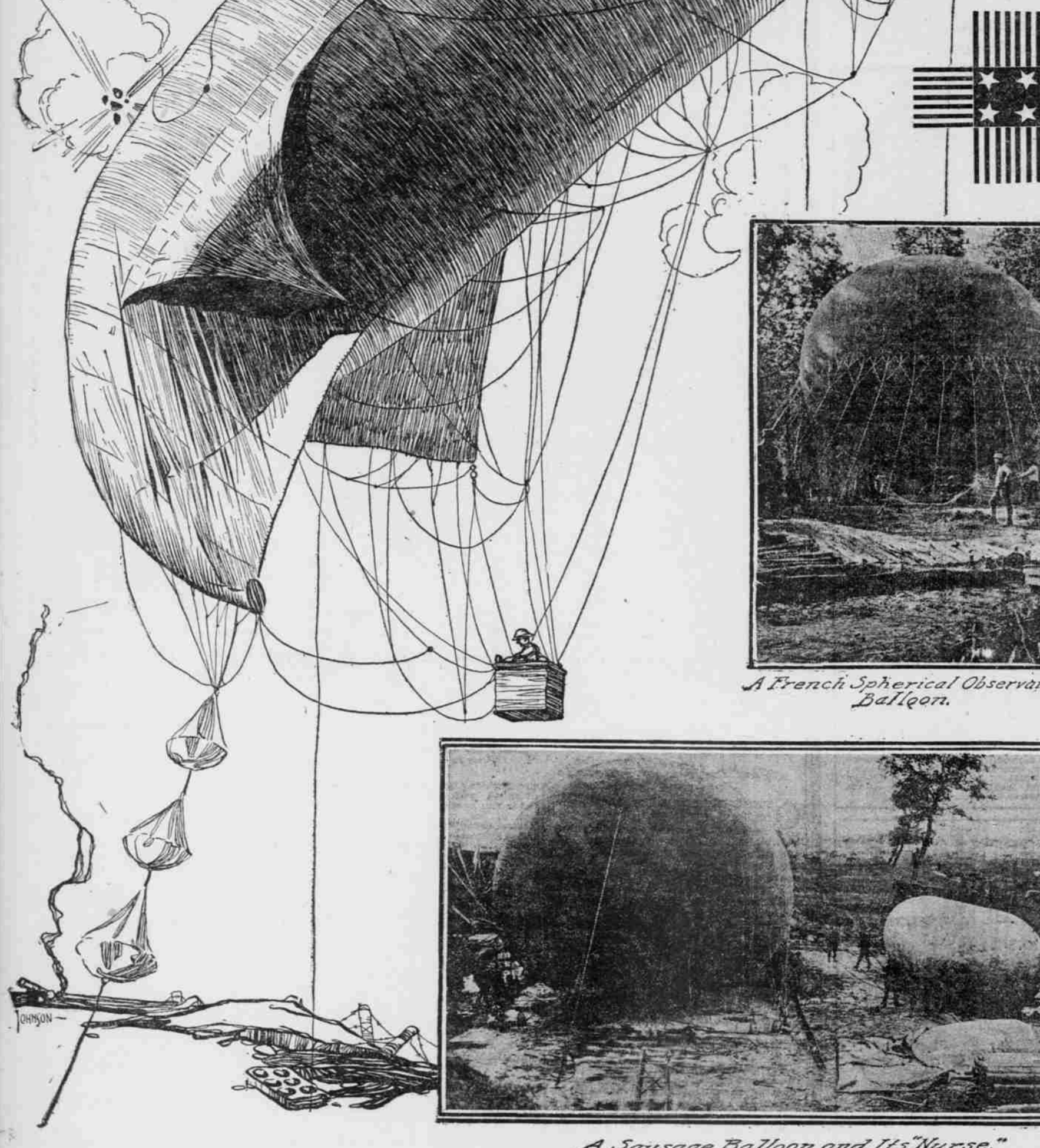
