A MAMMOTH AIRSHIP TO CROSS THE OCEAN.

May Be Built in New York---Bigger Than Any Ocean Liner.

A number of New York capitalists have formed a company to build an airship bigger than any ocean liner afloat. The directors are men whose names will be recognized as shrewd, practical business men—men who have wealth as well as sagacity. The plans for the airship and the principle upon which it will be built, have been approved by engineers of recognized standing, as well as by officers of the United States navy. Indeed, it is a matter of record that Congress, not so very long ago, considered a bill for the construction of this particular airship. The committee to which it was referred recommended the appropriation of $50,000, but because a workable machine could not be built for less than $150,000, the inventor withdrew his proposition. Since that time the originator of the airship has endeavored to interest men of means. A company has been incorporated at last, of which the following are the directors:

Colonel A. C. Fisk, president of the Federal Supply Company; S. B. Reed, architect; A. De Bausset, inventor; Charles L. Pierce, life and fire insurance broker; Thos. F. Donohue, builder and contractor; Ernest L. Squire, secretary Inter-State Law Association; Ambrose Sweeney, contractor.

When young Joseph Leiter was at the high tide of wheat speculation he became interested in the airship project and started East to complete arrangements for beginning work at once. While on the way he received a telegram telling him of the reaction just that moment beginning and by the time he reached New York Mr. Leiter had other uses for his money than to experiment in airships. The principle of the De Bausset airship is absolutely new, easily understood and appeals at once to the imagination. It can be best understood by stating a well-known fact concerning airships. Make a ship of iron six inches long and it will sink in water. Make one sixty feet long and it will float, because it displaces more water than the boat itself weighs. Take a small, hollow, airtight cylinder, exhaust the air from within, and it will not rise. Make a steel cylinder eight hundred feet long, at lease one hundred and fifty feet in diameter, pump the air out, and, strange as it may seem, the weight of the air taken out is greater than the weight of the cylinder itself. For that reason the cylinder will float in the air just the same as a steel ship floats in the water. Really the only problem is to so brace the sides of the cylinder that the pressure of the air outside will not cause it to collapse like an eggshell under a bootheel. Engineers who know about such things, however, say that the inventor has overcome that difficulty.

Many persons, no doubt, will proclaim the projected aeroplanes impracticable. There is no reason to be incredulous on this account. When the idea of a steamship was under discussion, just as the projected aeroplane is now, many of the scientific men of the time pronounced the scheme visionary. Among these was Dr. Dionysius Lardner, esteemed in his day as the greatest scientific authority in England. Dr. Lardner demonstrated to his own satisfaction that no vessel propelled by steam could cross the Atlantic. He lived long enough to see steamships taking the place of sailing craft, which up to that time had been the only means of ocean navigation. Among the most amusing literature to be found anywhere are the speeches of eminent statesmen against the practicability of the telegraph. It is surprising that the vivid flashes of their scorn failed to paralyze the power of electricity. Aerial navigation does not seem a more difficult problem in 1899 than ocean navigation was in 1839.

The only system of aerial navigation that has been successful so far is that of inflation by hydrogen gas. This in all its nature was not practicable as a business proposition. The balloon is not dirigible to begin with. It goes with the currents of the atmosphere, and is incapable of direction. It is inadequate in lifting power and in the power of resistance under atmospheric pressure. Whether the "vacuum principle," which is the invention of Dr. De Bausset, is the solution of the problem of aerial navigation can only be determined when his aeroplanes are built and tried.

The lifting power and ascensional force of the De Bausset airships is to be obtained by a vacuum within a cylinder of great capacity. This cylinder is to be made of steel of the greatest tensile strength. It must be strong enough and light enough to resist the enormous pressure of the atmosphere when exhausted of the air within. It is claimed that an aeroplane constructed on this principle, when exhausted of the air from within the cylinder, will float into the atmosphere and carry with it a load of passengers and merchandise weighing from 60 to 70 tons. The vacuum cylinder is to be 775 feet in length from cone to cone, and 144 feet in diameter.

