

There are many other combinations for giving assured protection with oil burners other than thermostatic devices, such as pressure and weight-actuated mechanisms, but it is doubtful whether they are as reliable as the thermostatically controlled schemes.

Where electric ignition for the intermittent oil spray is used, it is safer to provide for a continuously operating spark, and to have a thermostat in the heater which will cut out the main switch if the temperature ever gets lower than the critical point which indicates failure to ignite the spray.

#### Gas Burner Control

The same high intensity as with oil fuel makes it necessary to depend on thermostats to prevent waste, and the intermittent operation and

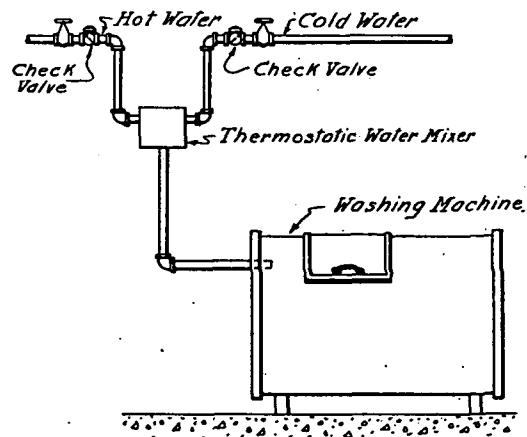


FIG. 10. WATER TEMPERATURE CONTROL FOR LAUNDRY MACHINERY

*Note.*—WASHING OF WOOLENS BY LAUNDRIES. A Thermostatic Water Mixer installed on the pipe line to a wash wheel will automatically deliver water of the exact temperature required properly to wash woolens. No matter how hot or how cold the water is admitted to the mixer, or whether the pressure of either varies, the temperature of the water delivered to the wash wheel will remain constant. Woolens should not be washed with water warmer than 80 deg. Fahr.

necessity for a pilot flame makes it wise to install for gas the same combination of three thermostats as for oil burners, one on the general service, one in the heater, and one on the pilot flame.

#### Central Station Heating

Central plants should always be governed by thermostats as a measure of economy, and many public service companies require the installation of automatic heat control for this reason. Where economy is of greater consideration than comfort, it often suffices to install one unit type thermostat in a representative room, this controlling a main valve at the entrance to the building.

Where steam at appreciable pressure is furnished from a central station, a combination of pressure reducing valve and cut-off valve, controlled by a thermostat in a representative room, gives excellent results,

as it automatically varies the steam pressure in the radiating surface within a considerable range, giving excellent regulation as well as economy.

#### Laundry Automatic Heat Control

Many laundry machines, especially for washing woolens, are improved wonderfully in service by the installation of automatic heat control.

By using automatic water mixers on the water supply pipe lines, water at the exact temperatures desired will always be delivered, no matter how hot the warm water may be, thus preventing the aggravating and expensive shrinking of woollen goods so common when water over about 80 deg. is used.

There is also a tremendous fuel saving by preventing overheating of all laundry water, while still insuring, by use of thermostats, that the water always shall be hot enough for each specific condition.

#### Refrigeration Automatic Control

In most buildings where refrigeration is used, common practice until recently at least, has been to install a central system, where cold brine is produced, and which is pumped through insulated pipes to the various out-lying boxes.

Since the brine temperature is usually much lower than the desired temperature for many of these boxes, the automatic heat control of each unit is desirable and effects a considerable saving in operating cost.

Unit type thermostats are especially well adapted to this service and are available for control of such comparatively cool substances as drinking water, or storage compartments in ice boxes. The low temperature thermostats are placed in the water pipes or in the air chambers with balanced valves in the brine pipes, and automatic control, without attention and enduring for many years without adjustment, goes into effect forthwith.

#### DOUBLE THERMOSTATIC CONTROL

Nearly all buildings equipped with a large number of thermostats and using compressed air for power, are occupied only part of each 24 hours, and can without any prejudice be kept at a lower temperature during unoccupied periods, as over night or over a holiday. The conventional thermostats as ordinarily applied militate against this arbitrary reduction, and each instrument would have to be adjusted each time for the lower degree, and then each would have to be restored following the unoccupied period. Equipment is available which provides two temperature adjustments to each instrument, such that if the general air pressure leading from the central compressor to the thermostat is suddenly changed, the service is switched automatically from one control to the other, and if the pressure again shall be suddenly changed, the service will be switched back. Thus at 6 o'clock p. m., say, the engineer of an office building releases the air pressure for an instant and all of the thermostats are switched from the 68 deg. control to the 45 deg. control. Either control, of course, is set for any temperature desired. At say 7 o'clock the following morning, a repetition of the drop in air pressure will restore to service the 68 deg. temperature.

In a school building the compressed air supply mains may be grouped so that parts of the building used for night school only remain on the