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**HOW ONE
GALLON**
could hoist them!



HOW ONE GALLON COULD LIFT THEM

Most people think of an automobile engine as a "gas" engine. Few realize that it is really a *heat* engine. Your motor develops its power from intense heat.

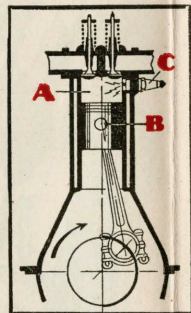
Gasoline vapor is sucked, with air, from the carburetor into the combustion chambers of your motor. This vapor, like any other gas, is composed of billions of molecules darting about at great speed. Compression within the combustion chambers heats the vapor. The heat causes the molecules to dart about all the faster. Millions of them bombard the pistons of your motor. But their greater activity does not, as yet, develop sufficient pressure to move the pistons. Something must be done to give still greater speed to the molecules and thus obtain the desired pressure.

HOW YOUR MOTOR UTILIZES HEAT

If you were asked to describe what happens in your motor you would say that the gasoline vapor explodes and pushes down the pistons. This is the common idea. But gasoline vapor does not explode—it burns.

As we said, the gasoline molecules when first drawn into the combustion chambers dart about at great speed—but do not create sufficient force to move the pistons.

By the firing of the spark plugs, the gasoline vapor ignites and burns. The heat thus generated



A-Combustion Chamber
B-Piston
C-Spark Plug

*Those interested in reading further on this interesting subject should consult "Gasoline—What You Should Know About It", by T. A. Boyd, head of the fuel section, General Motors Research Laboratory. Frederick A. Stokes, New York, Publisher.

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so speeds up the activity of the molecules, that terrific force is exerted on the pistons—so much force that you call it an explosion. It is this force or pressure which causes the pistons to go down—thus turning the crankshaft and hence the rear wheels of your car.

The energy in gasoline might be described as potential heat. This potential heat energy is transformed by your motor into what engineers call "mechanical work". Mechanical work is usually measured in "foot-pounds". A foot-pound is the amount of work done in hoisting a pound weight one foot.

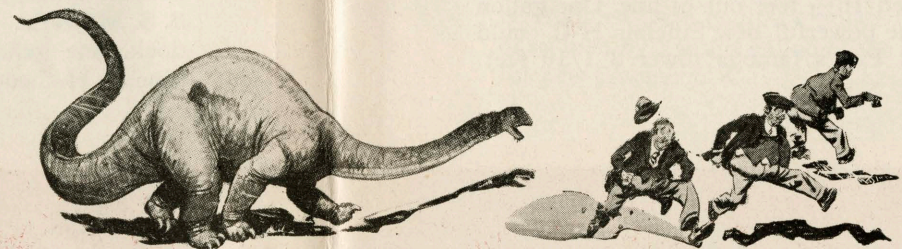
THE POWERFUL NEW SINCLAIR H-C

One gallon of the powerful new Sinclair H-C Gasoline contains enough heat energy, to perform 99,000,000 foot-pounds of mechanical work. To get the most out of this energy through smooth, efficient motor operation, the new H-C has a high anti-knock rating.

There is enough heat energy produced when a gallon of Sinclair H-C Gasoline burns, if converted completely into work, to hoist the Empire State Building, the world's tallest structure, 1 $\frac{3}{4}$ inches above its foundation. In the following pages are pictured other weighty objects together with distances they would be lifted by one gallon of the new



Sinclair motor oils in Tamper-Proof cans cost you nothing extra.



Sinclair dealers have oil bootleggers on the run. They sell you Sinclair motor oils just as they come from the refinery in Tamper-Proof cans.



H-C, if its potential energy could be fully utilized.

"But," you may ask, "how does the new H-C compare with other gasolines?"

