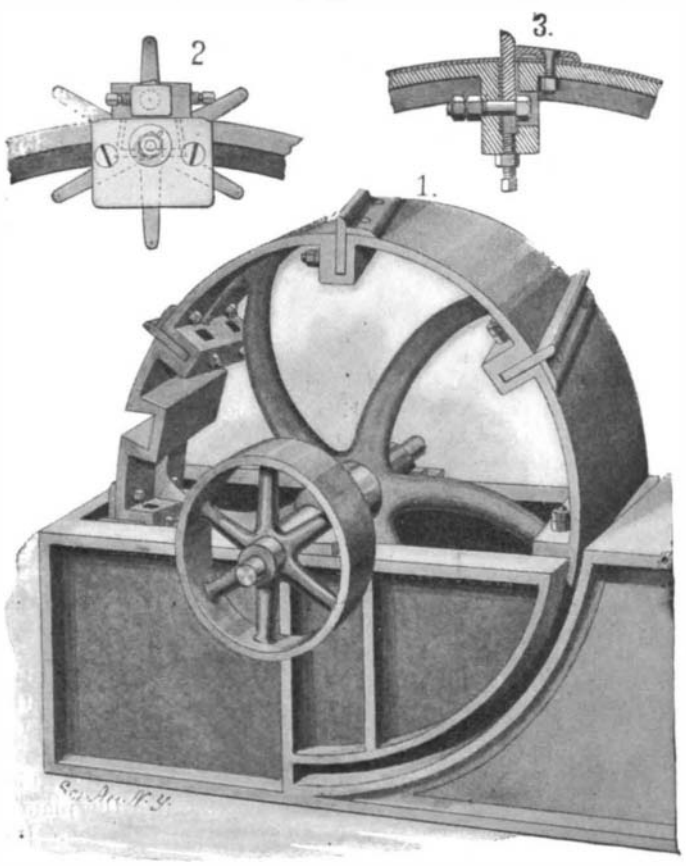
A NEW FORM OF FIBER-CLEANING MACHINE.

An ingenious improvement has been made by Faustino Escalante, of Merida, Yucatan, Mexico, upon fiber-cleaning machines, which have a wheel mounted upon a central shaft and which are provided with peripheral, transversely-projecting bars coacting with a segment-plate to crush and scrape manila fibers, thus very considerably facilitating the separation of the fiber. Hitherto, transverse scraping bars have been attached to the outside of a wheel having a smooth periphery, the bars projecting at such a distance that the leaves are whipped over the edge of the bar, so as to break the fiber. Mr. Escalante has provided bars which project a lesser distance, so as to prevent the whipping of the fiber. He has likewise devised a very simple and effective means of centering the segment plate.



THE ESCALANTE FIBER-CLEANING MACHINE.

The wheel's periphery is formed with transverse channels, in which adjustable scraping bars are designed to lie with one edge projecting beyond the rim. The bars are bolted in place in the manner shown in Fig. 3. Copper or brass plates, cover the sections of the rim between adjacent scraping bars one end of each plate extending into the channel and being held beneath the scraping bars. Clamping plates, secured to the wheel periphery, hold down the other end of the copper or brass plates. The construction limits the projection of the scraper bars so that there is no possibility of the fibers' being whipped. The manila leaves are introduced between the wheels and the segment plate at that edge of the wheel where the scraper bars are farthest removed from the segment plate, and are gradually worked across the wheel until they have been operated upon by the opposite edge of the scraper bars. The channels in which the bars are held are inclined, so that the manila will be moved transversely to the wheel.

The wheel, as shown in Fig. 1, is also provided with a dove-tailed channel, extending across its rim, which channel is designed to receive the centering device, illustrated in Fig. 2. In this channel a block is mounted to slide provided with a projecting head having a hole extending parallel with the channel, and receiving the stem of a tool. The block and tool are fed across the face of the rim by a threaded bar carrying a star wheel. In order to true the segment plate, the block and tool are put in place, and work is started with the block at one end of the channel. The tool is projected at such a distance as to take a small cut from the inner surface of the segment plate. The wheel is then turned and the block fed by causing the star wheel to strike any fixed object. The block is thus gradually fed along and the tool made to take a series of cuts from the face of the segment plate.

By this means the segment plate can be dressed up after the machine has been set up and can, therefore, be more accurately centered relatively to the wheel. The truing device, it is evident, will be especially serviceable in localities where no machine shop is at hand.