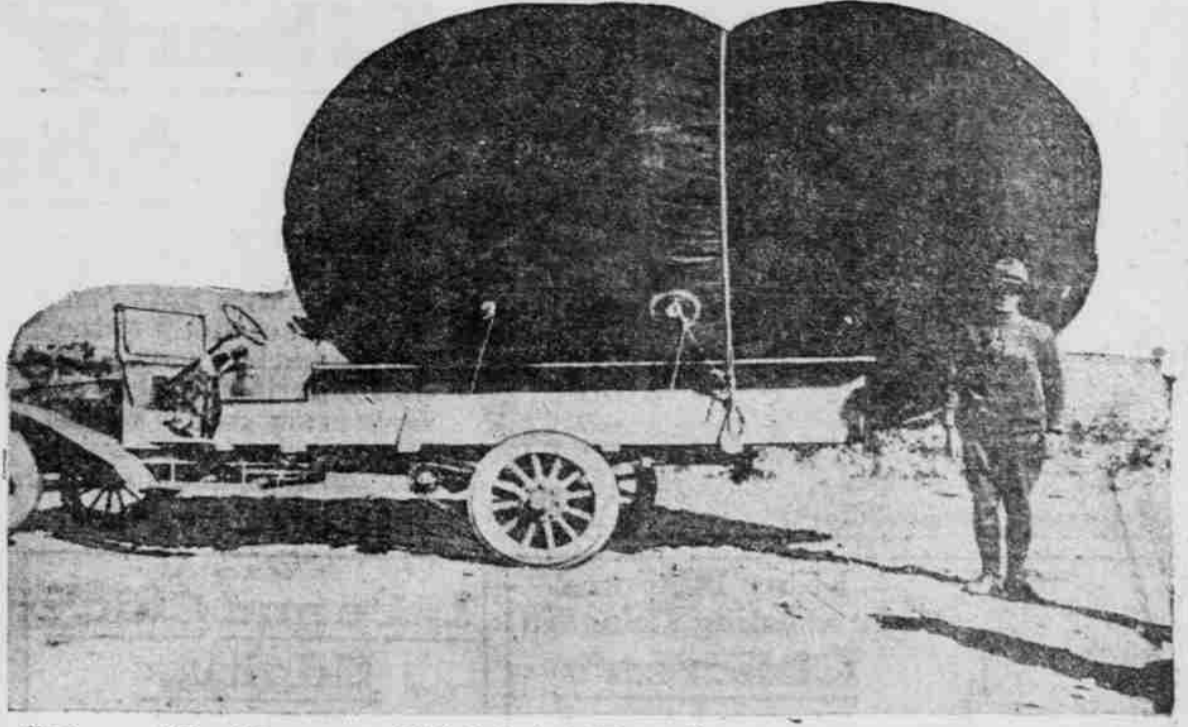


