

CATERPILLAR OF WAR

BRITISH TANKS ARE GROWING MUCH MORE EFFECTIVE.

Writer in the Popular Science Monthly Gives Description of the Huge Juggernaut That Saved So Many Lives at the Battle of the Somme and Filled Hunns With Terror.

WE INSPIRING monsters that the tanks were to the Germans, they were also much of a mystery to their own British troops. The first tanks were built in a walled factory in Lincoln, England, by mechanics who were not allowed to leave their Chinese City for three months, even to see their families. Secretly transported across the Channel, the tanks were assembled behind the Allied lines on the Somme to await call. The stolid Britishers thrilled at the whisper: "The tanks are coming!"

They were an untried military arm. Many thought that they never would return. But they did, and with a most enviable record for annihilating machine gun operators and snipers in a most thorough manner that it had ever been done before. They saved thousands of lives which would have had to be sacrificed if the old method of rushing such nests of death had been adhered to. After the tanks' work had thus been accomplished the infantry rushed forward to view the destruction.

New as the tanks are they are but the development of inventions made long ago by Hoki and Harvey. The former originated the now famous caterpillar device for farming tractors, writes Joseph Brinker in Popular Science Monthly. This apparatus makes it possible for the tanks to surmount seemingly impassable obstructions, such as trees, boulders, ditches, shell craters, wire entanglements or trenches. Harvested steel, so named after its inventor, made the tanks impervious to machine gun and rifle fire, shrapnel and everything except a direct shell hit.

The principal feature of the tank's construction is the caterpillar or track-laying device. This consists of an endless steel belt made up of short sections like shoes, which lie flat on the ground. These support the vehicle wheels which are mounted on trucks somewhat similar to those on railway cars. The insides of the shoes have double rails over which the truck wheels run.

The endless chain made up of the shoes acts as a track, being laid flat under the wheels and picked up again after the wheels have passed over it. The endless chains are driven by means of sprockets on the rear axle of the tank.

The real unusual adaptation of the caterpillar device for which the British designer of the tanks must be given credit is the shape of the belts. This has been carried out in a very different manner from that used on their farm tractor predecessors. Instead of being low and flat, they are strung out over frames thirty to forty feet long and from ten to fifteen feet high, depending upon the size of the tank. These frames are armored with Harveized steel to provide protection for the tank operators and the engine carried in the rear of a nose turret at the front to give the vehicle its wonderful tractive powers. This large curvature acts as a huge wheel with a tremendously long leverage equal to the radius of the circle of the spoke of the imaginary wheel of the same diameter. Only that portion of the assumed wheel in contact with the ground acts as the lever and it is this portion that is reproduced in the front end of a caterpillar belt.

This large area of the belts in contact with the ground also brings out the inherent property of the caterpillar which has made it possible for the tanks to traverse soft, muddy ground—the large bearing area of the caterpillar shoes. With the caterpillars thirty inches wide and with about fifteen or twenty feet of length in contact with the earth at any time, the pressure on the ground is said to be less than three pounds to the square inch. This is a great deal less than that exerted by a horse or a two-hundred-pound man. This

RACKACHE, LUMBAGO AND RHEUMATIC TROUBLES.

Dear Mr. Editor—I wish to state that I suffered greatly from backache, lumbago and rheumatic troubles. I used "Auric," the latest discovery of Doctor Pierce for backache, kidney troubles, and I can cheerfully recommend the "Auric Tablets" to anyone suffering from any of these maladies.

Notes: It is now asserted with confidence that these painful effects due to uric acid in the system are entirely eradicated. A new remedy, called "Auric," has been discovered by Dr. Pierce, and is the cause of a drainage outward of the uric acid with which it comes in contact within the body. It will ward off backache, headache, and the darting pains and aches of arthritic or muscular rheumatism—of those diseases which are caused by too much uric acid, such as gout, asthma, sciatica, renal calculus. "Auric" prolongs life because old people usually suffer from hardening and thickening of the walls of the arteries, due to the excess of uric acid in the blood and tissues.

Dr. Pierce, who is director and chief physician at the Invalide Hotel and Surgical Institute, Buffalo, N. Y., has been testing this wonderful medicine for the relief of over-worked and weakened kidneys. The relief obtained by sufferers has been so satisfactory that he determined to place "Auric" with the principal druggists in towns where people could get this ready-to-use medicine. "Auric" is not harmful or poisonous, but aids nature in throwing off those poisons within the body which cause so much suffering, pain and misery. Scientists assert this remedy is 37 times more potent than lithia. Send 50 cents for large trial package. "Auric" is building up a reputation as good as Dr. Pierce's other well-known medicines which have been proved reliable during nearly fifty years, such as Doctor Pierce's Favorite Prescription for the ill of women, Doctor Pierce's Pleasant Pellets, the liver regulator, and Doctor Pierce's Golden Medical Discovery for red blood.

