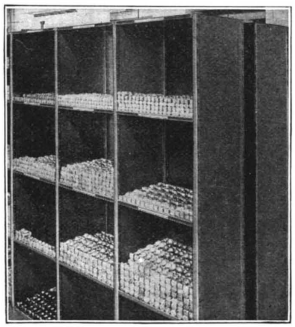
DURAND Steel Racks



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The Current Supplement

AN interesting paper in the current issue of the SCIENTIFIC AMERICAN SUPPLEMENT deals with *Economic Industrial Applications of Electricity*, as a potent means for conserving fuel and human energy. *Ancient Clock Jacks* describes a number of curious mechanical figures that were formerly to be found on English clock towers. Several of these are illustrated. *Effective Methods of Fly Control* reviews, and brings up to date, the various factors that underlie the problem. *Evolution of the Human Face* traces the chief stages of its development from the lowest forms of life to man, a valuable paper, illustrated by a large number of photographs and drawings. Another important paper is *Focusing X-Rays*, which discusses a problem of great importance to physical science. It is accompanied by a number of illustrations. With the fast growing use of aircraft the importance of a wider knowledge of meteorology is being recognized, and a report of great importance in this connection will be found in the paper on *Meteorology and Aeronautics*, which deals with physical properties and dynamics of the atmosphere. A number of shorter articles of general interest will also be found in this issue.

An Additional Lifting Force for Airplanes

(Concluded from page 211)

ported by the airplane itself but by the inertia of the moving particle of air. The velocity of the air and its density therefore are important factors in the sustaining strength of this beam.

In physics this phenomenon is a consequence from what is known as the Bernoulli theorem and it seems from this that this lifting force increases with the density of the material in the stream and with the square of the velocity. If this is correct this lifting force would increase rapidly with an increase of velocity of the air in the stream.

There is a very strong tendency of this force to produce oscillations in a flexible plane; it is this phenomenon which produces the flapping of the loose end of a flag in the wind. This tendency is so strong that a piece of apparatus carefully made of hinged links of sheet iron, was instantly torn to pieces under a stream from a compressed air chamber. Under the air stream of a propeller having only two blades the resulting pulsations in the air streams also gave rise to quite powerful tendencies to oscillate; so great were these oscillations that it was difficult to measure the average force.

The exact form of the curvature of a plane under an air stream to obtain the best results, seems to be of considerable

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Men enrolled

Presidents of big corporations are often