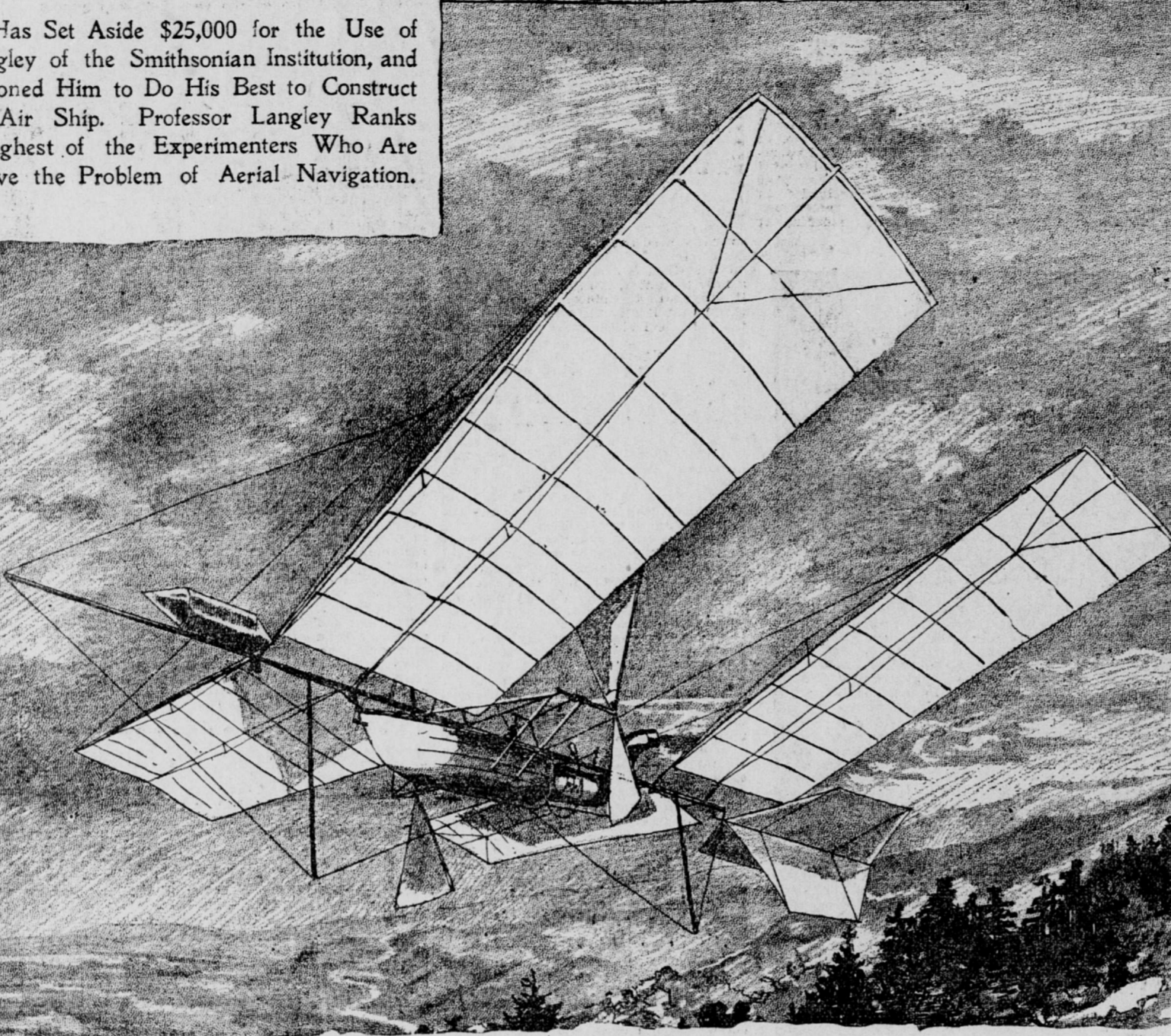


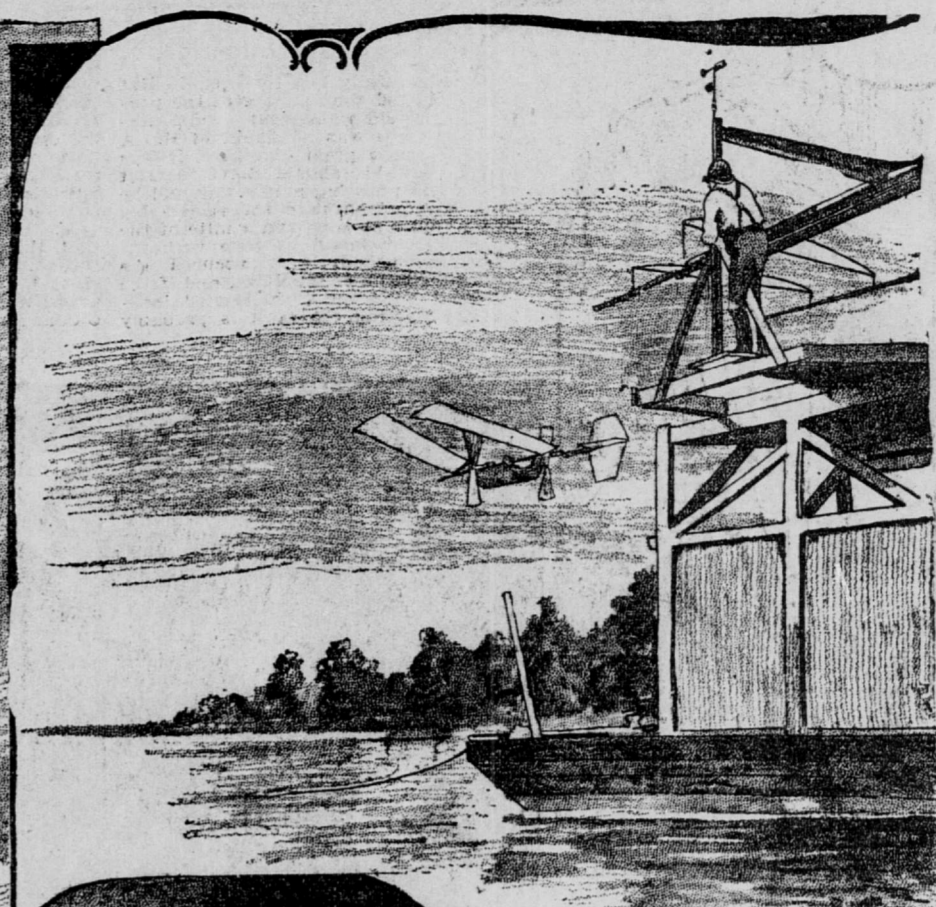
UNCLE SAM WILL TRY AND CONSTRUCT AN AIRSHIP

The Government Has Set Aside \$25,000 for the Use of Professor Langley of the Smithsonian Institution, and Has Commissioned Him to Do His Best to Construct a Successful Air Ship. Professor Langley Ranks Among the Highest of the Experimenters Who Are Trying to Solve the Problem of Aerial Navigation.

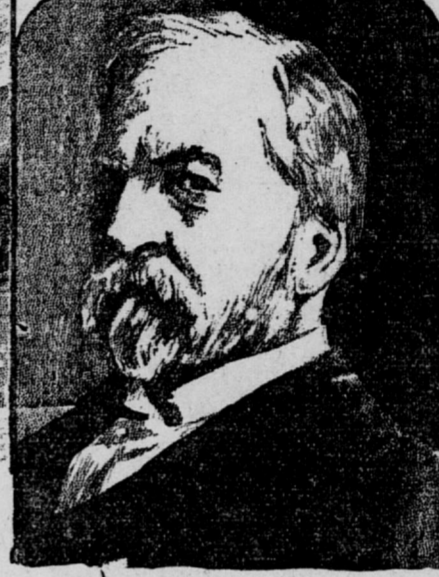


PROFESSOR S. P. LANGLEY'S AERODROME IN FLIGHT.—From a Photograph.

This flying machine is said to represent the greatest advance toward aerial navigation that has been invented to date. Professor Langley will use it to start his experiments for the United States Government, for which Congress has just advanced him \$25,000.



MANNER OF LAUNCHING THE AIRSHIP FROM THE SCOW



PROFESSOR S. C. LANGLEY of the Smithsonian Institute. From a photograph.

WASHINGTON, Dec. 3.—The Government has given Professor Langley a monopoly for the building of a flying machine. General Greely will send out to-morrow letters to all applicants in which he quotes the language of the appropriation, the important words of which are: "For construction, development and testing of a flying machine under special direction of Professor Langley, the expenditure to be made through the Chief Signal Officer of the army."

