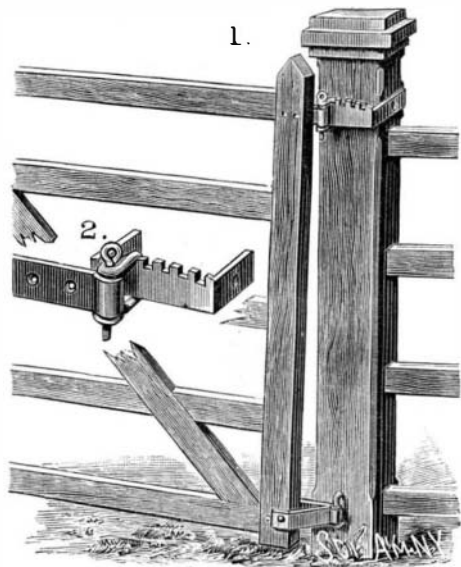


**IMPROVED GATE HINGE.**

This hinge is so arranged as to hold the free end of the gate at any desired elevation to free it from snow, to compensate for sagging, and to adjust it so that it will close by its own gravity. The lower hinge consists of an eye formed on a strap, which embraces both sides of the stile of the gate, the eye receiving a pintle attached to the post. The upper hinge consists of a

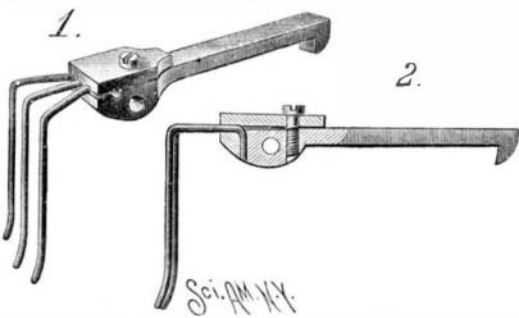


**COLE'S IMPROVED GATE HINGE.**

piece of round iron which is bent U-shaped, and has its ends flattened and perforated to receive the hinge pin. The U-shaped bar is received upon a curved notched bar bent twice at right angles and secured to opposite sides of the post, with the notched portion parallel with and a short distance from the face of the post. To adjust the gate at the desired angle, it is lifted up, when the upper shank of the U-shaped bar may be inserted in the proper notch in the curved bar, to hold the free end of the gate at the desired elevation. This invention has been patented by Mr. Carey W. Cole, of West Hartford, Mo.

**FILLING FORK FOR LOOM STOP MOTIONS.**

The object of this invention, which has been patented by Mr. John A. Platt, of Langley, S. C., is to provide a filling fork for the stop motion of looms, so constructed that the tines may be taken out, for replacing them if broken, without removing the fork from the loom. The body of the fork is formed at one end with a hook and at the other with an orifice in the usual way. The tines are bent to the shape clearly shown in the sectional view, Fig. 2, and are held to the body by a clamp through which passes a screw. Shallow grooves are formed in the body and clamp to form seats for the tines. By constructing the fork in this manner, a broken tine may be replaced by a new one at a small cost, and without causing delay.

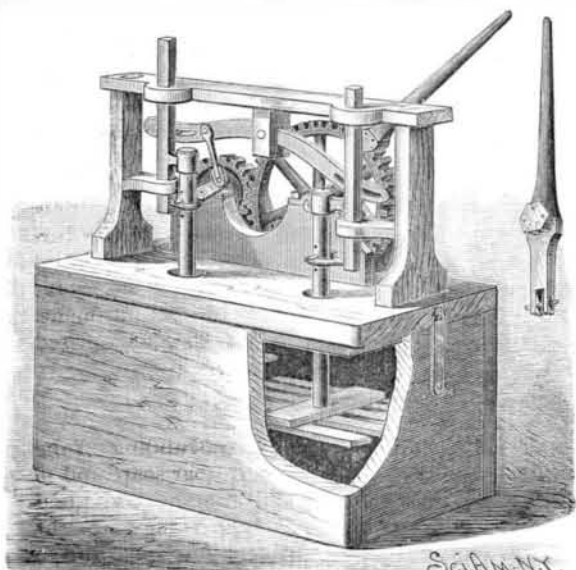


**PLATT'S FILLING FORK FOR LOOM STOP MOTIONS.**

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**IMPROVED CHURN.**

The driving mechanism of the churn here illustrated is fixed to the cover, and consists of a large gear wheel, provided with a crank arm, and meshing with a smaller



