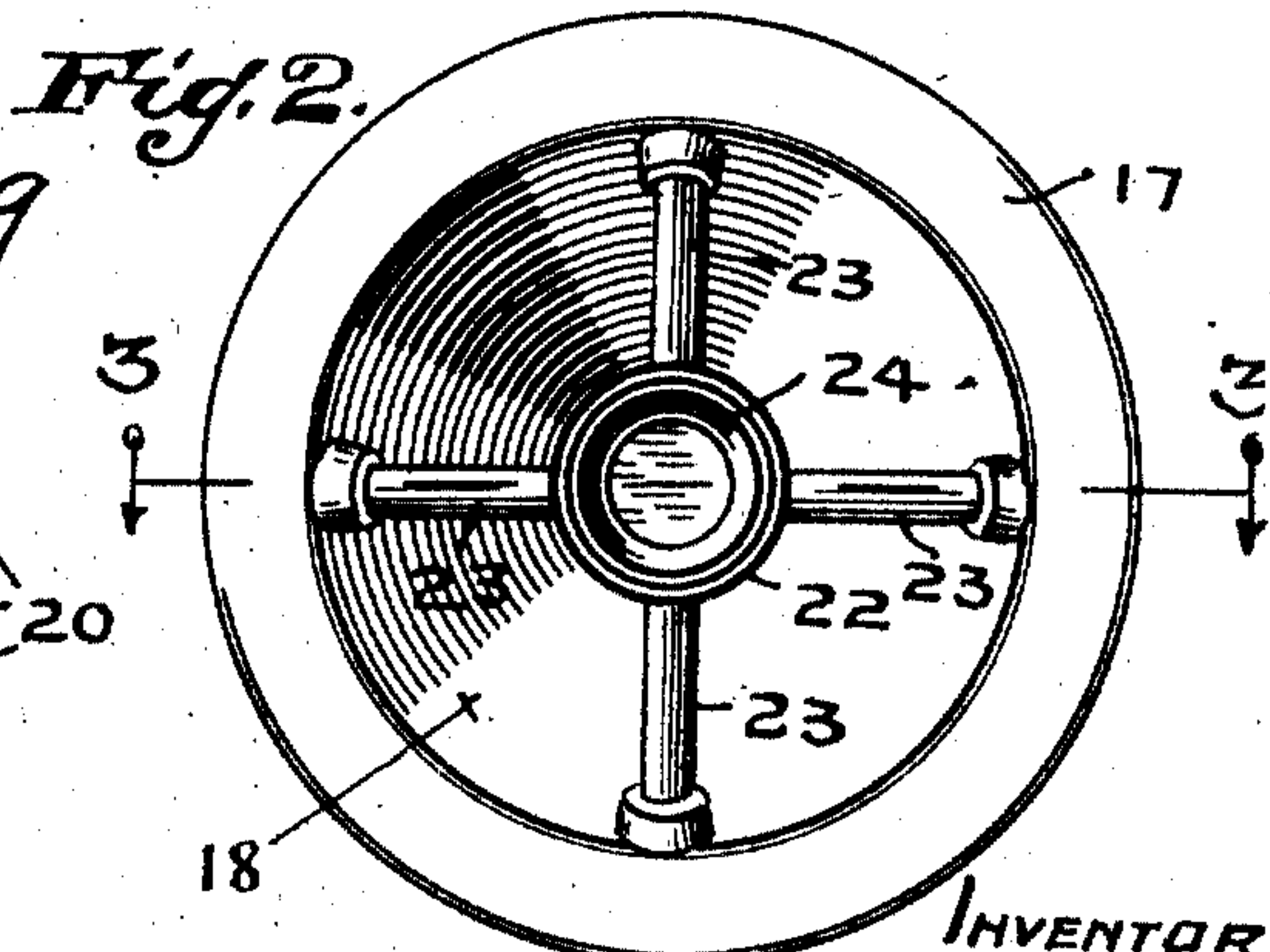
