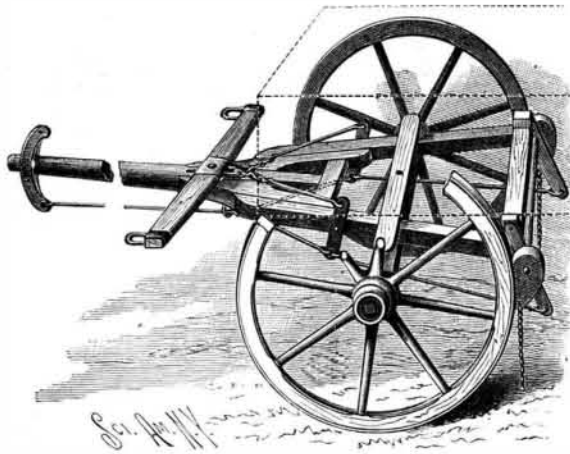


AN IMPROVED VEHICLE BRAKE.

A brake capable of automatic application, and which is designed to not only lock the wheels when the vehicle is descending a hill, but to lock them when the vehicle is stopped in ascending a hill, is illustrated herewith, and has been patented by Mr. John Fraser.



FRASER'S VEHICLE BRAKE.

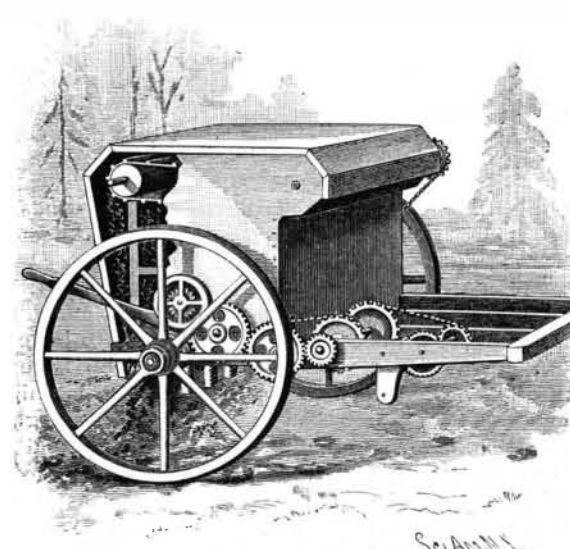
A clevis is secured to the forward end of the tongue, and a vertical yoke, with eyes at its ends, is pivoted thereon below the tongue. Forward of the axle a lever is vertically pivoted to the outer side of each section of the forward hounds, and the lower end of this lever is connected by rods or links with a rod passing through an eye and extending on the under side of the tongue to a pivotal connection with the vertical yoke on the forward end of the tongue. The tongue has a slot in which the bolt carrying the doubletree is held, two lengths of chain from a central staple on the doubletree being attached to links or rods which are connected to the upper ends of the levers vertically pivoted on the outer side of the hounds. A brake arm is pivoted to each extremity of the cross bar connecting the back ends of the hounds, and a brake shaft held by the arms carries on each end a brake shoe, having a concave and an opposing convex face, the brake shaft passing through the shoes near their larger end. A jack chain is attached to the lower pointed end of the brake shoe. In operation, when the horses hold back, and draw upon the upper end of the yoke on the forward end of the tongue, the brake beams are drawn forward, and their shoes come into frictional contact with the wheels, while as the horses start forward the doubletrees are also moved forward and the levers connected therewith carry the brake arms outward, relieving the wheels from contact with the brake shoes. To block the wheels in going up a hill, the jack chain is hooked in the stake ordinarily attached to the bolster of the vehicle, when the driver can, with a slight pull, bring the shoes in firm contact with the wheels.

For further particulars with reference to this invention address Mr. G. A. Upper, Simcoe, Ontario, Canada.

AN IMPROVED FERTILIZER DISTRIBUTER.

The illustration herewith represents a machine for distributing commercial fertilizers and sowing grain broadcast. It has been patented by Mr. Charles Greaves, of the Society of Shakers, Mount Lebanon, N. Y. The hopper is divided into a series of compartments by transverse partitions, each of the compartments having a vertically adjustable bottom or follower, connected with a vertical spaced rack.

