

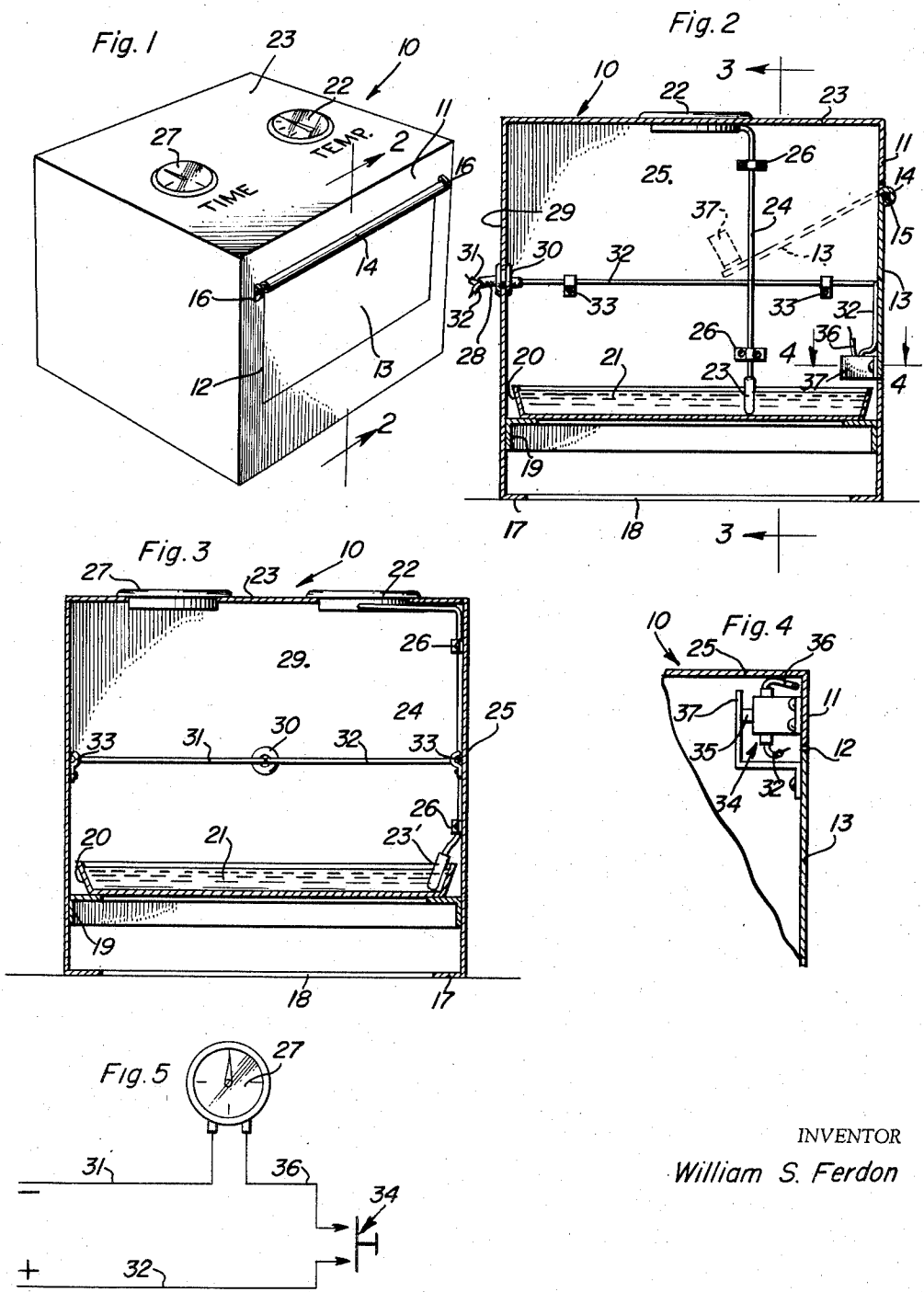
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HYPERTENSION COLD METER

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HYPERTENSION COLD METER

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1 Claim. (Cl. 128—2)

This invention relates to hypertension cold meters.

It is an object of the present invention to provide a hypertension cold meter which, when used in conjunction with conventional blood pressure apparatus, will permit the calculation of predisposition to serious hypertension.

It is another object of the present invention to provide a hypertension cold meter of the above type which will permit the insertion of the patient's hand into a refrigerated chamber and which will automatically record the period of time of immersion as well as the temperature drop within the chamber, this data being useful in combination with conventional blood pressure apparatus data in determining predisposition to serious hypertension.

It is another object of the present invention to provide a hypertension cold meter of the above type which is of simple construction, has a minimum number of parts, is inexpensive to manufacture and efficient and effective in use.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which:

Figure 1 is a perspective view of a preferred embodiment of the present invention;

Fig. 2 is a vertical sectional view thereof taken along the line 2—2 of Fig. 1;

Fig. 3 is a vertical sectional view taken along the line 3—3 of Fig. 2;

Fig. 4 is a fragmentary sectional view taken along the line 4—4 of Fig. 2; and

Fig. 5 is a circuit diagram of the stop watch circuit forming a part of the invention.

Referring now more in detail to the drawing, 10 indicates generally a box or container having a front wall 11 provided with a rectangular opening 12, substantially as illustrated.

A rectangular door 13 is pivotally mounted above the opening 12 by means of the integrally formed, hollow cylindrical portion 14, a pin 15 (Fig. 2) having its ends journaled in the lugs 16 provided at opposite ends of the opening 12, suitable spring means being provided for retaining the door 13 in the closed position of Fig. 1.

