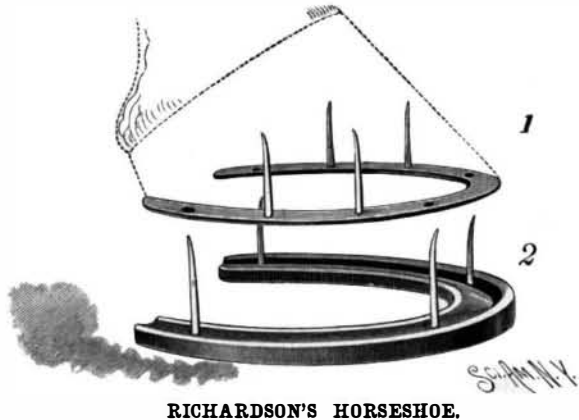


**A COMPOUND OR DOUBLE HORSESHOE.**

The illustration represents a shoe of which one section forms a light racing shoe, to be permanently nailed on, while the other, much heavier section, is recessed to fit over the racing shoe, and is temporarily nailed on over it, the shoe being thus used in its compound form when the horse is in training. The improvement has been patented by Mr. Erasmus Richardson, of Esbon, Kan. The outer shoe furnishes the weight desired for training purposes, while the light inner section preserves its sharp edges for a good hold upon the ground, reducing the liability to slip, and

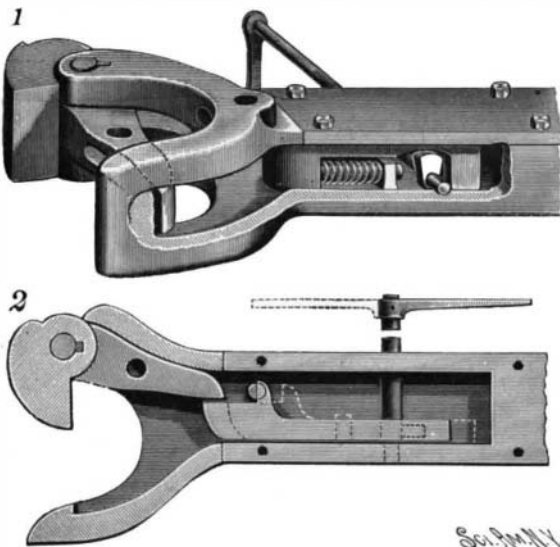


RICHARDSON'S HORSESHOE.

lightening the horse's feet to enable him to do his best work. The invention is also designed to lighten the expense of shoeing, lessening the putting on and pulling off of shoes and the consequent additional mutilation of the hoof.

**A TWIN-JAW, AUTOMATIC CAR COUPLER.**

The engraving represents a coupling of the Janney type, the uncoupling of which may be effected from the side of the car, while the improvement affords convenient means for making linked connection with a disabled coupling or one of the ordinary link and pin style. A patent has been granted for this invention to Mr. William Dunlap, of No. 1222 Sixth Street, San Diego, Cal. The peculiarly formed knuckle piece has a tail piece which extends nearly at right angles from the latching head, and the ears on the drawhead and the knuckle piece receive a pivot bolt with a collar which is countersunk, there being a locking toe in the head of the bolt. The bolt is made in two portions, its main lower portion affording a swing joint for the knuckle head, and a strong spiral spring, having its upper terminal attached to the bolt head, is attached at its lower end to a collar on the upper part of the main lower portion of the bolt. A spline or feather key in the side of the pivot bolt interlocks with a groove in the knuckle piece, and when the parts are in place the torsional force of the spring is exerted to normally throw the free end of the tail piece forward, as shown in Fig. 1. In the rear of the drawhead is a latch bar, as shown in the sectional plan view, Fig. 2, a recess in the bar affording space for a guide rod surrounded by a spiral spring, one end of which abuts against the front shoulder of the recess, while its other end abuts against a lug in the lower wall of the draw-



DUNLAP'S CAR COUPLING.