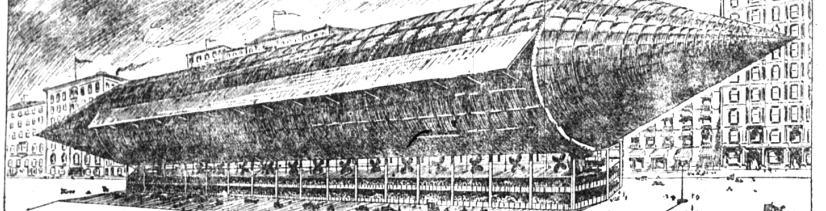
The means of propulsion are independent of the ascensional power. It is obtained by 32 turbines of 42 inches in diameter, located under and adhesive to the cylinder. The rudders for steering the airship in any desired direction consist of eight helical propellers at the front and at the rear of the car. These are to be rigidly fastened under the cylinder and to be pivoted upon an axis at a required angle. Liquefied air and carbonic gas engines of 300 horse power—6 of 60 horse power each—are to be used to work six dynamos for the transmission of electric power to the twenty-four motors communicating with the turbines, and forty helical propeller rudders. It is expected that an average velocity of one hundred miles per hour will be obtained, thus enabling the aeroplane to make the journey from New York to London or Paris in thirty hours.

Among the consulting and constructing engineers to whom the drawings and specifications of the proposed aeroplane have been submitted are many scientific men of the highest standing. Commodore George W. Melville writes that he finds the principle and theory of the aeroplane correct. W. H. Paine, the eminent civil engineer of New York, gave a similar indorsement. Lieutenant John P. Finley, U. S. A., Signal Service Corps, is sententious in closing his reply: "Mathematically you are right," he says. "Practically, you must now build the ship."

Of all the answers that of Charles H. Haswell, city surveyor of New York, is the most elaborate. He made careful calculations to verify both the weight of the structure of the proposed airship and the capacity of its buoyancy. Its volume he places at 803,017 pounds, its buoyancy at 600,897. The weight of the structure, with the appendages, accommodations, etc., he puts at 472,770 pounds. This would leave a buoyancy for officers, crew, passengers, etc., of 138,127 pounds. It will be allowable to keep any amount of air in reserve within the cylinder, to be pumped out according to the weight of the freight and passengers in the car below. The ascensional force or lifting power over all at a complete vacuum is put by Dr. De Bausset at 124 tons.

If the project fails it will be set down as a madman's freak; if it succeeds, as it may, for stranger things have happened, the projector will be celebrated in history as one of the great benefactors of mankind and one of the greatest geniuses of the world.

A complete ship is promised by the time the Paris Exposition opens.



PLAN OF THE MONSTER AIRSHIP TO BE BUILT IN NEW YORK.

AMERICA'S GIANT ENGINES.

Ready for Any Emergency Which May Confront Them.

The American locomotive engineer deems it unchallenged to design his engine with a very large margin of power, says the Engineering Magazine. If an express engine is designed to take a 200-ton load at fifty miles an hour, and if that load should happen to be increased to 300 tons, the locomotive is still expected to be able to take it and keep time, and usually does so. Such, at any rate, is the experience of such an impartial and level-headed observer as Mr. M. W. Acworth. If an American express be late at one point of its journey the engine is expected to make up the lost time even if the load be larger than usual. And, again, this is generally done. But if an English engine is given a single coach above its prescribed load the driver at once insists upon having a "pilot" and commonly he gets one. Or should the weather be bad, with strong side wind or a slippery rail, he demands an assisting engine and is accorded one as a matter of course. Obviously this applies especially to the case of single-wheelers, which are so largely used on some English railways, because their range of power is much more sharply limited by adverse conditions than is the case with coupled engines. But in either case it seems indisputable that a smaller range of power is given to an English locomotive than to an American.

FIGHT BETWEEN CAMELS.

Two camels were brought into the grounds at the back of the palace and made to face each other. They were male animals whose vicious tendencies had made it necessary for them to be kept from the other cattle and who had been carefully fed in the chieftain's fighting stock as being especially powerful animals.

At a signal from the prince the creatures were let loose and shambled toward each other. At first they merely clumsy fashion, their long, awkward legs an irrisistibly ludicrous sight. Presently they began to foam at the mouth, their faces became contorted with fury, and a sort of fencing match took place.

