

War Ballooning.

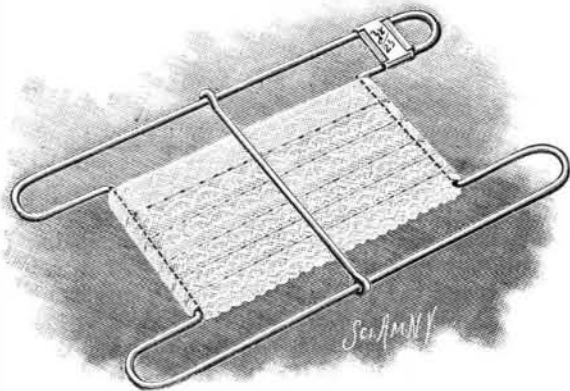
A correspondent of the London *Times* writes:

"During the last sixteen or seventeen years, the Dutch government have been carrying on a more or less active war with certain tribes in Acheen, a district of Sumatra, the third largest island of the world, and with this view have dispatched a military ballooning contingent, under the direction of Mr. Percival Spencer, an English aeronaut, to Kota Rajah, the fortified capital of the unconquered regions, where it is proposed to establish a permanent balloon reconnoitering corps to watch and, if possible, circumvent the strategical movements of the enemy. A preliminary trial ascent having been made by Mr. Spencer, in company with Major Haver Droeze, of the Dutch Royal Engineers, and in the presence of Colonel Van Zuylen, in command of the Engineers, and the highest military authorities in Batavia, and found satisfactory, no time has been lost in sending the expedition to the seat of war, and it will be interesting to learn the result of the experiment. Mr. Spencer's balloon is almost spherical in shape, with a capacity of 15,000 feet. The cable by which it is attached to the earth is made of hemp, and is 400 meters in length, while the gas used for its inflation is manufactured by portable apparatus of his own invention. The climate of Sumatra is admirably suited for ballooning observations, as dead calms prevail, and there is no mist to intercept the view of the land beneath."

NOVEL LACE OR EMBROIDERY HOLDER.

The engraving shows a simple and efficient device for holding and displaying lace, embroideries, insertions, braids, and similar goods, and for handling such goods for sale.

The holder, as will be seen, consists of a wire frame with inset ends upon which the material is wound. The joint at the ends of the wire is completed by a metallic plate, which is bent over the two branches of the wire, and the intermediate edges of the plate are bent over toward each other, forming a receptacle for a price ticket or for other memoranda. A cross wire or keeper bar, furnished at one end with an eye for receiving



LACE OR EMBROIDERY HOLDER.

one side of the frame, and at the other end with a hook for engaging the opposite side of the frame, is provided for preventing the unwinding of the lace or other material.

This device is new, simple and cheap, and well calculated for the use to which it is applied.

Further information regarding this invention may be obtained by addressing the inventor, Mr. W. C. Quigley, Lake Geneva, Wisconsin.

A Great Loom Suit Ended.

The suit brought by the Webster Loom Company against E. S. Higgins & Co., the carpet manufacturers, has been decided recently in the United States Circuit Court in this city. It has been pending since 1874, and by the terms of the decree the plaintiffs are entitled to only six cents damages. The first move was made before the Supreme Court of the United States, on an appeal by the Webster Loom Company from the decision of the Commissioner of Patents that the company's patent was invalid. The Webster Company won this suit, and the case was sent to the circuit court to determine the amount of damages due them for the infringement of their patent.

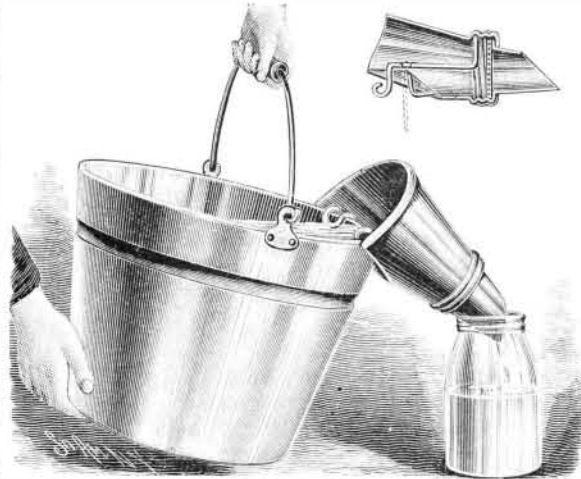
The original claim was \$30,000,000, the Webster Company declaring that E. S. Higgins & Co. had, by use of the infringing device, prevented others from using their patent, and thus destroyed the market. The royalties lost by this were alleged to be about \$30,000,000. Afterward the Webster Company reduced the amount of their claim to something over \$2,000,000, which they charged was the amount of profit made by E. S. Higgins & Co. The machinery in dispute is known as the "wire motion," and contains a device for inserting and withdrawing the wires which form the "pile" in tapestry carpets.