head. The latch bar is withdrawn by a cam block on a shaft which extends to one side of the car, where it is provided with a crank, the free reciprocation of the latch bar being permitted when the crank hangs pendant, as shown in Fig. 1. On the meeting of two cars provided with this coupling, the knuckle heads pass each other and rock the tail pieces rearwardly, the front ends of the latch bars then engaging the tail pieces at the same time that the knuckles become locked in coupled position, which is shown in Fig. 2, the uncoupling being effected by turning the crank handle to release the latch bar, as indicated by the dotted lines. To couple with a car having an ordinary link and pin coupling a vertical perforation is made centrally near the front of the drawhead pro-

per, to receive a common coupling pin, the tail piece being also similarly perforated with the like object.

**Asbestos Adapted to Modern Wants.**

The uses of asbestos are almost innumerable. Ground fine and combined with colors and oils by a secret process, it makes a beautiful paint, which is said to go far toward fireproofing the surface to which it is applied. Various kinds of roofing are also made by treating strong canvas with a combination of asbestos and felt and backing it with Manila paper. It is extensively used for roofs of factories, railroad shops, bridges, steamboat decks and other places where there is danger of fire.

Nearly every one has seen the thick asbestos felt covering for steam pipes and furnaces. Asbestos cement is sometimes used for hot blast pipes and fire heated surfaces. As a packing for locomotive pistons, valve stems and oil pumps it is almost indispensable. It is also made into ropes and millboards, which can be used almost everywhere. Asbestos cloth is being used more every year. Some States require theaters to use an asbestos drop curtain to protect the audience if the scenery catches fire. Some very beautiful drop curtains have been made, and the ordinary spectator cannot distinguish them from real cloth.

The yarn is knit into mittens for workers in iron and glass, says the Chicago Record. Goldsmiths use a block of asbestos to solder upon. Combined with rubber—vulcanized—asbestos has almost innumerable uses as an electrical insulator. In this form the substance resembles ebony, and is about as hard. The cloth is also of the greatest importance for acid filters in all kinds of chemical processes, for the reason that no acid will eat it.

Asbestos is found in a good many hundreds of places in the world besides Italy and Canada, but the fibers are nearly all too splintery and brittle. Rich deposits have recently been found in Wyoming, California and Montana, and the United States may soon come to the front as a producer of the substance. In 1893 California produced 50 tons of asbestos, valued at \$2,500, while Canada sent out 6,473 tons, valued at \$313,806. A good mine of asbestos is more valuable than a gold mine, and as the substance becomes better known and more used it will be still more precious. The time may not be far distant when firemen will be clothed in suits made from asbestos.

**First Report of the Commission on Tuberculosis in Cattle.**

The first annual report of the State Commission on Tuberculosis in Cattle has been presented recently to the State Legislature of New York. The investigations have been carried out with great care and thoroughness and the report contains much valuable information. It is not generally known that the statistics show that tuberculosis causes one in every eight deaths in this State. This fact, it will be seen, makes the work of the commission of the utmost importance.

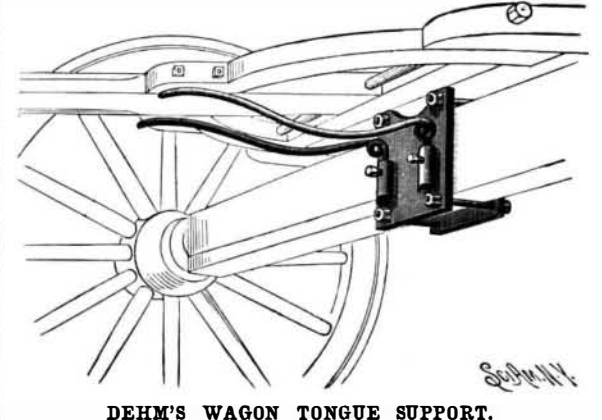
The present commission was constituted in May, 1894, to make a special inspection of the prevalence, distribution, mode of inspection and general behavior of tuberculosis in cattle. The work which furnishes the material for this report was confined to a given area which was considered comparatively free from infection. In this district 947 animals were examined, and of this number 66 were condemned and slaughtered. A large proportion of these animals were common stock, and all breeds of cattle seemed to be affected alike. Tuberculosis in cattle has been found wherever examinations have been made. It has been discovered that the general diffusion of tuberculosis is due to contagion. The disease has been found to spread with certainty when the animals are housed together. The affected animals often show no evidence of the disease by objective signs. Often the diseased animals gave plentiful supplies of milk. The commission therefore urges that a scientific inspection be made regularly. It recommends that some central authority be established which will exercise a strict supervision. The commission has conducted experiments with the imported Koch tuberculin and with the tuberculin from the Bureau of Animal Industry at Washington, and has found them equally valuable. As far as possible, the object lessons given by the commission have reached all who might profit by them. Many dairymen in consequence are now engaged in examining their own cattle. The trouble and expense of disseminating this knowledge is certainly justified by the importance of the work.

