R. DUNWODY.

SIGNALING APPARATUS FOR TURPENTINE STILLS.

APPLICATION FILED MAR. 10, 1911.

1,018,038.

Patented Feb. 20, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

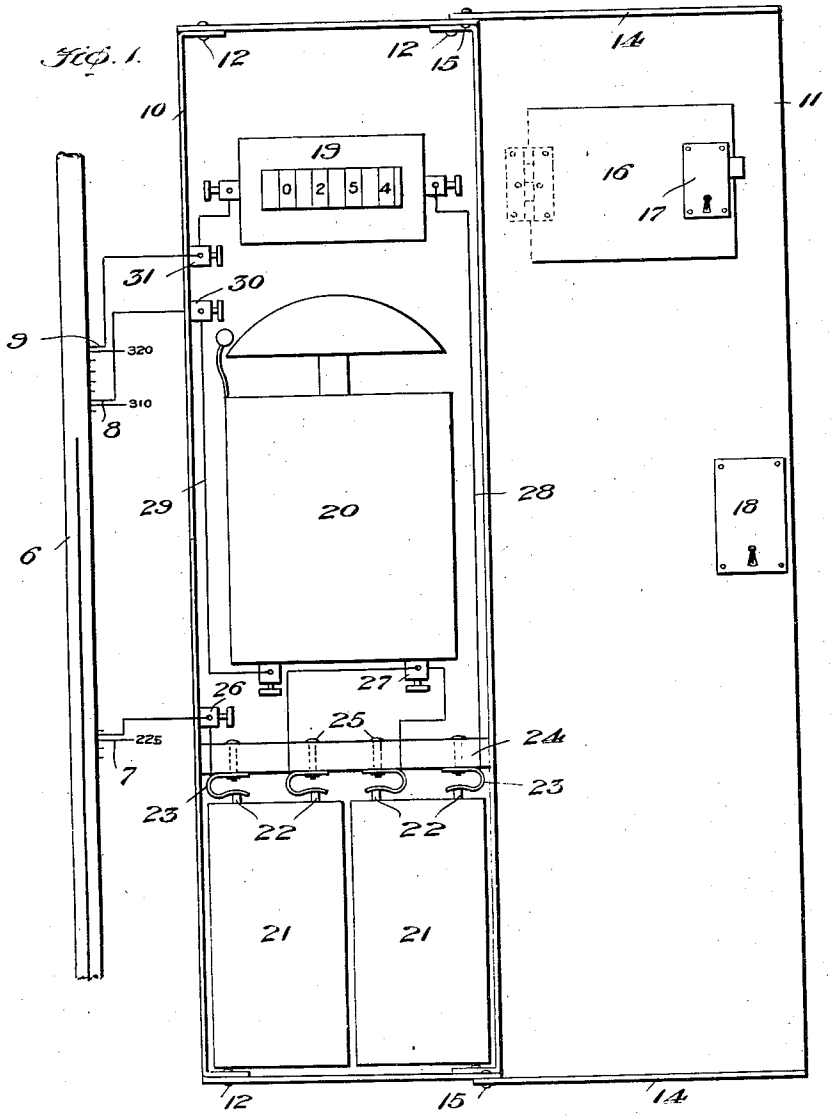
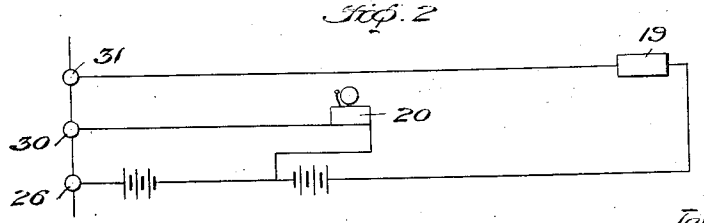


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

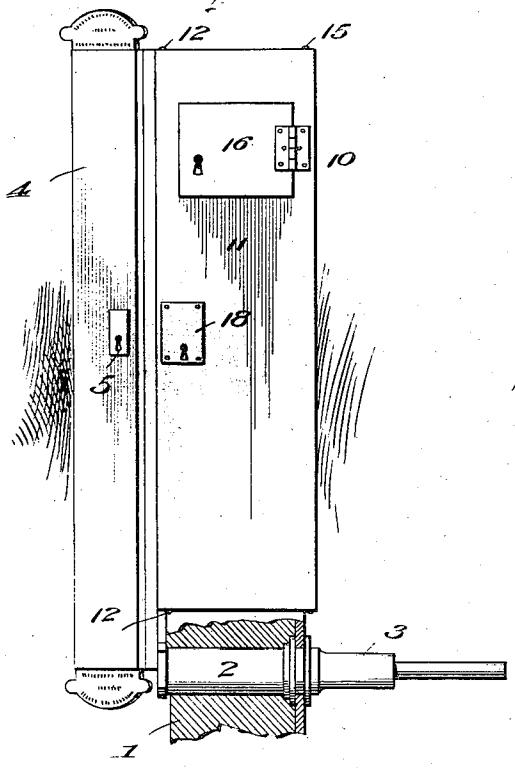


Fig. 4.

