

**Improved Rotary Harrow.**

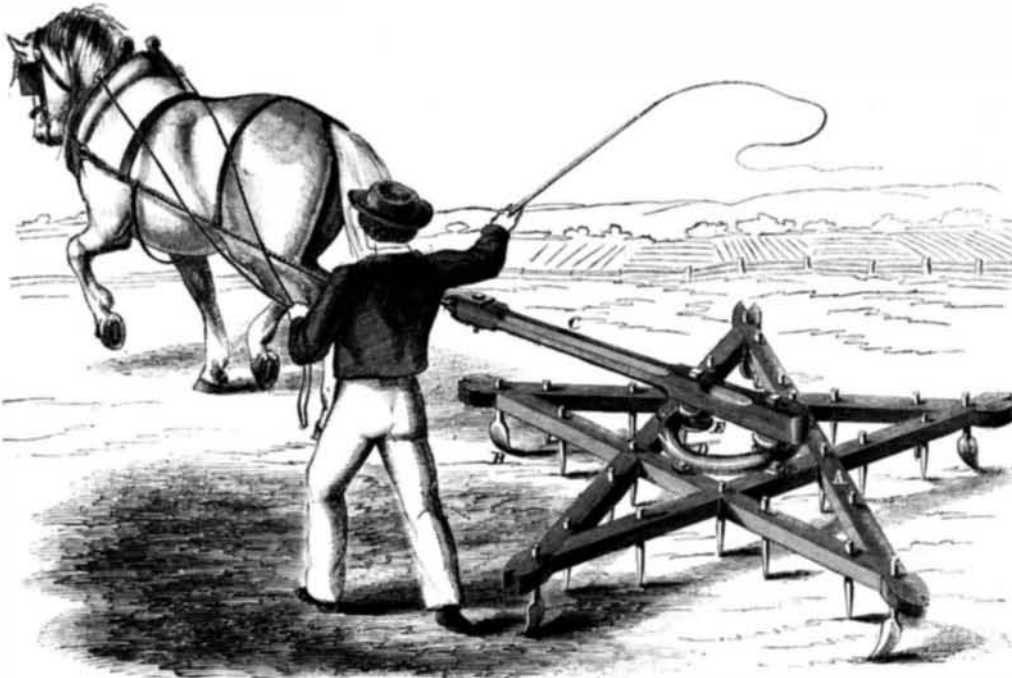
This agricultural implement is of the class known as the rotating harrow, it being so arranged as to revolve freely by its own action as the horse advances. The points of novelty are these:—The star-shaped frame A, the gages B, which enter the ground and by their action cause the machine to revolve, and also the connection of the draft pole with the main frame.

The frame explains itself; the gages are curved in form, and longer than the other teeth, and cause the frame to revolve, each being turned in the same direction, or all facing one way. The central metallic ring D, is fixed to the star frame and has grooved rollers E, working easily in it; said rollers being screwed, or

place with very slight pressure of the screws, and can be readily adjusted by slacking the screws and tapping lightly on the clamp. This is a very useful and well arranged implement for the purpose, and was patented through the Scientific American Patent Agency, on February 9, 1864, by A. F. Cushman; for further information address the assignee, H. B. Langdon, 13 Park Place, New York, or R. J. Ives, Bristol, Conn.

**Marked Articles for the Soldiers.**

Some of the marks which are fastened on the blankets, shirts, &c., sent to the Sanitary Commission for the soldiers, show the thought and feeling at home. Thus, on a home-spun blanket, worn, but

**DANIEL'S ROTARY HARROW.**

otherwise tightly fastened to the pole, so that as the harrow is drawn along and revolved by the action of the teeth, or gages, the draft pole maintains a direct pull upon the machine at all times. The rotation of the harrow thoroughly pulverizes the soil and causes it to be reduced to the proper condition in a short time. This excellent harrow was patented through the Scientific American Patent Agency, on December 1st, 1863, by Charles Daniel, of Sigel, Mo.; for further information address the inventor at that place.

