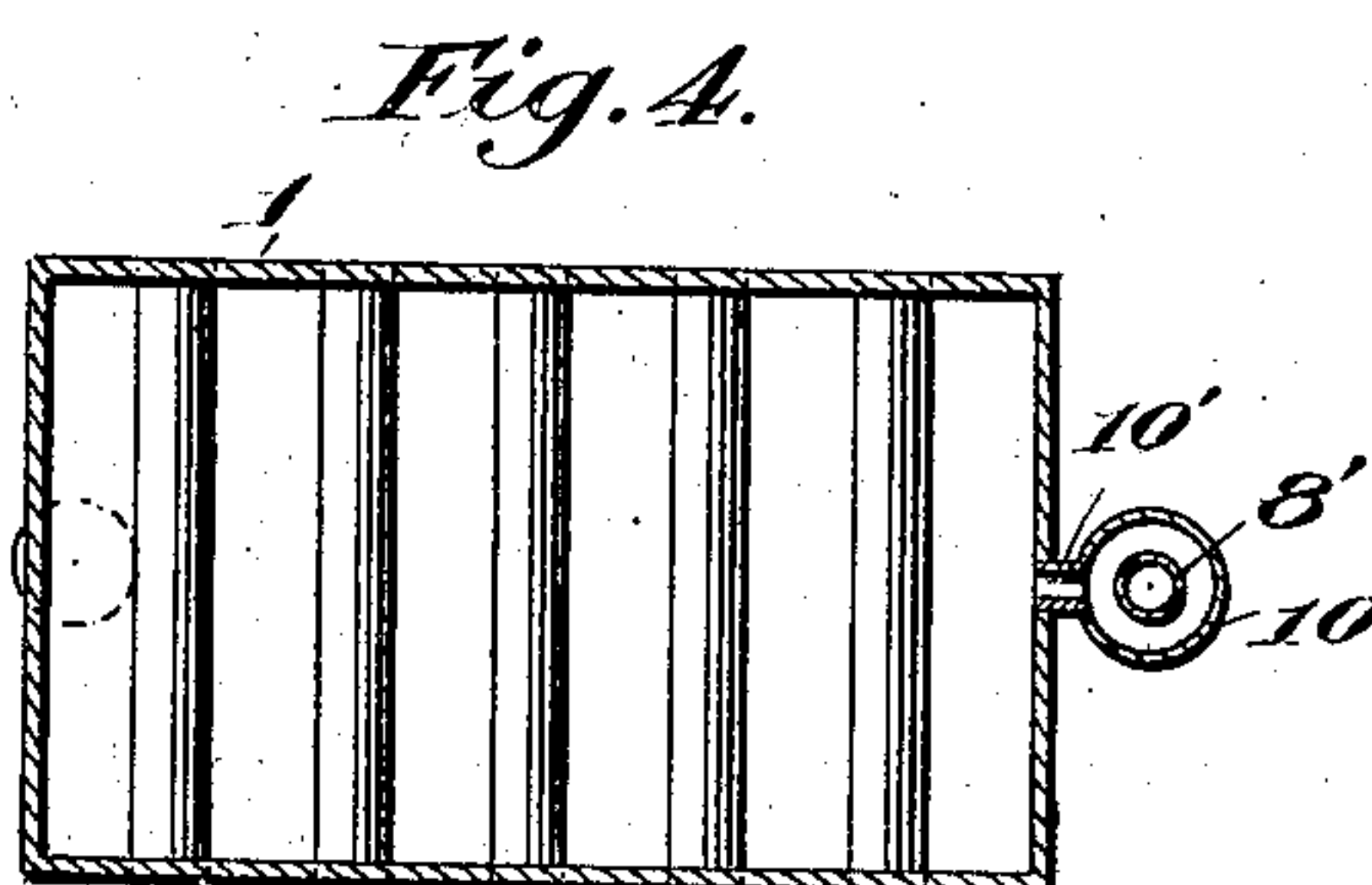