**Design Patents.**

In the case of *The Braddock Glass Company v. Macbeth*, for infringement of a design patent for a lamp chimney, the United States Circuit Court of Appeals, third circuit, upheld the well-known rule of law in such cases and decided in favor of the plaintiff. The court said: "The novelty of a design is to be tested, not by investigation of the means employed for its creation, but by ocular comparison of the design itself with the prior designs in the art."

**AN IMPROVED WAGON TONGUE SUPPORT.**

The device represented in the engraving may be quickly and easily applied to the wagon axle without in any way weakening the latter. The improvement has been patented by Mr. John F. Dehm, of San Diego, Cal. It consists of plates attached centrally to the front and rear sides of the axle by means of bolts, elongated lugs on the outer face of the front plate being apertured to form sockets to receive spring-supporting arms. The latter are preferably of stout wire and have a vertical section held in place in the socket by a set screw, the vertical and horizontal sections of



DEHM'S WAGON TONGUE SUPPORT.

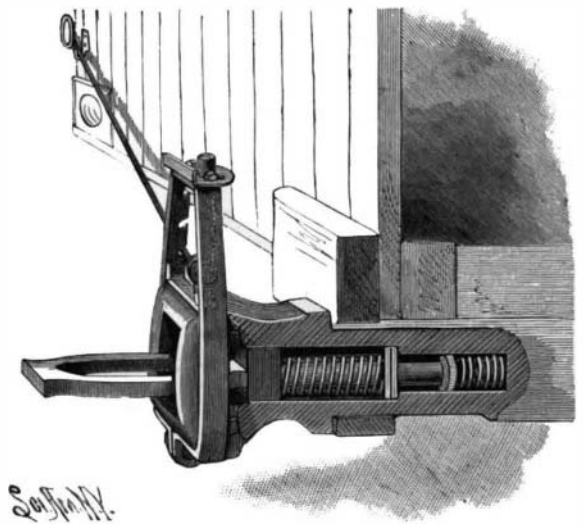
the arms being connected by a coil. It is not necessary to connect the spring arms to the tongue.

**Exhibition of Patents and Inventions, New York City.**

The above exhibition at the Grand Central Palace, this city, has attracted considerable attention during the past few weeks and is drawing to a close. A number of ingenious inventions have been shown, the exhibition as a whole somewhat recalling the American Institute annual fairs. We cannot well undertake to particularize the things which were to be seen there. Edison's kinoscope, Lennard's bullet proof coat, any number of car fenders, Mr. Webb's beautiful model of the New York Central locomotive, Empire State, and Leistner's building blocks being among those which first met the eye. The latter are a most ingenious addition to the building resources of the child. Six different bars comprise a set, and of such bars a hundred or more are supplied in boxes.