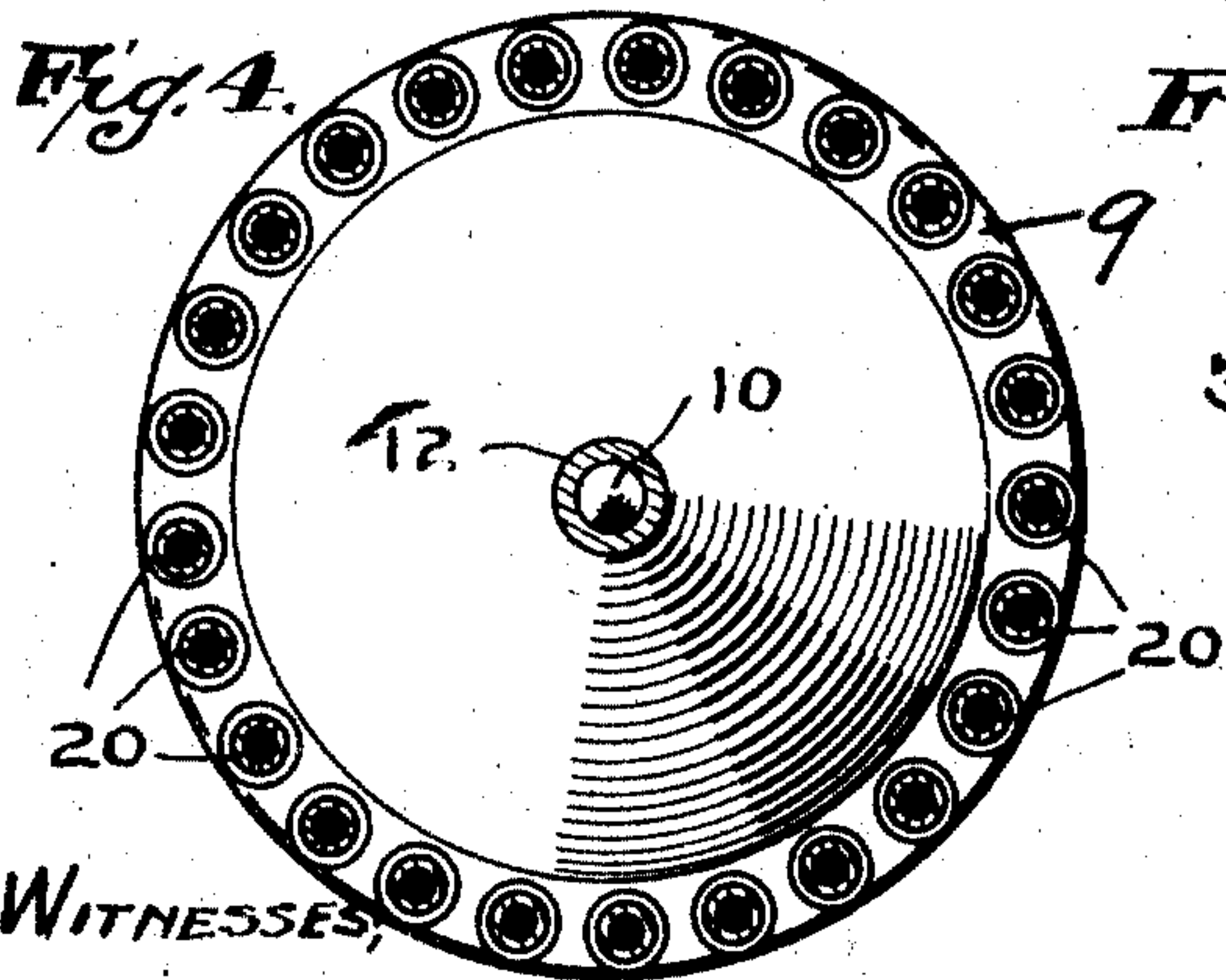
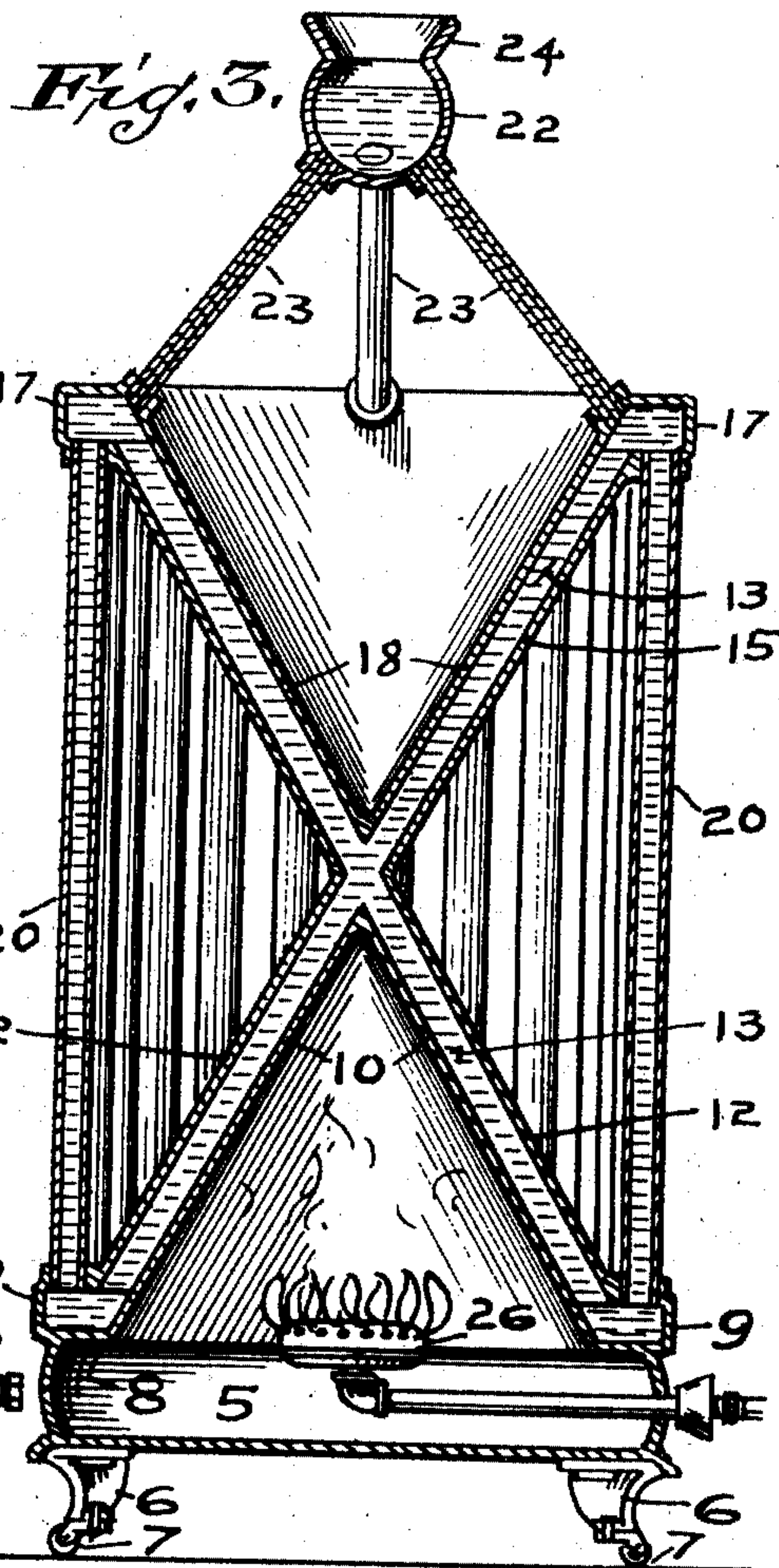