15% TO 20% MORE SMOOTH POWER

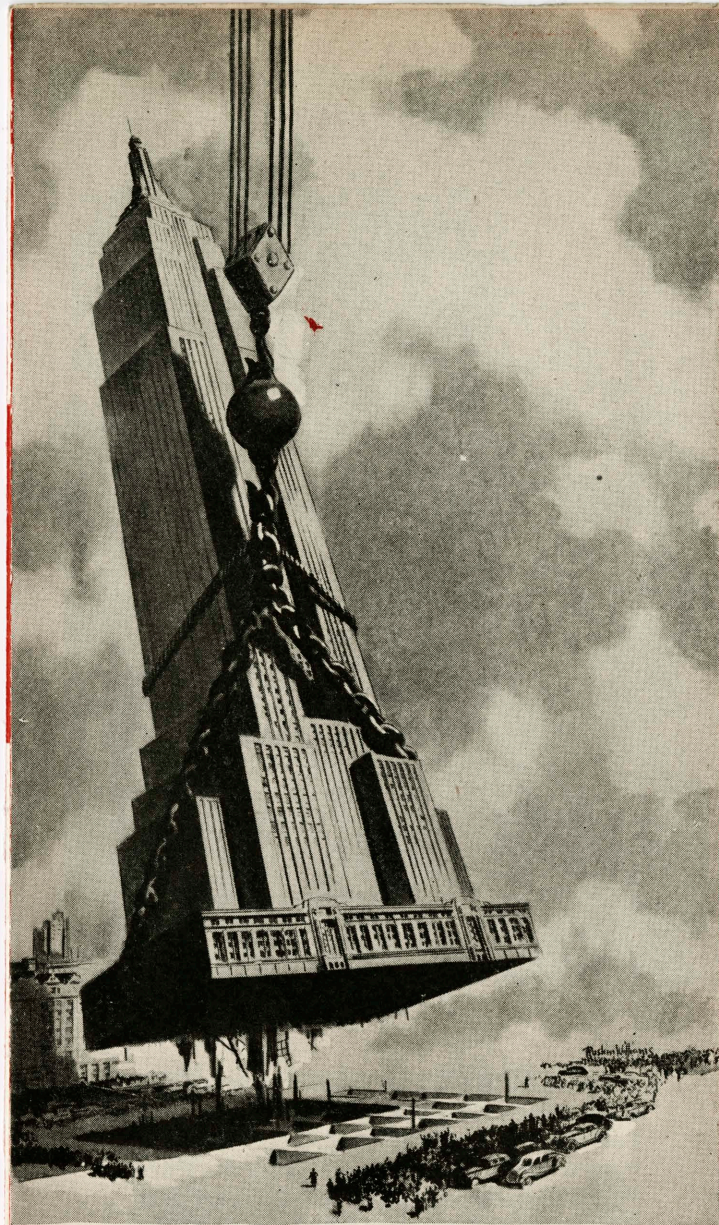
In a recent road test the new H-C Gasoline was compared to 12 competitive gasolines. The tests proved that the new H-C gave from 15% to 20% more *smooth* power. It gave from 1 to 3 more miles per gallon. It accelerated from 15% to 20% faster.

Here, surely, is the gasoline that you want for your car. It sells at the price of "regular" gasolines.

In order to help you reduce friction in the engine, chassis, differential and rear axle of your car, Sinclair takes special care in refining Sinclair motor oils and greases. Sinclair Opaline and Sinclair Pennsylvania Motor Oils, for example, are refined from the oldest crudes obtainable (Sinclair engineers have found that, by and large, the oldest, mellowest crudes make the finest lubricants). Furthermore, both these oils are fully stripped of non-lubricating petroleum jelly—an extra step in refining taken by very few motor oil manufacturers.

To protect you against oil bootleggers, Sinclair dealers sell Sinclair Opaline and Sinclair Pennsylvania Motor Oils in refinery-sealed Tamper-Proof cans at no extra price.