**AN IMPROVED CAR COUPLING.**

The illustration represents a simple and inexpensive coupling, adapted for automatic coupling and conveniently manipulated for uncoupling from the side of the car. The improvement has been patented by Mr. Jasper A. Sissom, of Galena, Kansas. The drawhead has two intersecting chambers of differing diameters, in which a pusher rod is supported to slide endwise, the rod having a head block at its front end and guide blocks at about its middle, while at its rear end is a tail block. A heavy coiled spring on the front end of the bar tends to hold the head block against the throat piece of the drawhead, there being also a re-enforcing spring at the rear of the tail block. The coupling link is flattened at its



SISSOM'S CAR COUPLING.

ends, and is placed in position for coupling by being pushed against the head block, compressing one of the springs and permitting the pin to drop by gravity, the spring then pushing the link against the pin and holding the link in the position shown in the illustration. A yoke frame clamped upon the forward portion of the drawhead, and having a cross bar connecting its side members, affords a vertical guideway for the coupling pin, which is connected with the inner end of a lifting rod extending to one side of the car, the pin being raised to uncouple by successively resting the adjacent part of the rod on rack teeth on one of the side bars of the yoke frame. A car having only the ordinary link and pin coupling may be readily coupled with one provided with this improvement.

**The Holly Gravity Return System.**

In a steam engine plant, this system is designed to return the water of condensation and entrainment without employing a pump or trap, by means of a simple open circuit, returning the water from below the boiler as if the boiler was below the surface. A single system receives and delivers the condensation from all the separators, drips, cylinder jackets, etc., effecting a saving of coal by returning the water to the boiler at very nearly boiler temperature. The system does not involve any mechanical movement and requires no attention after it is once put in operation. It has been placed in some of the best

and water supply complete. Roof is shingled, but slate would be better at a slight additional cost.

Size, 48 by 67 over all, except steps. Height of first story, ten feet; second story, ten feet; cellar, seven feet.

**JEANTAUD'S ELECTRIC CARRIAGE.**

In the interesting competition of automobile carriages organized in the month of July, 1894, by the *Petit Journal*, every one remarked with great surprise and much regret the absence of electric carriages. Only one was entered, and that was held in the custom house by various formalities. We have already de-

carriage there is suspended an electric motor that transmits motion to the hind wheels. A commutator is placed in front. Beneath the driver's foot there is a pedal that controls a circuit breaker and the brake. The weight of the vehicle and transmissions is 1,078 pounds, and that of the accumulators 925, inclusive of 615 for the plates and 310 for the liquid and the boxes. The motor weighs 240 pounds. Admitting an average weight of 330 pounds for two passengers, we reach a total weight of 2,573 pounds.

The source of electric energy consists of a battery of accumulators of the Fulmen type, of 21 elements distributed through 7 boxes of 3 elements each. Each of

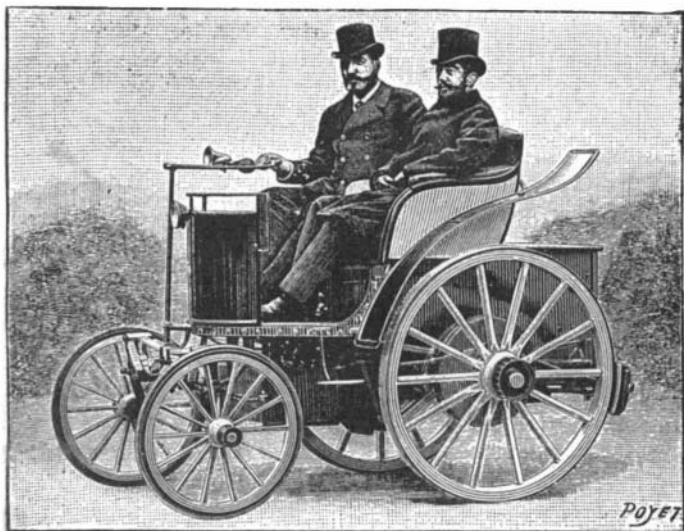


Fig. 1.—JEANTAUD'S ELECTRIC CARRIAGE.

