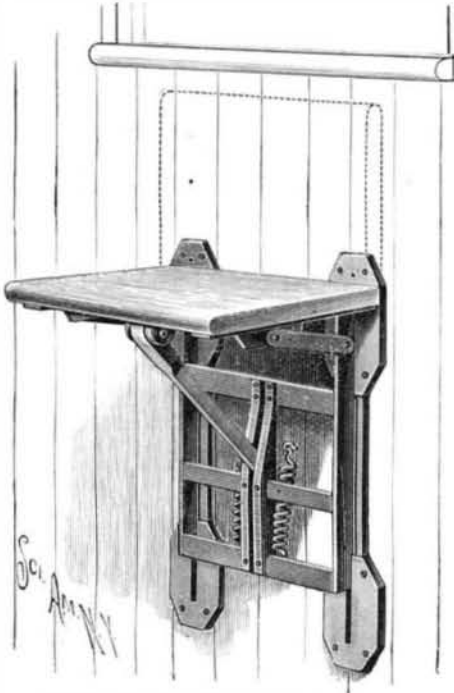


**A SIMPLE, COMPACT FOLDING SEAT.**

A safe, easy and convenient seat, especially adapted for use in locomotive cabs, is shown in the illustration, and has been patented by Mr. John S. Kilgore, of Salida, Col. The seat is supported on parallel slide-ways, which receive the flat flanges of the side pieces of the seat frame, cross bars making the frame rigid. The frame is supported by spiral springs, whose upper ends are secured to screw eyes in the walls of the cab. In

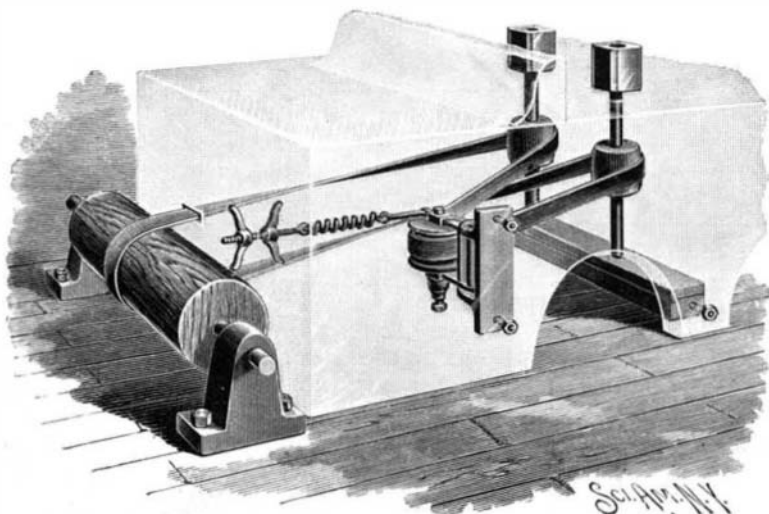


**KILGORE'S LOCOMOTIVE CAB SEAT.**

parallel guide bars near the center of the frame is pivoted the inner end of a swinging brace whose outer end is pivoted between angle clips on the under side of the seat, and pivoted links connect the ends of the seat bottom with the upper ends of the side pieces of the sliding seat frame. When the seat is used its lower edge is pulled out slightly, and the seat drops to place, its back edge resting on the upper ends of the side pieces of the sliding frame, and the brace swinging out into position, as shown, the seat being folded, as indicated by the dotted lines, by raising its inner sides with the hands, or simply by the inward pressure of the limbs upon its front edge, which causes the seat bottom to swing up into vertical position. The seat may be applied to any cab to occupy the least possible amount of space, while it has no lateral motion, and the spring supports it in a manner to make a very easy and comfortable seat.

