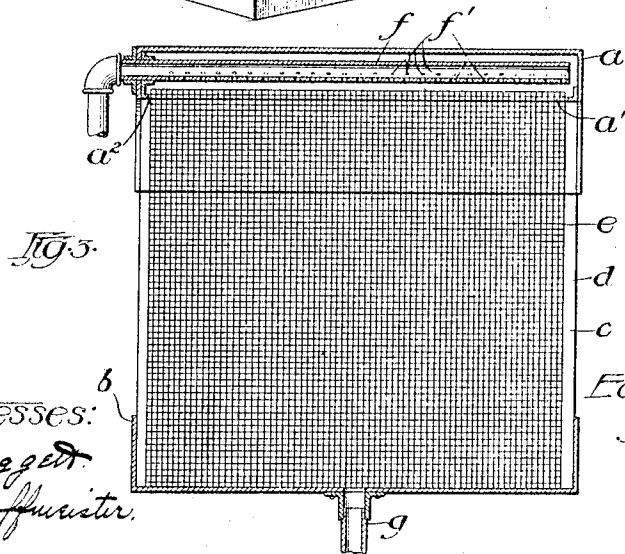
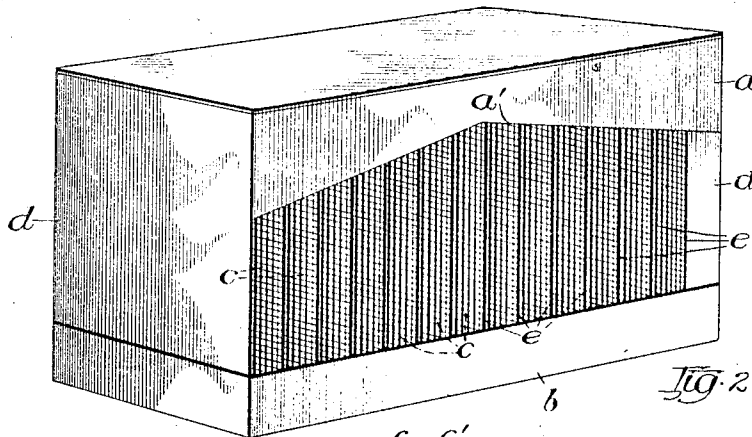
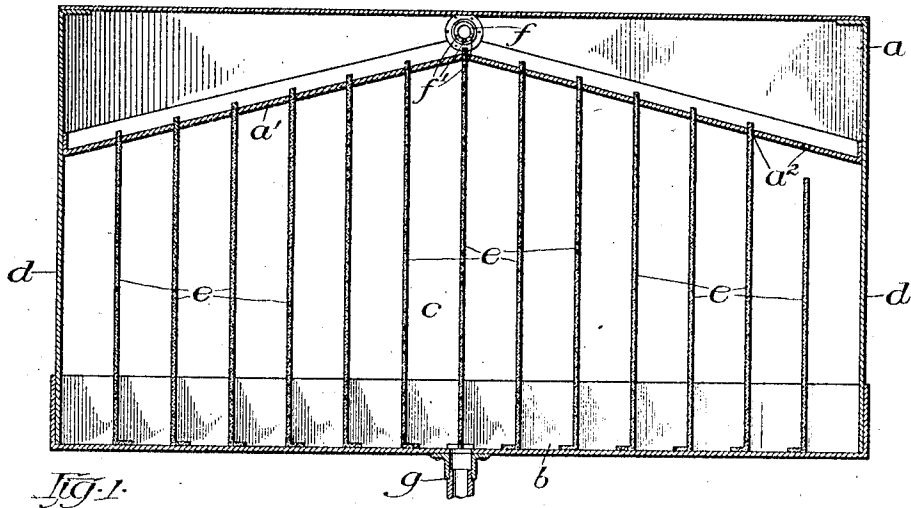


No. 844,677.

PATENTED FEB. 19, 1907.

E. A. JOHNSTON.
COOLER FOR EXPLOSIVE ENGINES.
APPLICATION FILED JAN. 11, 1906.



Witnesses:
W. Daggett.
F. W. Hoffmeister.