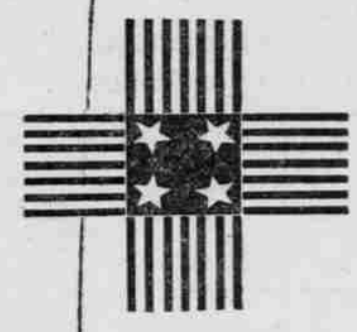
The Eyes of the Firing Line



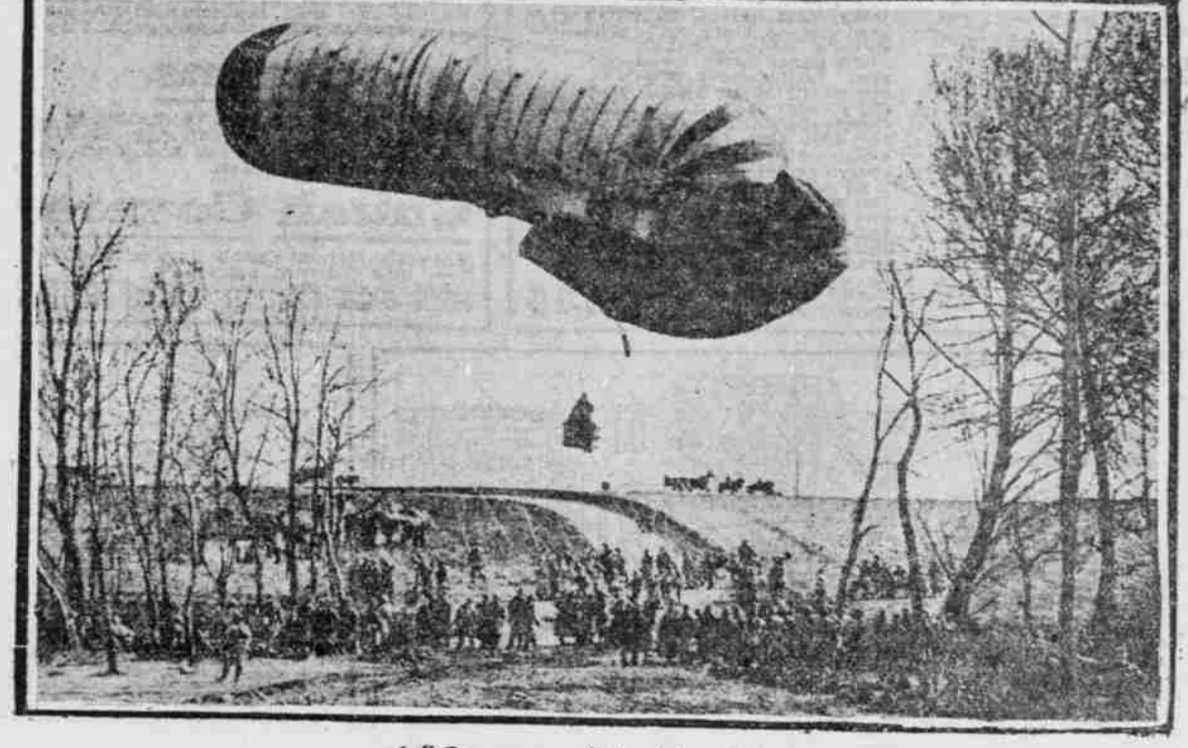
How the United States is Working to Supply "Sausage" Observation Balloons for the Fighting Front and the Part the "Nurse" Plays in the Great Game.



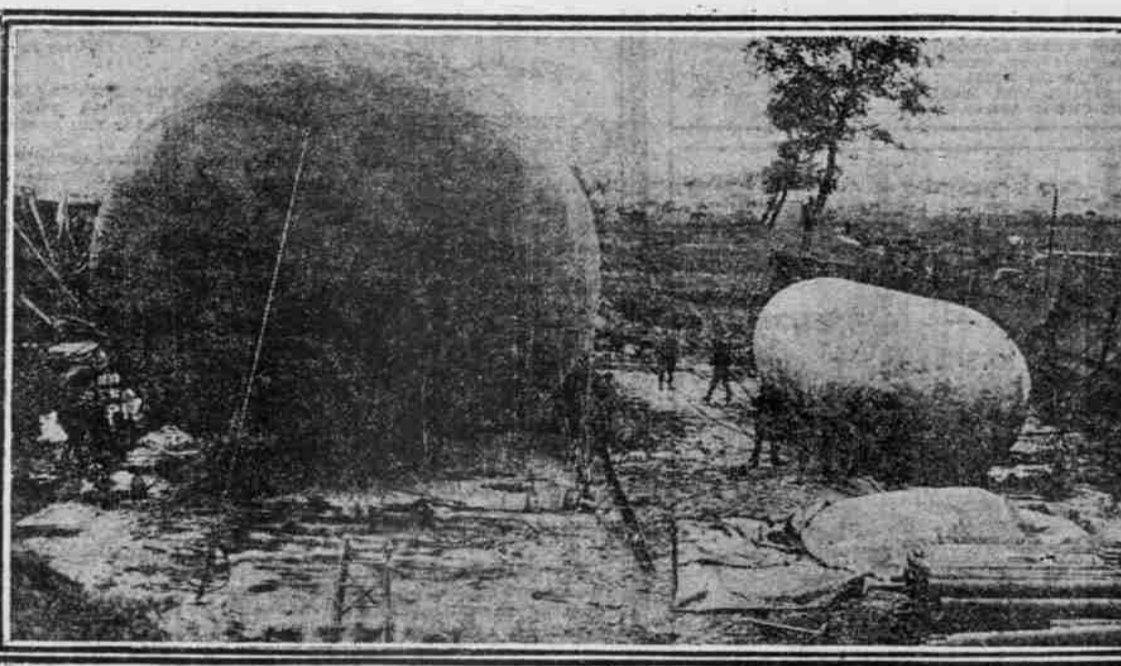
"Nurse" Balloon on U.S. Motor Truck © Field Artillery Journal.