**AN IMPROVED BELT TIGHTENER.**

The device shown in the illustration is especially adapted for use on planing, sizing, matching, moulding and similar machines, admitting of quick application and ready operation to tighten or slacken belts. It is also designed to lessen the cost of belting, as both the right and left hand cutters may be connected with the driving pulley by a single belt, and, as different faces of the belt pass over the tightener and the cutter head shafts, any shavings, chips or foreign material caught by the belts at the cutter heads will be discharged at the tightener. The improvement has been patented by Messrs. John B. Noble, of Tatum, and Joseph B. Hensley, of Baird, Texas. It is shown applied to a planer, the tightening pulley being mounted in boxes in a yoke-like frame pivoted



**NOBLE & HENSLEY'S BELT TIGHTENER.**

in a hanger secured to the inside of the planer frame. The outer end of the frame is connected by a rod with one end of a spiral spring, from whose opposite extremity a rod passes through an opening in the end of the planer frame, the end of the rod being threaded and carrying two lock nuts engaging the

inner and outer faces of the end piece of the planer frame. By the turning of these nuts the yoke carrying the pulley may be moved toward or from the cutter head shafts, to give the proper tension to the belt, the spring having a cushioning effect, although the spring may be omitted if desired. The weight of the tightening pulley is supported by an adjusting screw in the lower box, and the pulley also has end flanges to prevent the belt leaving it. The single belt employed passes from the driving pulley around one cutter head shaft, thence around the tightener and to the other cutter head shaft, and back again to the driving pulley. It will be seen that, by means of this device, the belt tension may be readily increased or diminished while the machine is in motion, without interfering in the least with its regular work. Manufacturers of planing and matching machines and others desiring to use the improvement may address Mr. J. B. Noble, Tatum, Texas.

**AN IMPROVED COOKING VESSEL.**

The improvement shown in the illustration, forming the subject of a patent issued to Mrs. A. R. Isaac, of New York City, consists of a vessel adapted to be held in a pot of water to permit the contents of the vessel to be steamed or boiled without escaping therefrom, an additional receptacle being also provided for the cooking of the sauce. The vessel is preferably made of sheet metal, open at the top and bottom and with many perforations in its sides, and near its bottom is an opening in which slides a perforated plate, having a flange and hinged handle on its outer edge. On sliding the plate inward, it rests upon brackets secured to the inner face of the body, and forms a removable bottom for the body of the vessel. In suitable sockets in the upper edge of the vessel rest the trunnions of an additional receptacle or saucepan. With the perforated plate or false bottom in its innermost position, the material placed in the vessel to be cooked will be either steamed or boiled, according to the quantity of water in the pot, the contents of the saucepan being in either case heated by the steam. After the cooking has been effected, the vessel is placed upon a platter or other dish and the sliding plate is drawn out, when the contents are deposited in a body, unbroken, in the dish provided therefor, obviating the necessity of removing the articles piece by piece. Further information relative to this improvement may be obtained by addressing the patentee, P. O. Box No. 773, New York City.



**ISAAC'S COOKING VESSEL.**

made, to which is added an alkaline sulphate and a little sulphuric acid, and a current is then passed through the solution. Pure chromium is then deposited at the negative pole. Thus prepared, the metal is of a bluish-white color and very hard. It resists atmospheric influences, and is not attacked by concentrated sulphuric acid, by nitric acid, or by a concentrated solution of caustic potash. It is proposed

to carry on chrome plating on an industrial scale, to replace the nickel plating. Good adherent deposits of chromium have been obtained from the same bath on brass, gun metal, copper, and even on iron. The deposit is said to resemble oxidized silver. An ingot of the pure metal, weighing one pound, has been prepared and sent to the academy by the inventor of the process, who is now engaged in investigating various alloys of the metal.

**The Hudson River Ice Crop.**

The Hudson River ice harvest is now in progress. It begins sixty miles north

of New York City. The ice is ten inches thick, and is pure water ice, so clear that one can read a newspaper through the blocks. The indications are that the ice crop this year will be the largest and finest ever gathered on the river, and will reach nearly 4,000,000 tons.