Last year the master to whom the case was referred to estimate damages, John A. Shields, rendered a report allowing nominal damages to the Webster Loom Company. This was excepted to by the plaintiffs, and the exception argued before Judge Shipman, who reversed the decision of the master on technical points of

law. The defendants secured a reargument before Judges Wallace and Shipman, which resulted, as before mentioned, in a decision confirming the master's report, and allowing nominal damages, namely, six cents.

COMBINED STRAINER AND FUNNEL.

We give perspective and sectional views of an im-



LAKE'S COMBINED STRAINER AND FUNNEL.

proved strainer and funnel recently patented by Mr. Otto E. Lake, of Topsfield, Mass.

The body of the funnel is made in two parts connected together by a spun or pressed screw joint, which also clamps the strainer in place. The mouth of the funnel is adapted to fit the side of the pail, near its rim, and the funnel is held at the required angle by a bracket attached to the upper part of the funnel and adapted to bear against the side of the pail. Above the screw joint in the upper part of the funnel is formed a circumferential groove into which is sprung a wire, the outer ends of which are curved to form spring hooks to catch upon the rim of the pail and hold the funnel securely in the position of use. The lower end of the funnel is tapered and cut away obliquely to facilitate the discharge of the milk or other liquid.

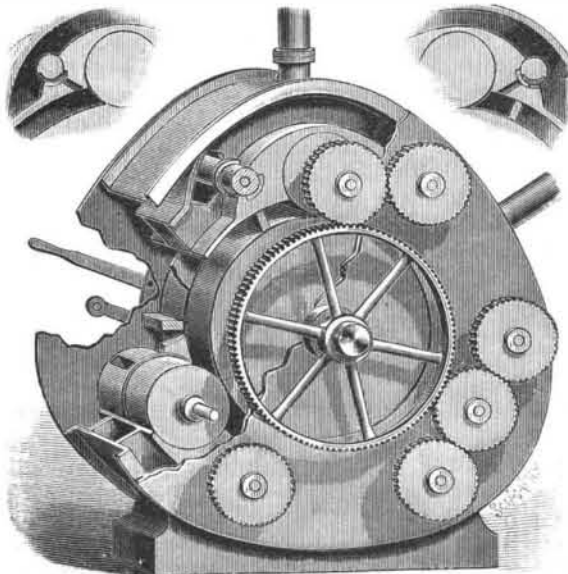
The funnel when attached to the pail in the manner described, can be used until the pail is emptied, without readjustment. The screw joint which clamps the two parts of the funnel together permits of readily taking the funnel apart for cleaning.

Further information in regard to this invention may be obtained by addressing the inventor as above.

IMPROVEMENTS IN ROTARY ENGINES.

The novel rotary engine illustrated by our engraving is the invention of Messrs. Samuel J. Holt and Daniel Kinney, of West Plains, Mo.

This engine is provided with a rotary piston furnished with a central circumferential groove into which projects a flange from the interior of the cylinder, practically dividing the cylinder into halves, each half containing a rotary piston. Each piston carries wings which are fitted to the interior of the cylinder, and at three points in the circumference of the cylinder are arranged rotary abutments which are adapted to pass the wings as the piston turns. The rotary abutments receive motion from a spur wheel on the main shaft of the engine, and rotary valves on either side of the abutments control the supply and exhaust of the steam. Each division of the cylinder is provided with throttle valves, and all of the throttle valves are operated by a system of levers connected with a single wheel or circle,



NEW ROTARY ENGINE.

which, being turned, operates all the valves simultaneously. By means of this construction, also, the engine may be reversed. The details of the rotary valves and of the abutments are shown in the small views in the upper part of the figure.

This engine is very simple, and as all of its parts are rotary, it must necessarily run in balance.

