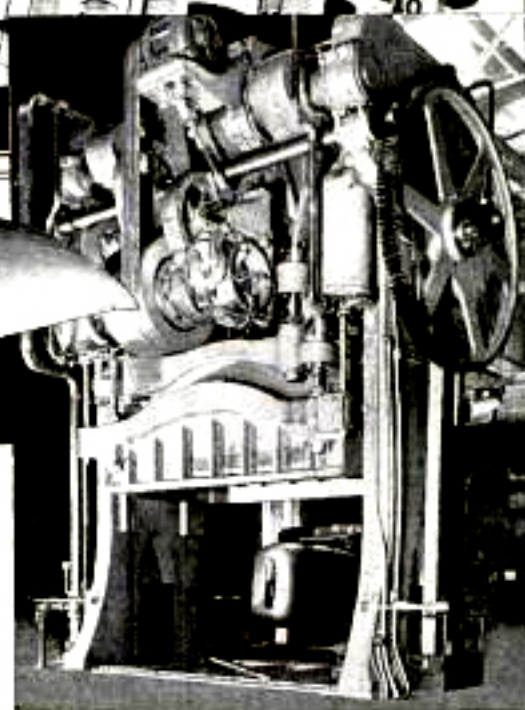


Giant Press Makes All-Steel Top for Autos



Top, Unusual View of Factory Ventilators; Left, One of the All-Steel "Turret Tops"; Right, Powerful Press in Which Steel Auto Tops Are Formed

More than four stories high and weighing 500 tons, a giant press for producing all-steel tops for automobiles has been developed. One of eighteen to be installed in the Fisher body plants, it exerts a pressure of 1,950 tons, or 3,900,000 pounds. Each top passes through four of the mammoth presses, a total pressure of 5,200 tons, or 10,400,000 pounds, being necessary to draw and form the solid steel roof. An electric motor drives the largest press, turning a ten-ton flywheel at a constant

speed of 375 revolutions per minute. A manually controlled air brake stops the flywheel in two minutes. If the brake were not used, the tremendous momentum of the flywheel would cause it to rotate for an hour or more after shutting off the power, holding up production and resulting in loss of time.

**A sheet of solid reinforced steel
over your head**



CHEVROLET'S TURRET-TOP BODY BY FISHER

affords additional strength and safety



To the overhead protection of the new Chevrolets there is added the further protection of strong construction throughout. The floor—cowl—rear panel—and two side panels—all are of rugged steel.



Men who have examined Chevrolet's new Turret-Top Body by Fisher pronounce it the most important contribution to motoring safety in the history of body-building. The entire roof consists of a *solid sheet of seamless steel*. Moreover, this roof is arched and reinforced by sturdy bows of heavy gauge metal to make it even stronger and more durable. Turret-Top construction—*exclusive to Chevrolet in its price class*—is a vital reason why so many people are choosing Chevrolet for quality at low cost.

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN
Compare Chevrolet's low delivered prices and easy G.M.A.C. terms. A General Motors Value

CHOOSE CHEVROLET FOR QUALITY AT LOW COST

CONSIDER CHEVROLET'S MANY EXCLUSIVE FEATURES

Turret-Top Body by Fisher
(with Fisher Ventilation System)

Blue-Flame Valve-in-Head Engine
with Pressure Stream Oiling

Improved Knee-Action Ride

**Weatherproof Cable-
Controlled Brakes**

Shock-Proof Steering



The Master De Luxe Coach

again **FISHER BODY** leads the way
to greater safety with a new solid steel
"TURRET TOP"*



The turret of the modern battleship, arched and crowned for strength, is the highest development of the principles utilized by Fisher in the new solid steel "Turret Top" for closed cars



Note the smart lines of the new solid steel "Turret Top" Body by Fisher. It's scientifically insulated against rumble and drum, heat and cold, too—thanks to years of experiment both in the laboratory and at the great General Motors Proving Grounds

Featured on all

CHEVROLET (Master De Luxe Series), **PONTIAC**

OLDSMOBILE, and LA SALLE

Closed car models for **1935**

THIS remarkable new solid steel "Turret Top" Body by Fisher—now featured on **1935** Chevrolet (Master De Luxe Series), Pontiac, Oldsmobile and La Salle closed cars—is a solid protective roof of seamless drawn steel—steel braced with steel like the modern battleship turret from which it takes its name. It is supported by steel-roof-bows and is welded to the steel body panels. For the first time, it successfully provides the safety of solid steel over your head.

By rounding the corners, the principles of sphere construction are employed to give maximum

over-all rigidity and strength—as well as lower wind resistance and enhanced appearance.

Moreover, it is scientifically insulated against drum and rumble; and comparative tests, using "Turret Top" cars and cars with the conventional type roofs, conducted at Key West, Florida, under the sanction and supervision of the American Automobile Association, proved conclusively that the "Turret Top" can be depended upon for maximum coolness under hot-weather driving conditions.

Other advantages in Body by Fisher for **1935** include greatly improved Fisher No Draft Ventilation, full streamlining, more luggage room, windstream V-type windshield, wider seats, more head room, bigger doors and many other vital advancements.



Latest Auto-Top Presses Squeeze Steel to Exact Shape



This is one of the giant dies, weighing several tons, used in the auto-top presses. These workers are polishing the die to exact size.

