

FRENCH SUBSOIL AND CLEARING PLOW.

In the official trial of steam plows at Gonesse, Departement Seine et Oise, August 10, a few plows, drawn by horses and oxen, were shown upon the ground in order to enable comparisons upon the spot of the steam and horse culture. A double Brabant plow was drawn by six yokes of oxen, plowing to a depth of 45 centimeters, about 18 inches, and subsequently the wire rope from the locomobile was attached to the same plow in lieu of the oxen.

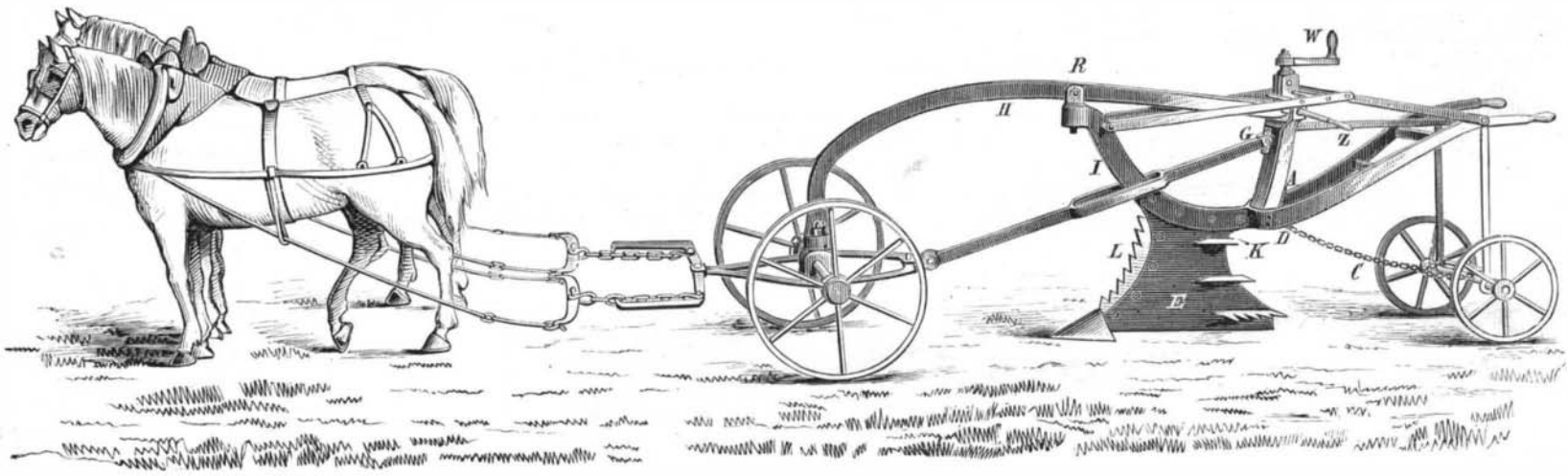
A small Brabant plow was then drawn by a pair of horses, and the machine represented, the Bourdin subsoil and clearing plow, was driven in the same furrow, stirring, lifting, and pulverizing the subsoil.

It has a deep, thin body, E, with a notched breast, L, a triangular share in front, and horizontal knives, K, when it has to be used to cut roots in ground lately cleared of bushes and shrubs.

To keep the sole of the plow level and preserve the gauged depth, the plow has, in addition to the draught rod, which reaches from the fore carriage of the plow to the standard, a second beam, H, to which the forward upward turned end of the beam, I, is pivoted at R. This forms a species of quadrilateral frame, whose pivoted angles permit such adjustment in the share frame as to raise or depress the point of the share, either to enter or rise from the soil, or the soil to run level at the depth for which it is set. The crank, W, and screw, operating upon the hind end of the draught rod at G, give the necessary adjustment.

C is a draught chain to the hind carriage, which also rides upon the ground and aids in keeping the plow level. When the wheels are withdrawn from supporting the handles, A, the rear end of the plow droops, and, the share pointing upward, the plow comes out of the ground.

The doubletree is an equalizer, permitting the adjustment of the leverage according to the different strengths of the horses in the team.

**BOURDIN'S SUBSOIL AND CLEARING PLOW.**

The conductor can, without stopping, change the land or depth of the plow by the handle, W, for depth, and Z for land.

