### POWER OF CENTRIFUGAL FANS.

Professor Carpenter gives in the *Sibley Journal* the following rules for the capacity of centrifugal fans and the power required.

The capacity of fans, expressed in cubic feet of air delivered per minute, is equal to the cube of the diameter of the fan wheel in feet multiplied by the number of revolutions multiplied by a coefficient having the following approximate value.

For a fan with a single inlet delivering air without pressure, 0.6; delivering air with a pressure of one inch of water, 0.5; delivering air with a pressure of one ounce, 0.4. For fans with double inlets the coefficient should be increased about 50 per cent. For practical purposes of ventilation the capacity of a fan in cubic feet per revolution would equal 0.4 x the cube of the diameter in feet.

The h.p. required for a given fan or blower is equal to the fifth power of the diameter in feet, multiplied by the cube of the number of revolutions per second, divided by one million, and multiplied by one of the following coefficients: For free delivery 30, for delivery against one ounce of pressure 20, for delivery against two ounces of pressure, 10.

Expressed in formulæ, the above rules reduce to:

Cu. ft. per min. $= C \times D^3 \times r.p.m.$

$H.P. = K \times D^5 \times r.p.s.^3 \times 10^{-6}$.

| | Free | 1in | 1oz. | Other Pressures. |
|---|---|---|---|---|
| $C =$ | 0.6 | 0.5 | .04 | — |
| $K =$ | 30. | — | 20. | $20 \div p.$ |