Their heads darted from side to side, and they strove to seize each other with their teeth. They groaned and roared furiously, and the spectators were soon worked up to a high pitch of excitement.

At length one camel seized his enemy by the leg while the other, a large, long-haired animal, retaliated by laying hold of his opponent's ear. Blood flowed freely, and opinion was divided as to which camel would be the victor.

At length the long-haired camel, whose grip on his adversary's ear was not very firm, suddenly let go, but the other continued to hold on to his antagonist's leg and even to drag him about, roaring with pain.

The prince eventually gave the order to separate the combatants, but it required the efforts of nearly a dozen men with ropes, chains and cudgels to put an end to the affray. Even then the wound on the leg of the vanquished camel was so serious that I believe the poor creature was crippled for months.

HE WANTED TO SPOIL THE FUN.

"You've had a quarrel with your sweetheart, haven't you, Rosa?"
"Yes! Only think, the fellow want ed to marry me just before the carnivall."—Jugend.

A Snoring Premier.

From the Sydney Telegraph: During the all-night sitting of the New South Wales legislative assembly this week the premier, Mr. Reid, spent a large part of the night in slumber on the opposition benches. The incident did not escape notice, as the rotund attitude of the sleepy premier and his nasal performances compelled attention from all parts of the house. Eventually it was satirically demanded why the leader of the government should persist in remaining on the opposition side of the house. Mr. Barton promptly and wittily defended his new colleague by asking: "Why should he not be there? Is he not now my sleeping partner?"

Interesting Twins.

Probably the most interesting pair of twins in the country are living at Wichita, Kas. They are Wilbur F. and John F. Stites. They are 54 years old, and look so much alike that only intimate friends can tell them apart. They married twin sisters, the Misses Alice and Carrie Worth. The two families live together in the same house in Wichita. Thirty years ago the brothers embarked in business together in Wichita, and the same old sign, "Stites Brothers, Real Estate," tells of the twin business relations between them, which still exists.

Worthy the Office.

Mrs. Craigie (John Oliver Hobbes) intends to offer herself for election to the London school board when a suitable opportunity offers. She is a constant attendant upon its meetings and personally is known to most of the members of the board, in whose work she takes a deep interest.

Serious Mistake

"The worst enemy I ever made, said the statesman, "was the man I got a government job for a few years ago." "What ingratitude!" "No, it was downright anger. There was a good salary attached, but he had to work."—Indianapolis Journal.

FARM AND GARDEN.

MATTERS OF INTEREST TO AGRICULTURISTS.

Some Up-to-Date Hints About Cultivation of the Soil and Yields Thereof—Horticulture, Viticulture and Floriculture.

Beet Cultural Directions.

In the early cultivation of the sugar beet, says Dr. Wiley of the department of agriculture, who has had charge of all the government beet analyses and has made a careful study of beets and beet sugar both in this country and Germany, the ground should be stirred as deeply as possible. To accomplish this without covering the plants the ideal implement would be a cultivator with numerous long, hooked teeth, not more than an inch wide, one which might be called a cross between a harrow and a cultivator. Such cultivators are now on the market. After the beets have become larger a cultivator with broader shovels may be used in order to cut the weeds more effectually, but deep working of the soil should be carefully avoided after it has become filled with the feeding roots of the crop. The after cultivation should consist in keeping the ground free of weeds and keeping the surface loose, both points being necessary to the preservation of the soil moisture.

"When the young plants have 4 leaves they should be thinned so as to stand 4 to 6 inches apart in the rows. They may be roughly thinned by chopping out part of the plants with a narrow hoe, but the final thinning must be done by hand, leaving, of course, the most vigorous plants. The interspaces should not exceed 8 inches. When there are gaps they may be filled in by transplanting, but transplanted beets are apt to be prongy and inferior. The ripening of the beets is indicated by the leaves turning yellow and this will not ordinarily begin until October. The beet will stand considerable frost, and the percentage of sugar increases up to full maturity. In harvesting, the tops may be scalped off with a sharp hoe, as they stand in the row, or the beets may be dug first and topped with a corn knife as they are loaded into wagon. In digging, unless a special implement for this purpose is at hand, turn a furrow next to the outside row of beets, running the landside of the plow close to the beets, they may then be easily pulled out, or thrown out with a spading fork, and the next row loosened in the same manner.

