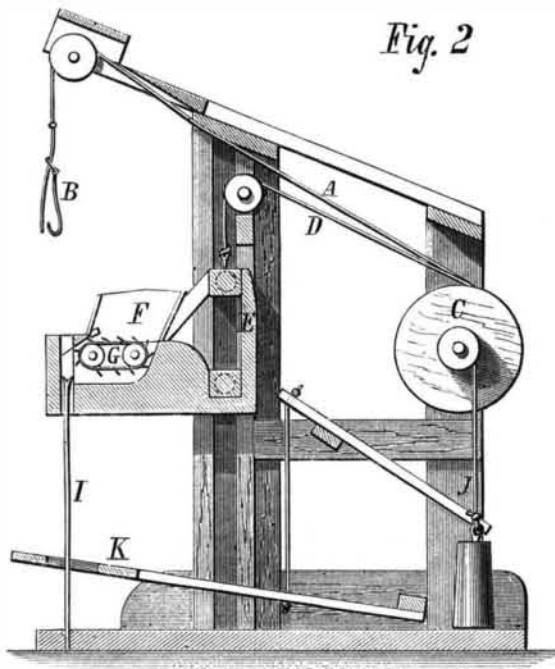


**IMPROVED HORSE COLLAR STUFFING MACHINE.**

We illustrate herewith a new machine for stuffing horse collars, by means of which the work can be much more rapidly performed than is ordinarily the case. Fig. 2 is a sectional view, and Fig. 1 is a perspective view of the device.



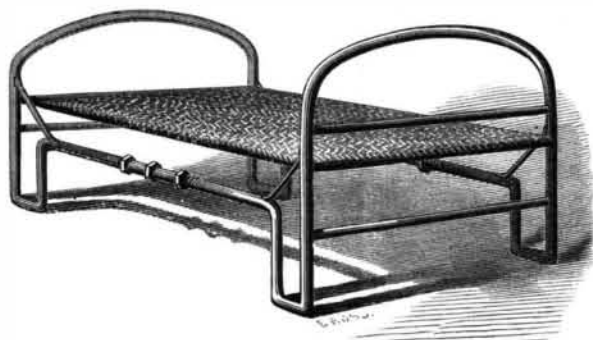
HORSE COLLAR STUFFING MACHINE.

To the upper portion of the frame is attached an inclined bar which carries a pulley, over which passes the rope, A, Fig. 2. Adjustably fastened to said rope is a hook, B, which receives the collar to be stuffed, as shown in Fig. 1. The rope passes back and is wound around a drum, C, generally in the rear portion of the frame. To this drum is also attached another rope, D, which, after passing over a pulley in the frame is fastened to a carriage, E, the wheels of which move up and down in ways in the frame.

The straw or other material is received in the hopper, F, secured to said carriage. The bottom of this hopper is a short endless belt, G, provided with teeth to grasp the straw and carry it forward into a recess in the front part of the carriage. A small arm suitably arranged prevents clogging of the recess. Upon one of the journals of the rollers over which the belt passes, is a pulley, H, which is connected to the roller journal by a pawl and ratchet wheel, so that only when said pulley is turned forward, the roller and belt may be carried with it. Around the pulley, H, passes a strap, one end of which is attached to one extremity of a coiled spring, while the other end of the spring is secured to the carriage. The opposite end of the strap is attached to a segmental pulley, which has a projecting arm to strike against a stop on the frame whenever the carriage moves upward to operate the feed belt, and which is drawn back to its former position by the spring as soon as it is released from the stop.

The rod, I, passes through a hole in the carriage to take the straw from the carrier belt and force it into the collar. To the shaft of the drum, C, is secured a rope, J, which is wound thereon in the opposite direction to that of the ropes previously mentioned, and which carries a weight large enough to overbalance and raise the carriage and its attachments.

The mode of operating the machine is as follows: The workman hangs the collar to be stuffed, as shown in Fig. 1, by one end from the hook on rope, A, and places the straw or other stuffing material in the hopper. He then holds the open lower end of the collar over the hole in the carriage and presses the treadle, K, down with his foot. This, through the intermediate mechanism, raises the weight and allows the carriage to descend, the operator drawing the collar down with it. As the carriage comes down, the rod, I, forces the straw into the collar. The workman then raises



A GASPIPE BEDSTEAD.

his foot from the treadle, the weight is lowered, and the carriage is raised. The ascent of the latter operates the feed belt and feeds more straw into the cavity of the carriage ready to be forced up into the collar as the carriage again descends. In this way it is claimed that a collar can be quickly, easily, and thoroughly stuffed.

Patented through the Scientific American Patent Agency, June 19, 1877, by Mr. John M. Lichtner, Page county, Va. For further information address B. F. Grayson, Jr., Luray.