Mammoth machinery, designed to shape sheets of steel into automobile tops at a pressure of 3,000,000 pounds, is handling nine miles of steel per hour, in strips six feet wide. In one large plant the giant presses squeeze the metal into a complete body section including the cowl, windshield frame, top and back panel as far as the trunk, all constructed in one unit from a single sheet of steel. Inside the mouth of each big press are ponderous steel dies, ground and polished with greatest care by experts to at-

tain the exact shape of the automobile top. One set of dies inside such a press weighs about 240,000 pounds. More than forty-five feet high these presses are half-buried in concrete to withstand the tremendous pressure they exert. Instead of bending the metal these machines clamp down on it with such pressure that the cold steel "flows" into the contours desired. One set of dies requires 45,000 man-hours of grinding and smoothing the curved surfaces. As a result of this construction the steel body of the latest automobile withstands strains thirty times more severe than any encountered in actual use. One of the twist tests given the body calls for application of strains of 22,500 pounds, equivalent to loading a single automobile with 150 passengers.

Giant Press for Plane Parts Speeds Up Aircraft Building

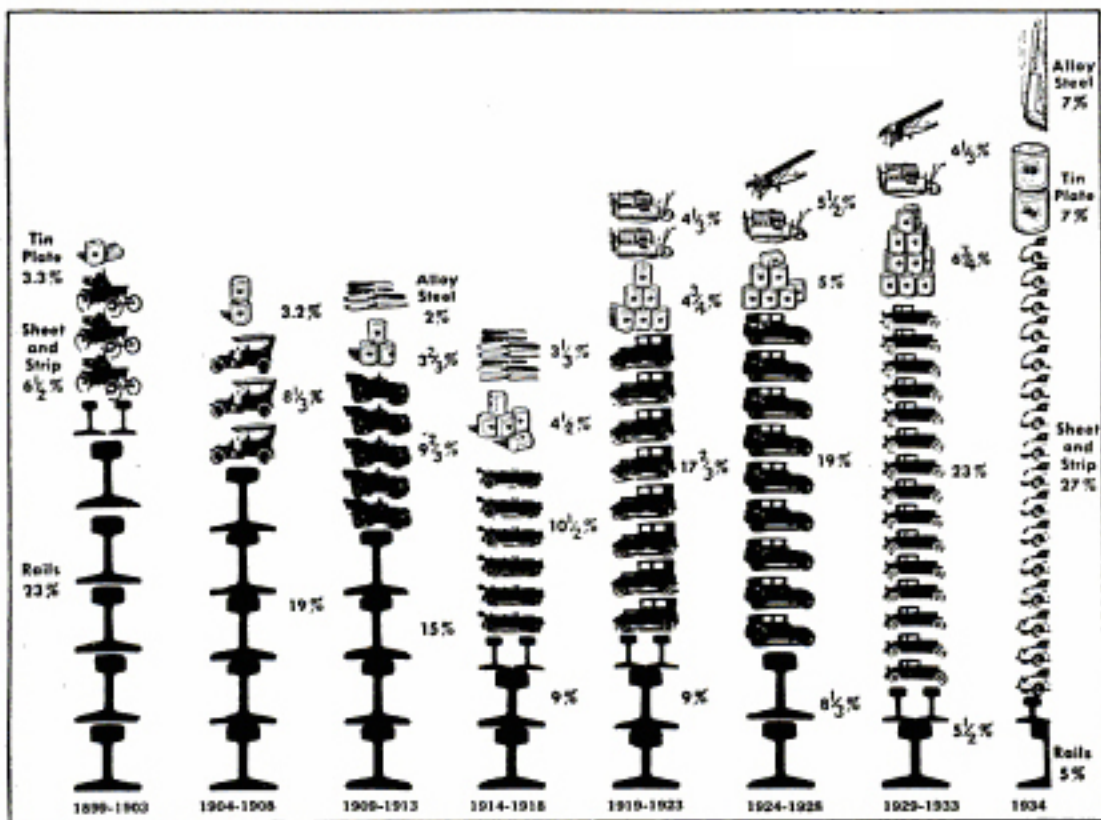


Here is the giant press in place, ready to stamp out airplane parts quickly to speed up production of air liners. It is four stories high

For increasing production of airplanes, the Douglas Aircraft company has installed a four-story, 420-ton hydraulic press which will shape several thousand kinds of parts. Completely self-contained, the press has a pressure capacity of 5,000 tons created by a single hydraulic ram six feet in diameter actuated by oil under a pressure of 2,500 pounds per square inch. The hydraulic pressure is generated by four giant radial pumps driven by two 150-horsepower electric motors. Covering as much floor space as the average home, the press is set into a special foundation of reinforced concrete. In order to move the press into the Douglas plant, it was necessary to tear away the front of the building and disman-

tle part of the roof. Shaping of the parts on this big press, and a smaller one installed sometime ago, has resulted in a reduction in tool costs, as much as twenty-five to one, over conventional requirements. The parts are all of aluminum alloy.

Steel Demand Reflects New Living Standards



Showing How the Changes in Living Standards Have Been Accompanied by Changes in Demand for Various Kinds of Steel; Remarkable Is the Increase in the Use of Sheet and Strip from 1899 to 1934

Records of the shifting demand for steel products over the last thirty-six years reflect living standards. Outstanding changes have decreased output of railroad materials and increased output of sheets, strips and other products required by the automobile industry. And as the automobile industry has grown, body styles have changed and canned foods have become more popular. Many alloy metals have been developed, some for cutlery and others for more powerful airplane and automobile engines. The rising importance of sheet and strip in the total steel tonnage has been accelerated by the increasing popularity of mechanical refrigerators, steel stoves, steel furniture, washing and ironing machines and other household equipment. In 1899 to 1903, railroads took twenty-three per cent of the total output, automobile factories six and one-half per cent and tin plate, for canned goods, three and three-tenths per cent. In 1934, rail-

road materials represented five per cent of the total, automobile materials twenty-seven per cent, tin plate seven per cent and airplanes, streamline trains and other alloy products, seven per cent.