Professor Langley's disposal, and he will now proceed to carry out on a larger scale the remarkable experiments which he conducted privately for many years, resulting in the discovery of certain principles of flight and in an "aerodrome"—a steam-driven flying machine of steel and canvas—which repeatedly flew a distance of three-quarters of a mile and was the first flying machine capable of actual and independent flight which man had created.

with scientific knowledge who recognize the fact that the great bulk of a buoyant car in any form is an impediment to speed and mobility, and is at the mercy of the winds. The soaring machines of Otto Lilienthal and others, the kiting machines of Chanute and Herring and somewhat similar contrivance of Dr. Woelfert have helped show the possibilities in this way as well as the dangers of trying to fly, for Lilienthal and Woelfert have both been killed during experiments within two years.

hawks soaring in graceful circles and advancing through the air without using any power at all. Rules applying to horses, ships and so on evidently did not apply up in the air.

theoretically possible with engines that could then be built. That was one step. There were other almost insuperable difficulties regarding upward and downward motion and the acquisition of the "art" of aerial navigation. But it was plain that the first necessity was high speed—the higher the easier. This is one thing that Langley taught, and it seems to promise that when flying machines fly the petrol will be a laggard and "lightning express" trains will be creeping things.

how to make them balance was one of many worked out with failure after failure. Much more was needed than the mere power to fly. The problems that arose and the hundreds of experiments and failures that attended years of faithful effort would make a long story even in briefest outline. But finally in 1896 came the success that warrants the action of Congress.

The flying machine that would really fly suggested a big dragon fly. There were two sets of rigid wings, thirteen feet from tip to tip, made of canvas and steel rods and attached to a long steel rod which was the backbone, to which were attached two propellers connected with the engine suspended from the rod. The furnace was in front, the coils of the boiler wound toward the rear and the smoke stack stuck out behind toward the rear.

In 1896 this aerodrome repeatedly flew from half to three-quarters of a mile at a speed of thirty miles an hour, descending in safety to be recovered. "A miracle," said wondering witnesses. A flying machine had at last flown, and it was the weight of the evolution of years. A thousand problems had been solved, and the practicability of mechanical flight demonstrated. Langley paused in triumph and said to the world, "There are the principles, go ahead!"

There is a long way to go before mails, men and dynamite will fit about the upper air, but Langley's success warrants the faith that our wings have almost got here. It is not unlikely that we will fly into the twentieth century as a past generation steamed into the nineteenth.

THE United States Government has started building experimental flying machines, and in that and associated facts lies a rational expectation that navigation of the air will be a practical realization of the comparatively near future.

ed by inventive genius and indomitable enterprise. Nothing that man has achieved in scientific and mechanical ways has ever worked so profound a revolution in the world as will quickly attend aerial navigation.

But Langley has taught the world more about flying than all the rest and his accounts of his long experiments are interesting reading and inspire respect for him and for his efforts. When Langley took up the problem he didn't go to building a big artificial bird that he could ride on. He began inquiring how a bird flies and no man could tell him a little bit about the mystery of "the way of a bird in the air."

Years of experiment convinced him that horizontal mechanical flight was

When he finally got to the building of his first flyer the problem of an engine of unprecedented lightness in proportion to power was long worried over. He wanted one that would weigh less than ten pounds to the horsepower and a few years ago the average engine weighed 1000 pounds to the horsepower. Compressed air, electricity and gas engines were tried and finally abandoned for a steam engine in which every economy was sacrificed wholly to lightness. Engines were made by dozens for little aerodromes that worked wrong and got smashed. These first flying machines were something like the last one—the one pictured. They were driven by propellers set amidships and with rudders, but they wouldn't balance in the air and the problem of

FAVORITE HEROES OF THE WAR TATTOOED ON THE ARMS OF ENTHUSIASTIC SOLDIERS AND SAILORS.

Special to The Sunday Call. CORES of jack tars in the North Atlantic squadron wear Admiral George Dewey on their left arms above the elbow. It is a portrait tattooed in green and red and if the tar happened to be flushed when the pricking was done it is surrounded by a wreath with the stars and stripes entwined. Measured by tattooing, Dewey is by far the most popular man in the navy, with "Fighting Bob" Evans a close second. There are also a few Sampsons, a Phillip, a Schley and any number of "Liberty" and "The Man Behind the Gun."