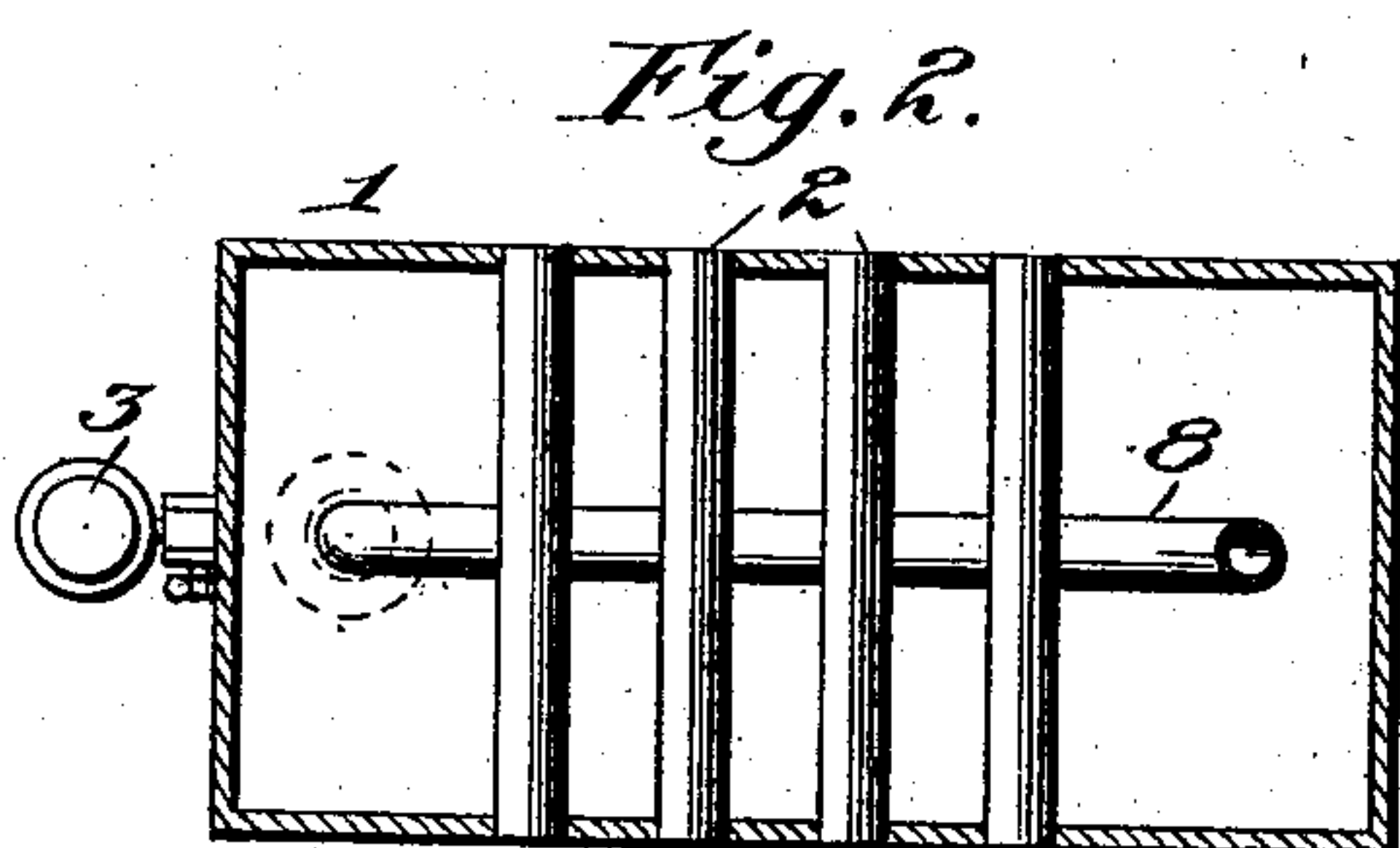
