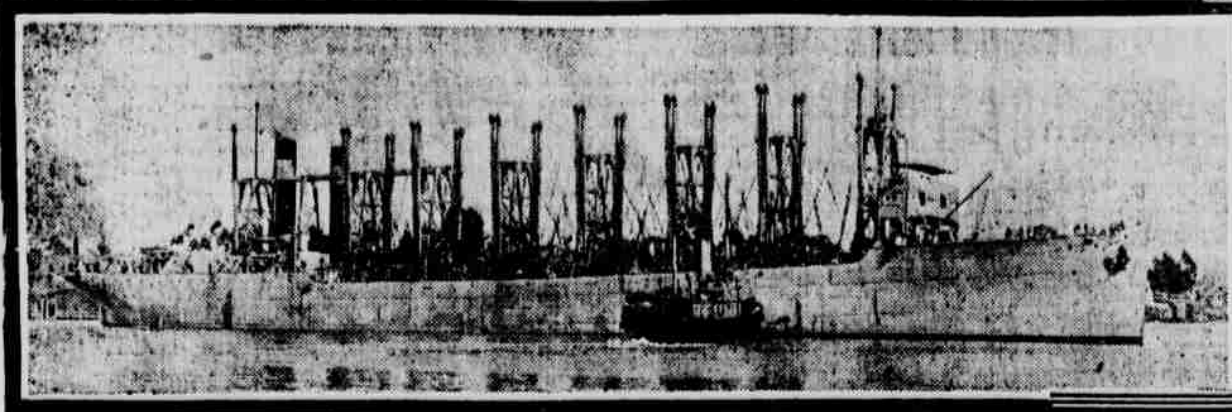
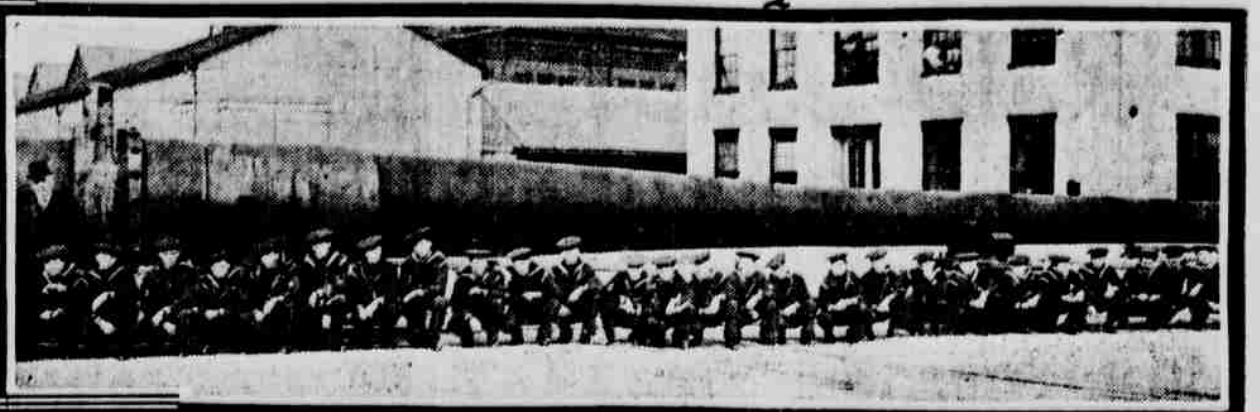


