## A HUGE VACUUM PAN.

We give an engraving of a monster vacuum pan recently made by Messsrs. R. Deeley & Co., of New York city, for Mr. C. Spreckles, proprietor of the California Sugar Refinery, San Francisco, Cal.

The pan, besides being unusually large, possesses several points of novelty. The shell, which is 12 feet in diameter, is made of cast iron, and consists of three horizontal sections—the top, the belt, and the bottom. The top and belt are each made in six sections, for convenience in transportation. The several pieces are flanged and carefully fitted, so that when they are bolted together the joints are solid and tight. The pan will hold about 7,600 gallons, which will yield at every strike about 250 to 260 barrels of dry sugar.

The heating surface of the enclosed copper coils is about 1,000 square ft. The lengths of the five coils, beginning with the top coil, are respectively 189, 194, 203, 206, and 208 feet. Each coil is divided into four sections, and each section is provided with an inlet and outlet, so that the longest stretch of the pipe is about 50 feet. This arrangement insures an effective heating surface and avoids anything like dead and inefficient pipe.

The inlets are connected by brass valves to 10-inch trunks, one trunk being placed on each side of the pan. The outlets, twenty in number, are connected with steam traps, which take off the water of condensation.

The curved overflow pipe at the top is 5 feet in diameter, and the condenser which joins it reaches through the floor is of the same diameter and 18 feet high. It is provided internally with eight scattering plates for distributing the water used in condensing the steam discharged by the vacuum pan.

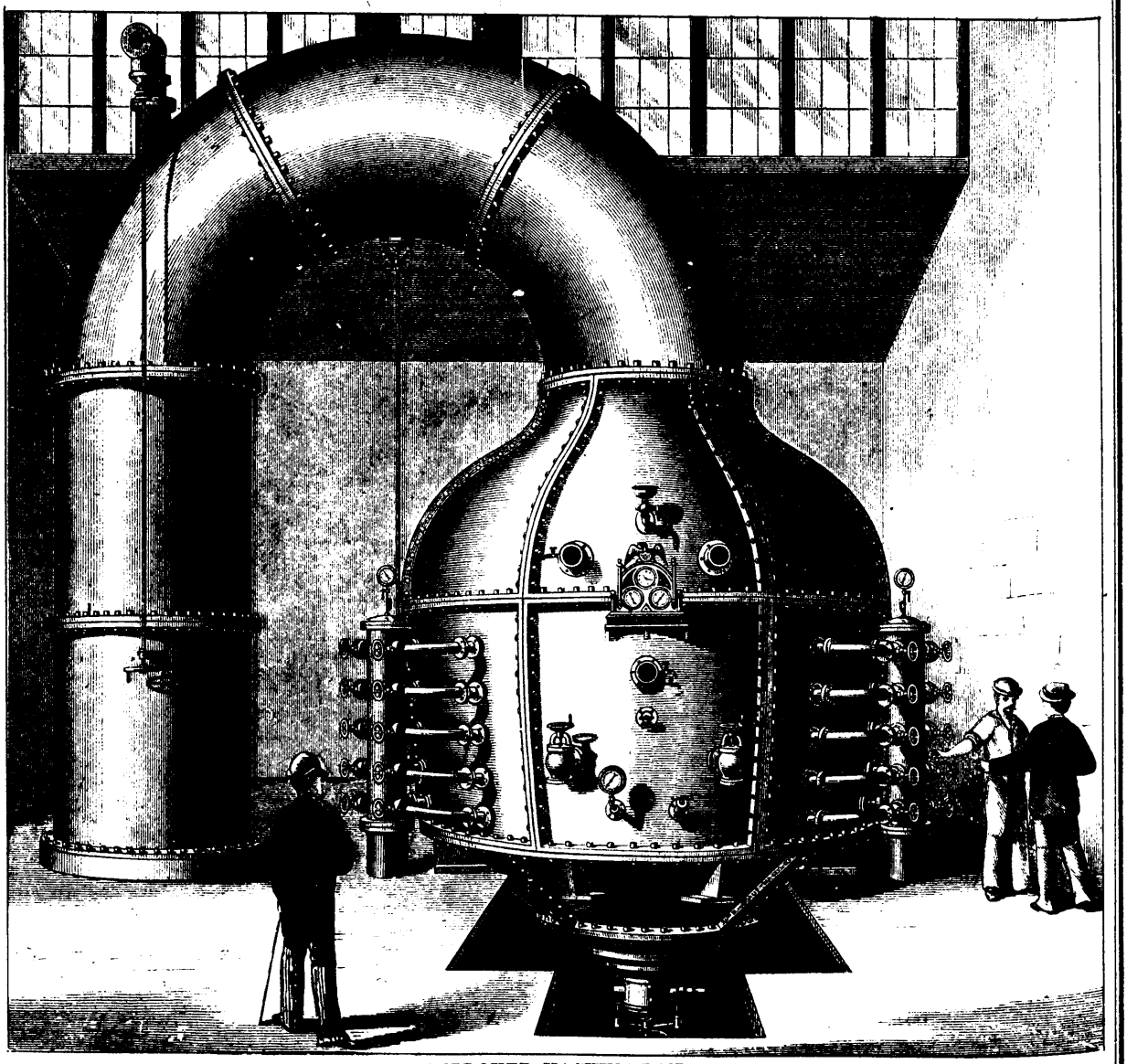
There are two thermometers for indicating the temperature of the liquid in the pan, one being placed near the top at the side of the clock to show the temperature of the upper portion of the liquid, the other being placed near the bottom to show the temperature of the lower stratum of liquid.

The pan is provided with two proof sticks for removing a small quantity of the syrup from the pan from time to time for the purpose of testing it. These proof sticks are not what the name might indicate, for they are in reality tubes with nicely fitted valves and a piston for removing the syrup without destroying the vacuum.

Six 5-inch eyeglasses are arranged in different positions for viewing the inside of the pan. The pan is provided with two 4 inch charging valves, which communicate with the interior through two copper pipes reaching nearly to the bottom.

The steam trunks, which supply the heating coils, are each 10 inches in diameter, and each is provided with a steam gauge and with a supply valve, which is connected with a receiver that takes exhaust steam from the engines and steam pumps used in the refinery.

The pan has a 4-inch valve for admitting air in breaking the vacuum. This is one of the largest vacuum pans ever made.—*Scientific American.*



IMPROVED VACUUM PAN.