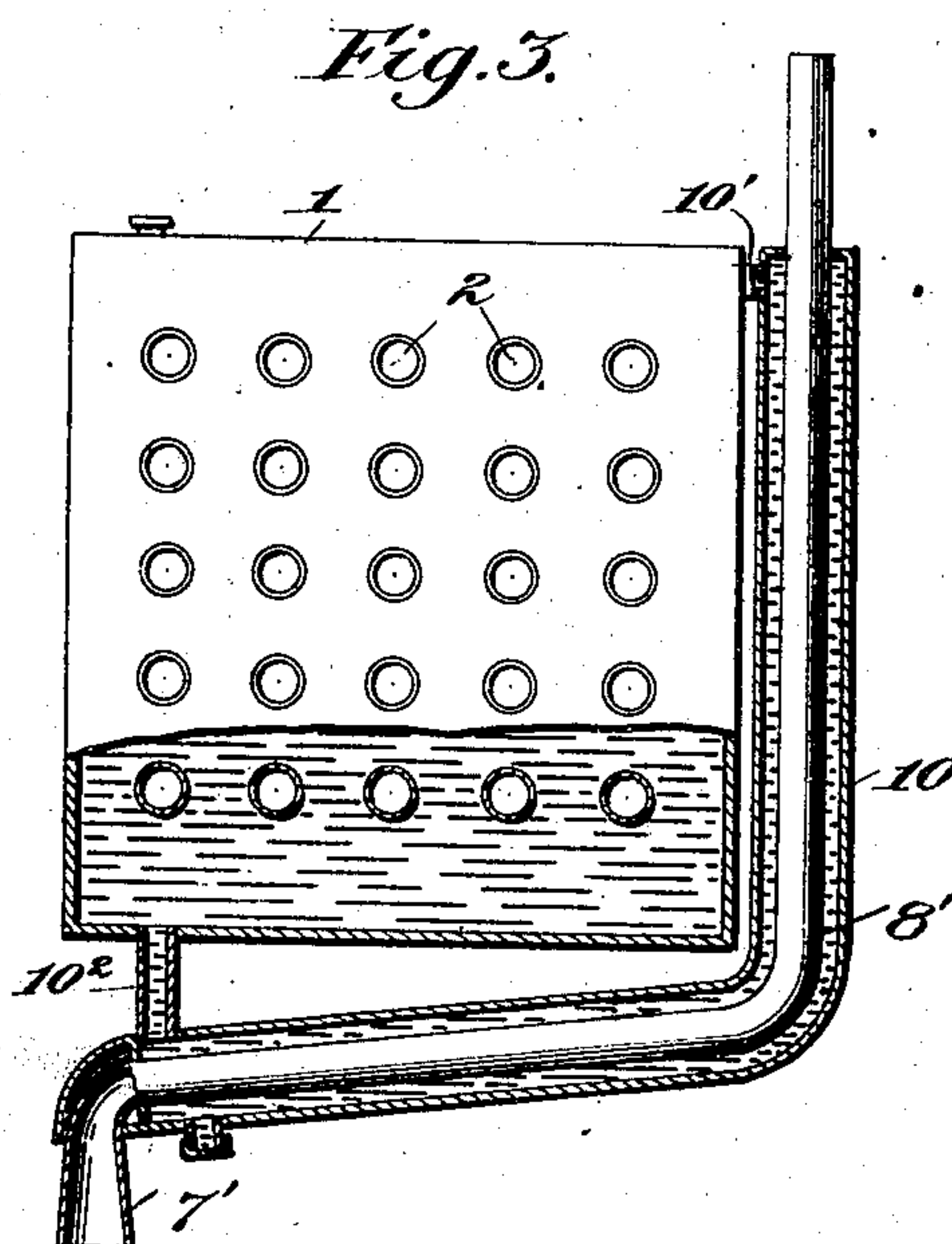