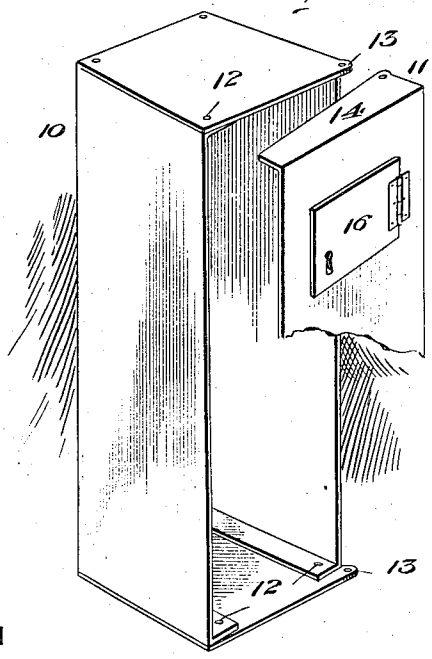
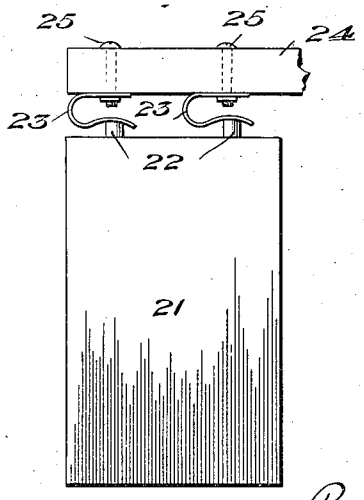


Fig. 5.



Witnesses

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SIGNALING APPARATUS FOR TURPENTINE-STILLS.

1,018,038. Specification of Letters Patent. Patented Feb. 20, 1912.

Application filed March 10, 1911. Serial No. 613,623.

To all whom it may concern:

Be it known that I, ROBSON DUNWODY, a citizen of the United States, residing at Kirkwood, in the county of Dekalb and State of Georgia, have invented new and useful Improvements in Signaling Apparatus for Turpentine-Stills, of which the following is a specification.

In the distillation of turpentine, it is necessary to keep the temperature of the gum being distilled between certain limits and around 316° F. is a critical temperature which, if exceeded, will result in scorching and discoloration of the gum and a defective distillate, resulting in much loss on account of such scorching and discoloration, from a financial standpoint. Distillers of turpentine are inclined to be careless in attending to their stills and while thermometers have heretofore been used for the guidance of distillers, from carelessness or lack of interest, these are frequently neglected and the turpentine is damaged.

The present invention has for its object the provision of a novel alarm and recording apparatus, combined with a thermometer, a source of electrical energy, and inclosing and protecting devices, whereby when the critical temperature of 316° F. is nearly reached, say, at 310° F., an alarm will be sounded to notify the distiller that his fires must have attention to bring the temperature of the still to a safe degree and whereby should the distiller neglect his still after such alarm is sounded, when the critical temperature has been passed and a temperature of, say, 320° F. has been reached, a recorder will be electrically operated to indicate that fact and thus enable the superintendent of the plant to learn at any time as, for instance, at the end of the day's run, whether the critical temperature has been passed and if so, how many times, so that the distiller may be held accountable for his neglect. The apparatus is so arranged that it cannot be tampered with by the distiller or any other than an authorized person such as the superintendent. I also propose to arrange the batteries and their contacts so that the batteries may be readily removed and new ones substituted at any time by an authorized person, without the necessity of disengaging any wires or other electrical connections, thus insuring against any accidental derangement of the apparatus.

The invention is fully set forth hereinafter and the novel features are recited in the appended claim.

In the accompanying drawings:—Figure 1 is a front view of the apparatus, the door of the box being open and the thermometer and contacts therefor being shown diagrammatically; Fig. 2, a diagram of the electrical connections; Fig. 3, an elevation showing how the device is applied to the wall of a turpentine still, which is shown in section; Fig. 4, a detail perspective showing the construction of the box and its door; and Fig. 5, a detail of one of the batteries and its connections.

