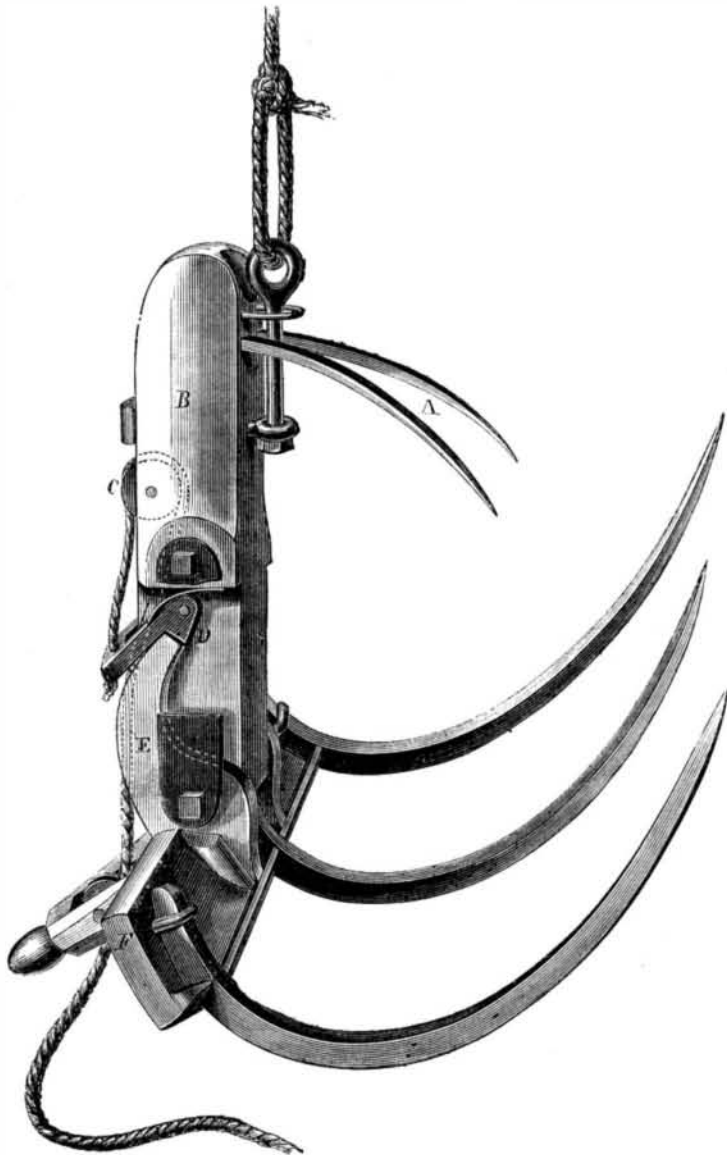


Improved Hay Fork.

Quite recently, in a trip through the country, we saw a neat farmhouse, with well-appointed buildings sleek-looking stock, and well-kept fences, but as an offset to this picture of prosperity, there was not a sign of a machine about the premises. Thrift and economy had done by hard work what we have described, but the farmer was worn down with toil and exposure. We could not help thinking that by the aid of modern machinery he might have spared himself some labor and enjoyed his possessions all the better therefor.

It is hard work to pitch hay on to a cart, and from it to the mow, and a person engaged in this occupation does a tremendous amount of labor in a day.

**WELLS'S HAY FORK.**

Since machinery has been invented for this purpose it should be more generally used.

Horse hayforks are re-garded with great favor by enterprising farmers, and we here illustrate a new one which has lately been invented. The chief feature of this fork is the certainty with which it retains the load after it is taken on. Persons who have used these tools know that of ten times when a large quantity is taken at once, the loose portions topple off and get scattered about, making a great deal of extra labor to collect it again. With this fork no such trouble occurs, as it is provided with two projecting tines, A, on the main beam, B, which are stationary, and place the load firmly, so that there is no escape and no waste, at the same time these tines do not interfere with discharging the load. This latter duty is performed by pulling the line as usual. The rope runs over the pulley, C, as shown by the dotted lines, and the end is fastened on the latch, D; by raising this catch the arm, E, which bears against the shoulder of the catch, is displaced and the fork falls, discharging its load. The tines of the fork itself are well hung to the shank, F, being set so that they cannot spring sidewise and so that they flare at their outer ends, thus affording a good support to the load.