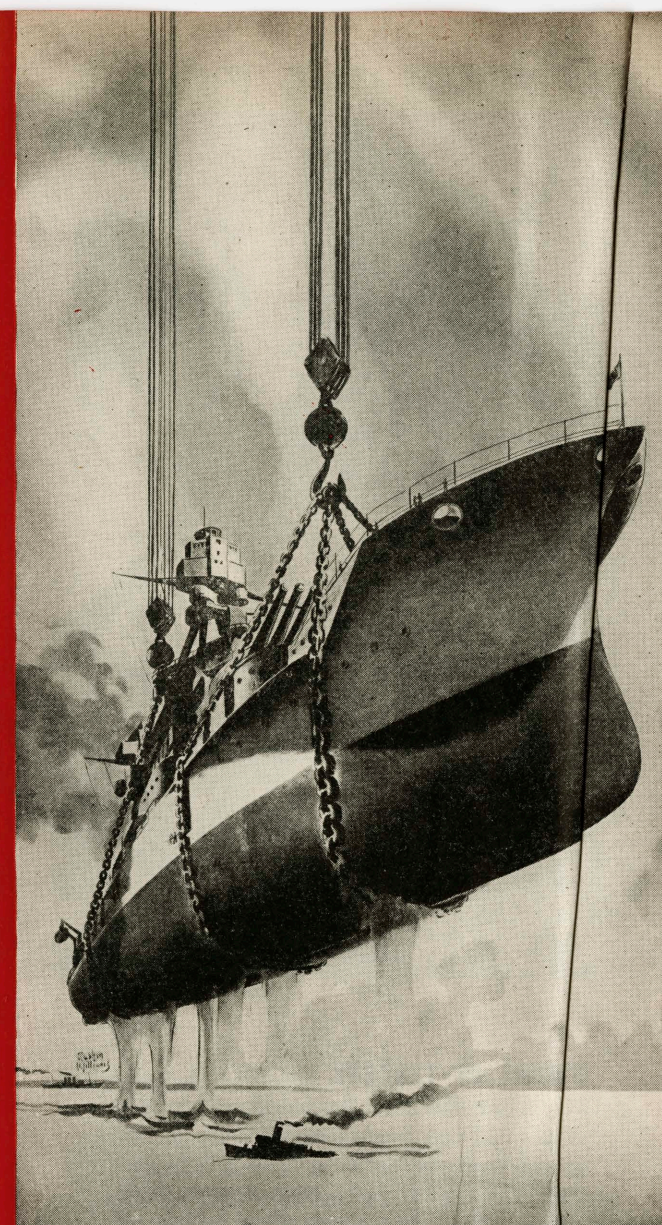
15% to 20% MORE SMOOTH POWER !



EMPIRE STATE BUILDING, New York City. This is the world's tallest structure, standing 102 stories above the street level and two below. Constructed mostly of steel and Indiana limestone the building weighs 339,360 tons. One gallon of the powerful new Sinclair H-C could hoist the Empire State Building $1\frac{3}{4}$ inches.



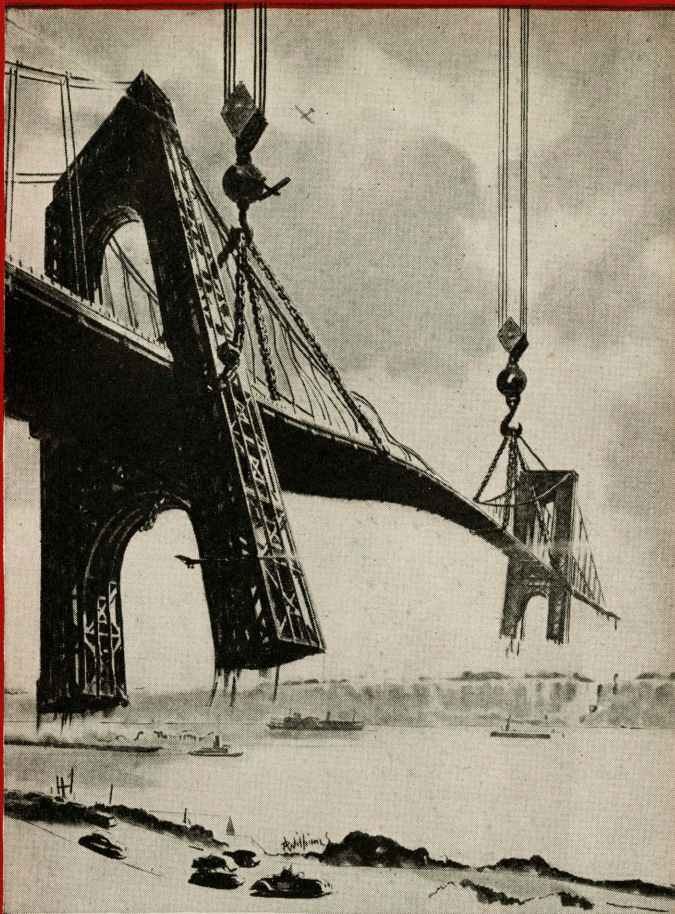
THIS LOCOMOTIVE is one of the largest types used on American railroads. It weighs 500 tons. One gallon of the powerful new H-C could lift this locomotive 99 feet. If the hoisting were done alongside an average tall office building, the locomotive would be hoisted to a point 8 stories above the street.