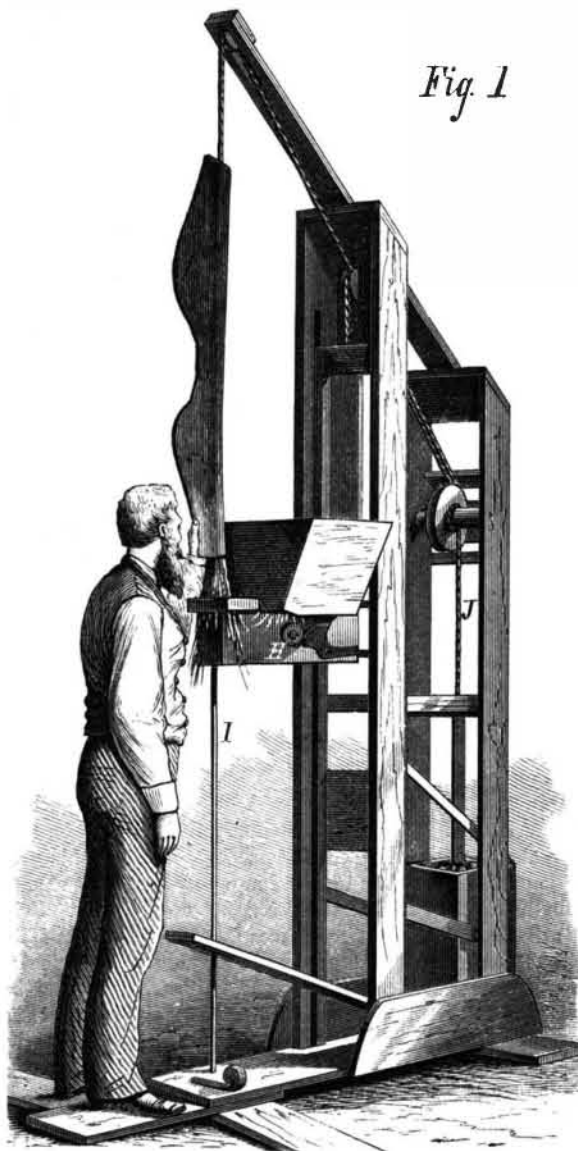
**Testing for Lead in the Glazing of Pottery.**

The method employed by Ebermayer for this purpose is so simple that we give it entire. As we have previously stated, some of the so-called granite ware contains lead, and the same method may probably be adopted in testing utensils made of this ware. Ebermayer takes weak commercial vinegar, which he dilutes with four parts of water, and adds to each liter of vinegar 50 grains (or 5 per cent) of table salt. The addition of the salt might be entirely omitted, as the chloride of lead formed is but slightly soluble in salt water. If the glazing is good, it will not be attacked either by dilute vinegar or salt water; if it is poor, more lead will be dissolved by the vinegar than by the brine. The vinegar and salt is left in the vessel 8 to 12 hours. A measured quantity is employed, say  $\frac{1}{4}$  liter, or  $\frac{1}{2}$  pint, and in repeating the test, use a little less of the liquid, so that it will not stand higher than before, and dissolve fresh portions of the glazing. After 8 or 12 hours, the contents of the vessel are tested for lead with sulphide of ammonium. If no precipitate of sulphide of lead is formed, or at most a light yellow to light brown color is produced, the vessel is not to be considered dangerous to health. If, however, a black precipitate, or dark brown color is formed, from which a precipitate falls in a short time, the glazing of such vessel is suspicious.

These vessels are then rinsed out with water, and again filled with the diluted vinegar. After 8 or 12 hours it is again tested with sulphide of ammonium. Those vessels which no longer yield any precipitate are to be regarded as good and fit to use. In these vessels there is nothing to fear provided they are boiled with vinegar and water before using. If a precipitate is formed a second time, the vessel is totally unfit for use, and dangerous to health.

**A GASPIPE BEDSTEAD.**

An ingeniously simple bedstead can be made of iron pipe in the manner illustrated in the annexed engraving. Two



HORSE COLLAR STUFFING MACHINE.

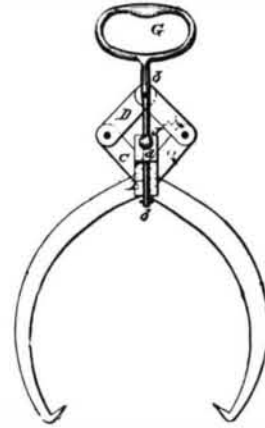
lengths of pipe are bent, each in the same manner, as follows: A distance equal to the desired width of the headboard is marked off at the middle of one of the pieces. Each end is then bent in U shape to form legs, and the arms of the U are bent at right angles to form side pieces. The other length of pipe is bent in precisely the same way. Then the two parts are joined by couplings on the side bars, braces are added as shown, a wire mattress is attached, and the bedstead is complete. This was patented April 24, 1877, by Mr. W. J. Myers, of Hartford, Conn.