The First Electric Battleship



Electric Collier Jupiter



One of the New 14 Inch Guns for the Battleship California

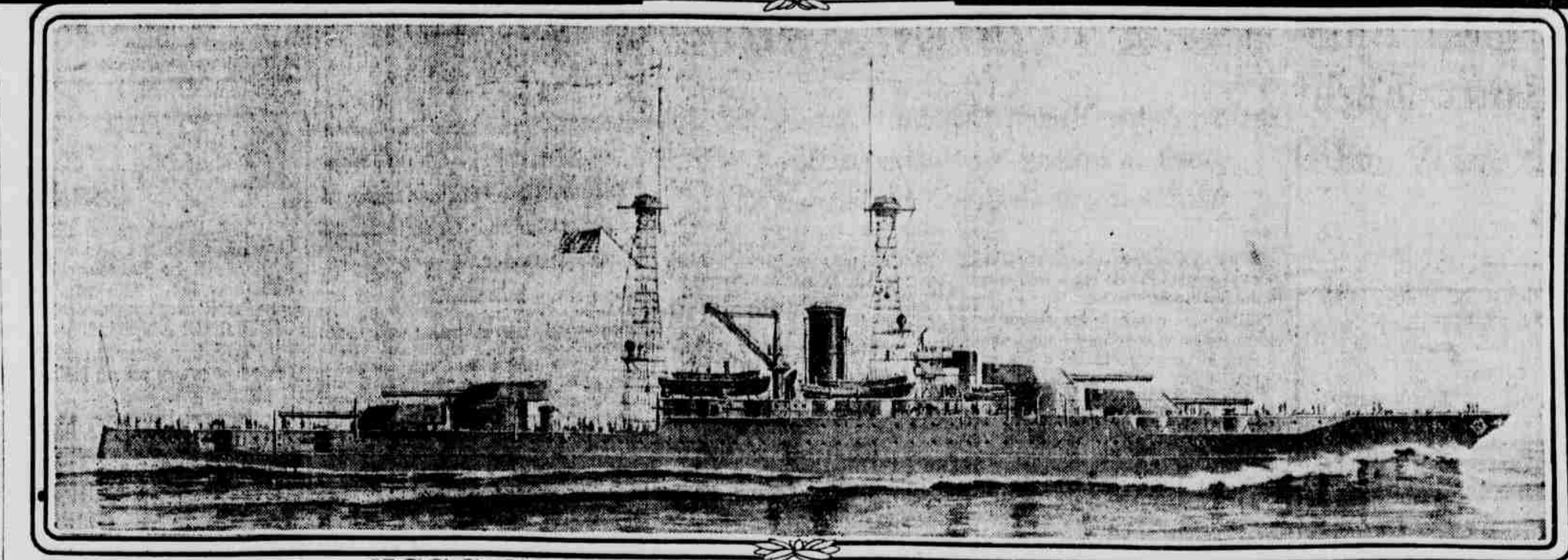
Uncle Sam Plans A Surprise for the Naval World In the Construction of the First and Only Electric Battleship - The New U. S. S. California To Be Propelled and Operated Solely By Electricity.

By Waldon Fawcett.

IN these piping times of war when all the other leading naval powers on the planet are fiercely flying at each other's throats your watchfully waiting Uncle Sam is quietly planning a sizeable surprise for maritime circles. Thanks to Uncle Sam, the day is coming when the captain of a battleship will personally put his vessel through all her paces and maneuvers by simply pressing buttons as he stands on the bridge of the ship. From "Full speed ahead" to "Full speed astern" will, in emergency, become an accomplished fact. Literally quicker than you could say "Jack Robinson." Nor need such sudden change of mind and of objective be accomplished by racking and straining a throbbing ship as her great engines are suddenly reversed.

California is the name to be bestowed upon our first electric battleship and appropriately enough, since the Golden Gate State is a commonwealth which is notable for standing for up-to-dateness in all things, Uncle Sam has had a "California" in the Navy but only an armored cruiser and in conformity with the plan to give the name of each sovereign State of the Union to a first-class battleship it has been decided that this newest addition to our floating defense shall be christened, the California.

In order that it may be made readily and conclusively apparent whether the magic current is a success as the sole source of battleship energy and, if so, that its advantages may be measured, Uncle Sam has planned to construct simultaneously with the California two other battleships, similar in all respects save in electrical dependence. In other words, the government is scheming to put the "deadly parallel" on the performances of the new-fan-



U.S.S. California as she will appear when completed

gled sea warrior as compared with those of her sister ships that are fitted with the familiar regulation engines and machinery. The two kindred craft that will enable the inquisitive to take the true measure of the California's efficiency will be designated the Mississippi and the Idaho—that is these newcomers will take the names of the old battleships Idaho and Mississippi which were some time ago pronounced a trifle obsolete for the American Navy and which this country sold to Greece just before the outbreak of the big European war.