The bottom wall 17 of the container is provided with a rectangular opening 18 while a rectangular frame 19 of L-shaped cross section is suitably mounted within the container thereabove (Fig. 2) and positions thereon the tray 20 which contains a suitable coolant or refrigerant 21, for example ice cubes in water, whereby to retain the interior of the container at a reduced temperature.

A temperature gauge 22 is mounted in the top wall 23 at one side thereof and includes a temperature bulb 23' which connects with the gauge by means of the line 24, the line 24 being mounted on the inner face of the side wall 25 by means of the clamps 26. Thus, the temperature of the coolant 21 will be readily visible from above

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at all times by means of the gauge 22 with the container 10 positioned on the desk of a physician.

An electric stop watch 27 is mounted within the top wall 23 at the other end thereof and is adapted to be supplied with current whereby to operate the same through the insulated cord 28 which extends inwardly through the rear wall 29 through the grommet 30. The insulated cord 28 includes the insulated conductors 31 and 32 which are separated within the grommet 30 and extend in opposite directions around the insides of the container (Fig. 3) being suitably secured thereat by means of the brackets 33. The insulated cord 28 is provided externally with a conventional male plug, not shown, for connection to a suitable source of power, for example a female outlet in the wall. The conductor 31 (Fig. 5) is connected to one terminal of the stop watch 27. The conductor 32 is connected to one terminal of a push button switch indicated generally at 34 (Fig. 4) and including the button 35 which is normally spring urged to the switch open position. The other terminal of the switch 34 is connected to the other terminal of the stop watch 37 by means of the insulated conductor 36. Thus, when the switch 34 is closed (Fig. 5) the circuit will be closed and the stop watch 27 will operate to record the passage of time. However, the switch 34 is normally retained in an open position by means of an L-shaped bracket 37 suitably secured to the door 13, the bracket 37 engaging button 35 and moving the same inwardly against the spring means contained therewithin to a switch open position (Fig. 4). Thus, the stop watch 27 will start when the door 13 is opened to the dotted line position of Fig. 2, and will stop when the door is again returned to its closed position. Meanwhile the temperature gauge 22 will indicate the temperature of the coolant 21.

As an alternate construction, the circuit of the stop watch 27 may be connected in series with an electric eye, the beam of which extends across the cabinet above the tray and which is interrupted by the insertion of a person's hand whereby to close the circuit and to start the stop watch, and to stop the stop watch when the hand is withdrawn. The hand will be passed into the cabinet above the tray 20 and refrigerant 21 into the refrigerated air thereabove.

It has been found that in the majority of cases, particularly critical cases of hypertension, that in testing the patient's blood pressure and heart reaction that a sudden cooling effect on the hands caused by ice, or some other coolant, elevates the blood pressure much more than it elevates the blood pressure of a perfectly normal person. Thus, by combining at the time of the blood pressure test the insertion of the patient's hand into a cool chamber, and recording the time of exposure, and the heat absorbed from the hand, it is possible to more accurately determine the serious hypertension cases. For this purpose the hypertension cold meter forming the subject matter of the invention has been developed for combination use with the conventional blood pressure apparatus or sphygmomaneter. In operation, the conventional blood pressure apparatus or sphygmomaneter is used in the usual way. It is then used in combination with the hypertension cold meter, and it has been found that the ratios between the systolic pressure diastolic pressure vary with the methods of determining blood pressure. Thus, we are able to determine whether the patient who has felt no ill effects so far is truly on the road to becoming a serious or critical hypertension victim. The pain of putting his hand near the coolant for even one minute will cause the patient predisposed to serious hypertension to have higher blood pressure readings than a normal person. Many physicians feel that critical high pressure is inherited, and if one is disposed

towards the same, it will be registered in the cold test described above.

In operation, the patient is given a normal blood pressure test. Subsequently, he inserts his extremities such as his hands in the cold test chamber 10, and the temperature in the chamber is recorded as well as the length of time that the hands are exposed to the cold. By taking the patient's blood pressure again and correlating all of these facts, one can tell who is, or who is not, subjected to hypertension or high blood pressure, permitting the physician to prescribe accordingly.

It should now be apparent that there has been provided a professional device which would tie with the stethoscope and the blood pressure findings of a physician from use of the sphygmomanometer and will indicate a tendency towards critical blood pressure during the examination.

Suitable means will be provided for permitting the insertion and removal of the tray 20 into the cabinet from a refrigerator.

When the temperature is right, the patient will insert his hand into the container and open the door 13, thereby to start the stop watch. He will touch the coolant 21, picking up ice cubes if such are provided. Blood pressure tests will be taken before and after the cold chamber is employed. The resultant figures of blood pressure before and after the cold treatment, the ratios of time and temperature being established, will enable the physician to more accurately diagnose the condition of the patient.

While various changes may be made in the detail description, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claim.

What I claim as new and desire to protect by Letters Patent of the United States is:

A hypertension cold meter comprising, in combination, a closed cabinet, refrigerating means located within said cabinet comprising a tray and a coolant adapted to be contacted by the hands of a patient when inserted therewithin, temperature indicating means for said refrigerating means mounted externally upon said cabinet including a temperature bulb immersed in said tray, electrical stop watch means mounted externally upon said cabinet, said cabinet having a hingeably mounted panel for permitting the insertion of the hands of a patient therethrough into said refrigerating means, and switch means controlling the starting and stopping of said electrical stop watch means in response to the movement of said hands within said cabinet, said switch means connected in series with said stop watch and including a push button switch mounted within said cabinet having a push button movable between a normally extended switch-on position and a depressed switch-off position, and an L-shaped bracket secured at one side to said panel normally in depressing engagement with said push button to retain said push button switch in an open position when said panel is closed and to release said push button to close said switch when said panel is opened.

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