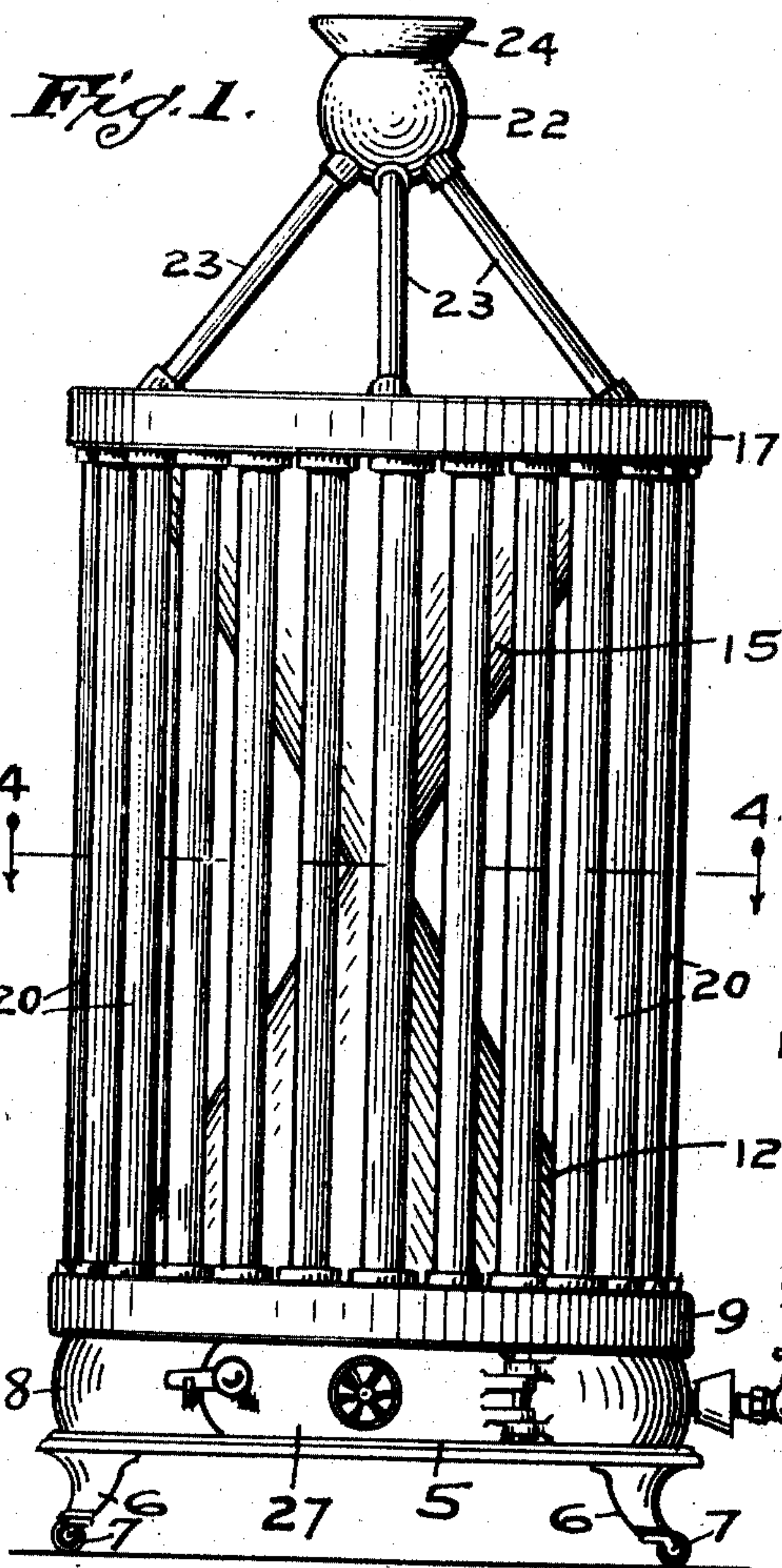


