A WINDOW CLEANING BRUSH.

A brush with which the upper as well as the lower sashes of windows may be readily cleaned, and with which the outer faces of the panes may be as easily cleaned as the inner faces, is shown in the accompanying illustration, and has been patented by Mrs. Mary L. W. Martinot. The handle of the brush is made in

MARTINOT'S WINDOW CLEANING BRUSH.

two or more sections, one section screwing into another to lengthen the handle. The end of the handle thus formed is screwed into a threaded aperture in one end of a horizontal plate, and into the other end of the plate is screwed a pole, also constructed of a series of sections screwed together. The sections of the pole and brush handle are preferably made tubular, so that the parts may be as light as possible.

For further information relative to this invention, address Mrs. Mary White, No. 1541 Broadway, New York City.

BOILER FLUE FLANGING MACHINE.

We illustrate a powerful boiler flue flanging machine constructed by Messrs. George Booth & Co., of the Central Iron Works, Halifax, for the works of Messrs. Denny & Co., engineers and boiler makers, Dumbarton. The machine says *Engineering* is capable of dealing with flues of from 1 ft. 10 in. to 4 ft. 6 in. in diameter and from 1 ft. 6 in. to 4 ft. 6 in. long, and up to ⅝ in. thick. The flue to be flanged is placed on the large horizontal chuck, where it is held by four gripping jaws while its upper edge is being flanged. During the process the top of the flue is supported by two anti-friction rollers, which can be adjusted for any size of flue by the handle shown to the right of the machine. The actual flanging is done by another roller kept up to its work by the sector and worm gear shown, which is driven by power, thus permitting of rapid manipulation of the machine. The chuck is rotated by powerful gearing driven by belting in the usual way. The largest flues can be flanged to a depth of 4½ in. at one heat, the time required to complete such a flange being about one minute. The handles principally used in working the machine are grouped together at one end within easy reach of the attendant. The machine has been specially designed for making flues built up in short lengths, connected together by Adamson flanged joints, the elasticity of which allows free expansion of the flue longitudinally, and at the same time adds considerably to its strength.

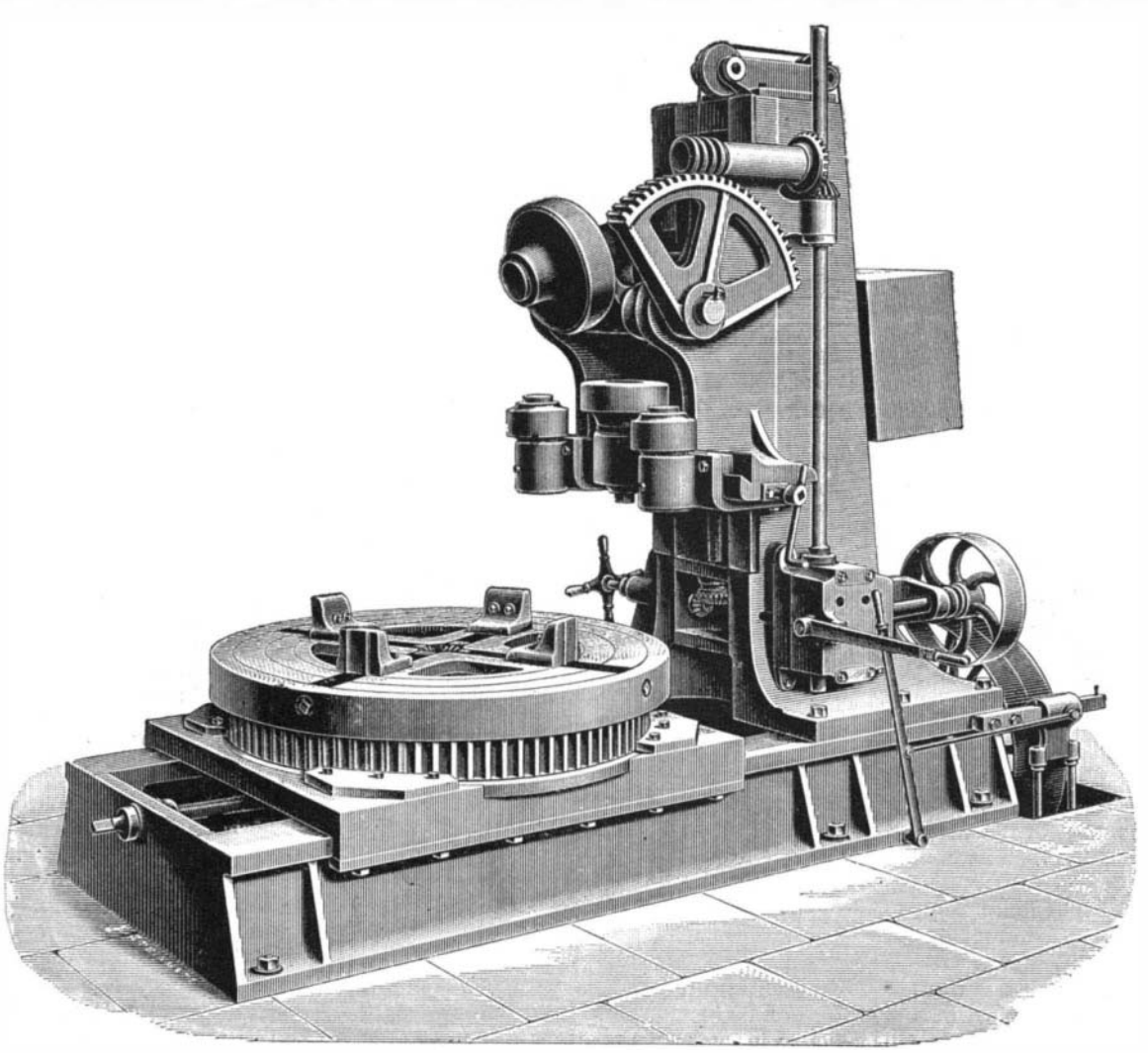

PLATE FLANGING MACHINE FOR MARINE BOILER WORK.