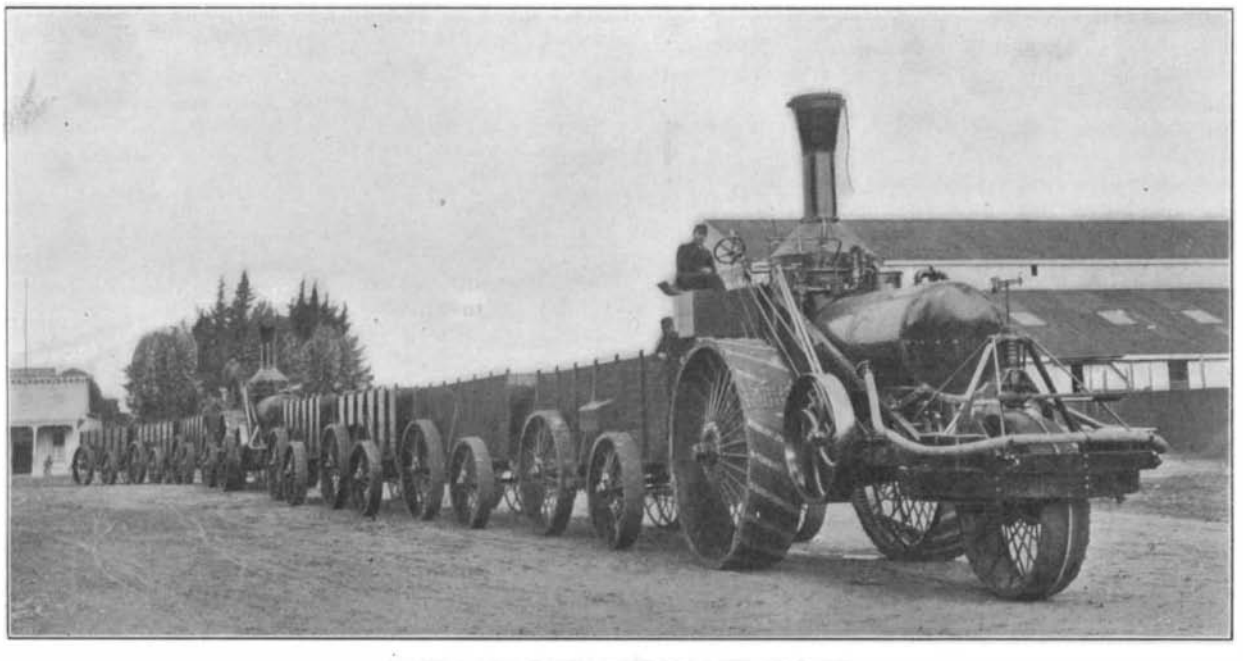
LARGE TRACTION ENGINES FOR SIBERIA.

BY ENOS BROWN.

A firm at San Francisco has recently manufactured two of the largest traction engines that have ever been turned out by any California works. These, with six steel freight wagons, were forwarded to Siberia a few days ago for use at the eastern terminus of the Trans-Siberian Railway. Though the distance across the Pacific Ocean to their destination is only about 6,000 miles, the impossibility of transferring from Vladivostock to the point of completion of the railway necessitated fowarding them by way of St. Petersburg, a distance of nearly 14,000 miles. On arrival they will be put to work on the extension of the railway and hauling freight. Should the experiment prove as successful as anticipated orders for a large number in addition will be given. The purpose is to use traction engines as feeders for the main line of railway in place of building branch lines. The shipment is considered significant as indicating the gradual increase of traffic and the hopeful outlook for future business between the Pacific States of America and the newly developed portions of Siberia traversed by the railway.

The new traction engines are not only the largest yet made on the coast, but they combine certain improvements which insure greater economy in the expense of operating, with simplicity of construction. They are of 50 horse power and will haul a load of from 30 to 50 tons, depending upon the quality of the roadway. The boilers are upright with a diameter of 4 feet, and they were tested to 200 pounds. Each has 480 square feet of heating surface.

Attached to the boilers are wrought iron bed plates, 6 × 1 inch, which form the main frames of all the machinery. To these are attached twin engines, 9-inch bore and 9-inch stroke, geared to the main inner cogged periphery of the two large drive wheels. The height of the main drive wheels is 8 feet, with tires 26 inches in width. The steering wheel is 5 feet in diameter and 18 inches wide. The total weight is 13½ tons. An attachment allows the engines to be used stationary if required. The water tank is 40 inches in diameter by 80 inches long, with capacity for 500 gallons. Coal, oil or wood may be used as fuel.