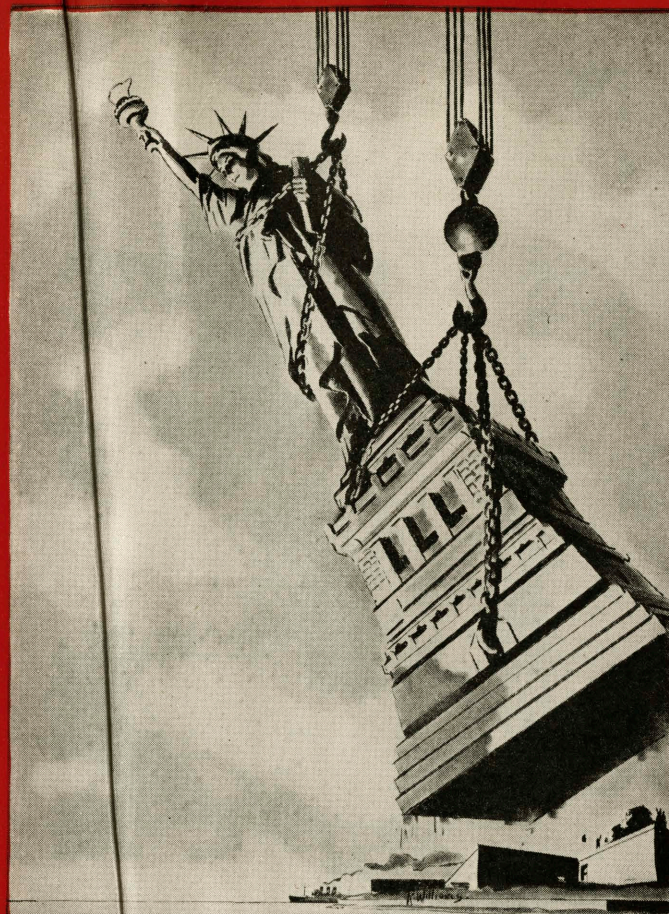
THIS BATTLESHIP is of the latest type—a ship similar to the U.S.S. *Pennsylvania*, flagship of the Atlantic fleet in the Presidential review off New York. She is of 33,100 tons displacement, which equals 37,000 short tons. If this battleship were in dry dock, one gallon of the powerful new Sinclair H-C Gasoline could lift her $1\frac{1}{3}$ feet



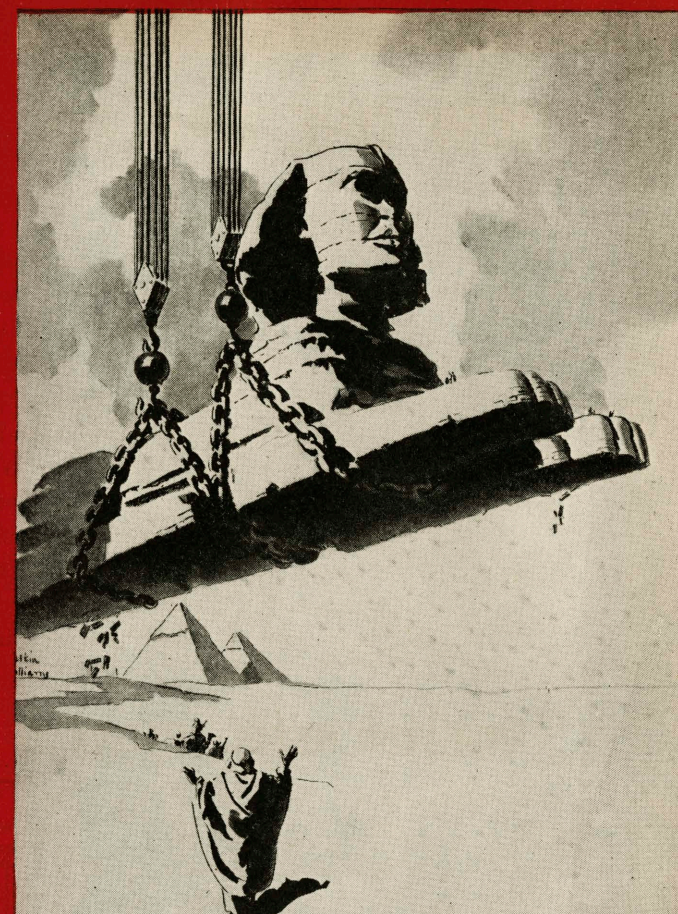
GENERAL SHERMAN TREE, Sequoia National Park, California. This is the biggest tree in the world and the oldest living thing known. It stands 273.9 feet above the ground and measures 102 feet around its trunk at the base. Its total weight is estimated at 6,167 tons. One gallon of the powerful new Sinclair H-C could lift the General Sherman tree 8 feet.