**A NOVEL MUSICAL INSTRUMENT.**

The musical novelty shown in the engraving, which the inventor has christened the pneumatone (Gr. *pneuma*, breath or air) has been patented by Mr. Clark S. Mudge, of Bettsville, Ohio. A thin disk, preferably of celluloid or similar material, is held on a stud projecting from a plate which has at its lower end an angular offset connected with or integral with the handle, and on the face of the disk is held an adjustable plate having an elongated slot loosely engaging the stud, so that the latter plate can be moved up or



**MUDGE'S "PNEUMATONE."**

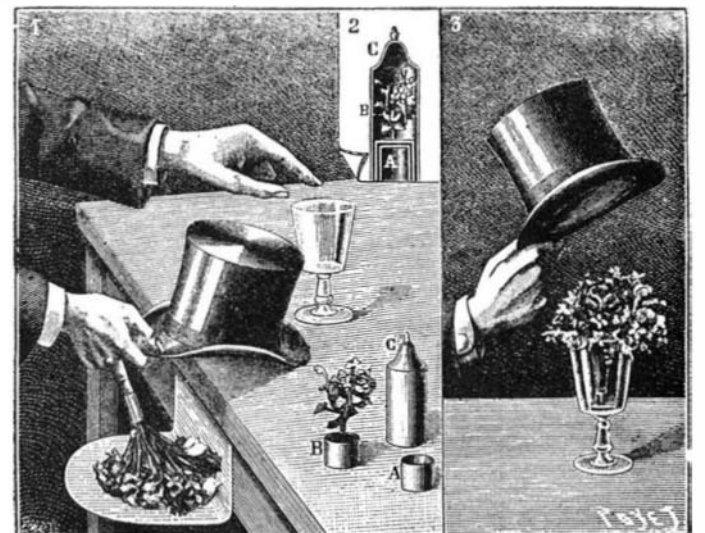
down on the face of the disk, and secured in desired position by a thumb nut. On the lower end of this plate is an angular extension, a rod connected with which extends downward through the offset of the other plate, a spring being coiled around the rod, whose lower end is threaded and fitted with a large nut. This rod forms the one key or slide used, and that only in producing a very high note, in which case it is pressed up, and in making a very low note, when it is allowed to go back to its lowest position by spring pressure. In playing the pneumatone the operator has only to place the exposed part of the circular disk to his lips and force the air against and over the disk, which will cause it to vibrate to produce a musical tone, which can be changed by the tongue and mouth much the same as in whistling. The pneumatone is 6 1/2 x 1 1/2 x 1/2 inches in size, making it a very convenient instrument to carry in the pocket.

**AN INTERESTING FLOWER TRICK.**

The trick that we about to describe, although old, is very interesting. The prestidigitator comes forward holding in his hand a small cardboard box which he says contains various kinds of flower seeds.

"Here there is no need of moisture, earth, or time to cause the seed to germinate, the plant to spring up and the flower to bloom. Everything takes place instantaneously. Would not a rose in my buttonhole produce a charming effect? A stroke of the wand upon the seed deposited in the desired place, and see! the rose appears. A few seeds in this little box (Fig. 1 A), that we shall cover for an instant so that it cannot be seen how flowers are born. . . . It is done; let us take off the cover: violets, forget-me-nots, and Easter daisies are here all freshly blown.

"You are suspicious, perhaps, and rightly, of the little tin box, and more so of its cover. Well then!



**THE BIRTH OF THE FLOWERS.**

here is a small goblet the transparency of which is perfect, and this borrowed hat with which I cover it can have undergone no preparation. Let us remove it quickly, for the flowers. . . . What! no flowers? Ah! it is because I forgot to sow the seeds. Let us begin the operation over again. What flowers do you want?

—a mignonette, a violet, a marigold? Here is a seed of each kind, which I shall put into the glass. Now let each one tell me the flower that he prefers. Now I cover the glass, and count three seconds . . . See the magnificent bouquet!" (Fig. 3.)

Finally the trick is finished by taking from the hat a number of small bouquets that are offered to the ladies. The following is an explanation of it:

1. *The Buttonhole Rose.*—This is a stemless artificial rose of muslin, which is traversed by a strong black silk thread arrested by a knot. To this thread, which should be 5 or 6 inches in length, is attached quite a strong rubber cord capable of being doubled if need be. The free extremity of the rubber traverses, in the first place, the left buttonhole of the coat, and then a small eyelet formed beneath, and then passes over the chest and behind the back, and is fixed by the extremity to one of the right hand buttons of the waistband of the trousers.

