

sity at 15° C. of 0.980. This new composition has been termed "twentieth century gum," and among its advantages over ordinary rubber are first, saving in the cost of reproducing the plant; second, saving in the cost of exportation; third, saving in material used in purifying establishments; fourth, saving in fuel; fifth, in machinery; and sixth, saving in time.

#### Paris Exposition Notes.

It is estimated that 150,000 Americans will visit Paris sometime while the Exposition is open. These figures are said to be based upon the number of residents now abroad and the capacity of the transatlantic steamers. It seems very high, however, and probably 100,000 will be much nearer the mark.

The Experiment Station exhibit at the Paris Exposition is most interesting. The various agricultural colleges and experiment stations in the association have contributed materials, charts, pieces of apparatus, models, etc. The collections of photographs and publications is a most imposing one and the photographs are displayed in portfolios; there being 750 in all. Some of the apparatus is very interesting, such as electrical devices for determining the salt content, temperature, and moisture content in soils. The California Station furnished an olive exhibit including fifty samples of olive oil. The Alabama Station, on the other hand, presented a collection of mounted specimens of cotton. Several pieces of original apparatus for investigation in vegetable physiology are shown. The dairy exhibit is the largest. In 1889 our agricultural experiment stations also made an exhibit at Paris, but the exhibit was small and unimportant compared with the present one.

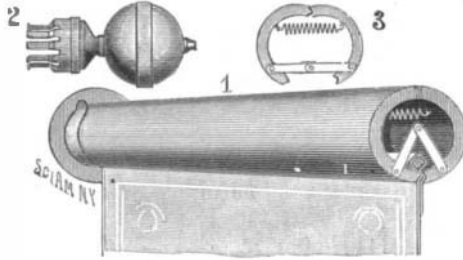
One of the interesting features of the Paris Exposition is the elevated moving sidewalk. This is modeled somewhat after that of Chicago, but the idea is carried out on a more extended scale; the line forms a complete circuit, running along the side of the Champ de Mars, the Quai d'Orsay, the Esplanade des Invalides, and the Avenue de la Motte-Picquet, the total length of its course being 3,500 meters. The platform is supported on an elevated structure, to which access is given from a number of stations located within the Exposition grounds. The substructure supports three platforms, one fixed and two movable, these having a speed of 8 and 4 kilometers per hour. This arrangement permits an easy passage from one to the other, and a more or less extended survey of the grounds may be made, a fine view being obtained from this elevated point. The tour is made in 26 or 52 minutes, and the fixed rate is 50 centimes. To enable the platform to pass around the curves, the different sections are dovetailed into each other by large circular portions, forming a kind of horizontal hinge. Each of the platforms carries an I-beam running along under the center; these rest upon a series of rollers placed at intervals, operated by electric motors. Upon the shaft of the motor is mounted a large roller for the high-speed platform and a roller of one-half the diameter for the slow speed. The friction of the platform is sufficient to cause its adhesion to the rollers. The platform was put into operation on April 14 and has proved a great success, as by its means an easy passage through the grounds is afforded, as well as a series of interesting views.

The great 25-ton crane which is mounted in one of the main dynamo rooms of the Paris Exposition presents many points of interest. It is of great height, being 20 meters from the ground to the highest point; it takes the form of an immense tower, formed of iron beams and braced by horizontal and oblique cross-pieces. It rolls upon a track laid along the whole length of the building, and is used to mount the large dynamos and engines of this section. The track is 6 meters wide, and is made up of two rails placed close together, leaving a space between the flanges, which is occupied by a series of short cross-pieces which constitute a rack. With this the pinion of the crane engages, the transmission being made by a stout shaft which leads from a motor placed midway up the crane. The middle space underneath the tower is large enough to afford a wide passageway, and the railroad track which has been laid to bring in the pieces of the machines passes under it, leaving still a considerable space. The tower supports a platform at the top, whose height is 12½ meters from the ground. On this is a circular crown of rollers arranged to carry the horizontal beam of the crane, which may thus take a circular motion around a pin in the center. Upon the center of this beam, which is constructed of trelliswork, are placed the motors, which separate the carriage by chains which pass over a series of pulleys. The length of the horizontal beam is 25 meters and the carriage mounted upon it will describe a radius of 11 meters. It will lift 25 tons to a height of 12½ meters. The rate of lifting is 0.04 meters per second, and the carriage travels at 0.20 meters per second; the crane is moved as a whole at the same rate. It rolls upon 8 wheels on each side. This crane has been constructed by Jules Leblanc, of Paris.