Referring first to Fig. 3, the wall of an ordinary still is shown at 1, through which extends the shell of a thermometer 2, whose inner part 3 is subject to the temperature of the interior of the still. This thermometer may be of any approved type, an instance being that shown in the patent to Neal No. 900575, October 6, 1908. The vertical part of the thermometer, the part located outside the still, is covered and protected by any suitable hinged door 4 having a lock 5 and thus access to the thermometer cannot be had except by an authorized person. The vertical part of the thermometer is, as shown at 6, in Fig. 1, provided with an electrical contact 7 let into the glass of the thermometer at any suitable comparatively low temperature such as say, 225° F. for contact with the thread of the thermometer, and with contacts 8 and 9 let into the thermometer at points just above, say, 310° F. and 320° F.

The apparatus for the batteries, alarm, and recorder is contained in a suitable box which I prefer to construct of sheet metal, the body 10 being formed from a blank and the same being true of the cover 11. The sides and ends of the box body overlap and are riveted or otherwise suitably secured together as at 12, and I prefer to extend the top and bottom of the box at 13 to constitute means for the hinging thereto of the upper and lower flanges 14 of the cover 11, rivets or other suitable fastenings 15 being used. The upper part of the cover is provided with a hinged door 16 covering a sight opening through which the recorder may be inspected, the door 16 having a lock 17. The door 11 has a lock 18 whereby the entire main door and the small door 16 carried thereby may be locked when closed. The

left-hand side of the box 10 is suitably bolted or secured to the vertical part of the thermometer casing.

At a suitable point in the box 10 is a recorder or register 19 which may be of the rotating dial type and any suitable style may be used, the same being adapted for electrical operation. This is disposed so that it may be observed through the sight opening covered by the door 16. At any suitable point in the box is an electric bell or buzzer 20. Suitably disposed in the box 10, preferably in the bottom thereof, are the batteries 21, preferably of the dry cell type and two being used. These batteries have terminals 22. Suitably insulated from the box if the latter is made of metal are spring contacts 23 positioned so that they will engage the terminals 22 when the batteries are in position. These contacts may be held or secured to a cross-piece 24 in the box by screws or other fastenings 25.

The circuits may be traced as follows: from the contact 7 to a binding post 26, thence to and from the contacts for the first battery, thence to binding post 27 of the alarm 20, thence to and from the contacts of the remaining battery, thence to the recorder 19 by circuit 28. The remaining terminal of the alarm 20 is connected by circuit 29 to a binding post 30 and thence to the contact 8. The remaining binding post of the recorder 19 is connected to a binding post 31 and thence to contact 9.

As long as the thread of the thermometer remains below the contact 8, that is, does not pass 310° F., no alarm will be sounded or record made. Should, however, the temperature of the still rise beyond 310° F., the engagement of the thread of the thermometer with the contact 8 will close the circuit through the alarm 20 which will then sound and call the distiller's attention to the fact that his still needs consideration. If it receives attention and the fire is lowered, as soon as the temperature falls below the contact 8 the alarm ceases sounding but if the still is not given attention and the temperature increases past the critical temperature of 316° F. and on past the 320° F. temperature, not only does the alarm continue to sound, but the circuit is closed through the contact 9 and the recorder or register 19 is actuated to indicate the fact that a dangerous temperature has been reached. Each time the contact 9 is reached by the thread of the thermometer, the register 19 will be actuated and so at the end of a day the superintendent or other authorized person by noting the difference in the numbers appearing on the register since his last inspection can at once tell, how many, if any, times the distiller has neglected his still, such inspection being had by merely opening the door 16.

I wish it understood that while the preferred form of the invention contemplates the location of the alarm, at least, where it will be heard by the distiller, nevertheless, the recorder or register could be located at any suitable point distant from the still.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

An alarm and registering apparatus for a turpentine still comprising a thermometer having a portion adapted to be inserted into said still, electric contacts located in the bore of that portion of said thermometer outside the still at positions corresponding with three predetermined temperatures, a casing inclosing said outside portion of the thermometer and said contacts, said casing being provided with a door having a lock, an audible electric alarm connected with the lower and middle of said three contacts, an electric registering device connected between the middle and upper contacts, an electric battery in circuit with said alarm and register, a box inclosing said alarm register and battery, a door for said box having a lock and a sight opening for said register, and a separate closure for said opening carried by said door and provided with its own lock.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBSON DUNWODY.

Witnesses:
C. L. Ashley,
Ira R. Steiner.