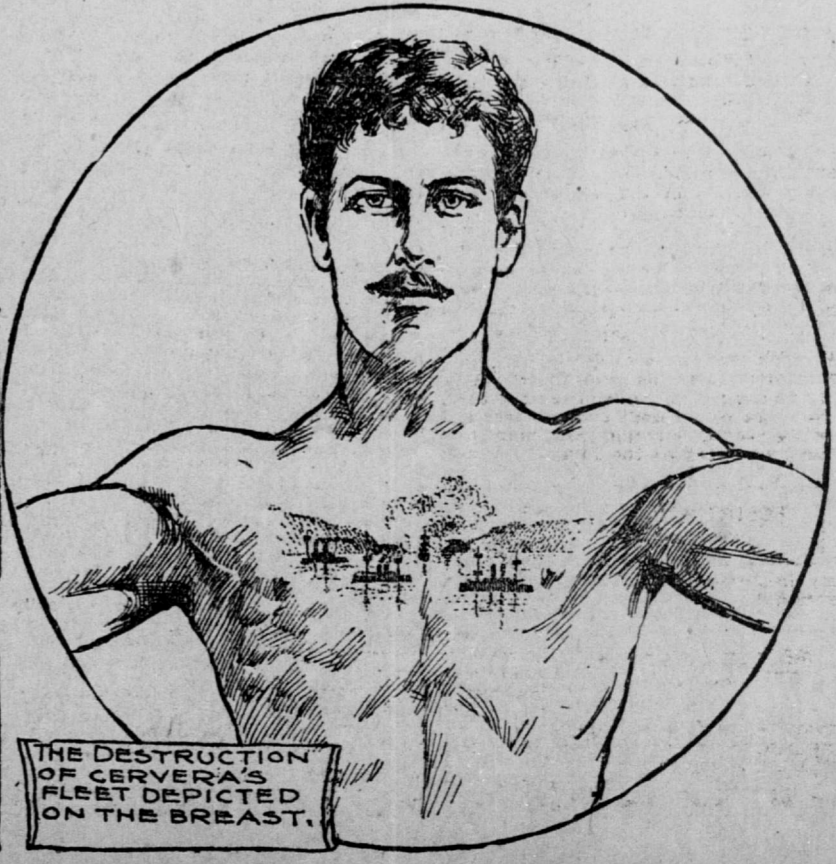
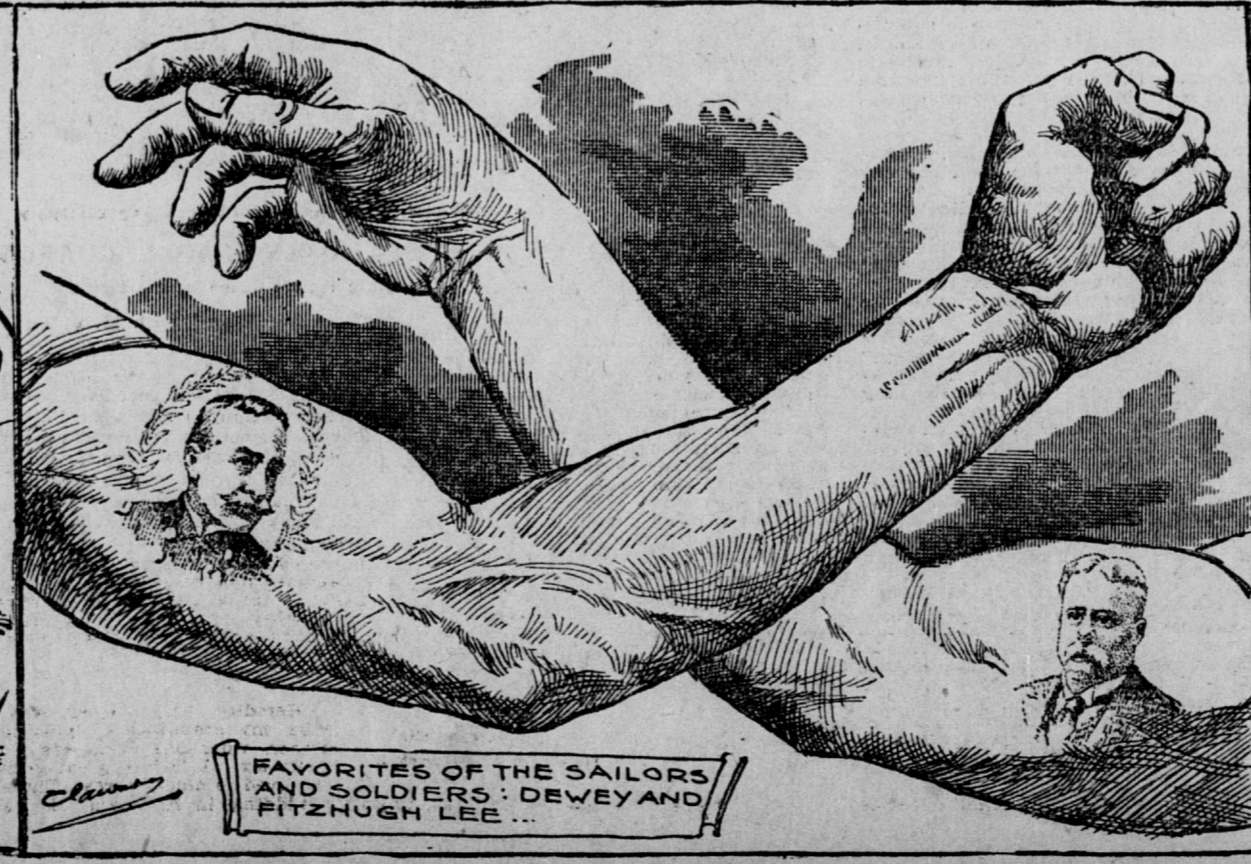
little electric machine which tattoos a picture in a single day that would require weeks by the old hand process. Mr. O'Reilly had never seen a battle picture tattooed, but being an artist at heart he told the seaman very promptly that he would illustrate him in colors. Accordingly he purchased a newspaper containing photographic reproductions of the American fleet as stationed off Santiago harbor, and pictures of the Spanish ships as they appeared after the fight. He ascertained that an engineering officer holding the rank of lieutenant, and temporarily stationed on the Brooklyn, had drawn detailed sketches for the use of the Government, showing the various positions assumed by our ships and by the enemy from the time the battle began until after Cervera surrendered. In some way he managed to secure a set of these official drawings, which he showed me; and then he outlined the design as it would look when tattooed on the sailor's body.