**Improved Box Plane.**

For erasing marks or directions upon boxes, a handy little implement like the one here illustrated is indispensable. It is also useful for scraping butch-

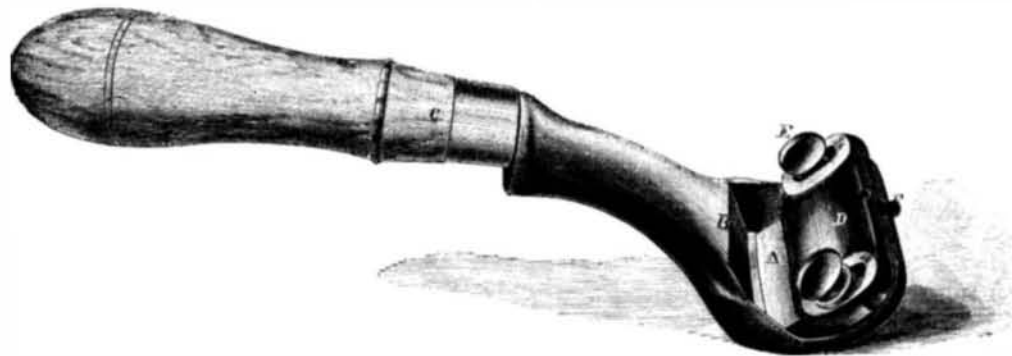
washed as clean as snow, was pinned a bit of paper, which said: "This blanket was carried by Milly Aldrich (who is 93 years old) down hill and up hill, one and a half miles, to be given to some soldier."

On a bed-quilt was pinned a card saying—"My son is in the army. Whoever is made warm by this quilt, which I have worked on for six days and most all of six nights, let him remember his own mother's love."

On another blanket was this—"This blanket was used by a soldier in the war of 1812—may it keep some soldier warm in this war against traitors!"

On a pillow was written—"This pillow belonged to my little boy, who died resting on it: it is a precious treasure to me, but I give it for the soldiers."

On a pair of woolen socks was written—"These

**CUSHMAN'S BOX PLANE**

ers' benches, and for similar purposes where it is merely desired to renew the surface of wood without regard to very fine workmanship. The engraving represents this box plane very clearly; it is simply a steel cutter, A, set in a cast iron stock, B, which is furnished with a handle, C. There is further a clamp D, which is secured by thumb-screws, E, tapped into the bottom plate; this clamp has a square jog on the under side which fits into a square hole in the cutter, there is also a groove, as at F, which receives the part of the shoulder which projects through the cutter. By this arrangement the cutter is firmly held in its

stockings were knit by a little girl five years old, and she is going to knit some more, for mother says it will help some poor soldier."

On a box of beautiful lint was this mark—"Made in a sick room, where the sunlight has not entered for 9 years, but where God has entered, and where two sons have bid their mother good bye, as they have gone out to the war."

On a bundle containing bandages was written—"This is a poor gift, but it is all I had; I have given my husband and my boy, and only wish I had more to give."

On some eye-shades were marked—"Made by one who is blind. Oh, how I long to see the dear old flag that you are fighting for!"

**Petroleum as Fuel.**

In the neighborhood of the Caspian Sea, where petroleum springs are abundant, the inhabitants manufacture fuel by impregnating clay with the combustible fluid; the clods are afterward burned on an ordinary hearth. The Norwegians have long economized the saw-dust of their mills, by incorporating with it a little clay and tar, and moulding it into the form of bricks. Of late years, in England, much attention has been given to artificial fuel in many districts, but not with much success, owing to the want of a suitable combustible, which petroleum is, above all others, best adapted to supply. In France, charcoal is prepared from the refuse of the charcoal furnaces, by mixing it with charred peat or spent tar, and then adding tar or pitch. The materials are ground together and subjected to heat in close vessels, to expel volatile gases. From seven to nine gallons of tar are mixed with two hundred-weight of charcoal powder.

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