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Lift and Force Pump.



MANUFACTURER
"A BOOK FOR THE PEOPLE.

FOR

BEAST!
Mexican Mustang Liniment






THE GOLD FEVER.


 How Thermoweters Are Mado.
If thermometers were all of uniform
aliber and graded accurately there caliber and graded accurately there
would, of course, be oo difference in their records. But the fact is that many
are imperfectly made and carelessly graded, and these, of course, will give
widely differing results. The first point widely differing results. The first point
in the construction of the mercurial ther-
mometer is to see that the tube is of uni. nometer is to see that the tube is of uni-
orm caliher throughout its whole in-
erior. To ascertain this a short column of mercury is put into the tube and
moved up and down, to see if its leggth
remains the same through all paits of the abe tube whose caliber is not uni-
ondight differences are mate
its graduation to allow for it of equal parts is etched upon the tube, of the column of mercury mored in it tabie giving the temperatures corre
sponding to these divisions is formed. A
$\qquad$ wercury heat is applied to the bulb to
xpand the air in it. The heat is then withdrawn, and, the air within contract
ing, a portion of the mercury rises in open end of the tube a funnel containing
mercury is fitted, the wulb piaced ovee mercury is fitted, the bulb placed over
a flame until it boils, thus expelling all
air and moisture from the instrument, and, on cooling, the tube instantly fille
with mercury. The bulb is now plated ithin it to expand and flow over the top of the tube, and when this overflow han
ceased the open end of the tube is heated with a blow-pipe tlame. To graduate the
instrument, the bulb is placed in meltin ice, and, when the top of the mercury
column has fallen as low as it will, note is taken of its position referred to th scale on the tube. This is the freezing
point: It is markeci as zero on the ther-
mometers of Kelsius and Reaumur, and as $32^{\circ}$ on the Fahrenheit system. To
determine the boiling point, the instru double walls, between which circulatee the frezing and boiling point of wator
100 equal degrees are merked in the centigrade graduation of Celsius, 180
degrees on the Fahrenheit plan, and 80 degrees on the Fahrenheit plan, and
degress on the Reaumur. $O$ On many thermorneters all three of these graduations
are indicated on the frame to which the tube is attached. Some weeks after a
hermometer has been made and graded it may be noticed that when the bnlb is
immersed in pounded ice the mercery does not quite descend to the freezing
point. This is owing to a gradual or. pansion of the mercury which usually
goes on for nearly two years, when it it
found that the zero has risen nearily a whole degree. It is then necossrry to
side down the scale to which the tube is the movements of the mercury. After
this change, the accuracy of the thermothis change, the accuracy of the thermo-
peter is assured, as there is no furtherex.
pansion of the mercury column. $\rightarrow$ Inter.