It is the newest thing in its line in France and has attracted much attention. The blades, K, are removed, excepting when roots are to be cut, and the intention is to divide them into such short pieces that there will be no need to remove them from the soil.

EDWARD H. KNIGHT.

Paris, October 1, 1878.

Removal of the Entire Scalp by Machinery.

At a recent meeting of the New York Pathological Society, reported in the *N. Y. Medical Journal*, Dr. Finnel presented, on behalf of a candidate, the entire scalp of a woman 28 years of age. While visiting an oleomargarine factory, she stooped down to examine some of the processes. Behind her head was a revolving shaft, and in some manner her long hair became wound round the shaft. The rapidity of the shaft was such that the whole scalp was torn off without giving sufficient pain to draw her attention to the condition of her head. The first sensation she experienced was coldness of the head, and on putting up her hand she found that her hair was gone. Following the injury there was no shock and no pain. On examining the head the denuded surface was seen to extend from the base of the occiput to the left eyebrow. The eyebrow was gone, and the left ear was so much injured as to hang down by a strip of skin.

The scalp measured 24 inches in circumference, and was attached to the hair 32 inches long. It was at first proposed to apply the scalp, but on examining there was noticed such an amount of grease adhering to the raw surface that any effort at union was thought to be useless.

Dr. Finnel said it was the intention to tan the scalp, and thus allow the patient to use her natural hair, but not in the natural way.

Dr. Abbe referred to a similar case which occurred four years ago, and was under treatment in St. Luke's Hospital. The amount of scalp removed was nearly identical with that presented, and the manner in which it was done was similar. Three months after the injury, granulation extended over the denuded cranium. It was found, in the use of grafts, that those only were successful that were placed within an inch from the cicatricial margins. The grafts were the size

of canary seed, and, during the four years that the process of cicatrization continued, about twelve thousand were used.

Dr. J. C. Peters referred to the case of a waiter at a club house, who was scalped by a falling mirror. The scalp was separated into two flaps, which were attached at their base. These were brought into position, and within a few days union took place.

Opening for Trade in Madagascar.

The island of Madagascar has an area of about four times that of England and Wales, with an estimated population of five millions. Writing from the capital of the island two years ago, Consul Robinson said that the demand for American cotton manufactures was increasing, and that, in addition the American traders, one English and one German house, were importing American fabrics. More recently a correspondent writing from Andovalaly, Madagascar, said that all kinds of agricultural and woodworking machines were needed there, and that there was a good sale for American cottons at a handsome profit when the quality was good. Complaint is raised, however, that too few American vessels visit the island, and that those which do trade there sail from home as though venturing on a piratical expedition, studiously concealing their destination in order to keep the trade in a few hands.

Handling Grain in Buffalo.

A correspondent of the *Cleveland Herald*, writing from Buffalo, says: "Nearly all the elevators are grain, and immense amounts are going forward constantly by canal and rail. The freight line propellers appear to have the preference over outside vessels in unloading. The appliances for getting wheat out of a ship are far in advance of those of a few years ago. Nearly all the work, including shoveling the grain in the hold to the cups of the elevator, is done by steam power supplied from the shore engine, and during the

3. Lay on the blanket the prepared paper with the sensitive side uppermost.

4. Lay on this paper the tracing, smoothing it out as perfectly as possible, so as to insure a perfect contact with the paper.

5. Lay on the tracing a plate of clear glass, which should be heavy enough to press the tracing close down upon the paper. Ordinary plate glass of $\frac{3}{8}$ inch thickness is quite sufficient.

6. Expose the whole to a clear sunlight, by pushing it out on a shelf from an ordinary window, or in any other convenient way, for six to ten minutes. If a clear skylight only can be had, the exposure must be continued for thirty or forty-five minutes, and under a cloudy sky, sixty to ninety minutes may be needed.

7. Remove the prepared paper and drench it freely for one or two minutes in clean water, and hang it up to dry.

We Buy of those that Advertise.