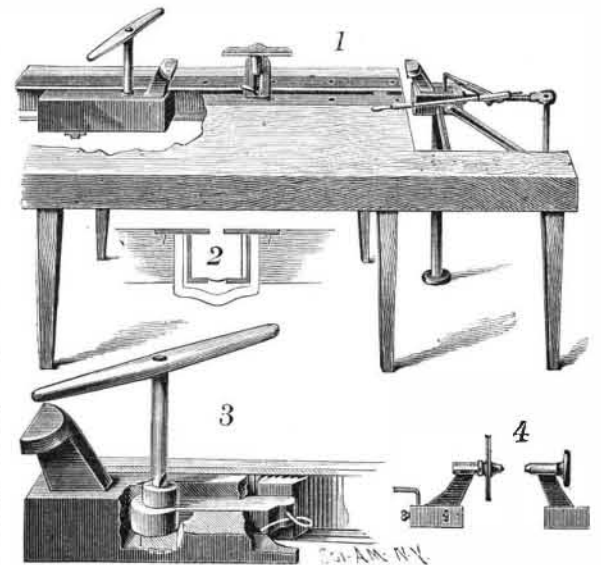
Railroad Earnings.

The gross earnings of 154 railways operating 88,560 miles of road for the month of August, 1890, according to statistics collected by the *Financial Chronicle*, are \$40,634,120, as compared with \$39,052,895 for the corresponding month of 1889, an increase of 4.05 per cent. The per cent increase is much smaller for August than for any other month of the current year, it being less than one-half that for June, the next smallest. A considerable number of the larger roads show losses. Considering the roads by groups, the Southern roads lead all others in the general favorable character of their earnings. Of the Southwestern roads, the Atchison, Topeka & Santa Fe and the Denver & Rio Grande show large gains, as heretofore, and several of the other lines also show improved results. On the other hand, the Chicago, Rock Island & Pacific shows a loss of \$165,953, and several of the other lines have losses of greater or less amounts. The Northwestern lines, with one or two minor exceptions, exhibit increases. The Middle Western group shows more decreases than any other. This is attributed largely to the short winter wheat yield, and in the case of the New York Central & Hudson River Railroad and tributary lines, to the recent strike.

A NOVEL VISE.

The annexed engraving illustrates a new vise recently patented by Mr. George H. Squier, of Trempealeau, Wisconsin, which is adapted to a large range of work, and is also convertible into an efficient lathe.

In the work bench to which this improvement is applied is formed a longitudinal slot, the sides of which are lined with channeled iron bars, as shown in Figs. 1 and 2. The bar at the front of the bench is serrated, and to the space between and within the channeled bars is fitted a sliding block carrying one of the jaws of the vise. In the block is journaled a cam or eccentric, adapted to reciprocate a serrated jaw which engages the inner surface of the serrated channel bar. To the



SQUIER'S IMPROVED VISE.

eccentric is fitted a key with a cross arm which may be inserted whenever it is desired to revolve the eccentric and thus move forward the jaw. In this movable block is inserted one of the jaws of a vise. The other jaw of the vise is supported by a standard at the end of the bench, and is adjustable by a screw. The jaws are both removable, and may be replaced by jaws of other forms and by other attachments.

The inventor has provided a lathe head and tail block, shown in Fig. 4, which may be used in place of the jaws, and the tool rest shown in Fig. 1 may be used in connection with the head tail block, for turning wood or metal, or for boring or light sawing.

This invention will prove useful to all wood workers, and may be used advantageously by workers in metals.

Liquid Gutta-Percha.

This useful preparation is to be found in the United States Pharmacopœia, and is made thus: Gutta percha in thin slices, 1 oz.; chloroform, 8 fl. oz.; carbonate of lead, in fine powder, 1 oz. Add the gutta-percha to 6 fl. oz. of the chloroform in a stoppered bottle and shake them together frequently until the solution has been effected. Then add the carbonate of lead previously mixed with the remainder of the chloroform, and, having several times shaken the whole together, set the mixture aside and let it remain at rest until the insoluble matter has subsided. Lastly, decant the clear liquid, and keep it in a well-stoppered bottle. One part of this solution in 10 by weight of chloroform produces an excellent and convenient preparation for painting over cuts or wounds. It readily acts as a styptic and protective to the wound, and causes neither tension nor pain. If pure iodoform be added, about 10 per cent, it further enhances the value of the styptic, and can be used in veterinary surgery with marked success for applying to cuts and abrasions, as it arrests hemorrhage, forms a coating over the wound, and promotes a healthy cicatrization.