E. R. DYE.
HEATER.
APPLICATION FILED MAY 5, 1909.

929,756.

Patented Aug. 3, 1909.



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UNITED STATES PATENT OFFICE.

EDWARD R. DYE, OF MONTICELLO, INDIANA.

HEATER.

No. 929,756.

Specification of Letters Patent.

Patented Aug. 1 1909.

Application filed May 5, 1909. Serial No. 494,113.

To all whom it may concern:

Be it known that I, EDWARD R. DYE, a citizen of the United States, residing at Monticello, in the county of White and State of Indiana, have invented certain new and useful Improvements in Heaters, of which the following is a specification.

This invention relates to improvements in portable heaters for heating rooms, and the object of the invention is to more thoroughly utilize the heat units in the fuel consumed, and to provide a device which will occupy a comparatively small space, and which will be easily operated, inexpensive to maintain and of comparatively low cost to manufacture.

I accomplish the objects of the invention by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 is a view in side elevation of my complete invention. Fig. 2 is a top plan view of same. Fig. 3 is a vertical section on the line 3—3 of Fig. 2, and Fig. 4 is a horizontal section on the line 4—4 of Fig. 1.

Like characters of reference indicate like parts throughout the several views.

This invention is shown in connection with a burner for burning gas as a fuel, to which the invention is well adapted, but it may also be used in connection with an oil burner, or an electric or other initial heater. The invention contemplates the use of this initial heat in heating water in which the heat units will be stored and given off more uniformly and equally than would otherwise be possible.

Referring to the drawings, 5 is the base of the heater which is supported on legs 6, the said legs being mounted on casters 7 to facilitate the moving of the heater from one place to another. Supported by sides 8 which project upwardly from the base 5 is a horizontal annular reservoir 9, the inner walls of which are extended to form a conical shell 10. The top wall of the reservoir 9 is extended to form a conical shell 12 which envelops the shell 10 and is enough larger than the latter to provide a water space 13 between the two shells. Supported by the conical shell 12 is an inverted conical shell 15 and supported by the shell 15 is a second or top annular reservoir 17. The inner wall of the reservoir 17 is continued downwardly to form the inner inverted conical shell 18 which is spaced away from the shell 15 to provide a continuation of the water space 13 between said two upper inverted cones. By the construction

just described water placed in the reservoirs 9 and 17 will have free communication or flow from one reservoir to the other through the space 13 between the several conical shells above mentioned.