#### A NEW CURTAIN-HANGER.

The subject of the annexed illustration is an improved curtain pole, to which a portière or curtain may be attached without the use of the rings or pins ordinarily employed. Fig. 1 is a perspective view of the curtain-pole. Fig. 2 represents a socket employed when the pole is supported on brackets. Fig. 3 is an end view, showing the pole in position to receive a curtain. The pole has been patented by Almon S. Venen and Albert L. MacLeod, of Forest Grove, Ore.

The pole is formed of two hollow semi-cylindrical sections, hinged together at their upper ends to permit the lower ends to swing apart. Retractable springs



A NEW AND IMPROVED CURTAIN-HANGER.

serve to draw the two sections of the pole together. In order to hold the sections in distended position, toggle-links are employed, one of which is provided with a lug, which limits the downward movement of the toggles.

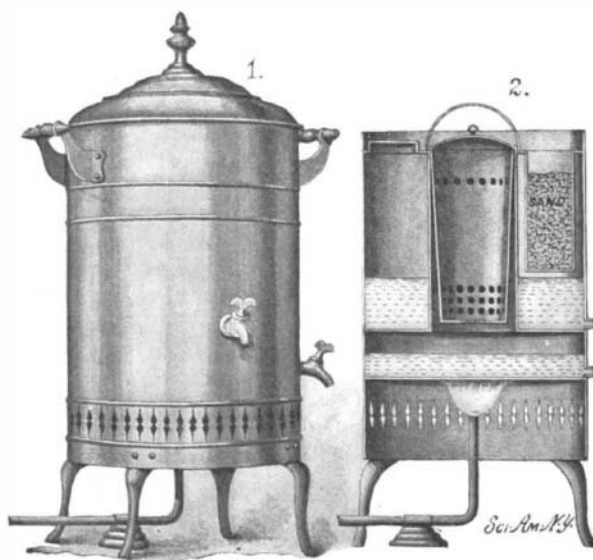
The upper end of the curtain is wrapped around a strip of wood and passed into the open pole. By forcing the links up, the retractile springs will draw the two sections of the pole together, as shown in Fig. 1.

When the pole is supported on brackets extended inward from the casing, the sections are held from accidental separation by means of a socket (Fig. 2) consisting of spring-fingers, to which an ornamental end piece is attached.

#### A STERILIZER FOR RAZORS AND SURGICAL INSTRUMENTS.

An apparatus for antiseptically cleaning the instruments used by barbers, dentists and surgeons, is of primary importance, for the reason that the germs in septic or infected tissues are but too easily transferred to healthy tissues by the very instruments which are used in maintaining that healthy condition. Undoubtedly the ideal sterilizing antiseptic is a moist vapor or liquid at boiling temperature, which immediately acts upon bacteria without in any way injuring the instruments. A simple sterilizer built upon this principle has been devised by Dr. J. A. Cronkhite, of the J. A. Cronkhite Manufacturing Company, 405½ South Broadway, Los Angeles, Cal.

Dr. Cronkhite's sterilizer comprises a casing formed with a heating-chamber in its bottom. Above the heating-chamber is a tank which contains an antiseptic solution, the vapors of which pass upward into a central vapor-chamber which is surrounded by a water-chamber, and which is designed to receive a conical, removable instrument-cup. In order that the



THE CRONKHITE INSTRUMENT STERILIZER.

Instruments may be subjected to the action of the vapors given off by the heated antiseptic solution, the cup is provided with orifices in its sides.

Since it is often desirable to subject the instruments to the action of a sand bath, the inventor has arranged in the top of the water-chamber surrounding the vapor-chamber, a sand-vessel, into which the instruments are inserted to be mechanically cleaned before they are placed in the sterilizing receptacle.