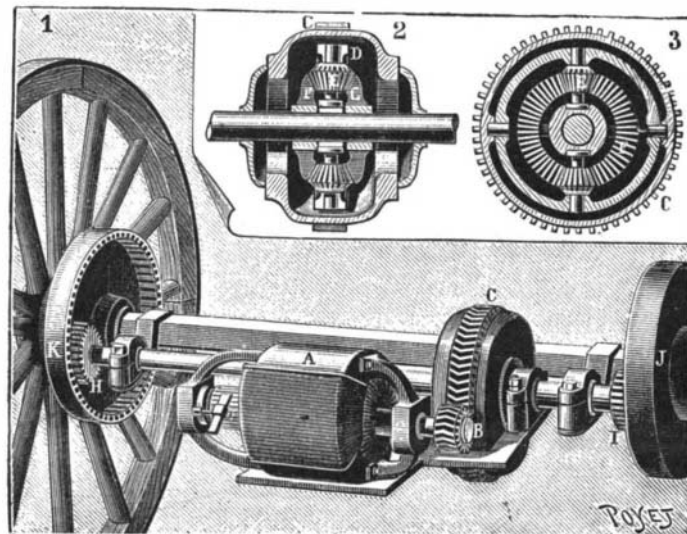


Fig. 2.—DETAILS OF THE MECHANISM.

equipped power stations in the country, and is now being put in at the power station of the Metropolitan Traction Company, of New York City.

**AN ATTRACTIVE HOUSE.\***

The very attractive house represented herewith in perspective is estimated to cost \$5,500. The cost of building materials and labor varies of course in different localities, but this is the estimate stated in *American Homes*, published at Knoxville, Tenn., for that section of the country.

The first story is of brick and the second story of shingles. Gables timbered and plastered. The staircase in the front hall is so arranged as to make the hall a nice, comfortable sitting room. On the stair landing is a handsome art glass window, producing a beautiful effect, both from inside and outside. Four pairs of sliding doors throw all the main rooms and hall practically into one room. The second floor has four large chambers, but the number may be increased by reducing their size.

The interior is finished on first floor in hard woods for main rooms, and whitewood stained or painted for second floor. Cellar under entire house. Plumbing

scribed some models of such carriages devised by various amateurs, but we must recognize the fact that up to the present the electric carriage has left much to be desired in its operation and has not given very satisfactory results. Must we blame the source of electric energy and the complex transmissions from the motor to the wheels for this? The blame might be equally ascribed to all these parts.

Mr. Jeantaud, a carriage maker of Paris, has just made a long stride toward the electric carriage. He has been studying this question, he tells us, for about fifteen years. He has had the wisdom to mature it without stopping at the results of an incomplete invention, and to ever seek a really practical solution and one capable of industrial application. He has finally succeeded in constructing a carriage which, after a trial by Mr. Michel Levy, engineer of mines, has been authorized to run freely around Paris.

Fig. 1 gives a general view of the carriage, which is a four-wheeled phaeton with a seat for two and with accumulators. There is a box placed in the rear for the reception of the latter. In front is the steering axle, which is the same as the one now employed in all automobile carriages, which Mr. Jeantaud was the first to apply, and which is provided with a long rod within reach of the driver. Under the

these accumulators contains 29 pounds of plates and is capable of furnishing, in normal operation, a capacity of 300 amperes-hour at a discharge of 30 amperes, of 240 amperes-hour at 40 amperes, and of 210 amperes-hour at 70 amperes. It will be remarked that it is a question here of discharges reaching as high as 3 amperes per pound of plates. In some particular cases, and certainly exaggerated ones, Mr. Jeantaud has been able to obtain discharges varying from 80 to 180 amperes, but for an hour and a half only. The capacity was 11 amperes-hour per pound of plate in the first case cited above and 7.5 in the last. The accumulators are mounted in tension, and keep this coupling constantly. From these figures, it may be remarked that the new accumulators are distinguished by a great capacity and by the high discharge that they are capable of furnishing, in resisting jarrings and shocks. These properties they owe to their very structure. The plates, which we have been able to examine at the works of the company, are formed of an internal mounting with honeycombs that are filled with active material, and the whole is inclosed between two celluloid plates containing apertures of small diameter. These celluloid coverings are in turn united and cemented at the top and bottom. A series of similar plates is grouped between them and mounted

\* Engraving from *American Homes*, published at Knoxville, Tenn.



PERSPECTIVE VIEW OF AN ATTRACTIVE HOUSE.