R. F. HAWLEY & F. L. BOHANAN.

HEATER.

APPLICATION FILED AUG. 20, 1912.

1,147,396.

Patented July 20, 1915.

2 SHEETS—SHEET 1.

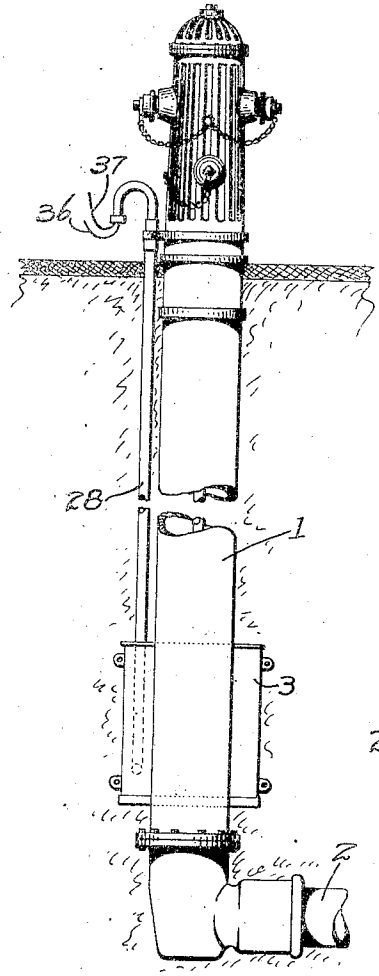


Fig. 1.

Fig. 2.

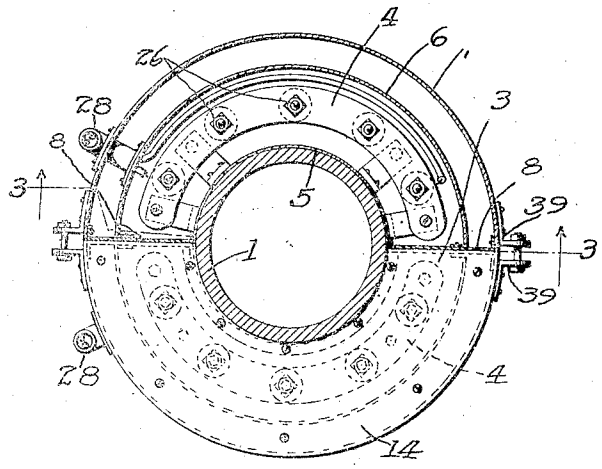
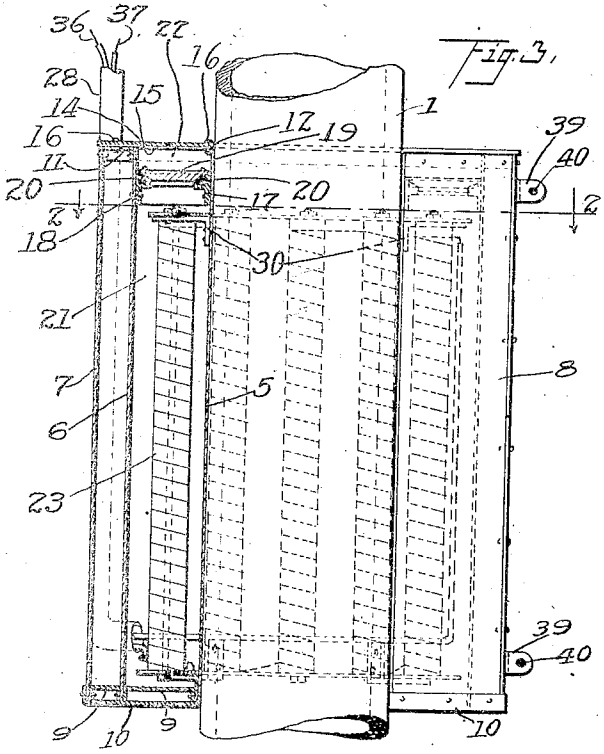


Fig. 3.



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HEATER.

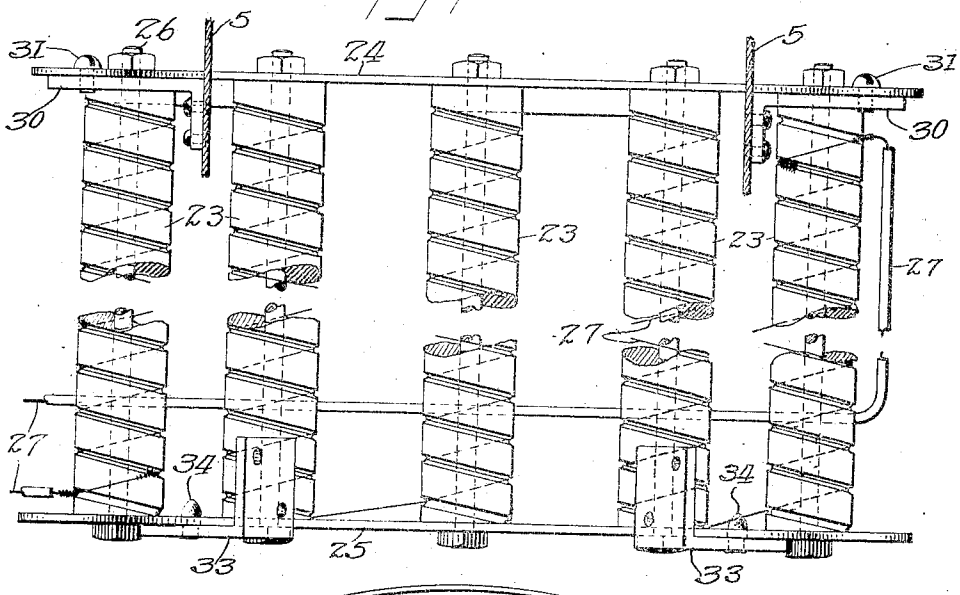
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2 SHEETS—SHEET 2.