In operation, the cover of the apparatus is removed, the sterilizing receptacle is filled with the instruments and hung in the vapor-chamber. The burners in the heating-chambers being ignited, the antiseptic solution is heated, and the hot, rising vapors sterilize the instruments, and also heat the water in the water-cham-

ber, and hence the sand in the sand-vessel. Hypodermic syringes and the like can be directly sterilized by withdrawing a small quantity of the heated antiseptic solution and using it in any suitable manner.

The water-chamber places at the dentist's command the supply of hot water which he finds so indispensable in his work.

#### Automobile News.

Coke will be used as a fuel for an English motor carriage.

A Chicago firm is using an automobile provided with a steel fender.

In the Paris-Roubaix race a serious accident occurred. Two competitors on motor tricycles collided and dashed into a crowd of two thousand persons. Twenty persons were knocked down, some of them having their bones broken and many others were bruised.

Two of the largest traction engines in the world and eight steel carriages, for use in the mining district of Siberia are reported to have been shipped from San Leandro, Cal. There has also been planned a carrying service across the desert in China in competition with the trade now done by means of camels, and it is expected to have 50 engines and 3,000 wagons actively engaged within a year.

A French military paper states that Col. Renard has invented a light motor for the purpose of traction on land and sea, says The Engineer. A grant was therefore made of \$4,000 in order to enable Col. Renard to adapt it for the traction of a military convoy by road. In this he has been successful, and in connection with it he has invented a stiff spiral coupling for the wagons by means of which as many as thirty wagons can be hauled by the motor, and yet be kept exactly in its wake, however winding the road may be. Col. Renard's invention will be tested at the army maneuvers this year on the plateau of Beauce.

The Russian Minister of War is desirous of purchasing a freight automobile to be propelled either by steam or kerosene, and if any manufacturer will ship two sets of carriages, one for steam and the other for kerosene, to St. Petersburg, the War Department will pay the freight and duty on both, and purchase the one best suited for its purpose, while the other one will be returned. The carriages must reach St. Petersburg by June, 1900. Full data as to weight, price, rapidity of movement, etc., should be sent to the Chief of the Staff of the Ministry of War. Owing to the fact that large orders may be given to supply the Russian army this matter is an important one.

The question of regulating the speed and circulation of automobiles has occupied the attention of the Paris authorities for some time past. The regulations which now exist have not given entire satisfaction, and the Minister of Public Works has decided to draw up a new set of rules, these to be established by a commission which has been appointed for the purpose, composed of experienced automobilists and engineers. The questions to be considered will be mainly those of speed, audible signals and the police measures to be taken relative to circulation, as well as the placing of certain distinctive marks, plates, etc., upon the vehicles. The commission includes Messrs. de Zuylen, president of the Automobile Club of France; Bailly, president of the Touring Club; Forestier, inspector general of routes; Pierre Giffard, etc. The commission has been well chosen, and out of its eleven members eight are members of the Automobile Club, and are experienced conductors.

A collection of military automobiles is to be shown at the Paris Exposition. The committee in charge of the section including the armament and material for the artillery has taken up the idea some time since, and from among the different vehicles used in the army a number of types have been chosen, to which this form of locomotion seemed to be best adapted. A number of constructors were called upon to furnish models of the different types, and a collection of twelve automobiles will be seen, of which two are operated by steam, one by petroleum, and nine by gasoline. These include a heavy tractor for use in artillery and engineering service, a medical wagon containing an equipment of surgical apparatus, medicines, etc., besides a folding tent for conducting operations. A telegraph wagon will contain a complete outfit of apparatus for field use, and another vehicle will be shown for transporting telegraphic materials. An automobile for the military postal service will also be seen. Among others are an omnibus for the transportation of personnel, a vehicle for the commanding officer, a rapid automobile and a smaller vehicle for the use of officers, a moto-cycle for the transmission of dispatches, etc. They have been built by a number of prominent constructors, such as Panhard & Levassor, the Société Scotte, Peugeot, De Dion, etc. The greater number of these automobiles will be painted a uniform gray color, which is that adopted for the army vehicles. The exhibit will be made in the Army and Marine Palace, fronting on the Seine near the Champ de Mars.