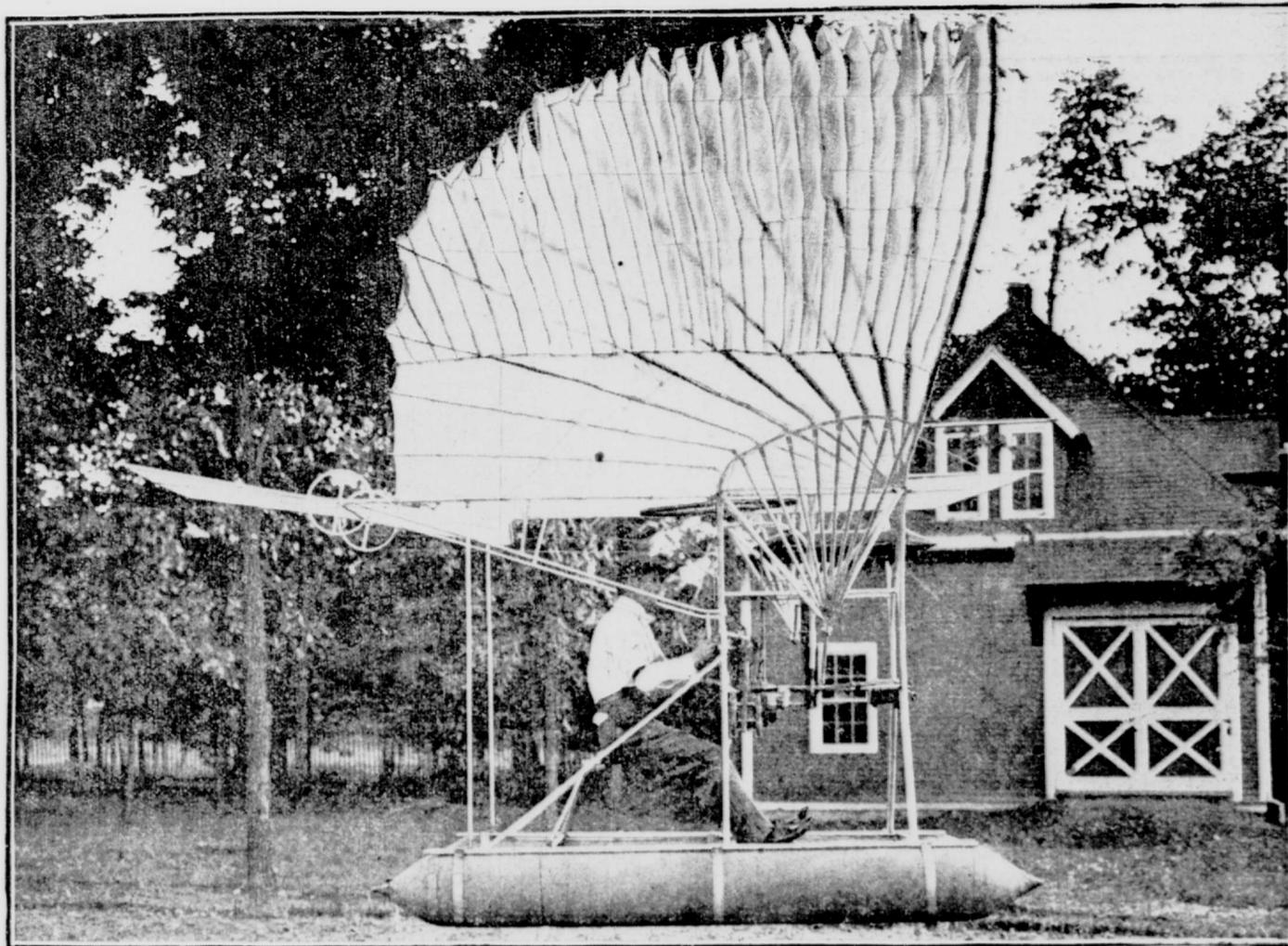


PRACTICAL DEVELOPMENT OF THE FLYING MACHINE WILL BE STIMULATED, IT IS HOPED,



FLYING MACHINE WITH FLAPPING WINGS.