The drive wheels are secured to the axle by means



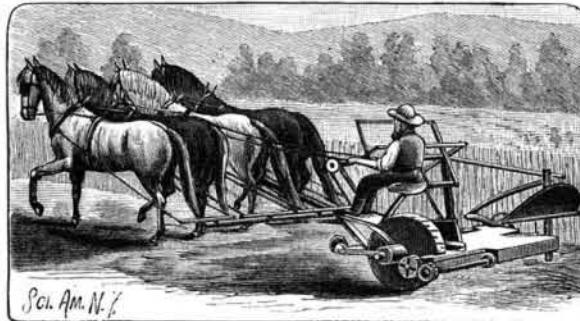
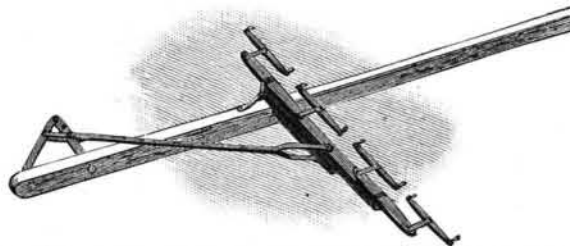
GREAVES' "SHAKER" FERTILIZER DISTRIBUTER.

of a clutch, one section of which is integral with the inner face of the wheel hub, while its opposing section is made fast to the axle, the sections engaging each other as the machine is drawn forward and passing one another freely when the machine is backed. The racks of the followers are guided by a notched bar attached to the frame in advance of the axle, and

in advance of the racks is journaled a shaft upon which are pinions adapted to mesh with the racks. The cover of the hopper has at its front and rear parallel shafts carrying near each end a sprocket wheel, the wheels being connected by endless chain belts, and these belts being united by strips of wood, so that as the belt is operated the strips pass directly over the top of the hopper, motion being communicated by means of a sprocket pinion and chain belt from a shaft journaled in the frame in advance of the hopper. There are also shafts journaled in the frame, in advance of the hopper, with suitable gears and pinions, by which the followers in the several compartments of the hopper are elevated, as the machine moves forward, at such rate of speed as desired, pressing the fertilizer or grain up against the strips of wood upon the endless belt, which is rapidly revolving at the top, the machine being adjustable so that it may be made to distribute fifty or one hundred and so on up to one thousand pounds of fertilizer, or a proportionate amount of seed, to the acre. When it is not desired to operate the hopper, the pinion shaft operating the racks of the followers is thrown out of gear by means of the lever at one side.

AN IMPROVED DRAUGHT EQUALIZER.

A device especially adapted for attachment to the tongues of harvesters, in connection with which three or more horses may be employed, is illustrated herewith, and has been patented by Mr. Jonas P. McDowell, of Foote, Iowa. A triangular iron is bolted on the left hand side of the inner end of the tongue, the iron having different apertures in its forward or straight member. In advance of this iron a horizontal arm is pivoted on the right hand side of the tongue, and upon the outer end of this arm an evener is centrally pivoted. A connecting rod unites the evener and its



McDOWELL'S DRAUGHT EQUALIZER.

supporting arm with the triangular iron, the adjustment of the connecting rod with either one of the apertures in the iron being made according to the strength of the animals on either the right or left of the tongue. At each end of the evener, upon its upper side, a doubletree is pivoted, preferably by means of a clevis or clip, whereby the entire draught is received upon the connecting rod and the triangular iron. To the rear of the evener, when parallel with the supporting arm, a stop block or bracket is vertically secured to the tongue, adapted to limit the rearward movement of the left extremity of the evener, and prevent the doubletree at that end from interfering with the binder. The stop also serves to hold the evener at a right angle with the tongue when turning corners.

Cedrus Deodora.

This is the great cedar of the Himalayas, and, under cultivation, is the most gracefully beautiful of all conifers.

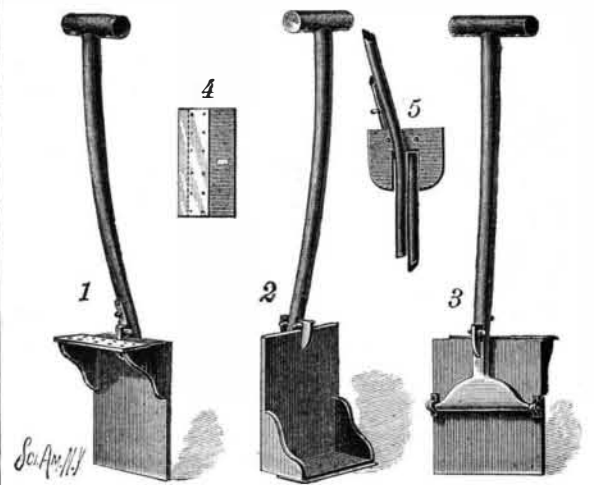
A well grown specimen is sure to inspire in one a rare feeling of adoration. *Cedrus deodora* in its native habitat often grows to a height of several hundred feet, but under cultivation it has not as yet reached any great height.