Legumes Make Rich Manure.

The high manurial value of nitrogenous feeding stuffs is a very important factor in their use. This is especially true on old ground where the original fertility of the soil has been reduced by long cropping. Nitrogen is the most expensive constituent of commercial fertilizer. It costs over three times as much per pound as potash and nearly three times as much as phosphoric acid. The real value that the farmer is able to get out of his fodders in the form of manure, depends largely upon the composition of the fodder, the manure containing practically the same proportions of fertilizing elements. The kind of animal through which the fodder passes and the way in which the manure is cared for are of course important factors, especially the latter, but everything else being equal fodder which is rich in nitrogen will of course yield a manure far more valuable than fodder containing mostly carbonaceous matter. The leguminous coarse fodders, such as clover, vetch, cow peas, soy beans, etc., have a much higher manurial value than similar fodders of grasses, corn, sorghum, etc. According to some of the experiment station investigations such fodders as clover hay, for instance, produce a manure nearly twice as valuable for fertilizing purposes as do common grasses. By making unilateral use of feeding stuffs rich in nitrogen (protein)—which nitrogen, by the way, has been drawn from the air without cost—the fertilizers purchased on the farm may consist mainly of the cheaper materials furnishing phosphoric acid and potash.

Canker Worm Traps.

From the Farmers' Review: Last spring the department of entomology at the Kansas State Agricultural College fastened to a number of trees Pratts' Canker-worm traps in place of the ordinary carpet-paper bands. These traps are nothing more than a narrow width of the common wire screening with slits along one side so that the screening can be fastened to the trees with a flange at the lower side. By using carpet tacks of a good size, the traps can be made very firm and tight, so that there are no passageways collar, through which the female moths can continue their ascent up the tree. Last year the orchards in which the traps were placed were not infested to any extent by the canker-worms, so that we were not able to give the traps a good test. They caught quite a number of the moths, but did not prevent them from depositing eggs either on or just above the screening. The worms from the eggs so deposited were of course able to ascend the tree. The mesh of the wire screening does not prevent the young worms from going through. The traps are quite durable; those put on last year in but a few instances needed attention this spring; a tack here and there was all that was necessary to put the traps in good condition. They will probably last for three seasons. Where these traps of wire screening are used, it is necessary to visit the traps quite often to collect and kill the female moths, and to spray once or twice with kerosene emulsion the region about and under the traps to kill the young worms, and the eggs deposited by the entrapped females. The time for spraying must be determined by the fruit grower himself.

When and How to Sow Millet.

The greatest confusion exists with the great group of grasses coming under the general term of "millet." Doubtless this is because the millet plant is grown over a large part of the world and is one of the oldest used by man. The plant runs through a great variety of forms and what is called millet by one person is often called Hungarian grass by another. The true Hungarian grass is a smaller and finer plant than most varieties of millet, though there is little difference between what is commonly called "German millet" and Hungarian grass proper, says Prof. W. A. Henry in Breeder's Gazette. Use either German millet or Hungarian grass for producing hay of the best quality. The extensive experiments conducted by the North Dakota Experiment Station show that when millet hay is fed exclusively to horses it may affect the kidneys seriously. Farmers who feed the hay in moderate quantity along with corn stover and other varieties of hay, and give some grain, need have no fears of evil results following the use of good millet or Hungarian grass hay.

None of the millets, including Hungarian, grass should be sown until the soil is well warmed up, which is after corn-planting time. Any time up to the first of July will do in the latitude of our correspondent. Sow from one to two bushels of seed per acre. The more seed sown the finer will be the grass, and consequently the better the hay. On poor soil less seed should be sown than on rich soil. It is very important to cut millet for hay purposes just when the heads are coming into blossom, for the reason that millet seeds are very fine and have a hard coating. This renders them indigestible, for they are not crushed by the teeth of horses or cattle.

Why Shorthorns Are Popular.