The Gammeter orthopeter, entered at St. Louis, weighs 490 pounds with operator and fuel. The engine is rated at 7 horsepower. It is expected to give the wings seventy-five strokes a minute.

AIRSHIP HOPES.

Great Progress Already Made Toward Useful Machines.

The old-fashioned balloon, it is expected, will not be the only kind of aerial craft to be seen at St. Louis when the contestants in the International race for the James Gordon Bennett Cup assemble there this week. With the object of stimulating the invention of flying machines not depending upon a big bubble of gas contained in a cloth envelope for support in the air, prizes have been offered, not only for airships and dirigible balloons but for gasless or heavier than air aerial machines.

The Business Men's League and the Aero Club of St. Louis have offered prizes for contests aside from the one which brings the aeronauts together. The St. Louis Aero Club's prizes will total \$5,000 in amount. They are offered to the winners of races for dirigible balloons and gas-

less flying machines. The contests among the entrants in these classes will be held on the days succeeding that on which the balloon race is started, October 21, provided the entrants appear.

The city of St. Louis has also subscribed three cash prizes of \$1,000, \$750 and \$500, to be awarded to those who secure second, third and fourth places in the race for the Bennett Cup, won by Lieutenant Lahm last year. Another prize which will be open to the contestants in this race as well as to any who may not be eligible as contestants for the Bennett Cup is the so-called Lahm cup, offered by the Aero Club of America to the balloonist who exceeds Lieutenant Lahm's record of 402 miles.

A silver and onyx trophy, thirty-two inches high and valued at \$2,500, has also been offered by "The Scientific American" for heavier-than-air flying machines. This has been decided to the Aero Club of America, to be competed for annually by both American and foreign inventors.

The first competition will be for a flight of one kilometre in a straight line. The succeed-

ing contests are to be progressive in character—that is to say, if the flight of the predetermined distance is accomplished this year, next year a longer flight will be required. If it is won three times in different years by any one competitor the trophy will become his personal property.

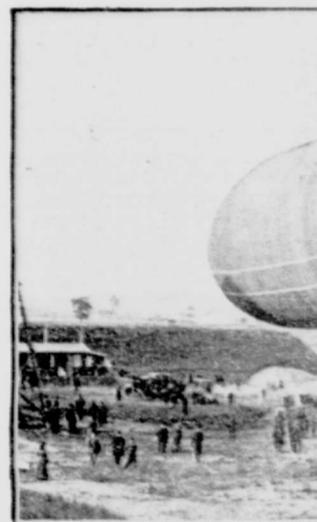
Few persons to-day laugh at the successors of Darius Green and his flying machine. The progress of aeronautics has been so great that many thinking persons are willing to believe that mechanical devices in the course of a few years will make man, to a certain degree, independent of the supporting medium of a great bubble of gas and give him power to mount up like the eagle and go in whatever direction his will listeth.

The progress has been so great in the development of the dirigible balloon, or airship, as the elongated gas bag equipped with a motor and rudder has been styled, that the French, German and British governments have invested money in war balloons of this type. Airships have been devised with gas bags divided into compartments as are the hulls of steamships, so that if one should be punctured in any way the vessel would not immediately sink to the ground, and having double motors in separate cars to provide against incapacitation through an enemy's bullet or any other mishap.

