

all folds or seams to press against and hurt the head of the wearer of the hat, which it materially serves to stiffen and strengthen.

IMPROVED CAR TRUCK.

The common difficulty with ordinary iron car trucks is that the beams to which the axle boxes are attached will sag when the car is loaded, thereby twisting the axle boxes, tending to bring all of the pressure on the inner edge of the box. The engraving shows an improved car truck in which the beams to which the axle boxes are attached are made very rigid by form and arrangement of the bars of which it is composed.

The upper bar is bent or arched in the usual form, except at the ends; and the lower bar is bent sufficiently to join the upper bar at the ends where both bars are bent downward at an angle corresponding to the angle of the lower bar.

The axle boxes are sloped on the upper sides to correspond with the angle formed in the end of the beam, the apex of each box being on the vertical central line of the box. The upper and lower bars meeting at this point form a bearing which transfers the weight thrown on the beam or truss to the center of the box. The weight is thus evenly distributed instead of being secured by the inner edge of the box.

This construction remedies the great defect of the ordinary iron truck—that is, the tendency to sag down by the pressure of the load.

This improvement has recently been patented by Mr. Edward B. Meatyrd, of Lake Geneva, Wis.

Cattle Restaurants.

The latest wrinkle in connection with the transportation of cattle is that of Mr. Tingley, of the Humane Live Stock Express Company. Some time ago the same gentleman invented a feed car, theoretically good but practically a failure. The grain and water were placed on the roof, and passed down by pipes when required; but the troughs in the crowded cattle cars got dirty, and the animals refused to eat out of them. An attempt was then made to substitute cars with compartments, so as to keep the cattle separate, but this rendered the cars unfit for any other purpose on the return trip, and was abandoned.

Mr. Tingley's present scheme is a simple one. It is to establish a number of "cattle restaurants" along each line of railroad that transports live stock. They will be two hundred miles apart, and the cattle can be fed and watered every twelve hours. When a train with a load of cattle on board gets within twenty miles of one of these restaurants, a telegram will be sent to the officer in charge, and when the train arrives everything will be in readiness. Great iron cups, about as large as and something of the shape of a good-sized kitchen pot, will contain food and water, run into them through rubber pipes from tanks above. The train will stop between two rows of these troughs, those on one side containing water, and those on the other side holding four quarts of food, consisting of a mixture of ground corn, oats, and cut hay. Each car will have sixteen openings on each side, all of which can be easily closed when the car—which need be nothing more than an ordinary cattle car, such as is at present used—is required for other purposes on the return trip. The device for moving the water and feed troughs to the openings is not complicated.

"Old Ironsides" Retired.

The historic frigate Constitution, for some time used as a school-ship, has been put out of commission as unseaworthy and beyond repair. She now lies at the Brooklyn Navy Yard.

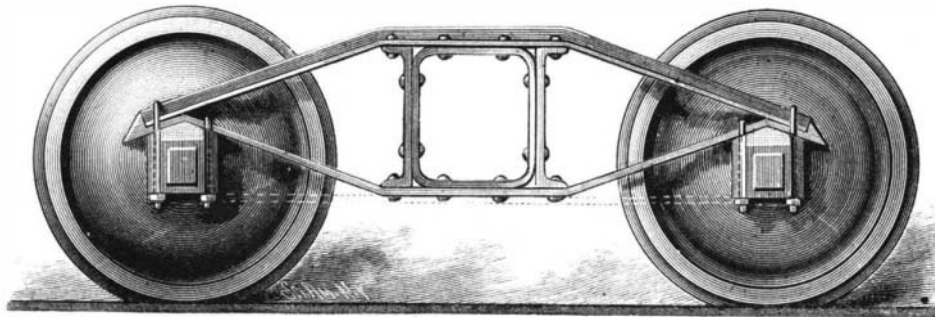
The Constitution was one of the largest of six frigates whose construction was ordered by Congress on March 27, 1794. She was launched in October, 1797. She was built in Boston, of the best live oak, and cost \$302,718. She began her career in the Tripolitan war in 1804, engaging against batteries mounting 115 guns at Tripoli, and her broadsides assisted in recapturing three hundred American sailors who had been captured by the Tripolitans from on board of the frigate Philadelphia. In the war against Great Britain, in 1812, she gained her famous victory over the British frigate Guerriere on August 19. On December 26 following, the Constitution had an engagement with the British frigate Java, and after a hot contest took her as a prize. The following year, on a cruise on the coast of Guiana and among the Windward Islands, she captured the British sloop-of-war Picton, a letter-of-marque, and several merchant vessels. She barely escaped being captured by a British fleet in 1814 by taking refuge in the harbor of Salem, Mass. On February 20, 1815, during another cruise, she captured, after an action of forty minutes, at night, the British frigate Cyane, and the British sloop Levant. The latter was recaptured by a British squadron off the harbor of Porto Praya, and Capt. Stewart, of the Constitution, fearing that the neutrality of the port would not be observed, ran away with his other prize. The Cyane arrived at New York in April, 1815, and the Constitution a month later.

