

ly into it, and as Z is nearer the saw, F, than V, the saw will be thus drawn from the log—the shaft, G, being allowed the necessary vibration to do so.

The movable dog, E, is a valuable improvement, because it can be turned over backwards, and logs placed on the carriage from the outer side without the trouble of gigging back. The jib and auxiliary saw is also a useful arrangement, by which one or two circular saws can be employed for logs of different sizes. The gearing by which the feed and return motions of the carriage are accomplished, is also a valuable arrangement. These improvements, as described, will render the matter clear to all.

More information may be obtained by letter addressed to the inventors.

## MISCELLANEOUS.

### New Patent Law in Austria.

The following is the section of the new Patent Law in Austria concerning foreigners:—

“No exclusive patent for an invention, discovery, or improvement that is introduced from other countries, will be granted except when the application is restrained likewise in other countries to an exclusive patent. But it is only the possessor of the foreign patent that can obtain in Austria an exclusive patent. Under these restrictions, no patent for an invention, discovery, or improvement made abroad, but which has not yet been applied for in that country, can be granted.

The number of years for which a patent is granted cannot, without the consent of the sovereign, exceed fifteen years, and with regard to patents granted abroad, and of which the possessor would wish to have the advantages in Austria, their duration is limited to the number of years that the patents have to run. If an exclusive patent is granted to a foreigner, he can possess, as if he were a native of the country, all the advantages and privileges attached to such a patent; that is to say, the patent assures to the patentee the exclusive benefit of his invention for the number of years mentioned in it. The patentee is entitled to form, in every part of the kingdom, any establishment, and to employ all the requisite operatives for the perfect carrying out of the object for which the patent has been granted. He can, besides, authorize other individuals to employ his invention protected by his patent, dispose of his patent as he thinks expedient—will, sell, or let it out. The patent dues are proportioned to the length of time, and are the same for a foreigner as for a native of the country. The whole sum is to be paid at once for the full length of time for which the patent is solicited, and is to be paid at the time of filing the petition. If the petition is refused, the money will be returned, but if it is granted, there will be no restitution unless the patent, after it has been granted, should be annulled for public reasons, and only for the number of years that the patent has yet to run.—[L'Invention.

The chemical lecture of Prof. Wright, on the “Atmosphere,” will appear in our next number; also the criticism on “Hot Air Engines, showing how they have Failed.”

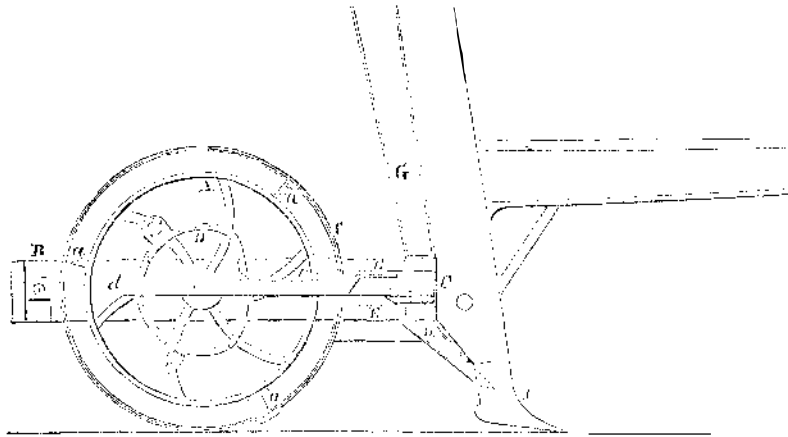
### Great Tunnel—Dayton and Cincinnati Short Line Railroad.

The contract for the tunnel on this railroad E. Gest, Chief Engineer, has been made, and we suppose the work will proceed with all despatch. The actual tunnelling is 8,000 feet, but the arched approaches amount to 1,300 making the total length of tunnel 9,300 feet. The contracting price for the work is \$553,861. It is a work of great magnitude, and from the abilities of the Chief Engineer, the workmanship will be well done, not like the wretched tunnel on the New York and Harlem Railroad, which is continually falling, to the great danger of life, limb, and property. We have the specification of this new tunnel before us, it is complete. At the distance of 2,000 feet from one another, there are to be three shafts of 160, 175, and 135 feet deep to the top of the tunnel. The tunnel will be 29 feet wide, and 29 feet deep. The walls are to be built in the most thorough manner. The shaft walls will spring from a cast-iron frame inserted in the arch of the tunnel. The

work is to be driven night and day with a double set of hands, and the whole is to be complete and ready for the cars in 22 months from the 20th of last month (Nov.) The excavation will be through blue limestone and indurated marl.

The shoe trade in London is divided into twenty branches, such as the shoeman or maker of the sole parts of the shoe; the bootman, or maker of the sole parts of the boot; the foot-closer, or joiner together, of the leg, vamp, &c.

### IMPROVED SEED PLANTER.—Figure 1.



The annexed engravings are views of a seed planter, invented by Daniel Haldeman, of Morgantown, Monongalia Co., Va., and for which a patent was granted on the 5th of last October, (1852)

Fig. 1 is a side view of the wheel or roller showing one of the cams and also one of the slides, the iron plate and tubes through which the seed passes into the furrow. Figure 2 is a side elevation of the machine; figure 3 is a detached plan showing the wheel or roller with the cams attached, the slides and iron plates being represented by dotted lines; figure 4 is a front view of the slides showing the manner in which they work over the iron plate. Similar letters of reference indicate corresponding parts in each of the several parts.