In California, as in the Southern States, it is perfectly at home, and though slow in growth for the first few years, is beautiful in all stages, and no grounds are complete without at least one specimen. There is a notably fine tree upon the grounds of O. W. Childs in Los Angeles. Pasadena and Oakland also boast of handsome specimens.

In symmetry the tree is perfect, the branches are broad at the base, and reclining on the ground, then taper gradually to a sharp drooping apex. The thickest, tasseled branches give a soft, billowy effect, and the light silvery-green foliage forms a striking contrast to surrounding trees or plants. *Cedrus deodora*, like *S. verticillato*, the Japanese umbrella pine, should be planted much more generally, for such natural beauty is beyond moneyed value, yet is within the reach of every one who has a strip of ground.—*Cal. Florist.*

AN IMPROVED SNOW SHOVEL AND SCRAPER.

A combined snow shovel and scraper, designed to be readily changed from a shovel to a scraper, and vice versa, is shown herewith, and has been patented by Mrs. Lydia Fairweather, of Richmond Hill, L. I., N.

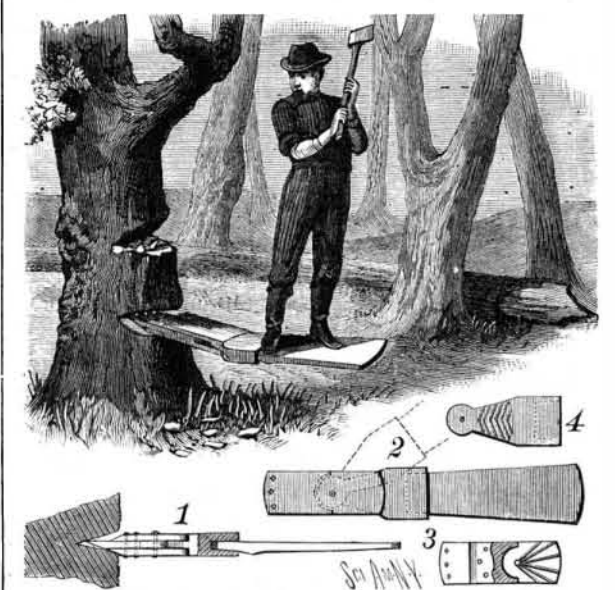


FAIRWEATHER'S SNOW SHOVEL AND SCRAPER.

Y. Fig. 1 shows the tool in form for use as a shovel, and Fig. 2 as a scraper, Fig. 3 being a bottom plan view of the shovel, and Fig. 4 an end view of the scraper. The handle is pivoted to the bottom of the scoop near its middle, and has a longitudinal slot in which is held a key adapted to pass on to the handle and the bottom of the scoop, as shown in Figs. 2, 3, and 5, to lock the scoop in place in either position on the handle, this key being held in place by pins or locked by a latch. To change the tool from a shovel to a scraper, the latch holding the key is unlocked, and the key disengaged from the bottom, which is then turned on its pivots on the handle so that the front end of the bottom extends rearward under the handle, as shown in Fig. 2. The key is then made to engage the bottom in this position on the handle, and is locked in place, the scraper, which had before been on the top at the rear, now extending downward on the front end of the bottom. On the outer edge of the endpiece is a transversely extending metallic plate, forming a scraper for loosening or removing snow or ice when this end is turned down.

AN IMPROVED FOOT BOARD FOR WOOD CHOPPERS.

In felling large, heavy trees, where it is necessary to cut them considerably above the roots, to get rid of the heavy end, which would sink the butt too much in the water when the tree is made into a raft, and in other cases, a foot board is sometimes used for the chopper to stand upon and make a higher cut. The illustration herewith represents a device to facilitate such work which has been patented by Mr. Aaron L. Stevens, of Little Falls, Washington Territory. The foot board has an arm, beveled at its front end, to pass into a notch in the tree, as shown in Fig. 1, and on the inner end of the arm are upwardly projecting points adapted to engage with the tree. The outer end of this arm is provided with two arms, one above the other, between which is pivoted a tongue, having at its outer end a socket into which fits one end of a board of suitable width and length for the operator to stand on when chopping the tree. Fig. 2 is a plan view of the device, Figs. 3 and 4



STEVENS' FOOT BOARD FOR WOOD CHOPPERS.

being plan views of the arms and the pivot head of the board, respectively, these having roughened surfaces and notches, whereby the head is conveniently held in any desired position on the arm. The board can be moved around, as indicated in dotted lines in Fig. 2, to promote the convenience of the wood chopper as his work proceeds.