design was finished; that is, it was long for electric tattooing. When it was finished that sailor had the whole battle of Santiago stretching like a panorama across the front of his body. One of those who came to have patriotic designs placed upon him now bears, in addition to the regulation picture of Admiral Dewey on his left arm, a portrait of General Fitzhugh Lee on his right arm, and on his chest the American and Cuban flags intertwined. The greater number of customers brought to the tattoo shop by the war have been either sailors or naval reserves stationed on vessels that had seen active service, and the reserves especially have been partial to two designs, which are shown herewith in illustrations, "Liberty," and "The Man Behind the Gun." These two have been and are by all means the most popular, but a third favorite is an American eagle with flag and shield, executed in four colors. A good many volunteer soldiers, especially from the various troops of Rough Riders, have had permanent souvenirs of the war with Spain tattooed upon them, and of course these are almost without exception of patriotic nature.

By examining the picture carefully it may be seen that the tattooer is holding upon the subject's shoulder a curious instrument connected with a wire that ends in an electric motor upon a table near by, and the instrument on the shoulder is an electric tattooer. Until half a decade ago Mr. O'Reilly used for tattooing the ordinary instrument which had been common property in Burma, Japan, the Sandwich Islands and Chinese Tartary for a thousand years—in fact, wherever tattooing has been practiced. This instrument differed somewhat in form in various lands, but substantially it was of a single type, consisting of four very fine needles placed close to one another in a row and bound together very tightly. The blunt ends were then firmly fixed in a handle, leaving the pointed ends exposed for about a quarter of an inch. The operator would dip this set of needles in ink and then prick the skin of his customer, and four little holes would result. Then it would be dipped

in ink again and four more holes would be pricked. This process was repeated over and over until the design was finished; and a slow, tedious and irritating process it was. Nobody can tell how long it took to cover the body of the Greek Captain Constantine, the first "tattooed man" who traveled with P. T. Barnum, but in all probability a year or two passed away before the work was finished. When the conventional little electric motors came into general use Mr. O'Reilly began to think of some way whereby the slow hand-needle might be improved upon, and finally he invented and patented his tattooer, which performs work with rapidity almost incredible. The operating end of this machine consists of a single fine needle which is made to dart in and out of its case at a rate of speed approaching a thousand strokes a minute.

for any special reformation, merely as a part of their growth in religious life. Of all classes and conditions of men who are oftenest tattooed, however, the British sailor stands first. Do you ask why? I can't tell you, and I don't know any one who can. If it is necessary, tattooed designs can be removed and new flesh and cuticle will form so that no scars need be left, it is said. We were speaking of this, Mr. O'Reilly's assistant and I, and he carelessly pulled an envelope out of the desk and slid upon the table designs of an anchor and a star and one of Venus, which last was fully five inches long. They were blackened and looked as if they had been made of charred pulp which had been dried until stiff and hard.



HENRY EDWARD ROOD.