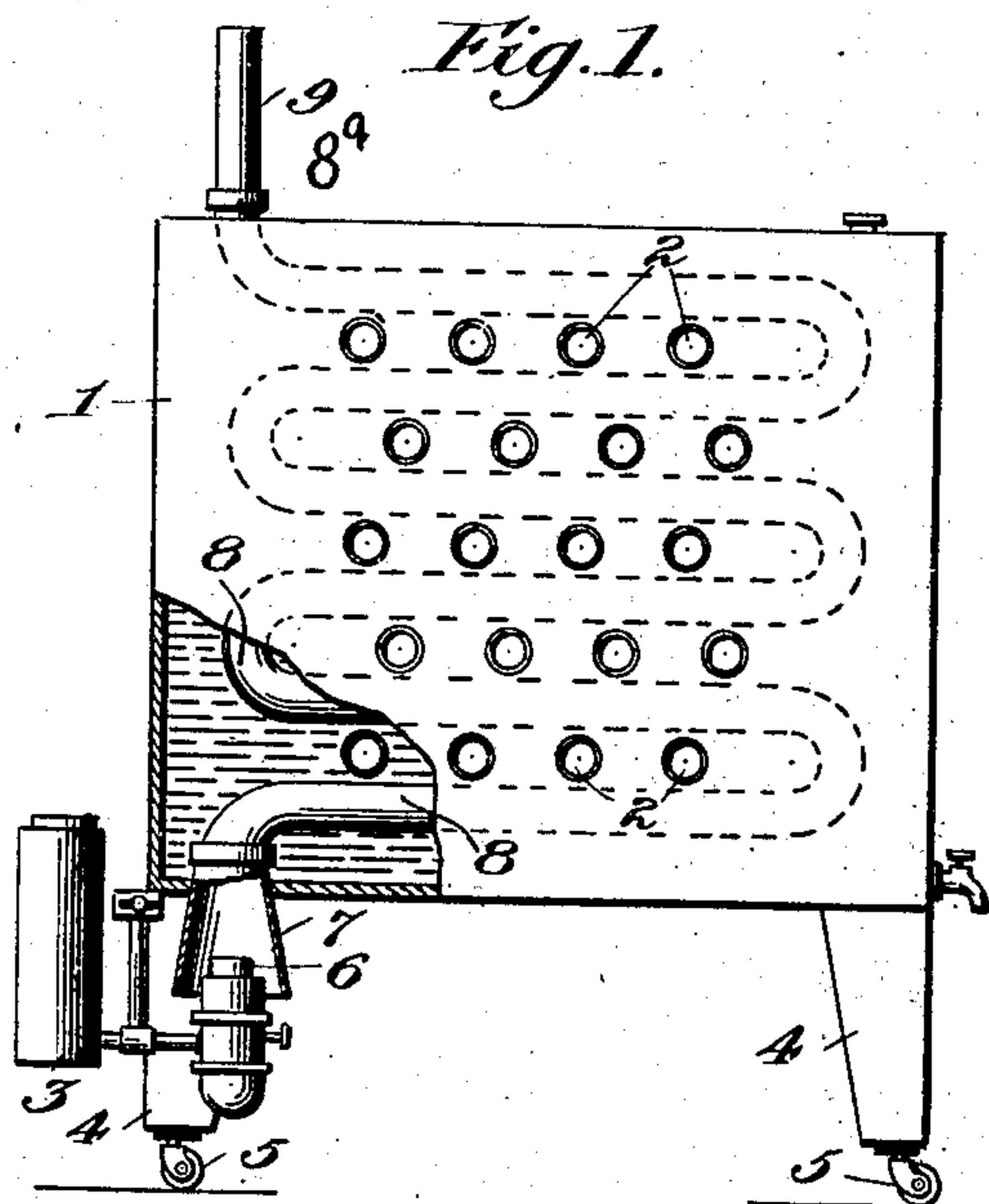


