

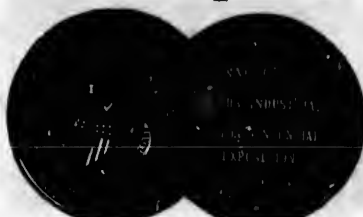
Gold Medals over all Competitors.



Gold Medal, Western Fair, 1883.



Gold Medal, World's Fair, New Orleans.
Ball Automatic Engine, 1884.



Award to Ball Engine Company, Erie, Pa.,
Automatic Cut-off Engine, Boston, 1884.



Leonard-Ball Automatic Engine,
Gold Medal, 1885.



INDICATOR DIAGRAMS.



DIAGRAM NO. 1.

THE action of the Automatic Cut-off is beautifully illustrated by Diagram No. 1 which represents four diagrams traced on the same card with different conditions of load. Scale of diagram 60; Engine, 10x12; initial pressure, 90 lbs.; No. 1, indicated horse-power, 99.39; No. 2, do., 89.11; No. 3, do., 68.56; No. 4, do., 35.64.



DIAGRAM NO. 2.

SCALE of diagram, 60; Engine, 10x12; initial pressure, 86 lbs.; mean effective pressure, 46.1 lbs.; indicated horse-power, 65.83; theoretic water consumption, 22.21 lbs. per horse-power per hour.

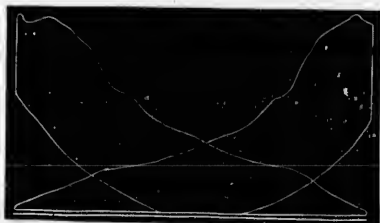


DIAGRAM NO. 3.

SCALE of diagram, 60; Engine, 10x12; initial pressure, 82 lbs.; mean effective pressure, 29.4 lbs.; indicated horse-power, 41.98; theoretic water consumption, 22.13 lbs. per horse-power per hour.



DIAGRAM NO. 4.

SCALE of diagram, 60; Engine, 10 x 12; initial pressure, 79 lbs.; mean effective pressure, 36.76 lbs.; indicated horse-power, 52.49; theoretic water consumption, 22.20 lbs. per horse-power per hour.