Ex-Governor G. W. Glick of Kansas, writing in Farmers' Guide, says:

What is the best breed of beef cattle to breed? Men may differ, and honestly, too, as to the best breed of males to use to breed up the common cattle of the country, and I have no quarrel with the friends of any breed. Circumstances, conditions and education often have much influence in these preference. But any of the thoroughbreds are far better than the scrub, and the breeder who uses thoroughbred males is far in advance of the one who uses scrubs. My own preference is for the Shorthorns. There are many reasons why I prefer the Shorthorn to other breeds. The Shorthorn improves and breeds up all other breeds of cattle on which it is crossed. It improves all classes of cattle to the highest point of bovine excellence. They take on flesh rapidly and mature very early and can be fatted off at any age and sell in the market for the block at top prices. The reason for this excellence is that the Shorthorn puts on flesh on those parts of the body where the high priced, tender, juicy steaks and roasts are found. The scrub steer may make as much weight for the food consumed as the thoroughbred or high grade Shorthorn, but no other class of beef animals produce such a wealth of high-priced steaks and roasts as are found in the upper third of the well-fatted Shorthorn steer. The Shorthorn always shows evidence of good breeding. It has a pleasant countenance, a mild and tractable disposition, a broad, level back, that carries a wealth of the best finely marbled steaks and roasts that bring the highest price in the markets, with thickly fleshed loins, long and well-finished quarters, while it has the well sprung ribs that give it a style and finish, and which are covered with thick, juicy flesh, mellow to the touch, and, though firm, is well marbled and tender.

This great, broad back is one of his distinguishing qualities. This broad back furnishes all the high-priced meats. It gives assurance that in cutting up and selling out the carcass that the largest percentage of good and valuable meat will be found and the largest percentage of good beef to live weight will reward the purchaser. It is the high price of the rib, the porterhouse, the sirloin and the round steaks that give the greatest value of the well fed beef steer, and in the production of these valuable parts the Shorthorn steer has no equal when the whole carcass is considered in connection with its market value. While it is true, once in a while, that a small number of another family of beef cattle may sell as well or better on some particular day in the market, it only attests the skill of a good feeder and does not disprove the fact that the Shorthorn is the best beef steer, and as a beef producer has no rival and is by far the best seller every day, that goes to the market.

The Clover Crop.

This has been a hard year for the clover fields, and for that reason some farmers will need all the encouragement they can receive to prevent them from giving up the growing of clover. Where it is naturally difficult to get a catch the farmer will argue that the clover crop is a thing so little to be depended on that it is safer for him to put his money and efforts into some more certain crop. But the full value to the farm of the clover crop should be considered. Frequently the clover crop is the only practical means of providing nitrogen to the soil. We say practical because to buy commercial nitrogen in any form for our great western grain farms is out of the question. The dairy farmer will not generally make the mistake of being compelled to use for feeding his dairy cows a less valuable hay than that made from clover because it can be more easily grown. The reports from the new sowings of clover indicate that the rains of this spring have proved beneficial and we may expect to have a good stand of new clover this summer and fall.

The Gritty Pioneer.—It was grasshopper year in the northwestern counties of Iowa. He was trying to hold on to his farm in spite of discouragements which were almost overwhelming. His house was a sod shack, his barn a few poles and a pile of straw, his grain fields stripped clean by the grasshopper scourge. He was ragged, unkempt, and his wife and little ones, his team and entire outfit seemed paralyzed with poverty. He had nothing to offer us but some cold Johnny-cake and a cup of cold water when we sought to get some refreshments at his place. He was withal gritty, and said he was going to stick it out somehow. This was about twenty years ago. Last year we were at his place again. There was a nice, large house, a big red barn, a wealth of cereal crops, flocks and herds; the grasshopper tree claim had become a $50-an-acre-farm, and the grit and courage of the pioneer was a last splendidly rewarded.—J. S. Trigg in Exchange.

COL. BEES' HOBBY.

MILLIONAIRE WILL PERPETUATE HIS NAME.

Features of the Military Academy Now in Course of Construction at Macon—To Be One of the Finest in Existence—Elaborate Plans.