Several years ago the ship was condemned by the Navy Department to be broken up, but gained a new lease of life

through the publication of Holmes' poetic protest, familiar to every schoolboy.

Preservation of Cross Ties.

Colonel A. Hanson, Superintendent of the Texas Central Railroad, has had creosoting works constructed at Houston, for treating cross ties, with a capacity of 760 pieces a day. The reservoir tanks are three in number, and will contain 4,000 barrels of crude oil. The cost of this oil is 11 cents in Galveston. The cost of each tie, when creosoted, is \$1.10. The tanks are constructed of brick and Portland cement. The timber is loaded upon low tramway cars. These are drawn by machinery and an endless chain into the reservoir cylinders, which are then sealed, and the process is therein completed, after which the cars are withdrawn. In the yards of the company are immense quantities of bridge tim-



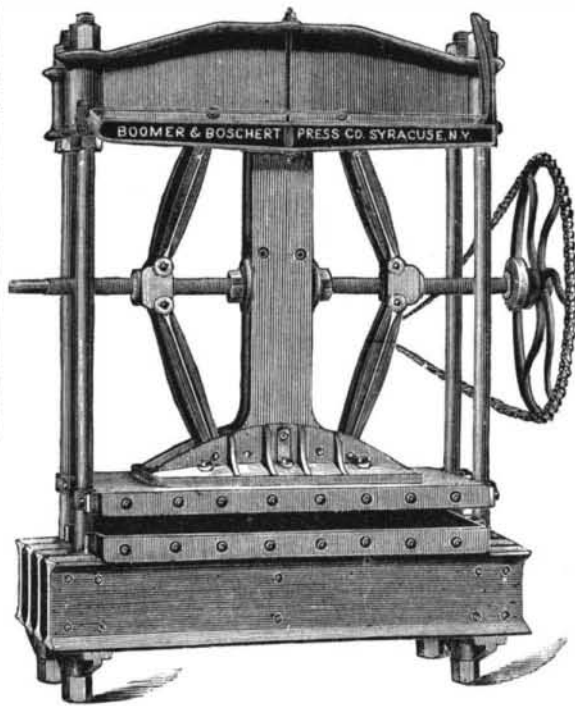
MEATYARD'S CAR TRUCK.

ber and ties awaiting treatment. One of the advantages of this process is the fact that the common loblolly pine, which is regarded of so little value, and which exists in such immense quantities in Eastern Texas and throughout many parishes in Louisiana, is the most suitable wood for creosoting, as it requires an open, porous timber and rapid treatment.

IMPROVED POWER AND HAND PRESSES.

This press is used for material requiring heat to vulcanize or otherwise properly finish it. It has two hollow plates, one of which forms the platen, and the other is placed on and forms part of the base of the press. These hollow plates are heated to any required degree by steam or hot air, and are planed smooth and true on the surfaces which come in contact with the material to be pressed.

The base of the press being made of four heavy 15-inch wrought iron I beams, bolted together with separators, is very rigid, and is designed to prevent the deflection of the lower steam plate when under great pressure.



BOOMER & BOSCHERT'S FIBER PRESS.

The principle for obtaining the pressure is the well-known device of a horizontal screw with right and left hand threads drawing the toggle levers to a perpendicular while it is held and controlled by the collars on the screw bearing against the central sliding standard. The press is well designed to withstand the great strain to which it is subjected. It is worked by power by a chain belt passing over a wheel on the end of the screw and being driven by a suitable counter-shaft. This press has an "indicator," showing at all times the amount of pressure being applied to the material under pressure.

The Vulcanized Fiber Company, Wilmington, Del., have recently put a press of this description, with plates 43 in. x 67 in., into their extensive works.

This is only one of the many uses to which the manufacturers of these presses have applied this principle, as they have been making a specialty of presses for many years, and are continually finding new uses for their machines and designing new styles to meet the demands of their customers. Their presses, being more simple and cheap, and capable of

exerting enormous pressure, are rapidly superseding the hydraulic, which has long taken the lead.