Inventor:
Edward A. Johnston.
By
J. C. Warren,
Attorney.

UNITED STATES PATENT OFFICE.

EDWARD A. JOHNSTON, OF STERLING, ILLINOIS, ASSIGNOR TO INTERNATIONAL HARVESTER COMPANY, A CORPORATION OF NEW JERSEY.

COOLER FOR EXPLOSIVE-ENGINES.

No. 844,677.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed January 11, 1906. Serial No. 295,524.

To all whom it may concern:

Be it known that I, EDWARD A. JOHNSTON, a citizen of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented a new and useful Improvement in a Water-Cooler for Explosive-Engines, of which the following is a complete specification.

This invention relates to devices for explosive-engines of the class in which the cooling medium is subjected to the cooling action of the atmosphere or to an air-current, the object being to provide a device which will be very compact in construction, effective in its work, simple in design, and particularly adapted for use on portable engines and automobiles.

The great weight of the tanks as at present in general use when filled with water is very objectionable, and the excessive vibrations to which they are constantly subjected when mounted on the same base with the engine frequently cause them to spring leaks.

My invention is directed to overcoming these difficulties, and is illustrated in the accompanying drawings, in which—

Figure 1 represents a longitudinal vertical section of the improved cooling device. Fig. 2 is a perspective view of the cooling-tank, and Fig. 3 represents a central transverse vertical section of same.

The device consists, essentially, of a box-shaped structure having an inclosed distributing-receptacle *a* at the top, a water-receiving pan *b* at the bottom, open side *c*, closed ends *d*, and a plurality of vertically-disposed transversely-arranged parallel screens *e*, extending from the bottom of the distributing-receptacle *a* to the bottom of the pan *b*. The bottom *a'* of the receptacle *a* inclines upwardly from the ends, and above the highest point midway of its length is placed the inlet-pipe *f*, which is provided with the series of outlet-orifices *f'*. The upper ends of the screens *e* are received by narrow slits *a²* in the bottom *a'*, and the lower ends of the screens are bent and soldered to the bottom of the pan *b*, as shown in Fig. 1. It is apparent, however, that the screens could connect with a series of openings instead of a slit; but the slit is preferred.

The outlet-pipe *g* and inlet-pipe *f* connect with the water-jacket on the engine, a pump (not shown) being introduced in the run to produce circulation. The slits *a²* are so pro-

portioned in size that the combined outlet produced by all will be just sufficient to permit the water received from the inlet-pipe *f* to pass therethrough, thus distributing the water equally to all the screens *e*. The hot water from the engine drips down these screens and in this manner presents a large cooling-surface to the action of the air. For stationary engines both sides are left open, as shown; but when used on automobiles it has been found desirable to close the rear side in order to prevent the violent air-currents blowing the water from the screens.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a device of the class described, in combination, an inclosed distributing-receptacle provided with an inclined bottom having a series of slits formed therein, an inlet-pipe leading thereto, a water-receiving pan located beneath said receptacle, a plurality of screens engaging the slits in the bottom of the receptacle and extending to the bottom of said pan, and an outlet-pipe leading from the receiving-pan.

2. In a device of the class described, in combination, an inclosed distributing-receptacle provided with an inclined bottom having a series of slits formed therein, an inlet-pipe leading thereto, a water-receiving pan located beneath said receptacle, a plurality of vertically-disposed, transversely-arranged parallel screens engaging the slits in the bottom of the receptacle and extending to the bottom of said pan, and an outlet-pipe leading from the receiving-pan.

3. In a device of the class described, a box-like structure having open sides and closed ends and comprised of an inclosed distributing-receptacle which forms the upper part thereof, the said receptacle having a bottom inclining upwardly from each end and provided with a series of slits therein, an inlet-pipe leading to said receptacle, a water-receiving pan which forms the base of said box-like structure, a plurality of vertically-disposed, transversely-arranged parallel screens engaging the slits in the bottom of the receptacle and extending to the bottom of said pan, and an outlet-pipe leading from the receiving-pan.

EDWARD A. JOHNSTON.

Witnesses:

E. R. THOMPSON,
FRED B. FRIEDRICH.