DARING GIRL FLYER "DOING HER BIT" FOR UNCLE SAM



Miss Katherine Stinson is a daring flyer who is aiding Uncle Sam right now, when he most needs help. Miss Stinson has made several long flights in a Curtiss aeroplane, dropping "bombs" filled with Red Cross appeals for contributions. Surely Miss Stinson is "doing her bit."

large supporting area explains why the tanks do not sink down and become mired in places where an ordinary wheeled armored motor car would be hopelessly mired down to the hubs. The tanks are of various sizes and designs, each later model being an improvement over its predecessors. The first ones had a maximum speed of from six to eight miles an hour. This was too slow, and the Germans soon found a way to destroy them. Before a tank could get back to shelter after a raid the German observers were able to wireless its position to their artillery, which promptly dropped shells on it. The latest tanks are lighter than their predecessors, have gasoline engines of over five hundred horsepower and travel at the remarkable speed of eighteen miles an hour.

Although varying in size and details, all tanks have the common characteristic of being divided into three main compartments between the two side caterpillar frames. The first is the observation compartment in which the driver and his helper are perched high above the ground to direct the movements of the huge steel beast. In the middle is the ammunition room from which the guns carried in the two side turrets are fired. At the rear is the engine room. From two to four gasoline engines are used, these driving the rear axle and its integral sprockets over which the caterpillars run. The later run over an idler pulley or sprockets at the extreme front ends and are supported by means of rollers attached to the upper portion of frame on each side when passing over the top. This movement of the caterpillar belts is exactly analogous to that of the ordinary variety of garden insect with the same name, which similarly says on its own track and bumps its back continuously and regardless of the land surface.

The tanks are steered by a pair of small ordinary wheels at the rear. These are supported in a pivot on a frame extended from the rear. They are merely for steering, and support none of the weight of the tank except when bridging wide trenches or dips in the surface. Steering can also be accomplished by making one caterpillar go faster than the other by manipulating clutches on the driving mechanism.

Turks on the West Front. Unusual significance attaches to the despatch from Copenhagen that "Berlin is thronged with Turkish troops en route to the west front." Heretofore the chief function of the Turkish troops and their German officers has been to keep Turkey intact and maintain the Turkish line in Asia. This was part of the Kaiser's plan for an empire from the Persian gulf to the North Sea. But the British and the Russians now threaten to cut the empire into several parts, and its eastern capital, Bagdad, has already fallen into British hands.

If, in the face of this disaster, the German war party has seen fit to compel Turkey to send troops to the west front, the Germans must be hard pressed. They must have abandoned the Bagdad railroad project and have concluded that the outcome of the war is being decided along what remains of the Hindenburg line. It may be, of course, that Turkey has many more troops than have been suspected, and that the German have brought some reserves to the west front merely in order to stimulate Turkish interest in the scope of the war. But it would seem that if the Turks had reserves to spare they would use them in defending their own territory.

The presence of Turkish troops in the German trenches in France will stimulate the Franco-British troops to greater efforts. The prospect of adding to German cruelty to the non-combatant victims of warfare, the kind of atrocities practiced on Christian peoples by the Turks, tends to spur the troops of any Christian nation to heroic deeds. In short, the Germans have added another insult to civilized nations, and have made it all the plainer to the world that Prussianism must be crushed and that the Turk must be driven from Europe.

Mexico's Largest Ship. A steamship of 250 tons gross which a Mexican is planning to build at Vera Cruz will, if completed, be the largest steamer ever built in Mexico, it is said. The vessel is to ply along the Gulf coast of Mexico, and will be capable of carrying twenty-four first-class passengers, in addition to freight. The rates of the older members of the Sons of Scotland Benevolent Association will be increased.

STRENUOUS WORK SOON TELLS ON YOU

Business Men And Breadwinners The Victims of Nervous Exhaustion.

When worry is added to overwork men soon become the victims of nervous exhaustion—neurasthenia—the doctor calls it. Some have no reserve strength in their systems to bear the strain; others overtax what strength they have. If you find that you are nervous and not sure of yourself, that you sleep badly, and wake up tired and aching, your nerves are out of order. Other signs are inability to take proper interest in your work, your appetite is fickle, your back feels weak, you are greatly depressed in spirits. One or more of these signs mean that you should take prompt steps to avert mischief by nourishing the nerves with the food they thrive on, namely the rich, red blood made by Dr. Williams' Pink Pills. These pills have cured thousands of cases of nervous disorders including nervous prostration, neuralgia, St. Vitus dance and partial paralysis. Here is an example: Mr. P. H. Callan, a well known business man in Coleman, P.E.I. says: "I owe my present health, if not life itself, to Dr. Williams' Pink Pills. I had always been an active man, and when I began to run down in health paid little attention to it as I thought it only a temporary weakness. As time passed, however, I found myself growing worse, and consulted a doctor, who said that I was not only badly run down but that my nervous system was badly shattered. I lost flesh, my appetite was poor, I slept badly, and notwithstanding the doctor's treatment, grew so weak that I had to leave my business and was confined to the house. Time went on and I was steadily growing weaker, and my friends were all greatly alarmed for my condition. In this condition I was strongly recommended to try Dr. Williams' Pink Pills, and as the doctor's medicine was not helping me I decided to do so. By the time I had used three boxes I could stand that they were helping me. When I had taken eight boxes of the pills I felt able to attend to my business again, and people were surprised to see me out. I continued the use of the pills until I had taken twelve boxes, by which time I was feeling as well as ever, and was being congratulated by my friends on my full restoration to health. I feel now that if I had used Dr. Williams' Pink Pills at the outset I would not only have saved much money spent in doctor bills, but would have had renewed health sooner. I cannot speak too highly of this medicine, and would recommend it to every man who feels weak, nervous or run down."