LARGE TRACTION ENGINE FOR SIBERIA.

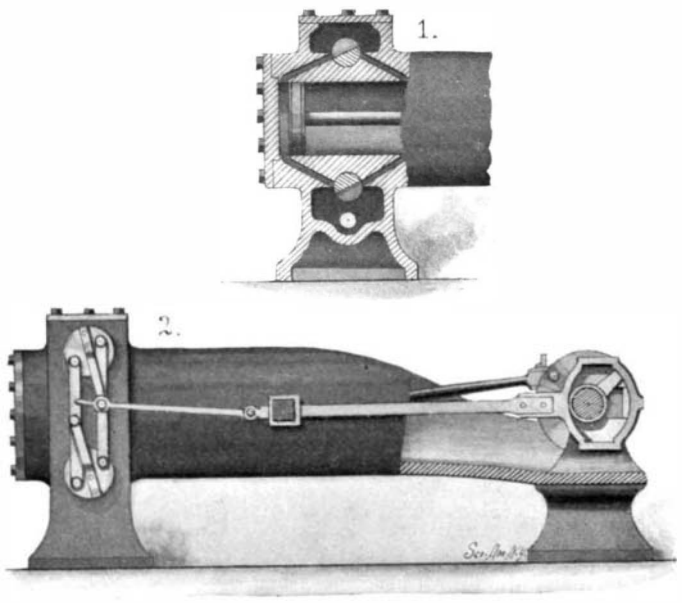
Weight, 13½ tons. Horse power, 50. Hauling capacity, 50 tons on good roads.

ENGLAND'S recent purchases of horses for use in South Africa has affected the American horse market. Several thousand have been sold in Texas to the British government, at excellent prices. The armies of European countries are constantly increasing in size. With this increase comes the need for more horses. Roughly speaking there are a million horses required for military service upon a war footing in all countries. The Russian army requires 300,000, France and Germany 200,000 and England and the United States 100,000 each.

AN IMPROVED ENGINE VALVE-GEAR.

A simple form of valve-gear, designed to actuate multiple rocking valves, and to move these valves in either direction in order to cause the engine to run forward or backward, has been patented by Joseph H. Ansell. Fort Washakie, Wyo. Fig. 1 is a longitudinal section through the cylinder, showing the valves and steam ducts, as well as the piston at the forward end of its stroke. Fig. 2 is a side elevation showing the valve-gear adjusted to open the live-steam valve when the piston is at the forward end of its travel.

Above the longitudinal bore of the cylinder is a live-steam chest, and below the bore an exhaust-steam chest. Cylindrical rocking valves in the steam chests are seated in transverse bores of the cylinder in the thick portions of the wall. The valves have flat sides to reduce their thickness opposite the openings of their seats. Two diagonal steam-ducts intersect each valve seat and the longitudinal bore of the cylinder near its ends.



VALVE-GEAR FOR ENGINES.

The mechanism for rocking the valves includes two parallel bars pivoted on the outer ends of the valves. A radius-bar is secured at one end on each valve, intermediately of the parallel bars, and each radius-bar is provided with a pin near its free end, and is offset to move over the parallel bars. The end of a jointed valve-rod is hooked to the pin of a radius-bar, and is reciprocated by a cam-block actuated by a cam-arm on the transverse shaft of the engine. As the shaft rotates, its cam-arm reciprocates the cam-block and hence the valve rod, thereby alternately opening and closing diagonally opposite steam inlet and exhaust ports. By disengaging the valve rod from the one radius-bar and hooking it on the pin of the other radius-bar the direction of the shaft's rotation may be changed.

White and Dark Meats in Dietetics.

In a recent series of articles, published in a German medical journal, Drs. Offer and Rosenquist deal with the opinion that has been accepted by many that white meats are more suitable for the sick owing to greater digestibility and the presence of less uric acid and nitrogenous extractives. This belief is shaken by the analysis made by the medical men referred to, which show that while white meats such as poultry and fish do in certain cases, as fish and fresh venison — contain less extractive and nitrogenous derivatives, the average amount does not appreciably differ in dark and white meats such as poultry, veal, beef, pork, mutton, etc., to make either preferable. They point out that the only way of limiting the ingestion of these deleterious extractive and nitrogenous substances is by diminishing the amount of meat taken, rather than by forbidding dark meats. They also asserted that among the extractives present in meat the most important ones are by no means harmful, if taken in small quantities as is ordinarily done. The same holds good as regards the other organic extractives which are nitrogenous.