These are the principal features of this fork, and we regard it as a very good one of its class. It was patented through the Scientific American Patent Agency on Oct. 11, 1864, by J. L. Wells, of Ames, N. Y. Address him at that place for further information.

To Etch on Glass.

Etching with hydrofluoric acid on plate glass is practiced now to a very considerable extent, the French manufacturers especially producing splendid ornamental effects by the process. The drawings to be imitated or etched on the glass are first made on stone or plate and then printed on unsized paper with fan ink consisting principally of a solution of asphaltum in oil of turpentine made with the aid of heat, to which some substance is added which shows a more or less crystalline structure on cooling, as stearic acid, spermaceti, naphthaline, paraffine. This mixture is strained and rapidly cooled with constant stirring; it is the only kind of coating which thoroughly resists the action of the corrosive acid. The printed paper is laid flat with the blank side on water, to which from 10 to 25 per cent of muriatic acid has been added, and as soon as the lines show signs of softening the negative printing is transferred to the glass by a slight pressure and when the paper is then removed the picture will adhere to the glass, and this is afterwards exposed to the fluorine vapors in leaden troughs.

Druggists' Circular.

[This acid is very dangerous to handle and should be used with great care. The fumes of it must not be inhaled and it makes a sore on the flesh where it touches.—Eds.]

A First-rate Paper.

With the next issue (July 1st) the New York "SCIENTIFIC AMERICAN" commences its thirteenth semi-annual volume (new series), and we avail ourselves of this opportunity of saying that if there is any mechanic, scientific man or manufacturer who is not in weekly receipt of this most excellent periodical, he does not study his own interests. It is by far the ablest of its cotemporaries in its peculiar department, and deserves the widest possible circulation. Its proprietors, Munn & Co., 37 Park Row, New York city, are the sponsors of about one-third of all the patents issued in this country, and their judgment in matters of this kind adds greatly to the value of their publication. Terms \$3 per annum, in advance.—*Chicago Journal.*

"THE PIPE OF PEACE."

Sir Walter Raleigh is said to have been quietly smoking in his study long years ago, when his servant, alarmed at the spectacle, and supposing his master on fire, immediately drenched him with the contents of a jug near at hand.

This injudicious attack, like all other intemperate onslaughts on familiar habits, utterly failed of its effect, and Sir Walter continued to smoke placidly, as do all his descendants to this day.

Very great improvements have been made of late in tobacco pipes. Rosewood, laurel and brier wood

have been employed as material for the bowls and stems, in the place of fragile clay.

The pipe herewith illustrated is convenient and handsome; it has also novel features, which will, no doubt, make it popular. In detail it is constructed as follows:—

The bowl is formed with a metallic reservoir, A, at the bottom, which has a joint, B, at the side. In this joint there is an elbow, C, on which the stem is fixed. The stem itself is provided with an ingenious device, shown in the portion broken out. This consists in a scroll, D, set in the tube so that the smoke must follow the passage, E, to the top before it reaches the mouth. By that time the smoke is cooled, and deprived in a measure of the heavier portions which may have been drawn through the



tube in smoking. Besides, smoke so cooled is more agreeable to the taste than at a higher temperature. The reservoir at the bottom collects all moisture which, from obvious causes, settles in the passages, and in common pipes clogs up the bowl and stem, rendering them foul in a short time. For cleaning, this pipe is especially convenient, it being only necessary to remove the scroll, E, and wash it out. The reservoir is also capable of being unscrewed from the bowl and purified. The elbow, C, enables the smoker to turn the bowl of the pipe at any angle with the stem, and thus avoid smoking in his own eyes or under the noses of other people. The elbow may be of one piece with the bowl, or separate, and of any material. The socket may be either horizontal or pointing upward.

This pipe was patented through the Scientific American Patent Agency on May 22, 1865, by F. Doellbor. For further information address him at No. 405 North Fourth street, Philadelphia.

THE department of coins and medals in the British Museum has acquired 2,567 examples during the past year. Of these 1,350 were Greek, including 5 specimens made of glass; 512 are Roman; 474 modern or mediæval; 295 of the Roman coins are Imperial, gold, valued at £3,200. The mint of the United States has presented a two-cent piece of 1864.