VENISON FOR ALL.

One Plan Suggested for Relieving Meat Shortage.

That venison, instead of being familiar to only about one per cent. of our citizens, may in the near future become as common and cheap as mutton, is the prospect held out by Charles A. Sidman, an American citizen, who advocates the wider use of deer-meat for food and the breeding of these animals for the purpose. If we can raise foxes for their fur, says Mr. Sidman, then we can raise deer and elk for their meat. This, of course, does not necessarily mean that these animals must be domesticated like cattle. That would probably be impossible. It has already been tried unsuccessfully many times with the common deer. It does mean, however, that they would be bred and kept in herds. Writes Mr. Sidman:

"The production of venison for the market has legitimate business as the production of beef and mutton. The laws, when prohibitory, should be so modified as to encourage the industry. Elk and deer may be raised to advantage in forests and on rough, brushy ground unfitted for either agriculture or stock-raising, thus utilizing for profit much land that is now waste. One of the added advantages is that the business is well adapted to landowners of small means.

"The members of the deer family rank next to the cattle, and sheep family in general utility, and are the most important of the big game animals of America. The meat of the deer has always been a staple article of food, whenever it could be obtained in any quantity, being a favorite with the epicures and also being utilized for profit much land that is now waste. It resembles the beef and mutton. It resembles the meats in texture, color, and general characteristics. The flavor is also distinctive and suggests mutton rather than beef.

"The general popularity of venison is so great and the demand for it so widespread that overproduction is most improbable. The other products of the deer, skin and horns, are of considerable importance, and in countries where deer are abundant and especially where large herds are kept in semi-domestication, the commerce in both is very extensive.

"The raising of deer for profit does not necessarily imply that they should be domesticated. They may be kept in large preserves with surroundings as nearly natural as possible and their domestication entirely ignored. In this manner the breeder may reap nearly all the profit that could be expected from a domestic herd, while the animals escape most of the dangers incident to close captivity.

You can get these pills through any medicine dealer, or by mail at 50 cents a box, or six boxes for \$2.50 from The Dr. Williams' Medicine Co., Brockville, Ont.

ORIGINAL FEATURE IS OBSERVED. Toronto Weekly Sun. It will be well in the celebration of the semi-centennial of Confederation to be held next week to reflect for a moment on the difficulties which Confederation has still to surmount. The plan upon which Confederation has been conducted was to unite the provinces by forcing trade east and west and by avoiding trade with the United States. The plan has been tried out at enormous cost, but without complete success. National unity is apparently as far off as in 1867. Trade refuses to follow the channels provided and the future of industry is uncertain.

The Y.M.C.A. raised over a million dollars in their recent Canadian campaign. Compton county carried the Canada temperance act by a majority expected when the polls are all heard from, to exceed 3,000, the largest yet for prohibition in the Eastern Townships. The most successful sale of short-horns in Canada in many years was held at Elora, sixty-three head exclusive of calves at foot being sold for \$49,150, the top price being \$2,600. R. S. Muir, who opposed Sir James Whitney in Dundas in the late Premier's last campaign, died in Toronto on Thursday. The Liberals in the Provincial riding of St. Catharines have organized an association.

Gee Whizz! it's Great. Cornwall Mild Ale and Porter. Delicious Summer Drinks. Served cold at all leading Hotels, Restaurants, etc. St. Lawrence Brewery Limited Cornwall Ontario.

Save the Food and Serve the Empire! The Average Canadian Family Wastes Enough to Feed a Soldier. INTELLIGENT economy in the kitchen can do much to prevent the threatened world famine—can counteract the effect of high prices—and can replace growing debt with systematic saving. Careful investigations show that before the war the average British family wasted 25% of their food—and we Canadians were even more extravagant. This waste is not in a few big things, but in many little ones, each, we used to think, too small to bother about—such as careless peeling of vegetables and fruit—failure to make good use of dripping and "left-overs"—and such others as will occur to every thrifty housekeeper. For the Empire's sake as well as your own, hunt up and cut out these leaks! You'll be helping to relieve the food shortage—saving your own money—and putting yourself in a position to buy Canadian War Savings Certificates and help win the war. War Savings Certificates are issued in denominations of \$25, \$50 and \$100, to be repaid in three years at full face value. They cost \$21.50, \$43 and \$86 respectively, at all Money Order Post-Offices and Banks, thus yielding over 5% interest. Should you need it, you can get your money back at any time. The National Service Board of Canada, OTTAWA.

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