GEORGE WASHINGTON BRIDGE, New York City. Arching over the Hudson River at 178th Street, this bridge now embraces the world's largest span (but will be exceeded by the Golden Gate Bridge under construction). It is built of steel with a concrete roadway and weighs 103,400 tons. One gallon of the powerful new Sinclair H-C could lift the George Washington Bridge $5\frac{3}{4}$ inches.

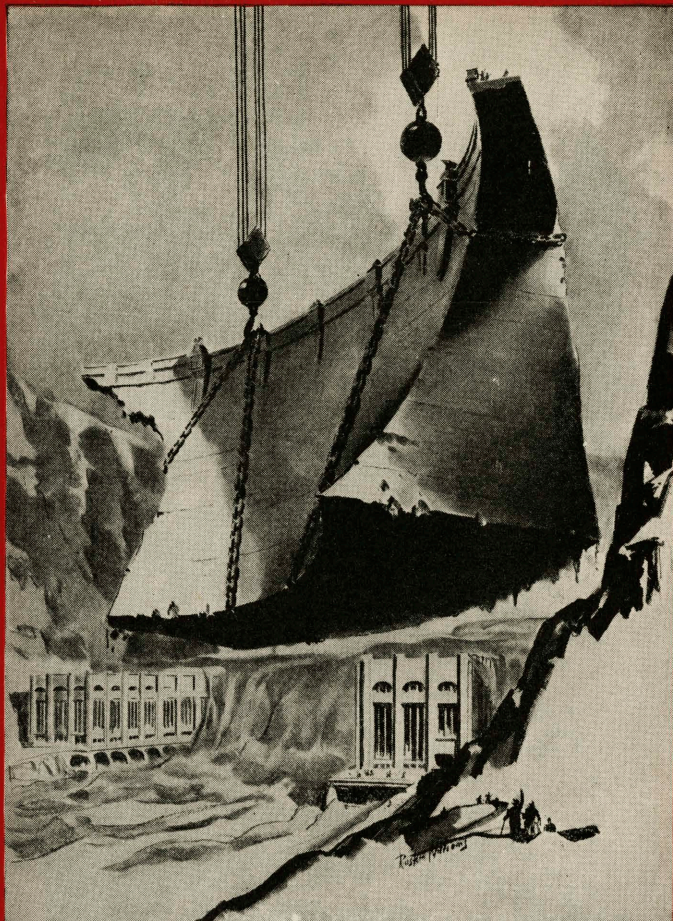


STATUE OF LIBERTY, Bedloe's Island, New York Harbor. Some idea of the size of this 225-ton bronze statue may be obtained from the fact that Liberty's fingernail measures 13 by 10 inches. Forty people can stand in her head. One gallon of Sinclair H-C could lift the Statue of Liberty 220 feet—could lift the Statue and its base $3\frac{1}{4}$ feet.