**LASSWELL'S IMPROVED CHURN.**

wheel carried by a crank. This crank is connected by means of a pitman with a beam lever, whose ends are formed with elongated slots, in which rest pins carried by vertical strips sliding in ways formed in the frame. The upper ends of the dasher rods fit within sockets carried by the vertical strips. The weight of the dashers and their rods is supported by loops that project inward from the lower ends of the strips, the rods being made with holes through which pins are passed. The upper portions of the dasher rods are of irregular shape, so that the relative position of the dashers may be changed by raising or lowering the dashers, and by changing the position of the pins. The beam lever is provided with a number of apertures, so that, by changing the position of the end of the pitman, the throw of the dashers may be increased or decreased. The churn may be driven by the crank arm or by a lever which is shown in place on the large wheel and also detached.

This invention has been patented by Mr. John Lasswell, of Augusta, Kansas.

**Machine to Make Conductors Honest.**

A checking apparatus for indicating and checking distances traveled by passengers on tramcars, omnibuses, cabs, and other vehicles is being made by Mr. H. Woolfe, of Barrington Road, Liverpool. The apparatus is small, and is to be fixed in a conspicuous position at the entrance of the car, and connected with the axle or wheel. The hand on a dial indicates the distance traveled. A gong on the top of the apparatus sounds every quarter of a mile, and the figures on the stamping or checking apparatus alter every quarter of a mile, corresponding with the number of miles indicated on the dial. The passenger on entering the car receives from the guard a ticket, which is stamped by the apparatus with the number of miles then shown on the indicator. This ticket is retained until the passenger gets off, when a glance at the indicator shows exactly how far he has traveled, and he pays accordingly. The guard again stamps the ticket, and the difference between the two numbers stamped thereon is the distance traveled, which must be accounted for by the guard when he delivers up his tickets at the office every journey.

To laundry shirts to give the fine gloss to the bosoms, take of white wax one ounce, spermaceti two ounces, melt them together with a gentle heat. When you have prepared a sufficient amount of starch, in the usual way, for a dozen pieces, put into it a piece of the polish about the size of a large pea, using more or less, according to large or small washings. Or thick gum solution (made by pouring boiling water upon gum arabic) may be used. One tablespoon to a pint of starch gives clothes a beautiful gloss.

**Adulteration of Silk.**

The weighting of silk by means of tin is, according to M. Moyret, increasing every day, and some surprising results are obtained on raw, boiled off, or souple silk, an increase of from 100 to 120 per cent in weight being obtained. The bichloride of tin obtained by the oxidation of ordinary tin salt (or stannous chloride) by means of aqua regia is in favor for black dyed silks, but for whites or colors it has some drawbacks, and is therefore not used. For the purpose of charging or weighting white or light colored silks, better results are obtained from the tin bichloride produced by the oxidation of tin salt by means of chlorate of potash and hydrochloric acid.

**FORCE PUMP.**

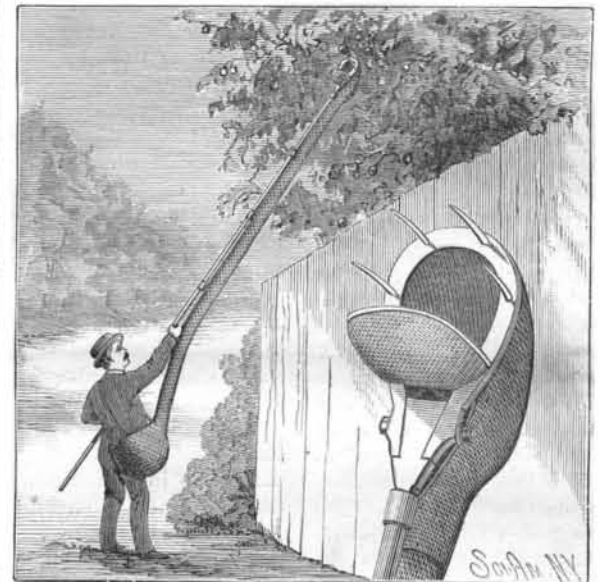
This pump is designed to be submerged in the water of the well or reservoir, and is supported by suitable framework. The lower end of the discharge pipe, B, is provided with a T-piece, C, each branch of which is connected with the small end of a conical water chamber, E. To flanges on the lower ends of these chambers are secured annular blocks, F, to the upper surface of each of which is hinged a valve which closes over an opening through the block. To the flaring lower edge of each block is secured a bellows, to the lower edge of which is secured a board, H, having a suction opening covered by a valve hinged to the board. The rear edge of each board is connected by a flexible strap, g, with the annular block, forming a hinge upon which the board is swung in the operation of pumping. To the front edge of each board is secured a plate, to which is attached a rod, i, leading to a lever pivoted to a standard on top of the casing. By oscillating the lever, the bellows are expanded and contracted alternately, and the water is forced through the discharge pipe.