Fig. 4.



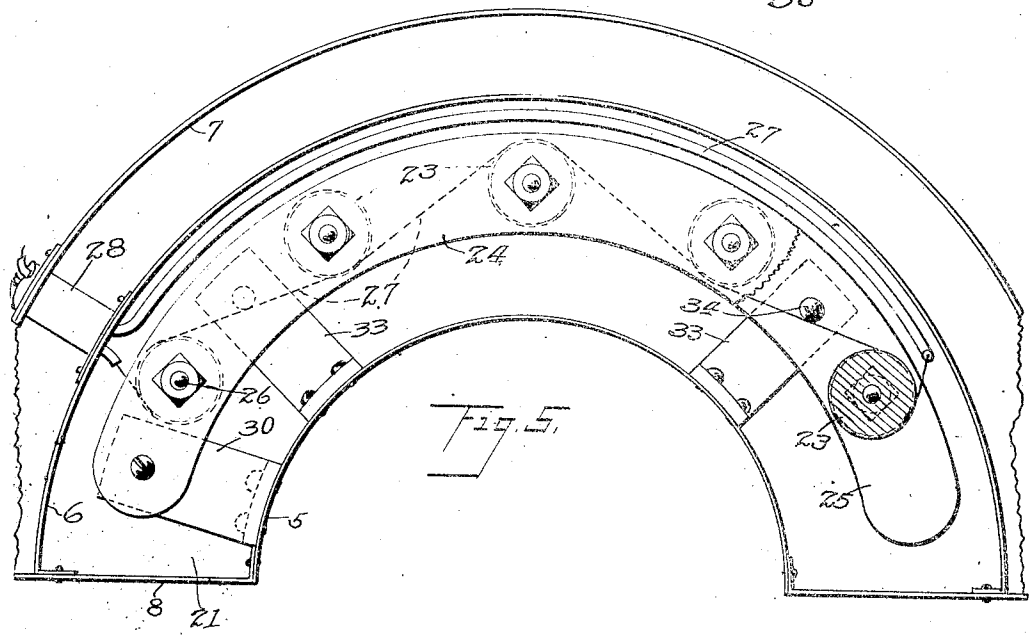


Fig. 5.

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UNITED STATES PATENT OFFICE.

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HEATER.

1,147,396. Specification of Letters Patent. Patented July 20, 1915.

Application filed August 20, 1912. Serial No. 716,113

To all whom it may concern:

Be it known that we, ROLLAND F. HAWLEY and FRANKLIN L. BOHANAN, both citizens of the United States, residing at Pullman, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Heaters, of which the following is a description.

Our invention relates to means for slightly warming or increasing the temperature of a body especially where it is desired to prevent damage by frost or chilling.

The object of our invention is to provide a simple, reliable and inexpensive device of the kind described suitable for use in any position or location and which will not be materially affected by climatic or weather conditions.

To this end our invention consists in the novel construction, arrangement and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the accompanying drawings wherein like or similar reference characters indicate like or corresponding parts, Figure 1 is an elevation of a fire-hydrant equipped with our improvement with one-half of the heater removed to more clearly show the application of our device. Fig. 2 is a plan view showing one of the sections of our device in transverse section taken substantially on line 2—2 of Fig. 3. Fig. 3 is a section taken substantially on line 3—3 of Fig. 2. Fig. 4 is an enlarged detail of the heating elements, their electrical connection and the method of mounting them in the section. Fig. 5 is an enlarged section taken substantially on line 2—2 of Fig. 3.

In the drawings our device is shown applied to an ordinary form of fire-hydrant to prevent its chilling or freezing and becoming inoperative. As shown 1 is the tubular body portion of the hydrant which is connected to the water main by a pipe 2 the valve mechanism of the hydrant is positioned at the junction of the pipes 1 and 2 and the object of our mechanism is to provide means for increasing the temperature of the pipe 1 to prevent any moisture remaining in the pipe from freezing around the valve and preventing its operation.