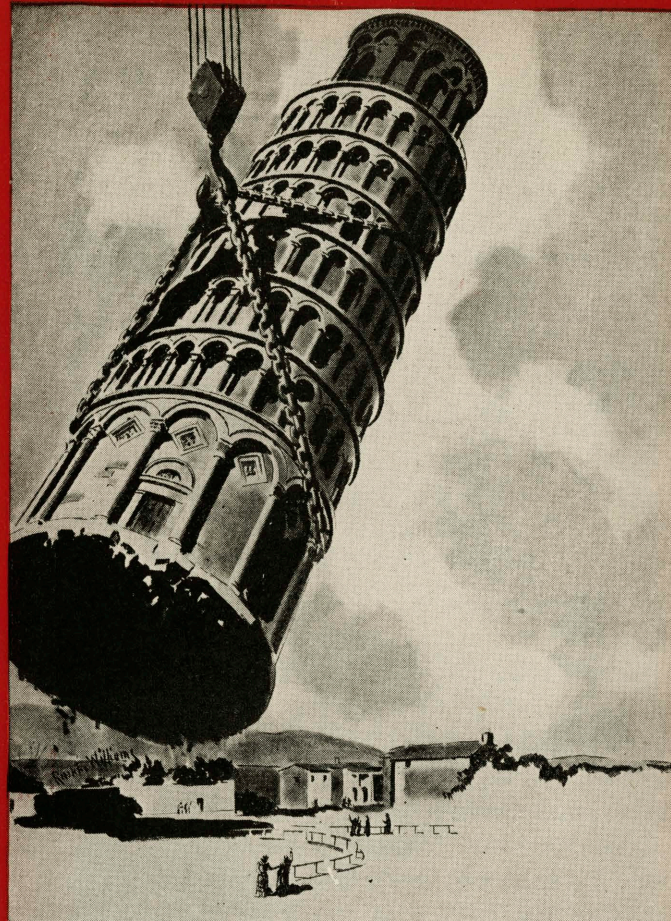


THE SPHINX, in the desert of Gizeh, Egypt. Nobody knows who built this riddle of the ages—or how—or why. No figures being obtainable, the weight of the Sphinx (14,630 tons) was estimated from actual measurements—with 154 pounds allowed for each cubic foot of stone. One gallon of the powerful new Sinclair H-C could lift the Sphinx $3\frac{1}{3}$ feet.

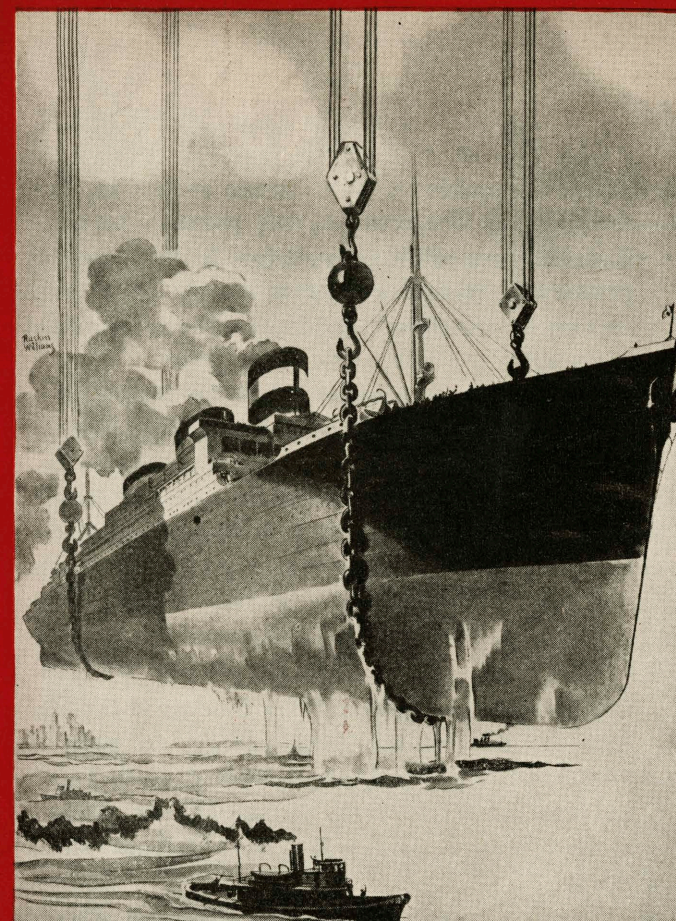
99 million foot-pounds



BOULDER DAM, Las Vegas, Nevada. This already famous structure is built mostly of concrete and will weigh 6,885,000 tons, according to figures supplied by the Public Works Administration. Colossal as it is, Boulder Dam could be hoisted 8/100 of an inch by a single gallon of the powerful new Sinclair H-C.



LEANING TOWER OF PISA, Pisa, Italy. Built in the Middle Ages, this marble Italian bell tower stands 179 feet high and weighs 15,967 tons. Originally a perpendicular structure, it has since sagged $16\frac{1}{2}$ feet out of line. One gallon of the powerful new Sinclair H-C could hoist Pisa's famous tower $3\frac{1}{10}$ feet.



S. S. LEVIATHAN of the United States Lines. Measured by displacement, Leviathan is the world's heaviest ship—67,550 tons. In gross tonnage, which is a measure of useable space, Leviathan is exceeded by S. S. Majestic. If Leviathan were in dry dock, one gallon of the powerful new Sinclair H-C could lift her $7\frac{3}{4}$ inches.

ounds per gallon!