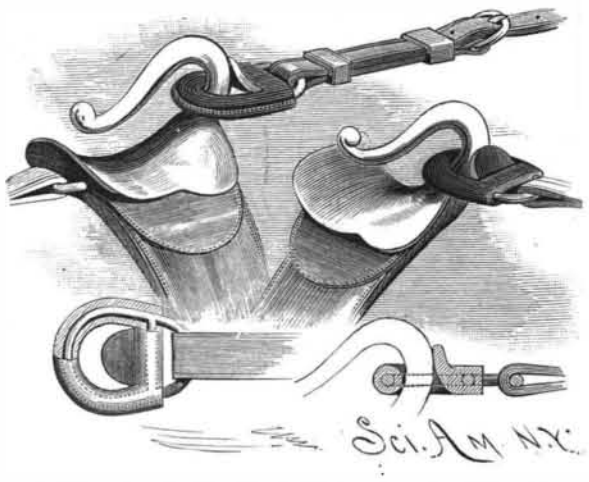
SAFETY LOOP FOR HARNESS CHECKS.

This loop is used on the check rein, and engages with the water hook on the saddle. It is so constructed that it cannot become detached from the hook by the working or throwing of the horse's head. The loop is composed of a core or body part, of rigid material, and a covering either of leather stitched over it or of rubber moulded to it. This covering is provided with a small projection on its inner front side, which forms a flexible tongue, arranged so that when the loop is engaged with the hook the tongue is turned upward, so as to bear against the hook. This will prevent the removal of the loop, the tongue preventing it from passing over the usual thickened outer end of the hook. When unchecking the horse, the holding tongue will be flexed in a reverse direction, out of line with the loop, which can then be readily removed from the hook.

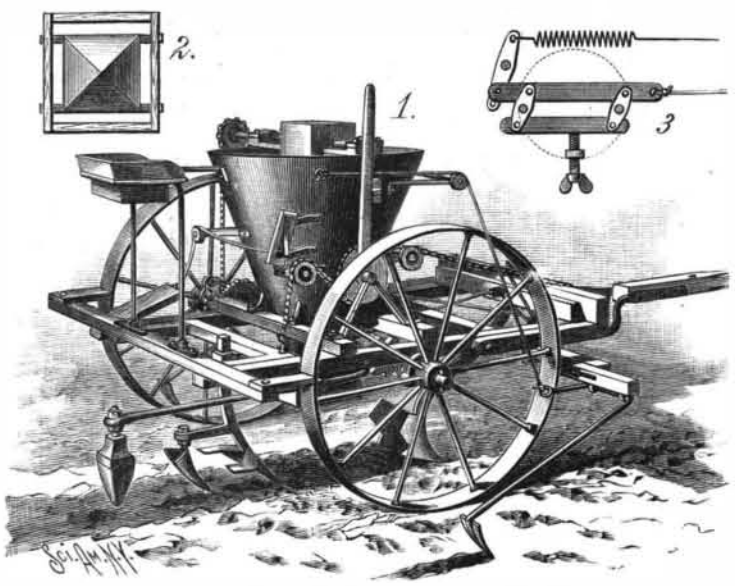


DENNIS' SAFETY LOOP FOR HARNESS CHECKS.

This invention has been patented by Mr. E. K. Dennis, of New Bedford, Mass.

FERTILIZER DISTRIBUTER.

