

BRISTOL'S THERMOMETER-THERMOSTAT.

The Bristol Company, Waterbury, Conn., are placing a new instrument upon the market which has been given the compound name as above, since it is a combination thermometer and thermostat. There is a demand for an instrument of this character which will give correct indications of the temperature of

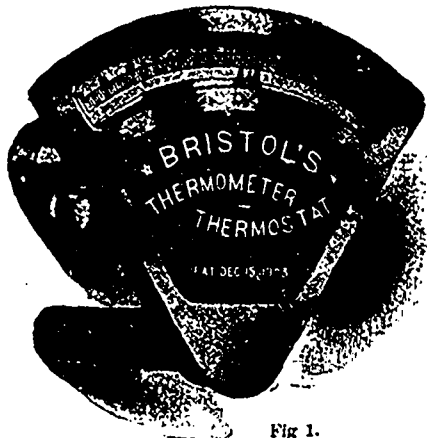


Fig. 1.

the atmosphere, gasses or liquids at all times, and also serve as a thermostat to make electric connection at any predetermined limits of temperature for the purpose of operating controlling apparatus, alarms and the like.

Fig. 1 shows external view of the instrument which is provided with a six inch scale graduated in degrees Fahrenheit.

The construction and capabilities of this instrument will be best understood by referring to the interior view, Fig. 2, in which A is an arm pivoted at lower portion of the case, terminating in a point

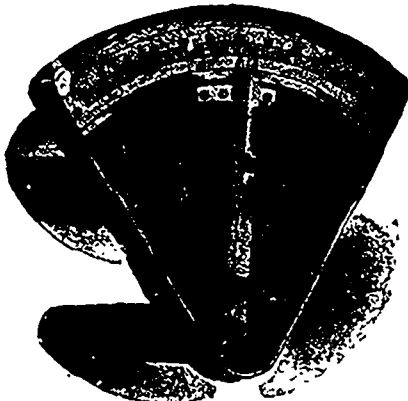


Fig. 2.

resting on the arc of the graduated scale and is held by friction at whatever point it may happen to beset. Two adjustable contact pieces, B and C, are carried by this arm. These contact pieces are capable of adjustment by means of a screw D, which is threaded so as to cause the contact pieces B and C to approach or recede at equal rates and distances from the centre line of the arm A, upon which they are supported.

They are also connected to binding posts as shown, which are used for making outside connections. These binding posts are located within the case to avoid any possibility of the wires or connections

being disturbed without detection. Three holes with insulating eyelets are provided in the lower portion of case, as shown, for the insertion of connecting wires. The high and low contacts can be placed on a single or on independent circuits. The arm E, moving over the graduated scale, indicates the changes of temperature where the instrument is located. This arm is operated by one of Bristol's Recording Thermometer tubes placed in the perforated protecting projection extending from the back of the case as shown in the illustration. On the back of the indicating pointer E there is a raised portion which makes electric connection with the contact pieces.

A novel feature of the instrument is that the temperature indicating arm E is not restrained by the thermometer-thermostatic contacts. Thus it will be seen that the controlling effect of the thermostat is perfectly adjustable as to position on the scale of the thermometer, and also as to high and low limits of operation, without in any way interfering with the correct indications of the thermometer in case the temperature does not remain, or is not controlled, within the limits for which contact pieces may be set.

The instrument may be readily applied to liquids, as for instance, to indicate the temperature, and set into operation controlling apparatus for the brine in a refrigerating system or tank.

For temperatures above the atmosphere as that occurring in ovens, kilns, closed spaces, or of liquids in pipes under pressure, a small bulb is located within the closed space or pipe. This bulb is connected with the thermometer-thermostat by a capillary tube filled with alcohol. The temperature at the bulb is communicated to the instrument which may be located at any convenient point for observation.

The electric wires connecting with the adjustable thermostatic contacts may be carried to any point where the controlling apparatus may be located or where it is desired that an alarm shall be given.

From the foregoing description it will be seen that the instrument is very flexible in its application and it is not improbable that other applications may suggest themselves to the reader which have not been thought of in the preparation of this description.

THE STURTEVANT IMPROVED HAND BLOWERS.

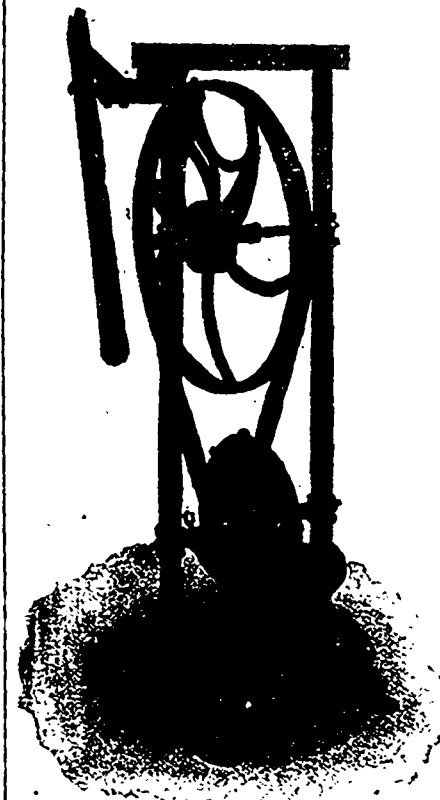
In these modern times men are always seeking devices by which they may accomplish the greatest results with the least exertion. To this fact, doubtless more than any other, was due the rapid introduction of the hand blower as a substitute for the old time bellows. During the years which have elapsed since this change, the B. F. Sturtevant Co. of Boston, Mass., pioneers in the manufacture of blowers, have been perfecting their design and construction until their hand blower, known as Style A, has shaped itself into a new design known as Style B, as herewith illustrated.

These hand blowers have been extensively introduced in connection with new forges of all kinds, and have likewise

been applied to old style brick and iron forges as simple, efficient and economical substitutes for the bellows. Not only are they adapted to forge blowing but can readily be applied as portable ventilating apparatus.

They are simple in design, strong, rigid and compact, easy and economical in operation and readily portable. The running gear is simple, effective and strong.

The blower is adjustable on the shaft, and its outlet may thus be set to discharge in any direction, and readily connected to the forge tuyere by means of galvanized iron piping. The blower is of cast iron, strongly constructed in every particular, has a steel shaft running in babbitted boxes, and a fan wheel of galvanized steel solidly riveted to a composition hub with extending arms.



Style B.-Sturtevant Improved Hand Blower.

The frame is carefully designed, well braced, and is so arranged that the slackness of the belt driving the blower may be taken up by lowering the blower shaft, which is supported by collars sliding on the frame. The feet are provided with holes so that the hand blower may be readily screwed to the floor.

These hand blowers are made in two sizes. The total length on the floor of Style B-1 is 18 inches, while the total height of the frame, not including the handle, is 48 inches. The driving wheel is 24 inches in diameter, the blower outlet is 3½ inches in diameter, and the complete outfit weighs but 135 pounds.

Style B-2 is of slightly larger dimensions and has proportionately greater capacity for delivering air. The driving outlet is 4½ inches in diameter, and the wheel is 24 inches in diameter, the blower complete outfit weighs 155 pounds.

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