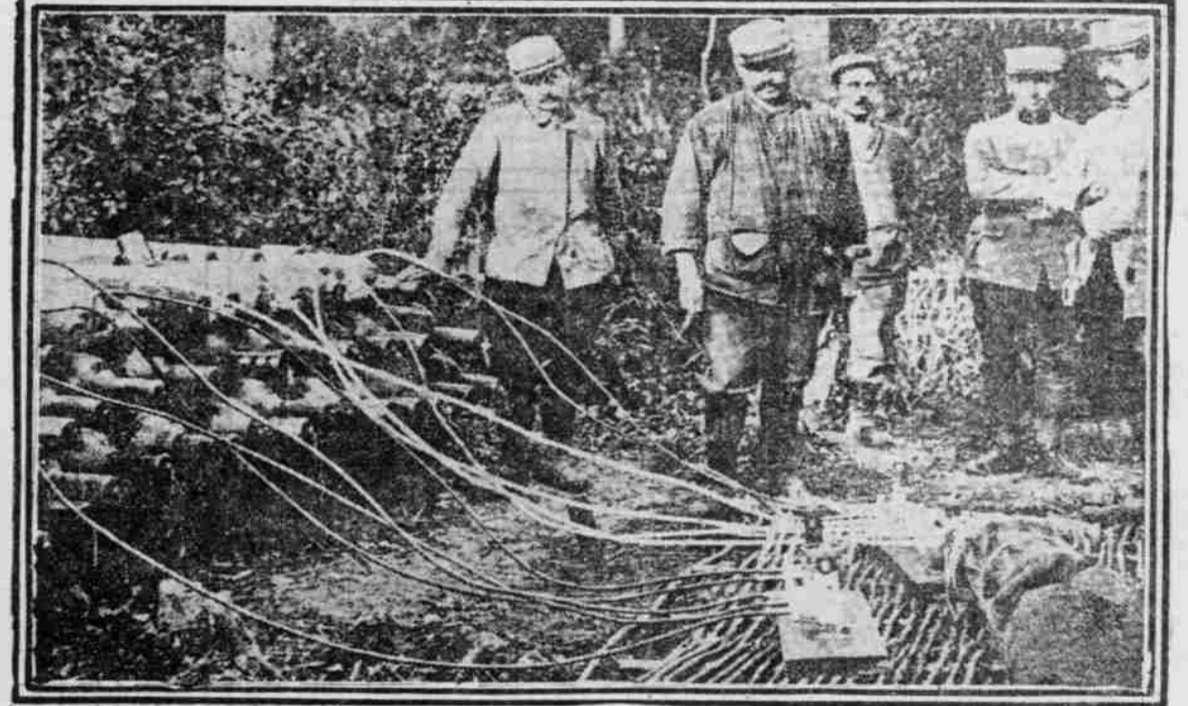
A French Spherical Observation Balloon.



A "Sausage" in the Air.



A Sausage Balloon and Its "Nurse."



Filling a French Balloon.

BY RENE BACHE.

OF the \$640,000,000 appropriated by Congress for air-fighting, no inconsiderable fraction will be devoted to the purchase of observation balloons and their equipments, including motor trucks to carry them and steel tanks to hold hydrogen gas for their inflation.

Flying machines are largely employed to direct, by signals, the fire of artillery, but by far the most important work of this kind is done by observers in "kite balloons," held captive four or five miles behind the trench lines and about six miles apart.

Relatively, the airplane scout is at a disadvantage, inasmuch as he can report only by wireless or by visual signals. The balloon, on the other hand, is in uninterrupted telephonic communication with the artillery commanders. A wire, running through the cable that connects the gas bag with the ground below, enables the observer, thousands of feet aloft, to speak directly (by the help of a switchboard mounted on a motor truck) to the officer in charge of any battery in the neighborhood.

From his post of vantage in the sky the observer can overlook a great extent of territory. Assisted by powerful field glasses and a telescope he is able to note the slightest change in the enemy's trench lines, to watch every movement of bodies of troops and, almost at a moment's notice, to let loose the fire of hundreds of guns upon any target that may seem to invite attention.

The Balloon School.