This distributer is so constructed that the discharge opening can be closed, the stirring mechanism thrown out of gear, and the plows raised from the ground by operating a single lever; all these parts can be returned to working positions by operating a treadle which can be readily adjusted to discharge more or less fertilizer to the acre. To the wheels are pivoted pawls which engage with ratchet wheels on the axle, so that the latter will be revolved only during the forward movement of the wheels. A furrow is opened to receive the fertilizer by a double mouldboard plow whose standard is secured to the cross bar of a U-shaped frame hinged to the side bars of the main frame. To the hinged frame is attached the end of a chain leading to a pulley secured to a lever the rearward movement of which raises the plow from the ground. The hopper is made funnel-shaped, and has a rectangular opening in its bottom, through which the fertilizer is pushed by radial fingers attached to the axle. Two parallel plates, Fig. 3, are so arranged as to regulate the size of the discharge opening. The plates are operated by means of a cord attached to the chain, so that the movement of the lever to raise the plow will also close the plates and stop the discharge of the fertilizer. To the opposite sides of the lower end of a vertical shaft revolving in bearings in cross bars attached to the hopper are secured arms, which keep the fertilizer in the lower part of the hopper stirred up so that it will be fed out evenly by the fingers. As the fertilizer falls through the discharge opening it falls upon a pyramid-shaped divider, Fig. 2, by which it is separated, to prevent it from falling to the ground in bunches. The fertilizer is mixed with soil in the bottom of the furrow by a plow made with wings upon each side; this plow can be adjusted to work at any desired depth in the ground. A channel is opened in the mixed soil and fertilizer by a small double mouldboard plow. These plows are also raised from the ground by the lever. To the forward part of the side bars of the main frame is attached a cross bar, whose ends project beyond the wheels; the ends of this bar, which can be extended more or less as the desired distance apart of the rows may require, carry small marking plows. Arranged so as to fall in the furrow in the rear of the center plows is a conically pointed marker of sufficient size and weight to form holes to receive the potatoes to be planted. The marker is operated by a cam wheel having such a number of cams as will cause the marker to form holes at the proper distances apart.



VAN SICLEN'S FERTILIZER DISTRIBUTER.

This invention has been patented by Mr. James Van Siclen, of Jamaica, N. Y.

A Notable Storm.

At a recent meeting of the Royal Meteorological Society, a paper was read on the gale of October 15–16, 1886, over the British Islands, by Mr. C. H. Harding. The storm was of very exceptional strength in the west, southwest, and south of the British Islands, but the principal violence of the wind was limited to these parts, although the force of a gale was experienced generally over the whole kingdom. By the aid of ships' observations, the storm has been tracked a long distance out in the Atlantic. It appears to have formed about 250 miles to the southeast of Newfoundland on the 12th, and was experienced by many ocean steamers on the 13th.

When the first indication of approaching bad weather was shown by the barometer and wind at our western outposts, the storm was about 500 miles to the west-southwest of the Irish coast, and was advancing at the rate of nearly 50 miles an hour. The center of the disturbance struck the coast of Ireland at about 1 A.M. on the 15th, and by 8 A.M. was central over Ireland. The storm traversed the Irish Sea, and turned to the southeast over the western Midlands and the southern counties of England, and its center remained over the British Isles about 34 hours, having traversed about 500 miles. The storm afterward crossed the English Channel into France, and subsequently again took a course to the northeastward, and finally broke up over Holland. In the center of the storm the barometer fell to 28·5 inches; but, as far as the action of the barometer was concerned, the principal feature of importance was the length of time that the readings remained low.

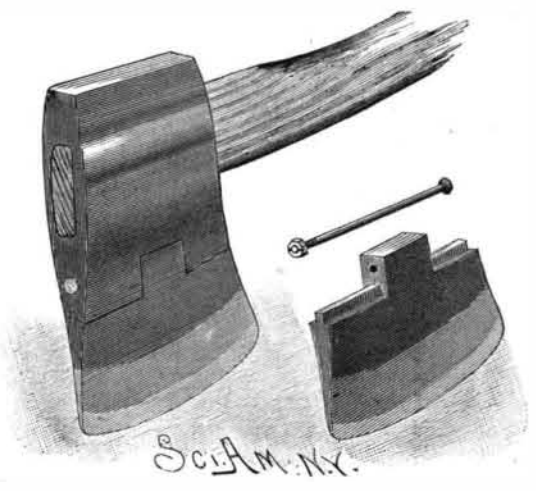
At Geldeston, not far from Lowestoft, the mercury was below 29 inches for 50 hours, and at Greenwich it was similarly low for 40 hours. The highest recorded hourly velocity of the wind was 78 miles, from northwest, at Scilly on the morning of the 16th; but, on due allowance being made for the squally character of the gale, it is estimated that in the squalls the velocity reached for a minute or so the hourly rate of about 120 miles, which is equivalent to a pressure of about 70 pounds on the square foot. On the mainland the wind attained a velocity of about 60 miles an hour for a considerable time; but, without question, this velocity would be greatly exceeded in the squalls. In the eastern parts of England the velocity scarcely amounted to 30 miles in the hour. The force of the gale was very prolonged. At Scilly the velocity was above 30 miles an hour for 61 hours, and it was above 60 miles an hour for 19 hours, while at Falmouth it was above 30 miles an hour for 52 hours.