**Exportation of American Beef.**

A statement is made by the Bureau of Statistics that during eighteen months ending with March, 1877, the total exports of fresh beef from the United States to Great Britain amounted to 34,278,810 lbs., the money value of which was \$3,026,483. Of this amount 29,601,250 lbs. went from New York, and 4,677,560 from Philadelphia. The exportation has been gradually increasing, 36,000 lbs. only having been sent in October, 1875, and 6,707,855 in March last.

**NEW ICE TONGS.**

The annexed engraving represents a new tongs for grasping and hoisting or lifting any desired article. It consists of two bowed arms, pivoted together and provided at their lower ends with prongs. Above the pivot the arms form levers, C, crossing each other, as shown, and to the upper ends of these levers are pivoted two links, D, the upper ends of which are pivoted together to a shank, b, projecting downward from the handle, the parts together forming a toggle-joint. The handle shank, b, passes through a guide or projection, d, attached to a bar, I, which is pivoted to the tongs. From this guide or projection extends a knob, S, as shown. The tongs are operated by holding them with the handle, G, and striking them down upon the block of ice, for example, when the toggle joint spreads so as to open the arms and allow the jaws to take hold. Then, by raising the tongs, the ice is lifted by them, and the heavier the ice is, the closer the tongs hold it. By taking hold of the knob, J, with the left



hand, while the right hand has hold of the handle, G, the arms can be opened easily and guided so that the jaws, B, can take proper hold of the ice.

This device was patented February 29, 1877, by Mr. Peter Euler, of Troy, N. Y.

**New Metallurgical Treatment of Nickel.**

M. Hersel proposes the following treatment of the oxides of nickel, and especially of the hydrosilicate of nickel and of magnesia. The nickel oxides are mixed with alkaline sulphides or persulphides, or with alkaline earths variable according to the composition of the ore and the nature of the gangue. The mixture is melted in a suitable furnace. The sulphides or alkaline earths react on the oxides and on the silicate of nickel formed by double decomposition of the nickel sulphide and the alkaline silicates. The gangue combines with the melted mass on the furnace hearth and produces scoriae: from the latter the nickel sulphide is separated in the same apparatus. Fusion gives: 1. Sulphide of nickel freed almost completely from sulphide of iron. 2. Alkalies or alkaline earths in excess. 3. Silicates forming slag. It remains only to transform the sulphide of nickel into oxide and to treat the latter according to methods commonly known.

**How the Chinese Make Tea.**

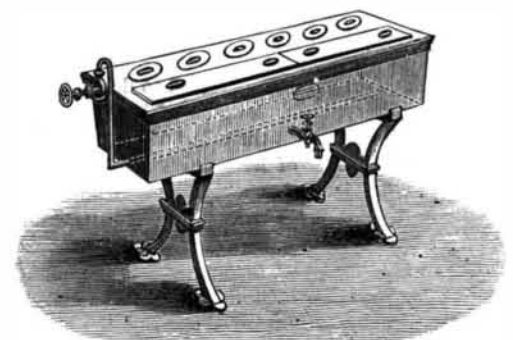
The upper classes in China, from very long experience in the matter, select the very choicest tea which they can afford—generally the young leaves from old trees. A few of these leaves are put into a cup, and water, a little short of the boiling point, is added. As soon as it is sufficiently cool, which does not take many seconds, for the cups are very small, the beverage is quaffed, much after the same manner as the Turks do coffee, so hot that it is commonly asserted they drink it boiling. By the above quick method, they skim, as it were, only the superficial flavor of the leaf, which is very capable of yielding up, when required, a bitter extract, which they avoid. This is the prime source where the "used leaves," spoken of by analysts, come from.

**American Institute Exhibition.**

The 46th Exhibition of the American Institute, New York City, promises to be of unusual value. Our inventors and manufacturers have at last learned the value of meeting the purchaser and consumer face to face. For rules, space, etc., address the General Superintendent.

**STEAM GLUE-HEATING APPARATUS.**

This apparatus has been devised by Messrs. W. Richardson & Co., of Darlington, England, to meet a want which has been felt in joinery shops and other establishments where there is a considerable consumption of glue. As will be



seen, it is a very simple affair. There is a cast iron pan or trough, which, when filled to about two thirds with water, receives a half-inch steam pipe, and when the water boils, the round covers on the top of the apparatus are removed, the glue cans being substituted. The oblong spaces in the top (also provided with covers) are intended to receive perforated zinc troughs for boiling the breakfast cans of the workmen. Hot water can always be had from the apparatus, and its use implies saving of material, trouble, and fuel.