Biggest Of American Battleships.
The California will be the largest type of battleship yet designed for the United States Navy. She is not merely a "dreadnaught," as the modern "all big gun" ship is termed, but a "superdreadnaught" which goes the dreadnaught one better in size, gun power, and everything else. The California will measure 624 feet in length over all and nearly 97 1/2 feet in breadth which means that she is comparable near to the maximum breadth of beam that can be comfortably accommodated in the locks of the new Panama Canal. The California will be so markedly superior to any of our battleships now in com-

mission that she will completely overshadow them but she will also lay it over the other battleships authorized by Congress within the past few years and which are now building. For instance, the California will be 18 feet longer than those monsters the Pennsylvania and Arizona which were ordered only a short time ago and she will exceed in length by full 41 feet the Nevada and the Oklahoma which were launched during the year 1914 and will be ready to go into commission a year or so hence.

Displacement 32,000 Tons.
As for displacement, the term in which battleships are usually measured by naval and maritime men, the California can boast 32,000 tons whereas her main battery of twelve of the huge 14-inch guns ought to make her more than a match for any fighting ship flying the flag of any nation. For one thing the conflict in Europe has disclosed that the torpedo must henceforth be accounted a very important factor in naval warfare, and consequently we find that arrangements have been made to fit the California with four submerged torpedo tubes so that this heavyweight fighter can discharge torpedoes at an enemy

just as can a submarine. On the other hand the California will have an innovation in the form of a "torpedo defense battery" consisting of twenty-two 8-inch rapid-fire guns so that this new mistress of the waves will be well qualified to cope at close range with those hostile swarms of warfare that strive to creep close enough to a battleship to make sure that torpedoes will find their mark. Most important of all the new-found attributes of the California is the possession of speed. Time and again during the present war it has been attested that speed in a heavy fighter no less than in a light cruiser is a valuable asset and consequently every effort is being made to give the California this advantage. It was contemplated that the battleship should, under the circumstances, show a speed of not less than twenty-four miles per hour but now that it has been determined to install electrical equipment throughout, the enthusiasts on the subject of electrical propulsion are joyously proclaiming that the California will do much better than 24 miles.

Electric Collier Pointed The Way.
Just how it came to pass that the California is to be "the electric battle-

ship" instead of a plain every-day sort of battleship, though the largest of her kind, is rather a long story. Strictly speaking, however, it was an electric collier or coal-carrying vessel that pointed the way to the present over-turning of precedent. For several years past electrical engineers of progressive ideas have been dreaming and talking of the day when our great ships, particularly our naval vessels, should answer as quickly and silently to electrical impulse as does an electric automobile or a trolley car. The logic of these champions of electricity was unanswerable and electricity gave a good account of itself in many small experimental vessels but the United States Government, along with the other great powers of the world, hesitated to risk an investment of millions of dollars—which is what an electric battleship amounts to.

However, in due course, the American electrical experts who had gone farther than any person else in quest of this goal, made out so favorably a case that the U. S. Navy Department decided to make a test on a vessel of moderate size. The collier Jupiter was chosen for the experiment and in order to accurately sense the value of the innovation it was determined—

Just as it has now been decided in the case of the California—to construct duplicate vessels that would afford standards of efficiency and economy whereby the freak might be measured.

A Complete Success.
Well, to make a long story short, the use of electricity on this test ship has proven a complete and unqualified success. The Jupiter has laid it all over her sister ships, the Cyclops, equipped with reciprocating engines, and the Neptune, fitted with turbine drive connected to propellers by gearing. Under ordinary service conditions the Jupiter maintains a speed of 15 knots per hour more easily and more cheaply than either of the others can make 14 knots and the experts from the Navy Department who voyaged on the electric collier during exhaustive tests under all sorts of conditions are ready to declare that her machinery equipment is superior in efficiency, lightness and economy to anything which has previously been used in such a ship.

How Power Is Applied.
Scarcely less remarkable than the fact of the employment of electrical energy in the California is the man-

ner in which this power will be utilized to drive the ship through the water. This brings us to one of the foremost reasons why electricity is so valuable a means of warship propulsion—more valuable, indeed, in naval environment than it is in the merchant marine. The ordinary conditions of peace prescribe that our battleships shall do a considerable amount of cruising but from considerations of economy and other reasons it is desirable that they do this at low or moderate speed. But when trouble brews they may be called upon, literally at a moment's notice to work up to top speed. It is in just this sort of versatility that electrical propelling machinery is declared to find its forte.