20 are vertical pipes extending from the top of the reservoir 9 to the bottom of the reservoir 17 and forming direct vertical communications between said upper and lower reservoirs.

22 is a supply tank supported above the reservoir 17 by means of the diagonal pipes 23, which pipes also provide communication from the tank 22 to the reservoir 17. The tank 22 has a funnel-shaped mouth 24 through which it is filled with water, and the water placed therein passes down through the pipes 23 into the top reservoir 17, and thence through pipes 20 and space 13 between the conical shells to the lower reservoir 9.

26 is a gas-burner, of any usual construction, which is mounted under the inner conical shell 10. A door 27 through the walls 8 affords access to the burner for lighting same. Heat from the burner 26 will be retained within the hollow shell 10 and base, between the walls 8 above the bottom plate. The water in the space 13 between the lower conical shells 10 and 12 will be heated by the heat generated by the burner 26, and will rise through the connected space between the inverted conical shells 15 and 18 and entering the top reservoir 17 will pass down through the vertical tubes 20 to the lower reservoir 9, thereby setting up a complete circulation. It will be noted that my device as above described provides very considerable radiating surface by reason of the vertical pipes 20 and also of the outer conical shell 12, the inverted conical shell 15 and inner conical shell 18, all of which afford exceptionally large and well placed surfaces for proper and thorough radiation.

While I have shown and described the preferred embodiment of my invention, it will be understood that I do not wish to be limited to the precise construction herein set forth, since various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus fully described my invention what I claim as new and wish to secure by Letters Patent of the United States, is—

1. In a portable heater, upper and lower horizontal annular reservoirs, a pair of conical shells spaced apart and extending up from the lower reservoir and like shells extending down from the upper reservoir, the outer shells of both pairs merging into each other to form continuous unbroken walls, said shells forming water spaces between them which spaces communicate with the interiors of said reservoirs to form water communications from one reservoir to the other.

2. In a portable heater, upper and lower horizontal annular reservoirs, a pair of conical shells spaced apart and extending up from the lower reservoir and like shells extending down from the upper reservoir, the outer shells of both pairs being joined, said shells forming water spaces between them which spaces communicate with the interiors of said reservoirs to form water communications from one reservoir to the other, and a plurality of pipes forming additional direct communication between the two reservoirs.

3. In a portable heater, upper and lower horizontal annular reservoirs, a pair of conical shells spaced apart and extending up from the lower reservoir and like shells extending down from the upper reservoir, the outer shells of both pairs being joined, said shells forming water spaces between them which spaces communicate with the interiors of said reservoirs to form water communications from one reservoir to the other, a plurality of pipes forming additional direct communication between the two reservoirs, and a burner for imparting an initial heat located under the bottom conical shell.

4. In a portable heater, upper and lower horizontal annular reservoirs, a pair of conical shells spaced apart and extending up from the lower reservoir and like shells extending down from the upper reservoir, the outer shells of both pairs being joined, said shells forming water spaces between them which spaces communicate with the interiors of said reservoirs to form water communications from one reservoir to the other, a plurality of pipes forming additional direct communication between the two reservoirs, a

base comprising a bottom plate and vertical sides, said base being mounted on caster rollers, and a burner for imparting an initial heat located within the base under the bottom conical shell.

5. In a portable heater, upper and lower horizontal annular reservoirs, a pair of conical shells spaced apart and extending up from the lower reservoir and like shells extending down from the upper reservoir, the outer shells of both pairs being joined, said shells forming water spaces between them which spaces communicate with the interiors of said reservoirs to form water communications from one reservoir to the other, a plurality of pipes forming additional direct communication between the two reservoirs, a tank above the upper reservoir and oblique pipes supporting said tank and forming water communications between the tank and upper reservoir.

6. In a portable heater, upper and lower horizontal annular reservoirs, a pair of conical shells spaced apart and extending up from the lower reservoir and like shells extending down from the upper reservoir, the outer shells of both pairs being joined, said shells forming water spaces between them which spaces communicate with the interiors of said reservoirs to form water communications from one reservoir to the other, a plurality of pipes forming additional direct communication between the two reservoirs, a tank above the upper reservoir, oblique pipes supporting said tank and forming water communications between the tank and upper reservoir, a base under the lower reservoir comprising a bottom plate and vertical sides said base being mounted on roller casters, and a gas-burner in said base under the bottom conical shell.

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, this 30th day of April, A. D. one thousand nine hundred and nine.

EDWARD R. DYE. [L. S.]

Witnesses:

F. W. WOERNER,
L. B. WOERNER.