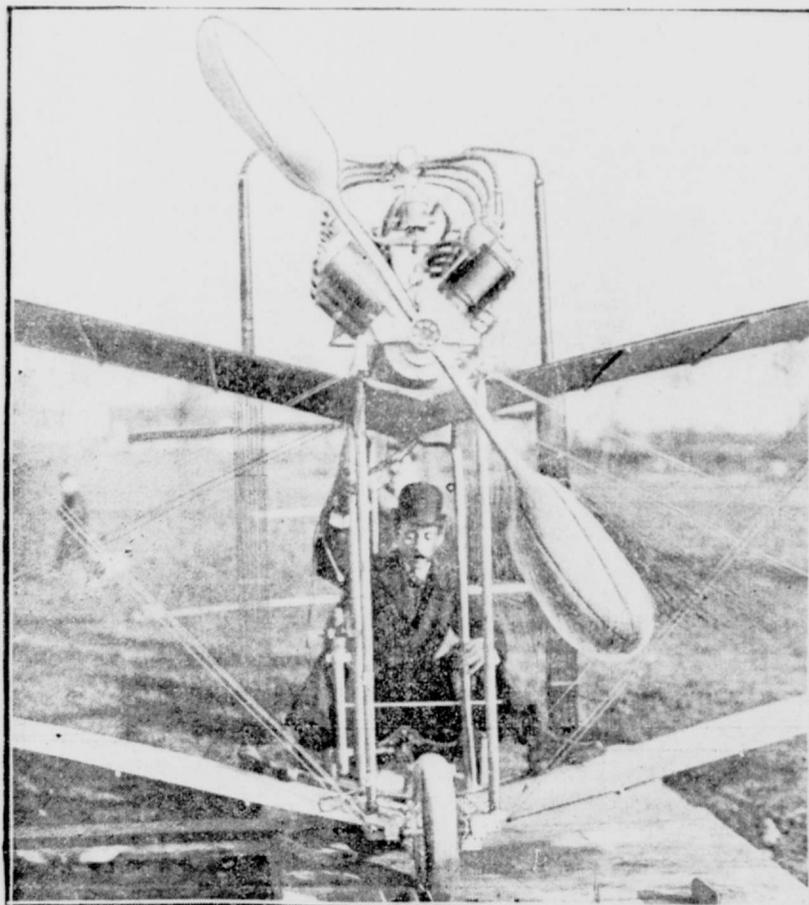
The airship designed by Count von Zeppelin and recently reported to be purchased by the German government at a cost of \$500,000 is 417 feet long, the length of a modern battleship, or more than twice as long as the America, the Wellman airship constructed to make the trip to the North Pole, which is only 183 feet long.



It is with this dirigible balloon after the start w

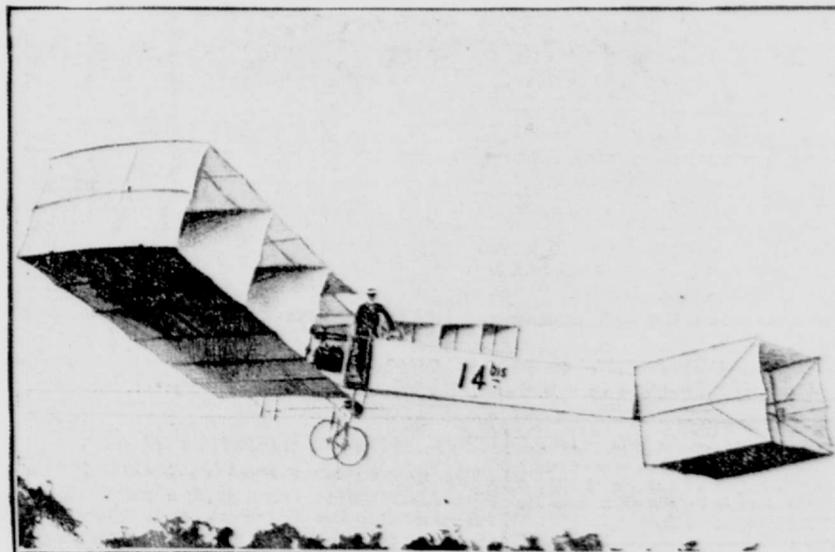


ODD-SHAPED D
The smaller bags attached to
types of airship, and has



SANTOS-DUMONT SEATED IN HIS NEW AEROPLANE.

This picture illustrates how a motor is attached to a flying machine of the soaring type. The aeroplane rests on rubber-tired wheels in order to make the launching and the landing easy for the machine. The power is furnished by gasoline.



SANTOS-DUMONT FLYING IN HIS AEROPLANE 14 BIS.

In this machine, driven by a motor capable of making 1,500 revolutions a minute, giving a speed of twenty-one miles an hour, Santos-Dumont actually flew upward of 700 feet. The device in front of the machine is the rudder. The wheels beneath are for the purpose of supporting it on the ground.