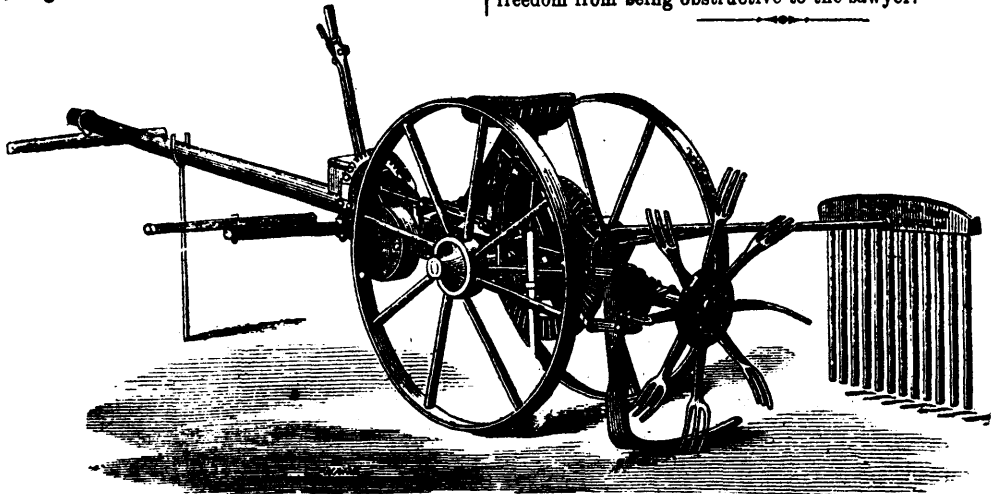


Agricultural Implements and Machinery.

PENNEY'S IMPROVED POTATO DIGGER.

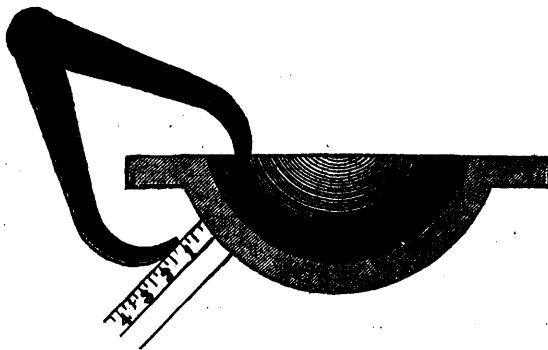
The value of this labour-saving implement has been completely tested in recent trials. This machine is shown in our engraving, and is wonderfully simple and compact. The potatoes are raised and strewed on the surface of the ground, ready to be gathered, at the rate of from three to four acres per day, and at a cost of about 50 per cent. less than when taken up in the ordinary way by manual labour. The apparatus is of light draught and one pair of horses can work it with ease. The driver has complete control of the whole by means of a single lever, which raises and lowers the machine and puts the revolving forks entirely out of gear when required. The digger is well and strongly made, and remarkably easy of management by an ordinary farm labourer without any previous experience in the use of such machinery. This machine is manufactured by Messrs. Penney & Co., Lincoln, England.



PENNEY'S IMPROVED POTATO DIGGER.

A MECHANICAL "WRINKLE."

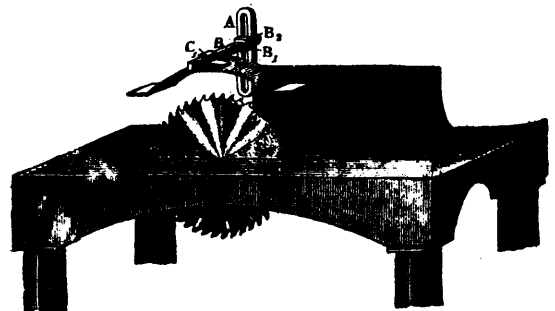
To get at the dimensions of a piece of work of irregular shape, the following simple procedure is given by John Walker in the *Millstone*: The adjoined casting being of spherical form, with flange, it would puzzle most mechanics, without special tools, to find its thickness. The first thing usually resorted to would be to drill a hole at a designated point. The accompanying "wrinkle" provides a readier method, and does away with the application of special tools. By simply applying a common rule, as shown, and setting the calliper to some even inch on the rule, so that it may easily be removed, it will be seen that the difference between the even inch denoted and the actual opening of the calliper is the dimension required.



LAKEMAN'S CIRCULAR SAW GUARD.

AN ENGLISH INVENTION.

This is an appliance of simple construction, which consists of a sheet iron bent plate, which is curved over the top of the saw, and which can be adjusted as to height by the aid of the thumb-screw. Most accidents due to circular saws occur when the attendant is pushing a piece of wood up to the saw; his foot slips and he falls forward on it. This last, it will be seen, the guard effectually prevents. The guard consists of three pieces, namely:—(1) The mortise plate A, secured by three bolts to the fence. (2) The radial arm, B, which is secured and adjusted vertically into the mortise plate A, by means of the nut and collar B¹ A²; and (3) the covering plate, C, which is secured and adjusted laterally in the radial arm B, in conformity with the adjustment of the saw fence, by means of the thumb-screw, C¹. Where several saws of various diameters are used in the same bench, it is advisable to have two or, perhaps, three covering plates, C, graduating in size to cover the whole series of saws. Thus, it is plain that the apparatus, as described, is in its mode of fixing exceedingly simple. It is to be recommended on account of its simplicity, its cheapness, its immovability when fixed, and for its perfect freedom from being obstructive to the sawyer.



LAKEMAN'S CIRCULAR SAW GUARD

RULE FOR FINDING THE WEIGHT NECESSARY TO PUT ON A SAFETY VALVE LEVER.—When the area of valve, pressure, etc., are known: Multiply the area of the valve by the pressure in pounds per square inch; multiply this product by the distance of the valve from the fulcrum; multiply the weight of the lever by one half its length; then multiply the weight of the valve and stem by their distance from the fulcrum; add these last two products together, subtract their sum from the first product, and divide the remainder by the length of the lever; the quotient will be the weight required.