When the prestidigitator comes upon the stage, the rose is carried under his left armpit, where he holds it by a slight pressure of the arm. At the proper moment he raises his wand toward the right, and looks in the same direction in order to attract the eyes of the spectators to that side; but at the same time he separates his arms slightly, and the rose held by the taut rubber suddenly puts itself in place. The magic effect produced by the instantaneous appearance of this flower, coming whence no one knows where, could not be appreciated without having been seen.

2. *The Flowers in the Small Box.*—In this second appearance of flowers, produced by means of the small apparatus shown in Fig. 2, there is really nothing very mysterious. The special object of it is to bring into relief the experiment that is to follow, and in which, evidently, there can be no question of double bottom. Moreover, the diversity of the means employed contributes powerfully toward astounding the spectators.

Fig. 2 shows in section the three pieces of the apparatus, which are placed separately upon the table in Fig. 1. A is the cylindrical tin box in which the seeds are sown, and B another box of slightly larger diameter, but in other respects just like the first, which it entirely covers. To the bottom of B is fixed a small bouquet of artificial flowers. By slightly squeezing the cover, C (which is of thin brass), toward the bottom, the box, B, with the bouquet, is lifted. If, on the contrary, the box is left upon the table, the spectators do not perceive the substitution made, and think that they all the time see the first box, whence they believe the flowers started.

3. *The Bouquet in the Glass.*—This is the most interesting part of the experiment.

As we have said, the glass is first covered with a hat, and the prestidigitator feigns astonishment upon seeing that the flowers have not appeared, but at the very instant at which the hat is lifted, when all eyes are fixed upon the glass, looking for the bouquet announced, the operator, who, with the right hand, holds the hat carelessly resting upon the edge of the table, suddenly sticks his middle finger in the cardboard tube fixed to the handle of the bouquet, which has been placed in advance upon a bracket, as shown in Fig. 1, and, immediately raising his finger, introduces the flowers into the hat, taking good care (and this is an important point) not to turn his gaze away from the glass to the bouquet or hat, as one might feel himself led to do in such a case. This introduction of the bouquet should be effected in less than a second, after which the hat is held aloft, while with the left hand some imaginary seeds, the kinds of which are designated in measure as they are taken, are selected from the cardboard box and successively deposited in

the glass. So, this time, be certain of it, the flowers will appear.

4. *The Small Bouquets in the Hat.*—There is not a second to be lost; the spectators are admiring the bouquet and are astonished to see it make its appearance. The operator very quickly profits by this moment of surprise to introduce, by the same process as before, a package of small bouquets tied together with a weak thread that will afterward be broken in the hat. We have not figured these bouquets upon the bracket, in order to avoid complication. Of course,

ble. It is on this account that, when there happens to be in any one winter several consecutive days when sleighing is possible, every sort of vehicle adapted to travel on runners is pressed into service, and what may be styled a regular "sleighing carnival" is indulged in.

The Russian sleigh shown in one of the accompanying views is a unique specimen of a class by no means small, it having been the custom of the rich in Russia for many years to provide themselves with very costly and highly ornamented sleighs, as sleighing in that country, during several months of each year, affords about the only means of communication over vast stretches of territory.

The "tub" sleigh and the "tub Victoria" shown, as well as the same general pattern of single sleigh with a rumble, are styles frequently seen on the roads around New York. In the latter case the driver in livery perched high up behind controls the team, the lines passing through rein supports. The dashes are provided with wire fenders and decorated with plumes, the colors of which are in harmony with those of the paint on the sleighs.