At Fort Omaha is now being established a balloon school where officers and men will be trained in the business of handling and operating observation balloons. It will work in co-operation with the school of fire at Fort Sill, where the art of artillery shooting is taught in all its branches. The school of fire will give a supplementary course

in ballooning to students who elect for aerial work and many of its graduates will go to the balloon school to complete their education.

Part of the training at the balloon school will be in the navigation of free balloons; for now and then it happens that a captive balloon breaks loose and must be operated as a free balloon to effect a safe landing.

Uncle Sam is to have many balloon battalions, organized as quickly as men and officers can be trained, and their outfit will be in all respects of very latest pattern, including specially designed motor trucks with windlasses and winding drums to operate the balloons—the machinery in question being driven by the truck's own engine.

A battalion comprises three companies, each operating one balloon. Recent experience in Europe has shown that there should be 150 men and officers to a company, to provide for three "shifts" every 24 hours. The work of the observers (ordinarily two of them together in a car) is especially arduous and every few hours the balloon has to be hauled down to replace them with a fresh pair.

The Science of the "Sausage."

Now the balloons used for purposes of military observation and the direction of gunfire are of a kind unfamiliar to most people. They are "sausage" balloons—so called on account of their shape—and the special quality that makes them useful is their steadiness in the air. A wind of 40 miles an hour will not cause them to bob about to any disturbing extent. To help their stability some of them are provided with a sort of kite-tail carrying several conical canvas cups.

Such a balloon is about 80 feet long and has a capacity of 25,000 cubic feet. It is filled with hydrogen gas, obtained by the electrolysis of water (which is two-thirds hydrogen), and stored, until required for use, in steel cylinders under a pressure of 150 atmospheres.

The generating and compressing machinery is installed in railroad cars at the nearest rail point, whither the cylinders are taken to be refilled.

A sausage balloon is calculated to lose 300 cubic feet of gas daily. The loss is replaced at night, a method commonly adopted being to fill (at the nearest field generating plant) small balloons called "nurses," which are conveyed to the hangar and emptied into the big gas bag.

A peculiar feature of this type of balloon is a "balloon" at the rear end, which contains air under pressure. It is separated from the gas bag proper by a diaphragm. When the balloon is full of gas the diaphragm is pushed so far to the rear that there is no air in the balloon. But when some of the gas is lost by leakage air enters the balloon through a sort of tunnel in the bottom of the "tail-fin" and thus the "sausage" is kept well distended.

Ordinarily the observation balloons go up at daybreak and are hauled down at nightfall. But sometimes they stay up all night to watch for the flashes of

the enemy's guns, with a view to locating them.

Sometimes two balloons are used as end stations of a base line for calculating the range of targets. Or an extemporized wooden tower, conveniently hidden by trees, may be utilized for one end station, a "sausage" doing duty for the other. The signals telephoned to the batteries for directing gun fire are the simplest possible, the mere words "Over," "short," "right," "left," "hit," serving the purpose.

The observation balloon, on the other hand, is not an easy target for the enemy artillery to hit. For one thing, it is four or five miles distant, and, seen from that far away, a tiny object in the sky. Then, too, with the uncertain breezes, it is constantly changing its position.

The only foe it really fears is the battleplane, attacking with incendiary bullets, incendiary arrows or bombs. But it does not lack capable defenders. On the ground beneath it are anti-aircraft guns. Above it, far aloft in the sky, hover friendly battleplanes.

LEGAL SIDELIGHTS FOR LAWYERS AND LAYMEN

BY REYNELLE G. E. CORNISH, OF THE PORTLAND BAR.

TIPPING. And now the law busies itself in dispensing justice as to social etiquette. If you are in doubt whether to tip the waiter or reimburse the too attentive hallboy just consult your favorite lawyer or run into the nearest law library and consult, say for instance, the case of *Sloat v. Rochester Taxicab Company*, 163, N. Y. 2, 904, and read what the court has to say on the subject, in part as follows:

"Many times a guest at a hotel, a

passenger upon a sleeper, or a person receiving service from the employe of another is glad to recompense a pleasing manner or an extra service by a reasonable tip; but according to the present custom tips are not usually a voluntary act of the person who gives them. The employe, with the knowledge and consent of the employer, furnishes a service which compels the payment of a tip, and if the tip is not paid the service is so grudgingly and unsatisfactorily given that the person served

is willing to pay it the next time. The person rendering the service considers that the tip is his as a matter of right and involves no particular favor; an extra large tip may be appreciated, but the ordinary tip is considered a payment of money actually due. The usual tips have come to be considered a part of the cost of entertainment at a hotel or upon a sleeper or public conveyance, and it is realized both by the person paying and receiving them that they are a part payment of the wages, which the employer compels the person served to pay."