In the form shown a substantially fluid tight casing 3 is provided formed in two parts of suitable form to coöperate and snugly fit the exterior of the pipe 1. A heating element 4 is positioned within each portion of the casing so that the temperature of the pipe may be increased when desired. As shown the casing 3 comprises an inner wall 5 adapted to fit against the exterior of the pipe 1 and a wall 6 suitably spaced from the wall 5 to receive the heating elements between them and a second wall 7 inclosing the wall 6 and suitably spaced therefrom to provide an air space or if preferred any suitable insulating material may be positioned between the walls to prevent the radiation of heat from the outer wall of the casing. Any suitable means may be provided to close the space between the walls 5, 6 and 7. As shown sheets 8—8 are rigidly secured to the vertical margins of the walls 5—6 and 7 to securely close the space between the walls, and in the form shown annular plates 9—9 are positioned between the lower edges of the sheets 8—8 and between the walls 5 and 6 and 6 and 7 respectively and each securely fastened to the sheets and walls thereby forming a fluid tight cover or closure for the lower end of our casing. A cover plate 10 is also preferably provided arranged to extend between and overlap the lower edges of the walls 5 and 7 and plates 8—8 thereby providing a second fluid tight end or cover for the lower end of our device. The space between the covers is preferably left as an air space or for receiving insulating material to prevent the radiation of heat. At the upper end of our casing we provide a plate 11 between the sheets 8—8 and between the walls 6 and 7 securely attached to the upper edge of each sheet and wall. The upper edge of the plate 5 is flanged or bent outward as at 12 and a cover 14 is provided extending from the exterior of the wall 7 to the inner edge of the plate 5. Suitable packing material 15 is provided between the plate 14 and the plate 11 and flange 12 so that, when the screws 16—16 are properly tightened a fluid tight cover is formed for the upper end of our casing. A pair of projecting shelves 17 and 18 are provided upon the proximate faces of the walls 5 and 6 and extending across the ends of the chamber secured to the sheets 8—8 and a cover 19 is provided adapted to rest upon the shelves and close the space between them. A strip of suitable packing material 20—20 positioned between the margin of the cover and the shelf is pro-

vided to prevent the passage of air or other fluid between the chambers 21 and 22. The spaces in each case between the outer walls of our casing may be left empty to serve as an air space, or if preferred, they may be filled with asbestos or other suitable insulating material depending upon the conditions under which my device is intended to operate.

Any suitable heating means may be provided in the chamber 21. As shown, a plurality of cores 23 formed of lava or other suitable material adapted to serve as cores for supporting a heating coil are provided and connected at their extremities by plates 24 and 25. A bolt 26 or other suitable means extends longitudinally through each core and through the plates 24 and 25 with a nut or other convenient fastening means at its extremities for clamping the several parts together. A suitable electric conductor 27, is wound successively upon the several cores in the chamber and passes out of the chamber finally through the pipe 28 which is rigidly connected to the walls 6 and 7 and extends upward near the pipe 1 to protect the conductors 36 and 37. If desired the space around the conductors in the pipe 28 may be filled with cement or other suitable material adapted to prevent water or other fluid from entering the casing. The cores 23 and plates 24 and 25 are preferably of suitable size to pass between the proximate edges of the flanges 17 and 18 so that if desired the plates 12 and 14 may be removed and the heating elements taken out bodily for repairs or examination.

Any suitable means may be provided for supporting the heating elements in position in the chamber 21. In the form shown suitable brackets 30—30 are provided upon the plate 5 in position to receive and support the projecting ends of the plate 24. A suitable screw or nut 31 is provided for rigidly securing the plate 24 to the brackets 30 to prevent accidental displacement of the heating element. In the preferred construction also a pair of brackets 33—33 are attached to the plate 5 near the lower end of the heating element, each bracket having a tapering pin 34 projecting upward from its face adapted to engage a suitable opening in the plate 25 to accurately maintain the lower end of the heating element in position and prevent the plate or the conductor 27 coming in contact with the walls of the chamber. Brackets 39 are provided upon the exterior of the walls 7 so that a suitable bolt may be inserted in the opening 40 in the corresponding brackets of the section of our casing to hold the sections together and firmly clamp the same to the pipe.

Having thus described our improvement it is obvious that various immaterial modifications may be made in our device without departing from the spirit of our invention, hence we do not wish to be understood as limiting ourselves to the exact form or construction shown.

What we claim as new and desire to secure by Letters Patent is:

1. In a device of the kind described, a substantially fluid tight annular casing, comprising a plurality of substantially independent sections, and means for securing said casing in position, in combination with a plurality of permanently connected heating elements positioned within each section and means for rigidly supporting said elements in position.

2. In a device of the kind described, a substantially fluid tight casing having a removable cover, means for insulating the outer walls of said casing against the radiation of heat and means for securing said casing in position, in combination with a plurality of sets of permanently connected heating elements positioned within said casing and means for rigidly and independently supporting the sets in position.

3. In a device of the kind described, a substantially fluid tight casing comprising a plurality of substantially independent sections each provided with a removable cover, and means for securing said casing in position, in combination with a plurality of sets of permanently connected heating elements positioned within said casing and means for rigidly and removably supporting said sets in position.

In testimony whereof, we have hereunto signed our names in the presence of two subscribing witnesses.

ROLLAND F. HAWLEY.
FRANKLIN L. BOHANAN.

Witnesses:
BLANCHE CHALMERS,
BURTON U. HILLS.