Further information may be obtained by addressing Messrs. Boomer & Boschert, 96 West Water Street, Syracuse, N. Y.

Chloroforming During Sleep.

The possibility of chloroforming a person in sleep, without waking him, having been disputed in a recent murder trial, Dr. J. V. Quimby, of Jersey City, was led to test the question experimentally. The results were presented in a paper before the section of Medical Jurisprudence at the meeting of the Medical American Association, a few days ago. Dr. Quimby made arrangements with a gentleman to enter his room when he was asleep and apply chloroform to him. This he did with entire success, transferring the person from natural to artificial sleep without arousing him. He used about three drachms of Squibb's chloroform, and occupied about seven minutes in the operation.

The second case was a boy of thirteen, who had refused to take ether for a minor operation. Dr. Quimby advised the mother to give the boy a light supper and put him to bed. She did so, and Dr. Quimby calling when the boy was asleep, administered the chloroform and performed the operation without awakening the boy. The third case was a boy of ten years suffering from an abscess, and the same course was pursued with equal success.

Two important inferences may be drawn from these cases, Dr. Quimby said. Minor surgical operations may be done with perfect safety and much more pleasantly than in the ordinary way; and, secondly, a person somewhat skilled in the use of chloroform may enter a sleeping apartment and administer chloroform with evil intentions while a person is asleep. Hence the use of this drug in the hands of a criminal may become an effective instrument in the accomplishment of his nefarious designs. —*Medical Advance.*

An Exhibition of Postage Stamps.

An exhibition of stamps by a society in Vienna has brought out some curious information relative to its branch of postal affairs. Some of the collections exhibited were of considerable historical interest and value, notably that of Dr. Moschkan, collected during the Franco-Prussian war. It contained the stamps and the envelopes of the German and French field post-offices, and of the field post-office of the Swiss corps of observation, a postage stamp from Alsace, issued by the North German Bund, August 1, 1870, balloon letters from Paris and Metz, the photographically reduced letters for the pigeon post, stamps issued under Gambetta's dictatorship, and others by private firms who managed the postal communication during the Commune. He exhibited the first stamps of the German Empire and of the French Republic, and one which bears the head of the Count de Chambord, issued by the Legitimists in 1870, in anticipation of a Bourbon restoration.

Among the portraits of postal reformers which graces the walls of the exhibition were those of Sir Rowland Hill and the Duchess de Longueville. This heroine of the Fronde introduced envelopes in 1635 for letters carried by the Paris city post. Envelopes with an impressed stamp were used first in Sardinia in 1819. The Spanish stamps reflect, in the heads of Isabella, Amadeo, Don Carlos, and Alfonso, the dynastic changes that have taken place. A collection of Spanish stamps from 1850 to 1853 is valued at \$150. The Austrian stamps, including those for Holstein under the Austrian occupation, and for Bosnia, amount to 2,262 specimens. There are 120 postal cards belonging to the General Postal Union, and a good collection of forged stamps was shown expressly for the benefit of collectors. The verdict of the visitors was that our stamp with the head of Washington was the most beautiful one in the exhibition.

In connection with this exhibition, some figures of the operations of the General Postal Union may be interesting. It extends to twenty-five States and to the British, French, and Dutch colonies. It forwarded, in the year 1879, 4,949,000,000 letters and cards. This total may be divided into 3,481,000,000 for Europe, 1,246,000,000 for America, 175,000,000 for Asia, 11,000,000 for Africa, and 36,000,000 for Australia. Including newspapers, printed matter, and samples, the Postal Union forwarded 6,776,000,000 packages, of which 5,285,000,000 belong to Europe.

Of the various European nations the English write the most letters. The figures for 1879 are 1,176,400,000 for England, and 553,000,000 for Germany. But the economical Germans sent 123,000,000 postal cards, while the English used only 114,000,000. It is reckoned that in the whole world the daily requirements are 13,000,000 letters and cards, giving every inhabitant of the globe a yearly average of 3½ written communications. The annual average of European countries for each inhabitant is: England, 36; Switzerland, 25; Germany, 18; Holland, 17; Belgium, 15; France, 14; Denmark, 13; Austria, 11. In England there is a post office for every 2,463 inhabitants; in Germany, for every 5,037; in Austria, for every 5,498; and in France, for every 6,242. Switzerland possesses the most post offices in proportion.