How this will work out in the case of the California is most interesting. The battleship will be fitted with four screws or propellers—something familiar in the case of our ocean grey-hounds but comparatively new practice in the case of battleships. There will be two separate and complete electrical installations, each furnishing power for two screws when the vessel is racing through the water at top speed. But the beauty of the arrangement is that it will always be possible, if circumstances dictate, to operate all four screws by means of one generator. The advantage of such arrangement in the event of an accident to one generator is obvious but none the less important is the fact that by shutting down one or more generators it will be possible to operate the battleship at her every-day rate and all cruising will be done by this plan with the result that there will be significant economies in operation.

Not only is the electrical installation expected to save money in coal bills etc., but the weight of this machinery is less than that of any other that could be used, thereby permitting just that much more weight allowance for guns and ammunition. Also the space occupied is considerably less than would be required for either turbines or reciprocating engines so that the California is going to have even more surplus space as compared with our other battleships than would be indicated by her extra length. In naval maneuvers and battle practice it is expected that the California will be a joy to handle because of the accuracy with which her speed can be regulated.

RUSSIA'S MIGHTY ARMY



A Russian Soldier in Winter Costume



A Russian Soldier on the Street in Moscow



A Detachment of Cossacks Ready to Start for the Front



The Czar's Own Lancers now fighting the Germans



Russian Soldiers Swearing Fealty to the Czar

How This Vast Body of Russian Peasantry Are Made Into Soldiers - Perfect Obedience To Officers - How They Manage To Exist On Their Small Salaries.

RUSSIA until recently has been regarded as just emerging from a state of semi-barbarism, as for centuries she has stood for every principle of government at variance with Anglo Saxon liberty and individual freedom. Her defeat by Japan, though unexpected, was not altogether regretted, but that defeat was a blessing in disguise. It showed Russia the weakness in her military organization, and above all the necessity for a feeling of patriotism and loyalty among her people. It taught her what she was beginning to learn by slow stages—the advantages of a commerce, and her industrial development during the last ten years has been the marvel of the age. The Land of the Bear was not wholly unprepared for war, and when the declaration came she had nearly a billion dollars as a gold reserve laid up in her treasury. Besides this, she is self-supporting, for her vast fields

of wheat, corn, rye, oats and buckwheat could feed all of Europe if necessary. Not only is Russia able to feed herself even in time of war, but she is rich in men for the army as well. More than one million men become available for military service each year. Of these only about four hundred and fifty thousand are accepted, and owing to the expense of keeping such an enormous army only the most robust men are taken. Horses can be obtained from Siberia by the thousands—sturdy little animals acclimated to the bitterest weather, consequently Russia has experienced little difficulty in securing remounts.

Recruited From Peasants.
The army is recruited for the most part from the one hundred and twenty million peasants. These men are fine physical specimens, but uneducated. They are superstitious to an alarming extent and are for the most part fatalists. "God gave and God took" is their belief, and they set little value on their own lives or that of others. Brought up in the squalid surroundings of Russian peasant life they seem immune from illness. Lack of sanitation does not seem to affect them, and they are not bothered with nerves. Music will rouse them quicker to action than gun fire, and the sound of the Russian national anthem stimulates them to action with renewed vigor. It is said that during the present war the sound of Russian music can be heard above the din of battle. They are slow in learning military manners except the salutation, and this they carry out to the limit. Few of them are intelligent enough to become non-commissioned officers except in name. This fact makes the work of the officers more laborious than those of any other nation. The Russian soldier has the mind of a child and he never bothers

ers to think for himself and sometimes he does not even know the name of his regiment, although he has it embroidered on the front of his cap. The cause of war does not concern him, and he shoots when his officer commands and stops when told. He is obedient to the last degree and the thought of insubordination never enters his mind. He simply carries out the orders literally.

The discipline of the army is so strict that men are put to death, many times instantly, for the slightest infringement of duty. Yet with this rigid discipline the officers display a fatherly spirit toward the men, and in addressing a company of soldiers always speak of them as "children." "Good morning, children," is the usual morning salutation of a Russian officer to his men. They reply in chorus—"Good health, high born!" or words to that effect. The men repay their officers for this kindness with a dog-like devotion and will carry out orders to the letter, even though they know that death will be their fate by so doing. "For God and the Czar" on the lips of a Russian soldier will dare any danger if the order comes from his commander. Sometimes they are permitted to call their officers "Little Father," and this permis-

son is a never-ending delight, especially to the man who comes from the part of the land known as "Little Russia."

