

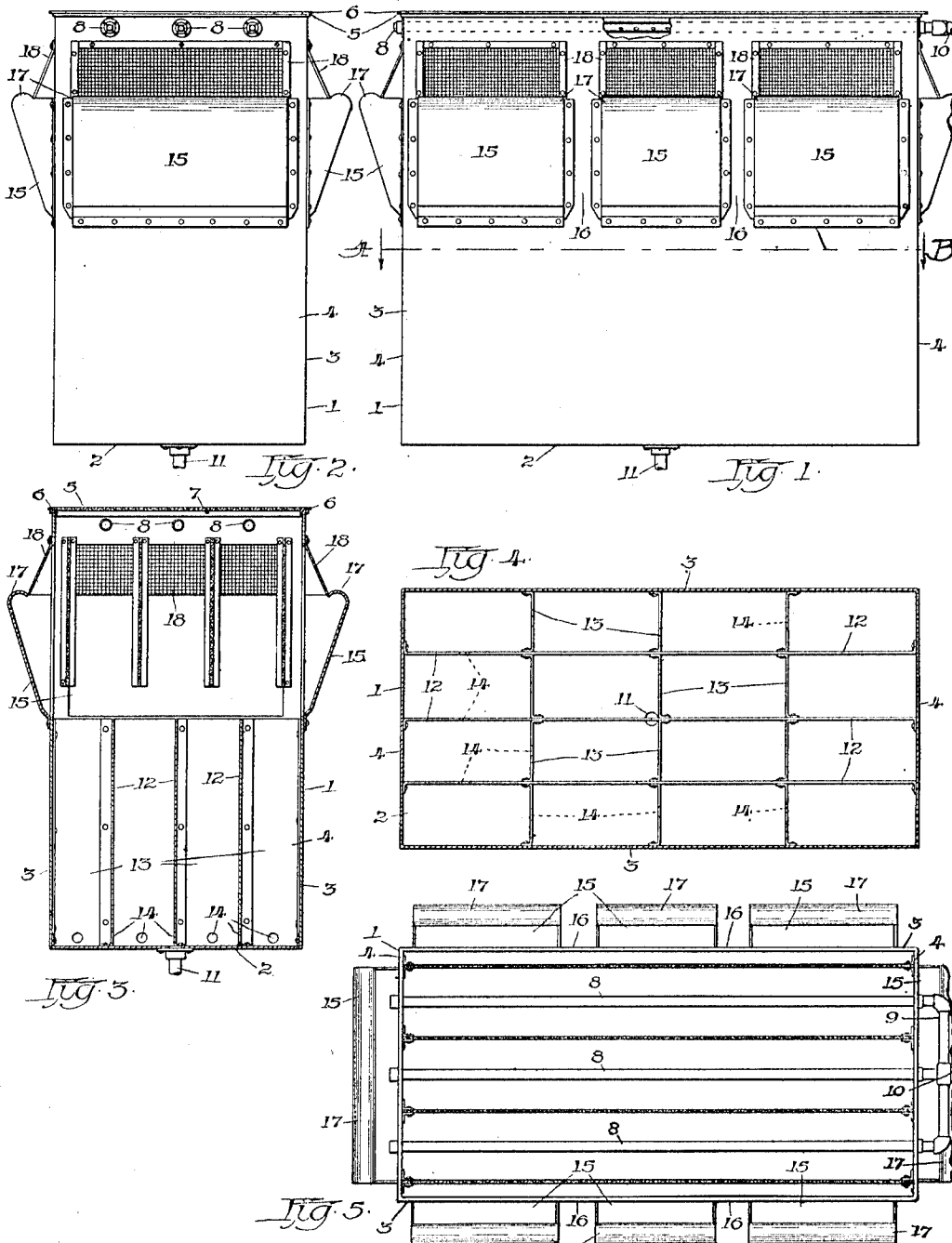
H. A. WATERMAN, L. C. BRADLEY & W. K. ANDREW.

COOLING TANK FOR EXPLOSIVE ENGINES.

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Witnesses:
F. W. Hoffmeister.
H. W. L. L.

Inventors.
Henry A. Waterman, Lyford C. Bradley
and William K. Andrew.

By O. W. Rogers
Attorney.

UNITED STATES PATENT OFFICE.

HENRY A. WATERMAN, LYFORD C. BRADLEY, AND WILLIAM K. ANDREW, OF MILWAUKEE, WISCONSIN, ASSIGNORS TO INTERNATIONAL HARVESTER COMPANY, A CORPORATION OF NEW JERSEY.

COOLING-TANK FOR EXPLOSIVE-ENGINES.

1,001,567.

Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed April 21, 1910. Serial No. 556,699.

To all whom it may concern:

Be it known that we, HENRY A. WATERMAN, LYFORD C. BRADLEY, and WILLIAM K. ANDREW, citizens of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Cooling-Tanks, of which the following is a specification.

Our invention relates to water cooling tanks, and is particularly adapted for use in connection with explosive engines that are provided with means for circulating a cooling medium around the wall of the cylinder and other parts subjected to the heat from the burned gases; its object being to provide a construction of tank that will present a maximum heat radiating area with a minimum capacity for fluid, and also means for preventing undue strains upon the walls of the tank due to the constant motion of the fluid when the tank is subjected to violent shocks such as are present in traction engines moving over rough roads and uneven ground. We attain these objects by means of the mechanism illustrated by the accompanying drawings, in which—

Figure 1 represents a side elevation of a tank having our invention embodied in its construction; Fig. 2 is an end elevation of Fig. 1; Fig. 3 is a vertical cross section of Fig. 1; Fig. 4 is a longitudinal section of Fig. 1 along the line A—B; Fig. 5 is a top plan view of the tank with the screen cover removed.

The same reference characters designate like parts throughout the several views.

Referring to the drawings, 1 represents a tank, preferably made rectangular, having a bottom 2, side walls 3, end walls 4, and a cover 5, including a removable frame made of angle bars 6, having a sheet 7 made of galvanized wire screen secured thereto.

8 represents a series of inlet pipes at the upper end of the tank arranged longitudinally and perforated on their lower surfaces to permit the water to flow in numerous jets therethrough.

9 represents a header connecting the pipes at one end of the tank, and 10 is a single feed pipe communicating with the header.

11 represents an outflow pipe connected with the bottom of the tank.

12 represents a series of vertical par-

tition sheets arranged longitudinally in the lower half of the tank, having their ends secured to the end walls of the tank, dividing it into a series of compartments lengthwise thereof, these compartments being subdivided by means of a series of short transversely arranged partition sheets 13, having their opposite ends secured to the lengthwise sheets and to the side walls of the tank, the two series of partitions forming a series of compartments in the lower half of the tank that operate in a manner to maintain the water in a comparative state of equilibrium regardless of the movement of the tank caused by vibration of the supporting parts.

14 represents openings through the transverse sheets at their lower edges to allow the free flow of water from one compartment to another.

The upper half of the tank is provided at its sides and ends with a series of upwardly and outwardly diverging pockets 15, those upon the sides of the tank having intervening spaces 16, the diverging walls of the pockets being curved inwardly at their upper edges, forming splash arresters 17, as shown in Fig. 2, for the purpose of preventing loss of water.

18 represents a galvanized wire screen connecting the inner edges of the splash arresters with the upper portion of the outside walls of the tank and operative as additional splash arresters and presenting an additional water cooling surface to receive the water as it is splashed against them, the water being directed thereby back into the pockets.

Arranged lengthwise of the tank, in its upper half, are a series of vertical screens below the inlet pipes 8, spaced apart in a manner to have the inlet pipes intermediate the screens and adapted to direct the flow of water against them.

When the cooling tank is connected with an explosive engine there is a continuous flow of water out of the tank, and when used in connection with a traction engine the vertical partitions, screens and side pockets operate to maintain the equilibrium of the water and prevent its splashing.

What we claim as being our invention, and desire to secure by Letters Patent, is:

1. A water cooling tank having on the

upper portion of its side walls a series of outwardly and upwardly extending pockets, the upper ends of said pockets being curved inwardly to form splash arresters.

5 2. A water cooling tank having on the upper portion of its side walls a series of outwardly and upwardly extending pockets, the upper ends of said pockets being curved inwardly to form splash arresters and con-
10 nected with the side walls of the tank by means of screens.

3. A water cooling tank having, in combination, a series of upwardly and outwardly diverging pockets forming part of
15 the upper walls thereof, said pockets being provided with splash arresters at their upper ends.

4. A water cooling tank having in combination, a series of upwardly and out-
20 wardly diverging pockets forming part of

the upper walls thereof, said pockets provided with splash arresters at their upper ends, said splash arresters being connected with the walls of the tank by means of screens.

5. A water cooling tank having on the upper portion of its side walls a series of outwardly and upwardly extending pockets, the upper ends of said pockets being provided with splash arresters, and a series of
25 compartments in the lower portion thereof communicating with each other and having open tops. 30

HENRY A. WATERMAN.
LYFORD C. BRADLEY.
WILLIAM K. ANDREW.

Witnesses:

B. C. WAIT,
CHARLES F. EDWARDS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."