IT is claimed that the fastest time ever made on an American railway was on the Pittsburg, Fort Wayne, and Chicago road. The official report showed that a train ran 53 miles in 45 minutes, 11 miles of which were covered in 7 minutes, or at an average speed of 94 miles an hour. This record is said to be authenticated by the train sheets.

How to Print Photographs in Ink.

At a recent meeting of the London and Provincial Photographic Association, a demonstration was given by Mr. L. Warnerke on "Collography." The lecturer expressed his opinion that a wide future is open for photo-mechanical printing. There was a general belief that special appliances were necessary, and that generally all processes of this kind were troublesome to work. The demand for cheapness and quickness of production had proved detrimental to good work. The process he intended to demonstrate was simple, requiring no special apparatus of any kind, enabling amateurs to produce quickly an unlimited number of copies on ordinary paper, with printer's ink, from photographic negatives. For the purposes of demonstration the lecturer had brought with him several sheets of exposed films in various stages. He proceeded to describe the process. A sheet of vegetable parchment, having a film of gelatine on its surface, is immersed for three minutes in a bath of bichromate of potash neutralized with ammonia. The sheet is then squeegeed to a glass plate that has previously been cleaned and polished with French chalk. The plate is now left to dry spontaneously. The drying should be completed in about ten hours, when the film will peel off its support. The maximum of sensitiveness would be reached in from two to three days after sensitizing. The object of drying the sheets on glass is to produce a flat surface, thus giving perfectly even contact with the negative. The sensitized film is exposed in an ordinary printing frame. When sufficiently exposed, the image will be quite visible. An exposure of the back of the film for two or three minutes to diffused light will cement it to the parchment support. The exposed tissue is now placed in water and allowed to remain about two hours until quite colorless; it is then drained and blotted, and the following solution poured over it:

Glycerine	70 parts.
Ammonia	3 "
Water	30 "

After soaking for an hour, the tissue is stretched upon a frame over a block of wood, and rolled up with printer's ink. For this purpose, the lecturer recommended using first a stiff ink, and afterward a thinner kind. Authorities differed with regard to the materials for thinning the ink. The lecturer said he preferred lard for this purpose. Sufficient rolling having been given to the surface of swelled gelatine, a sheet of paper is placed on it, and an impression can be taken in an ordinary letter copying press. Mr. L. Warnerke, at the conclusion of the demonstration, pulled several proofs from a sheet of prepared tissue, and passed them round. In answer to several questions Mr. Warnerke said he was unable to state the limit of the number of impressions that could be taken from one sheet; he had taken as many as 300 himself. Any paper might be used. It was necessary in printing to lay strips of paper round the inked image to protect the sides of the sheet of paper receiving the impression.

A FOOT BATH DEVICE.

The illustration represents an exceedingly simple form of foot bath receptacle, designed in use to facilitate the removal of callous skin and promote the action of the bath upon the entire foot and ankle. It is a patented invention of Mrs. Mary L. W. Martinot, of New York City. A receptacle is employed for each foot, made somewhat larger than the ordinary boot or

MARTINOT'S FOOT BATH.

shoe, and preferably of rubber, but with the entire inner surface roughened, as shown in Fig. 1, or in any approved manner. The leg section may be provided with a strap, draw string or equivalent device, to hold the bath receptacle in position, and enable the bather to walk about while using it. The receptacle being supplied with water prepared as desired for the bath, the natural movement of the foot therein is designed to cause a most effective and beneficial frictional contact, with the minimum of exertion.

For further information relative to this invention, address Mrs. Mary White, No. 1541 Broadway, New York City.

The Use of Aluminum in Iron Foundries.

Mr. David Spence, in *American Machinist*, says:

During the past winter I have used aluminum in foundry practice, and find that it is a splendid thing to make iron fluid and clean. It seems to take all the impurities out of the iron when it is charged in the cupola with the pig iron. Ten pounds of Cowles' ferro-aluminum to 2,000 pounds of pig iron will produce good, sound castings, free from blow holes.

It is as good in the use of crucible steel as in iron (its effects). It produces a sharp and solid casting, makes a uniform grain. It takes away the tendency to chill in cast iron.

In steel it reduces the shrinkage, and increases the welding properties in both wrought iron and steel.

I recommend it to persons making tool castings, such as face plates, and in fact all kinds of work that has to be planed, milled, or turned.

There is one thing that I like in its use, and that is, it does not weaken the iron or take the strength from it, but rather adds to it. We are having good success with it in sewing machine castings. I believe in progress in foundry practice, and am always willing to give such things a trial, if I find that they are a benefit.

I want other foundrymen to know it. I believe we are making rapid progress in American foundry practice, and the foundryman that is satisfied to run his foundry in the same old-fashioned way his grandfather did, he is going to get left. And the younger and more progressive men will come to the front.

AN olive oil factory is soon to be built in Sonoma County, California, by a company which now has sixty acres of six-year-old olive trees and is planting 700 acres more. The plant will cost $250,000.