There was a time when the patterns for sleighs could be counted on the fingers of one hand; now they are to be numbered by scores. The old square box has almost disappeared. The Albany cutter and its larger counterparts, the four and six seat sleighs, appear in diminished numbers, and contribute their share to the variety of the picture. The Portland sleigh is a favorite among light cutters, while Americanized Russian, Canadian and other types of

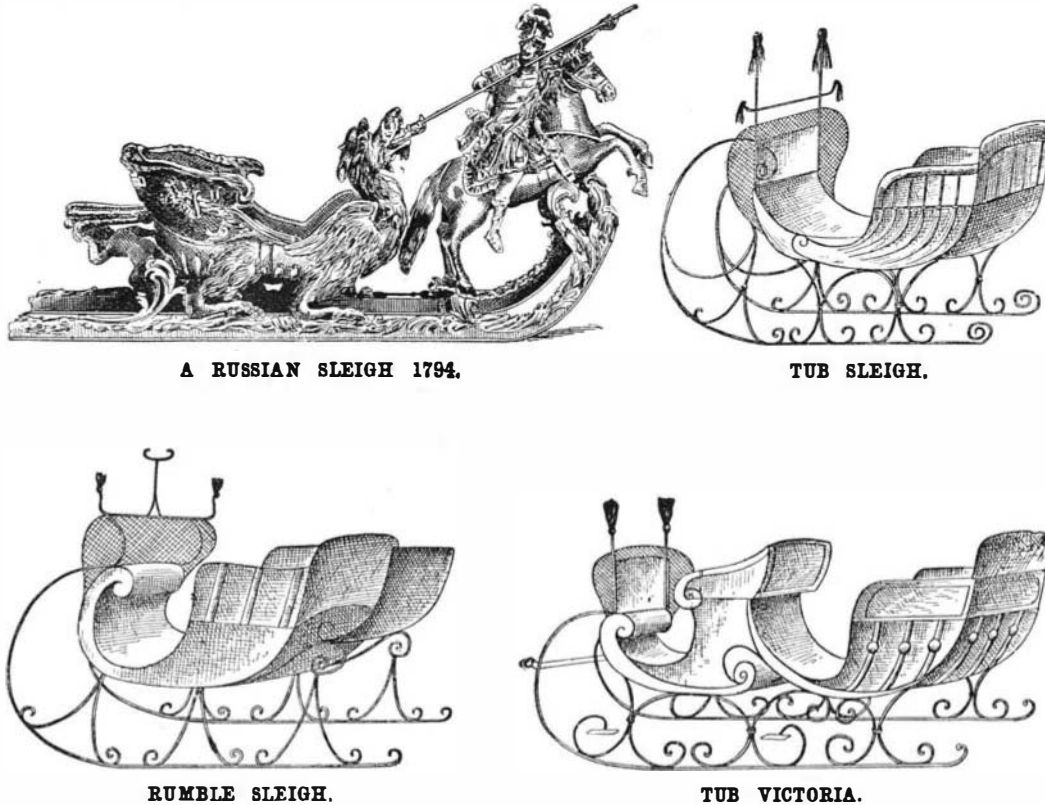
sleighs appear in almost endless variety, forming a most picturesque spectacle, in which color, form and motion are all united to make the "sleighing time" scene on our suburban boulevards a most attractive and animated one.

THE RUSSIAN WAR SHIP RURIC.

The new Russian cruiser Ruric is of 10,923 tons displacement, and measures 435 ft. long, over all, by 67 ft. beam and a draught of 29 ft. 9 in. She is what is frequently called an armored cruiser, and belongs to the class which includes the Imperieuse of 8,400 tons and the Galatea of 5,600 tons displacement; the French Dupuy de Lome of 6,297 tons, the Latourch Neville of 4,745 tons displacement, and the American New York of 8,150 tons and the Maine of 6,648 tons displacement, as well as ships protected with sloping armor like our Blake of 9,000 tons and Edgar of 7,350 tons displacement. The French Cecille of 5,766 tons and the Alger of 4,160 tons displacement; and also the American Columbia of 7,475 tons displacement. *The Engineer* says she is almost 2,000 tons greater displacement than the heaviest of those mentioned above, and in respect of length she eclipses the others—by over 60 ft. in the case of the Blake, the longest of them.