Exemption From Service.
The entire male population between the ages of twenty-one and forty-four are eligible for service either with the regulars or in the militia. Of course, there are exceptions to this rule, and numbers of men escape military service through these. The only son of a father over sixty years of age is supposed to serve his country by looking after the family at home. The only son of a widowed mother and the only one of several brothers who is able to work or who is the only worker of a family of orphans or the only grandson living with grandparents who have no son to support them, are exempt.

The Russian army is made up of many races—Tatars, Finns, Lithuanians, Tchouros, Little Russians, Circassians, Poles, Eths and Cossacks, as well as the pure Russians. While they are different in temperament and mode of living to a certain extent they all love force and they love the bayonet—that is, they love the bayonet charge, and prefer its use in battle to that of a rifle.

Both the Finns and the Tatars make excellent soldiers, but the latter are spiteful fellows and when roused are callous to human suffering. Give the Tartar vodka and his fury knows no limit.

The Cossack, too, sometimes allows his hatred for another race to get the best of him. These men form a special part of the army and are great favorites with the Czar on account of their loyalty and faithfulness under all circumstances. They are the most remarkable horsemen in the world, for they can ride hanging to the belly of the animal as well as on his back. During one of their charges on the Germans they rode in this position and the Germans, thinking it merely a stampede of horses, threw down their rifles and attempted to catch the horses. The Cossacks suddenly came to life and killed nearly all the Germans before they were able to recover their guns. The Cossack women ride as well as the men, and a number of them are acting as dispatch bearers.

The Siberian troops, too, are a splendid set of soldiers and will undoubtedly show their merits during the winter campaign, as they are almost immune to cold. The pure Russian is klanier in his manner than any

of the others, but none the less a fighter.

Poorly Paid.
The Russian army is the poorest paid army in Europe, the pay of a general being from \$1,500 to \$2,500 per year. The junior officers must live on from fifteen to fifty dollars per month. The higher officers are permitted to use one or more soldiers as servants in order to lessen their expenditure.

The pay of a Russian private is from eighteen to twenty cents per month, while a sergeant draws the magnificent sum of sixty-three cents per month. Unless these men receive help from home or by doing extra work when off duty the financial end of the service is quite as trying as the military duties.

The terms of service vary according to education. For instance, a man who has passed through a university serves two years in line and sixteen in the reserves. If he goes through a secondary school he serves three years and fifteen as a reserve, but if he comes from the national (public) school he must serve from five to seven years. The Cossacks are liable to service for life in return for the use of some of the Crown Lands in Russia and Siberia.

At least sixty-five per cent of the Russian conscripts can neither read nor write. The officers frequently have to teach them their alphabet, and many other things, for they are little short of barbarians when they enter the service.

Very few of the privates marry as the government rather discourages marriage on such a small salary unless the soldier's father is willing to take the young woman into his household while the young man is serving. It is no uncommon thing for a father to practically force his son to marry a somewhat strong, healthy peasant girl in order to have her help to support the

family while the husband is away.

Swear Fealty To Czar.
Each man swears fealty to the Czar when he becomes eligible for the army. This is done with no little ceremony before a priest of the Greek Church. The Russian soldier carries his religion with him to the battlefield and when a charge is to be made the chaplain leads the regiment bearing the Cross aloft as the men rush toward the enemy, not infrequently losing his life.

On Sundays and holidays the army goes to church either indoors or out. The outdoor service is picturesque, with the field altar, gorgeous vestments of the priest and kneeling soldiers rendering the beautiful chants used in the Greek service.

Clothes And Equipment.
The uniform of the soldier is both strong and warm—rough gray coats, waterproof top-boots and warm caps. All unnecessary ornaments are dispensed with. He carries (if he is an infantryman) what is called a "3 line" rifle—a modification of the Krag Jorgan rifle of 1891. It is said to kill at a distance of two miles and can be sighted for three thousand feet. His bayonet is always "fixed."

The artillery used at present is from the Schneider-Creuzot works in France, while their mountain guns, horse artillery, howitzers and heavy siege guns are of Russian manufacture. The cavalry are supplied with guns of various makes.

More than seven million men are in the field today—some of them engaged with Germany, others with the Austrians, while still another body of men has invaded Turkey. The struggle bids fair to be a long one, and whatever the outcome may be Russia stands first in numbers of men—soldiers who it is believed will give a good account of themselves in endurance, tenacity and bravery.