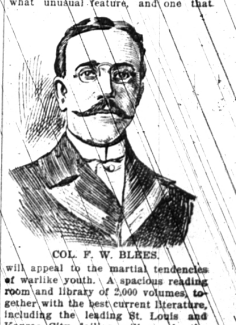
(Macon, Mo., Letter.)

The Blees Military Academy, now in course of construction here, is intended to be a magnificent architectural monument to the pet ambition of its wealthy founder, Lake all men of means, Col. F. W. Blees has his hobbies. He loves fine horses, and has a score or more of some of the best blooded animals in America in his stables. Painting, music and horticulture receive his warmest encouragement and support, but his real, earnest, controlling passion is for the military and the development of martial instincts. His own training was obtained in the Prussian army, which he entered immediately after his graduation and was commissioned second lieutenant. He was among the first in this section to offer his sword to the state when hostilities between the United States and Spain commenced.

Col. Blees came to America in 1881, and after teaching in various schools and academies in this country, accepted a position as commandant of Griswold College Corps of Cadets, Davenport, Ia. In recognition of his success in that capacity, he was appointed lieutenant-colonel in the Iowa National Guard and aid-de-camp to the commander, Gov. Horace Boies. He afterward resigned his position to accept the head mastership of St. James Military Academy here, and later was appointed superintendent. The academy was discontinued during Col. Blees' absence at the bedside of his parents in Germany, and after their death some time was necessarily employed in winding up the affairs of the property in the old country. But all the time the dream of an academy that would perpetuate his memory as an institution of influence and power in the land was with him, and as each stone and brick is laid in its proper position the rearing of the structure causes a responsive ascendency in the colonel's hopes. The grounds for the building have been carefully selected, with regard to health and with a view to the picturesque. Nature has done much for them in the way of gently rolling hills, natural streams, cascades and table lands, and the landscape gardener will do the rest. Within the campus there will be a lake covering eighteen acres, and just across on the rolling hills, natural streams, cascades grounds, will be another body of water nearly as large. Rustic bridges, grottoes, foliage labyrinths, fountains and statues will make the grounds an ideal resort to the students and attractive to visitors.

The general plans by the superintendent, Col. W. W. Clendenin, are embraced in the following:

The academy ground proper comprise 143 acres, and lying adjoining is the farm of Col. Blees, 400 acres, known as the "Blees place," which will supply the academy with everything that can be produced on a model farm where all modern methods of husbandry are employed. For the present the buildings will be limited to the academic hall, gymnasium, kitchen, laundry and power house. The arrangement of the buildings mentioned will be equal to anything in the country, and is the result of careful calculations, in which each member of the faculty has assisted. Everything, from the flagstaffs on the towers to the concrete in the basement, will be absolutely fireproof. There will be a 55x185-foot recreation court in the center of the academic hall, fitted up with pianos, lounging seats and all manner of games, for indoor entertainment. This court will be decorated with handsome foliage plants and portraits of illustrious American citizens. All the cadet rooms will open upon this court, which is to be lighted by a skylight, and provided with running water, steam heat and electric lights. Each cadet will have a room to himself. During the first year the school will be limited to 100 boarding cadets, but it is the purpose to build for the eventual accommodation of 500. The gymnasium will be 75x160 feet. In the basement will be a 50-yard rifle range, bowling alleys and a large swimming pool. In the building above will be all manner of apparatus for the physical development of the boys. Extending around this room or hall, as a wide balcony, will be a half-mile running track. A polo field, foot-ball grounds and base-ball diamond, with large grand stand, tennis and hand-ball courts and a half-mile race track are the provisions for outdoor exercises. A troupe of twenty powerful cavalry horses, specially selected, is a somewhat unusual feature, and one that will appeal to the martial tendencies of warlike youth. A spacious reading room and library of 2,000 volumes, together with the best current literature, including the leading St. Louis and Kansas City dailies, will supply the literary appetites of the students and instructors.



COL. F. W. BLEES.

Cause for Bliss.

Sarah—Oh, I am so happy. Maggie—What has happened, dear? Sarah—I have just found out that my darling Alonzo is color-blind. Maggie—Why, what advantage is there in that? Sarah—He can't see how stupidly red my nose gets in cold weather.—The Rival.

The devil seldom makes any foes over a death bed repentance.