As at present arranged, her protection consists of a belt covering some 80 per cent of total length of the ship, 7 ft. in depth, and tapering from 10 in. at the normal water line to 5 in. below it; over this there is to be a steel deck 2½ in. thick, of curved form, and covering the whole of the vital parts of the vessel, as well as sloping down fore and aft, where the armored belt affords little or no protection. The principal guns will be placed in armored sponsons, two at the forward end and two at the after end of a second-

ary battery, also in armored sponsons, etc. Her armament will consist of four 8 in., sixteen 6 in., fourteen 4.7 in., and eighteen quick-firing guns, and five tubes for Whitehead torpedoes. An armored conning tower for the protection of the captain in action, and the chutes by which the ammunition is conveyed to the guns on upper deck, will also be well protected by steel armor. Her motive power will consist of four sets of

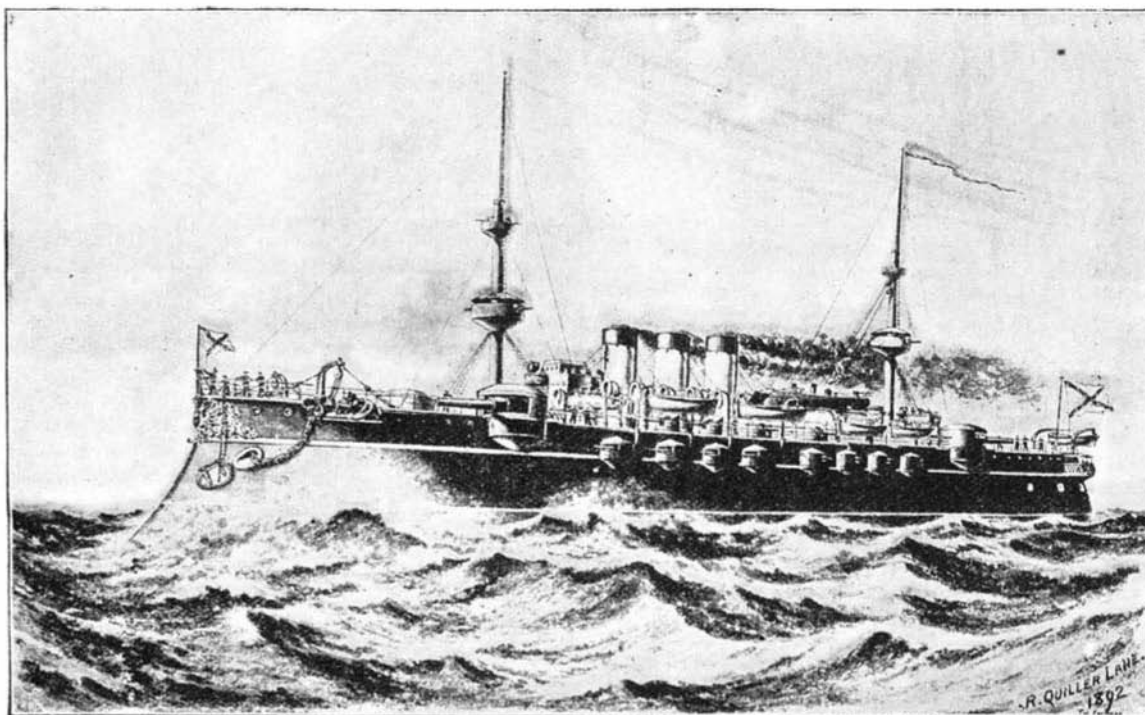


a skillful operator will not hasten to produce the small bouquets. He will advance toward the spectators as if the experiment were ended, and as if he wished to return the hat to the person from whom he borrowed it. Afterward, making believe answer a request, he says: "You wish some flowers, madam? And you too? And are there others who wish some? I will then empty into the hat the rest of my wonderful seeds, and we shall see the result." It is at this moment that the spectators are attentive and that all eyes are open to see the advent of the flowers.

Never forget that with prestidigitators it is almost always too late when one thinks of watching them.—*La Nature*.

VARIETY IN SLEIGHS.

The various designs of sleighs which one sees on the park driveways, and on all the thoroughfares in the neighborhood of large cities, when the winter happens



THE RUSSIAN WAR SHIP RURIC.

to be such as to afford a season of sleighing, afford a highly attractive feature of outdoor life at such periods. In the latitude of New York City, along the Atlantic coast, although the temperature often falls in the winter months to about the zero figure, it is seldom that the snow fall and the temperature are both such, for any considerable period, as to afford any noteworthy season during which riding on runners is feasi-