No. 894,621.

PATENTED JULY 28, 1908.

W. W. FRANTZ.
PORTABLE HEATER AND RADIATOR.

APPLICATION FILED JULY 30, 1907.



Witnesses:

Charles Lowell Howard
C. D. Bull

Inventor:

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UNITED STATES PATENT OFFICE.

WILLIS W. FRANTZ, OF WAYNESBORO, PENNSYLVANIA.

PORTABLE HEATER AND RADIATOR.

No. 894,621.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed July 30, 1907. Serial No. 386,232.

To all whom it may concern:

Be it known that I, WILLIS W. FRANTZ, a citizen of the United States, residing at Waynesboro, in the county of Franklin and State of Pennsylvania, have invented new and useful Improvements in Portable Heaters and Radiators, of which the following is a specification.

My invention, in which water is used as the heating medium, provides a unitary and self-contained device which may be bodily moved about an apartment as desired, the heat-producing medium being a lamp or gas flame the burner of which forms an integral part of the device, the entire construction being effected with the fewest possible number of parts and connections, they being capable of ready examination for substitution, repair or otherwise.

In carrying out my improvement I employ the well known and effective system of obtaining heat by radiation through the medium of water.

In the accompanying drawing, Figure 1 is a side view of the preferred form of my invention, partly in section. Fig. 2 is a plan view of the same, also in part section. Fig. 3 is a part sectional elevation showing a modification; and Fig. 4 a plan thereof.

Similar numerals of reference indicate similar parts in the respective figures.

Referring more particularly to Figs. 1 and 2, 1 represents a jacket or inclosed receptacle adapted to hold the water. The jacket 1 is provided with tubes 2 extending across and completely through it. At the lower left hand corner of the jacket 1 is a lamp or other flame-producing medium 3, mounted upon or secured to the jacket so as to be movable therewith. The entire device is preferably erected upon feet 4 having rollers or casters 5.

The burner of the heat producing medium is shown by 6 it being inclosed, but in a manner admitting free access of air, in a funnel-shaped mouth 7 constituting the lower end of a system of pipe 8 which, as shown, passes through the jacket 1 to its upper left hand corner, where the pipe is provided with a screw connection 8^a, to which a removable escape pipe 9 may be applied. The funnel-shaped mouth 7 is also furnished with a similar screw connection so that the lamp or other heat-producing medium may be detached from the jacket and pipe system as desired. I do not limit myself to the shape of the jacket, which may be rectangular, cy-

lindrical or of other form; nor to the character of the lamp or other heat-producing medium, it being only essential that when in operative position it shall form an integral though preferably detachable part of the radiator.

In Figs. 3 and 4 a modification is shown in which the jacket or water containing receptacle 1 is furnished with an external water circulating device forming a part thereof and connected as shown to the upper right hand and also to the lower left hand corner of the jacket. This water circulating device is the tube 10 which, extending at an upward angle lengthwise of the jacket or receptacle 1, turns upward and is provided with a neck 10¹ which enters the upper right hand corner of the jacket; while at the lower left hand corner there is a similar neck 10². A tube 8¹ through which the products of combustion are carried is concentric with the water tube 10; and at the lower end of the tube 8¹ there is an enlargement 7¹ into which the burner of the lamp or its equivalent enters. In this modification, as in the form shown in Figs. 1 and 2, the whole device is self-contained or unitary, and is by preference mounted upon feet or legs 4¹ having rollers or casters 5¹. In each form of the improvement the jacket is provided with a filling neck 12 and a discharge cock 13.

In operation, the jacket is filled with water, and heat applied to the pipe system through which the heat from the products of combustion are conveyed to the water, while the usual radiation of heat occurs. In the form shown in Figs. 1 and 2, the heat is conveyed through the body of water within the jacket by means of the internal pipe system 8; whereas in Figs. 3 and 4 the same effect is produced by means of the pipe 8¹ which is surrounded by a body of water in the tube 10 and in circulatory relation to the main body of water within the jacket.

It has been found in practice that the device herein described is efficient for the purposes intended.

It will be understood that in each form in which the invention is herein shown and described the pipe leading from the heating device passes through the water jacket or receptacle; and that the heat conveyed by the pipe is given out to the water contained within the receptacle.

My invention is capable of minor changes in detail which may occur to the skilled me-

chanic without the exercise of invention, and such minor changes are intended to be covered by the following claims.

Having thus described my invention, I
5 claim:—

1. In a portable heater and radiator, the combination of a water receptacle, radiator tubes arranged transversely thereof, a flame producing medium, and a pipe extending
10 from the flame producing medium through said water receptacle and adapted to provide for the escape of the products of combustion, said transversely arranged radiator tubes being situated in the path of the circulation
15 of the water within said receptacle, substantially as set forth.

2. In a portable heater and radiator, the combination of a water receptacle, radiator tubes arranged transversely thereof, a flame producing medium, means for admitting free
20 access of air to the flame, and a pipe system passing through said water receptacle and arranged in close juxtaposition to the radiator tubes, said coiled pipe constituting the means for the escape of the products of com-
25 bustion, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIS W. FRANTZ.

Witnesses:

J. M. LANTZ,
N. B. MARTIN.