The London correspondent of the *Cincinnati Enquirer* tells the following story. The moral will be obvious to those who have anything to sell:

In Paris, last summer, I saw a friend of mine, who had just come over, using a pen of peculiar construction, designed with special reference to those untidy persons who, like myself, ink their fingers when they write. Now my friend is a man whose hands are as white as lilies, with finger nails like rosebuds in tint—noticeable hands, even remarkable, considering that he is an elderly man, and who occasionally helps with the lighter work on his farm in Nebraska. Catch him inking his fingers!

"Why, where did you get that nice pen?" I asked him, a vista of blissful exemption from an uninked middle finger opening on my joyous, expectant mind.

"In Omaha," he answered. "It's the nicest thing. I used to ink my fingers before I got it!"

night the hold is illuminated by gas conducted from the building in rubber tubes. A steamer carrying 60,000 bushels is unloaded in a single night, and two canal boats are frequently brought along outside the propeller and fill at the same time the grain is coming out of the ship."

THE BLUE PROCESS OF COPYING TRACINGS.

This process has been in use in France for several years, though American engineers have but recently begun to appreciate its value. It is a strictly photographic process, the tracing being used instead of the ordinary glass negative. In a paper read before the American Institute of Mining Engineers, Mr. P. Barnes suggested that the drawing might be finished or nearly so in pencil upon paper in the usual way, and that all the inking be done upon tracing cloth laid upon the pencil work.

For the sensitizing solution take 1 7-8 ozs. citrate of iron and ammonia, and 8 ozs. clean water; and also $1\frac{1}{4}$ ozs. red prussiate of potash, and 8 ozs. clean water; dissolve these separately, and mix them, keeping the solution in a yellow glass bottle, or carefully protected from the light.

The paper may be very conveniently coated with a sponge of four inches diameter, with one flat side. The paper may be gone over once with the sponge quite moist with the solution, and the second time with the sponge squeezed very dry. The sheet should then be laid away to dry in a dark place, as in a drawer, and must be shielded from the light until it is to be used. When dry the paper is of a full yellow or bronze color; after the exposure to the light the surface becomes a darker bronze, and the lines of the tracing appear as still darker on the surface. Upon washing the paper the characteristic blue tint appears, with the lines of the tracing in vivid contrast.

Any good hard paper may be employed (from a leaf from a press copy-book up to Bristol board) which will bear the necessary wetting. The manipulations required are simple, and may be intrusted to any intelligent office boy. They are summarized by Mr. Barnes as follows:

1. Provide a flat board as large as the tracing which is to be copied.
2. Lay on this board two or three thicknesses of common blanket, or its equivalent, to give a slightly yielding backing for the paper.

He did! He inked his fingers! That was enough for me. I got the name of the merchant from whom he bought the pen, the price of it, and inclosing the money, I sent from Paris to Omaha for the pen.

By the last steamer it came to me. The stationer at Omaha was out of them, but he sent to Sioux City to the man that advertises them for another lot. And now here is where the laugh comes in. The pens are an English invention, and tons of them can be bought in London if desired. At the stationer's next door I could have got what I had sent after to Sioux City. But how could I know that? I dealt with the man that advertised.

Unprofitable Agents.

A late Commissioner of Patents calls attention to a prolific source of disappointment and loss to inventors—incompetent patent attorneys, as follows: "A large percentage of the cases filed in the office are prepared by men who have little knowledge beyond mere forms. These are often subordinates dismissed from the office or from private firms for incompetency, or draughtsmen, or model makers. Specifications filed by these attorneys are frequently so imperfect and obscure as to be unintelligible and utterly unfit for publication, and the preparation of these cases increases the labor of the examiners, and are a fraud upon the inventors. Inventors are particularly cautioned against men who claim to have special facility in the office, or who intimate that money may be used to hasten or assure the allowance of their cases."

The Probable Starting Point of the Yellow Fever.

Last September the *New Orleans Times* asserted that the yellow fever epidemic began its malignant course in the front part of the city, where "four thousand loads of kitchen garbage, which had been hauled to the dumping grounds by the city carts, had been brought back by the contractors and used to fill up the streets."

A committee of citizens, appointed by the Mayor of New Orleans to investigate the matter, have reported that the charge is substantially correct. After describing in detail the horribly offensive condition of the filled-in streets and squares, the committee say that "if the fearful pestilence did not originate there, it was largely fed by the evils made known, until the material was exhausted, when the roll of death added new victims to the feast."