The erratic course of the storm and its slow rate of travel while over the British Islands were attributed to the presence of a barrier of high barometer readings over Northern Europe, and also to the attraction in a westerly direction, owing to the great condensation and heavy rain in the rear of the storm. The rainfall in Ireland, Wales, and the southwest of England was exceptionally heavy. In the neighborhood of Aberystwith the fall on the 15th was 3·83 inches, and at several stations the amount exceeded 2 inches. Serious floods occurred in many parts of the country. A most terrific sea was also experienced on the western coasts and in the English Channel, and the number of vessels to which casualties occurred on the British coasts during the gale tell their own tale of its violence. The total number of casualties to sailing vessels and steamships was 158, and among these were five sailing and one steamship abandoned, five sailing and one steamship foundered, and forty-two sailing and two steamships stranded. During the gale the lifeboats of the Royal National Lifeboat Institution were launched fourteen times, and were instrumental in saving thirty-six lives.

THE total number of visitors to the Colonial Exhibition, London, recently closed, was 5,550,749, and the average daily attendance was 33,846.

AX WITH DETACHABLE BLADE.

This ax is provided with a detachable blade which can be renewed when worn or destroyed, thus saving the expense of a new ax, otherwise necessary. The body of the ax is formed with a transverse groove and a deeper slot at right angles thereto, to receive a corresponding tongue and projection or tenon on the detachable bit, the parts being rigidly united by a bolt passing transversely through the body and the extremity of the tenon. The advantages of this construction consist in its great simplicity and consequent cheapness, resulting from the facility with which the parts can be made, the close-fitting joints secured, and the easy detachability of the parts, a single bolt alone having to be removed to permit the withdrawal of the blade.



GOODIER'S AX WITH DETACHABLE BLADE.

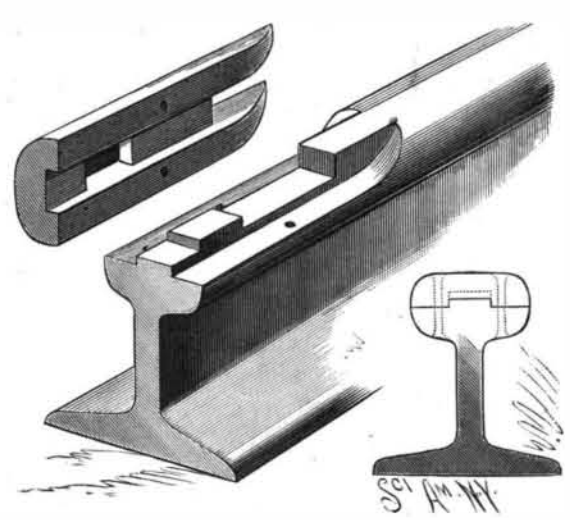
This invention has been patented by Mr. Nicholas Goodier, of Dardanelle, Ark.

Steaming vs. Fumigating.

A correspondent of *The Garden* directs the attention of plant growers and orchid growers to the advantages of the practice of boiling tobacco juice in houses for the destruction of insects over the old practice of fumigating. One great advantage is that the steam does not scald nor discolor the most tender foliage nor the most delicate flower; that it can be done without previous preparation, *i. e.*, drying the foliage, etc.; and that the operator can walk about in the house if necessary during the operation.

REPAIRING RAILS.

When railroad rails are battered and worn by use, they are generally removed and the worn portion cut away, thereby shortening the rail and necessitating the relaying of the track. The design of this invention, which has been patented by Mr. George Stratton, of Plainview, Minn., is to repair the rails without removing them from the roadbed, and to provide a rail end better adapted to withstand the wear than the end of the ordinary rail. The end of the rail is cut away so as to form rabbets, leaving a tongue in the middle of the head. The tongue is then cut transversely, so as to leave a lug. The end is then fitted with a cap made of steel of superior quality, hardened and tempered to enable it to withstand the wear to which it is subjected, and secured in place by rivets or bolts. The tongue being received in a corresponding groove in the cap prevents the latter from moving laterally, while the lug prevents end motion. The end may be milled away to leave a T-shaped tongue, which is received in a recess in the cap. At the ends of the recess are holes to receive rivets whose L-shaped heads engage the tongue. The rivets are upset so as to thoroughly fill the holes, and are finally riveted down in the countersunk upper ends of the holes.



STRATTON'S DEVICE FOR REPAIRING RAILS.