This invention has been patented by Mr. J. W. Van Order, of Arlington, Oregon.

**FRUIT PICKER.**

The pole is made in two sections, connected by ferules. On the upper end of one pole is held a bow, from which pins project. Projecting from the lower part of this bow is a second one, to which an apron made of suitable fabric is secured. This apron is connected

with the pocket secured to the first bow and with the fabric tube which extends down the pole. The lower end of the tube, which is held to the pole by loops, is united by snap hooks and rings with a bag provided with a shoulder strap for supporting it. In using this picker, which is the invention of Mr. Washington B. Mayfield, of South West City, Mo., the bow is placed under the fruit, which is loosened by means of the pins

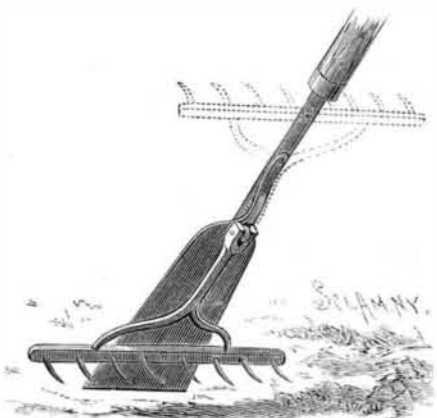


**MAYFIELD'S FRUIT PICKER.**

or by either of the bows. The fruit drops into the pocket, and slides down the tube into the bag. The apron prevents it from falling outside of the pocket. When not in use, the picker can be folded very compactly.

**GARDEN IMPLEMENT.**

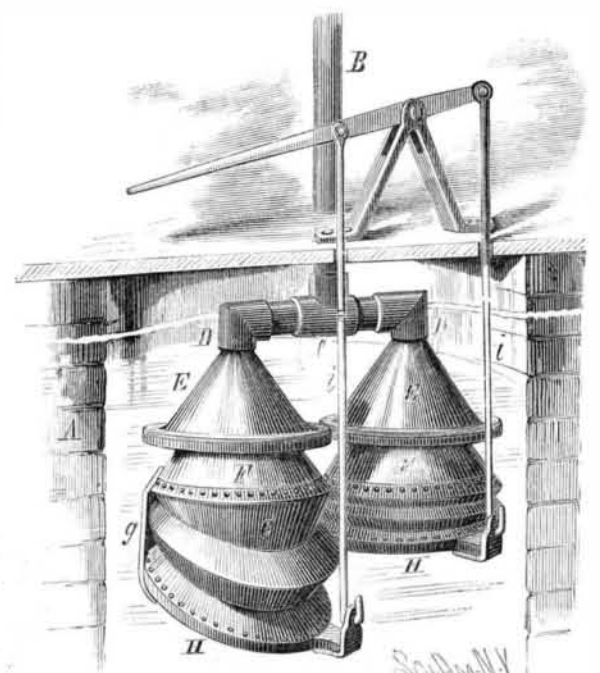
This simple and efficient implement may be arranged as a rake, or adjusted for use as a spud. Upon the shank is formed a spud of the usual size and shape, and projecting from the side of the spud at the top of the blade is an ear, to which is pivoted



**RANKINS' GARDEN IMPLEMENT.**

the shank of the rake. A spring is so arranged as to hold the rake in position for use and to hold it in a folded position, as indicated by the dotted lines. Dowel pins project from opposite sides of the head of the rake. One of these enters a hole in the spud blade when the rake is extended for use, and the other enters a hole in the shank when the rake is in a closed position. This implement is especially useful for working among roots, for loosening up the earth; also for exterminating plantain and similar weeds.

This invention has been patented by Mr. William J. Rankins, of Augusta, Kentucky.



**VAN ORDER'S FORCE PUMP.**