Legs and the Law.—If you hire a boy to run an errand for you, does he go on your legs or his own? Foolish question! Well, the Supreme Court of Missouri did not think so, and neither did the parties in the case of *Phillips vs. Western Union Tel. Co.*, 195 S. W. 711, for the plaintiff in the lower court recovered a verdict of \$10,000, which was reversed on the defendant's appeal to the higher court.

The boy whose legs were responsible for the trouble was an employe of the defendant telegraph company. It seemed that he ran out of the office with a telegram in his hand, and in passing the corner newsstand snatched a paper. Looking back over his shoulder to observe the results of his coup he ran into the plaintiff, who was at the curb, and threw her down. She sustained serious injuries and sued the company on the ground that they were liable for the negligent acts of their servants. The case rested upon the question whether the act committed lay within the scope of the master's business.

The defendant insisted that it did not, saying in part:

"That human legs, while safe and proper instruments of transportation when carefully used, are like automobiles and other things of a similar nature, dangerous when used negligently, and the master has as much control over the legs of his servant as over his

own animal or machine." The court held that the boy "was not traveling on the street by permission of his employer, but in the exercise of a public right valuable to himself as a facility for gaining a livelihood as well as to his employer. Had he not possessed this right, his employer could not have conferred it nor taken it away. It went with his service as far as it was necessary to the performance of the duty involved, and no further. In all other respects and for all other purposes it remained his own."

"Boys engaged in employment frequently encounter their juvenile enemies, and we who employ them do not think of worrying over our financial responsibility for the result. The youth who goes to the postoffice with our letter on a Fourth of July morning may carry a bundle of firecrackers and distribute them freely along the route, or the festive drummer on a holiday occasion may fall over a slight and quiet traveler, or the boy who carries a parcel may, at the same time, try to control his boon companion, the bull pup, with a string. Many of us have seen very painful accidents resulting from such conditions, but have seen no legal authority for holding the master liable in damages growing out of the rollicking movements of his servants on the street, even though his own business may have taken them to the very place at that very time, unless he investigates the wrong which caused the injury."

WIFE KISSED BY MISTAKE

Result of Oculatory Aim Is Seven Black Optics.

ST. PAUL, Oct. 11.—Seven black eyes were the wedding decorations at the Cords-Wood nuptials Tuesday night and early yesterday morning, according

ing to witnesses and two detectives from Central Police Station who arrived in time to witness the finale.

It all started, witnesses say, when W. W. Williams, formerly of 343 Charles street, kissed his own wife, by mistake.

V. E. Cords, of Blue Earth, and Miss Hazel Wood were married at the home of the bride's mother, Mrs. D. E. Russell, 237 North Smith avenue, and Mr. and Mrs. Williams were among the guests. There were other guests, too, and one of them, feminine, was pretty. Williams, witnesses said, followed the pretty one to a balcony. This was in spite of warning glances from Mrs. Williams.

Now it was dark on this balcony, and soon a resounding smack was heard. Then followed a thump. Mr. Williams, it is said, administered the kiss and Mrs. Williams the thump—with an empty beer bottle.

For Williams, it appears, had kissed his own wife, by mistake.

Williams' right optic was closed by his wife's blow. He retaliated and his wife's left optic likewise was shut.

Mrs. Cords came to Mrs. Williams' assistance. Her blow went wild.

Mrs. Russell then interfered. A wild swing from her fist landed in Mrs. Cords' right eye. Mrs. Cords then administered a tap which connected with her mother's right eye.

Mrs. Russell once more landed, the blow closing Williams' left eye, when he unintentionally stepped within range.

Whereupon Mr. Williams presented his wife with another discolored optic. Meanwhile the police had been summoned. Detectives Joe Pugliese and Hermann Vall ended the hostilities. Dr. Le Roy Brown, ambulance surgeon, accompanied them.

The fair dame over whom the optical contusions started, had disappeared. And yesterday, his wife said, Williams also vanished.

No arrests were made.