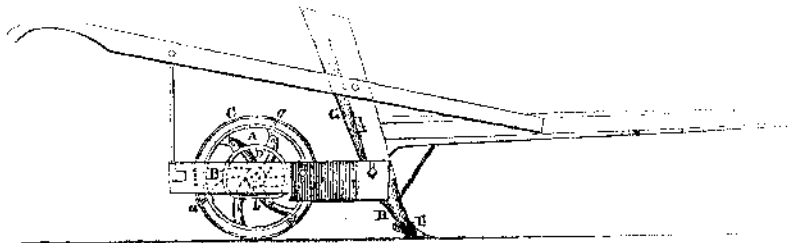
The nature of the invention consists 1st in having the wheel or roller encompassed by one or more tyres which may be adjusted to the wheel or roller at pleasure, thus increasing or diminishing the diameter of the wheel, and allowing the seed to be planted the re-

quired distance apart as will be hereafter shown.

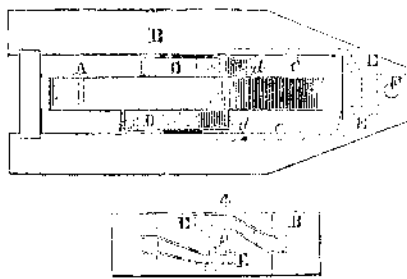
A represents the wheel or roller placed within a suitable frame; B C represents a tyre placed around the wheel and adjusted to it by set screws, a, figures 1 and 2. These screws by being relaxed allow the tyre to be removed. There may be one or more tyres as desired, every tyre that is added increasing the diameter of the wheel; for instance, if the diameter of the wheel, A, be three feet, and the outer surface of the tyre, C, be three inches from the periphery of the wheel, the diameter of the wheel will be increased six inches by employing the tyre. The object of employing the adjustable tyre or tyres will presently be shown.

D D are two cams, one on each side of the wheel, A, these cams are secured to the wheel in any proper way. Their shape will be seen and understood perfectly by referring to figures 1 and 2. They may be described as being D shaped, or a circle with a segment cut off. The cams, however, may vary some-

Figure 2.



what in shape from those represented and effect the same object. The cams are reversed, that is if the flat surface b, of one cam is nearest the beam or front of the implement, the flat surface of the other cam will be in an opposite position or the furthest point off from the beam or front of the implement, see figure 3. E E are two slides which are operated by the cams. These slides have shanks, c c with projections, d, at their ends, between which the edges of the cams fit, see figure 3. At the opposite ends of the shanks are the slides, which are flat square flutes, working in slots in the front part of the frame, B; FIG. 3.



both sides are curved or bent, one upwards and the other downwards, see figure 4. This allows a space between, in which a metal flute, F, is fitted, see figure 2, and dotted lines in figure 4, the plate, F, being fitted in a mortise. This plate has a hole or aperture through it of sufficient size to allow seed to pass through, see dotted lines. In line with the aperture through the plate are holes in the frame both above and below the plate, see figure 2. A

tube, G, communicates with the top hole, and a tube, H, with the lower hole, see figures 1 and 2. The upper tube, G, contains the seed, while the lower tube, H, conveys it to a recess in the share I, and it falls into the furrow made by the share as the implement is drawn or moved.

The slides have a reciprocating motion given them by the cams as will readily be seen, and as the cams are attached to the wheel relatively in a reverse position, of course one slide will be thrown forward while the other is drawn back. The slides work in slots one directly over, and the other immediately underneath the metal plate, F, so that when the upper slide is drawn back the seed will pass from the tube, G, and fall into the aperture in the metal plate, F, the aperture being closed at the bottom by the under slide which is thrown forwards, and when the under slide is drawn back the seed passes from the aperture and falls into the tube, H, and is conveyed into the furrow, the upper slide being thrown forwards and covering the aperture in the plate, F, at the top, while the lower slide is drawn back.

Thus the slides, E E, have a reciprocating motion, working alternately, allowing no waste of seed, and distributing the seed in an even and sure manner.

The object in using the adjustable tyre or tyres is, that the larger the diameter of the wheel, A, is, the slower the slides operate; consequently where it is desired to have the seed dropped three feet apart the wheel must be three feet in circumference, or one foot in

diameter. Now, by adding the tyres the space between the hills where seed will be deposited will be increased according as the diameter of the wheel is enlarged. Thus, by having a series of tyres, they may be adjusted to the wheel so that the seed may be planted at any reasonable distance.

More information may be obtained by letter addressed to the inventor.

### Recent Foreign Inventions.

TREATING MATTERS CONTAINING ANTIMONY, LEAD, TIN AND SILVER.—Thomas Richardson, of New-Castle-upon-Tyne, patentee.—The first part of this invention relates to the separation of metallic oxydes from one another.

1st. Mixed oxydes containing lead and antimony, or lead and tin, obtained during the process of softening hard lead of commerce.

2nd. Also the mixed oxydes of tin and copper produced by calcining the waste alloys of these metals in a reverberatory furnace under the action of hot air. The first class of oxydes are treated with nitric or acetic acids by which the lead is obtained as a nitrate or acetate, and the tin and antimony left for subsequent conversion by any of the known ways to a marketable commodity.

The second class of oxydes are acted upon by acetic or sulphuric acid, to obtain the copper as an acetate or sulphate, which can be separated by washing, leaving the tin to be converted into a metallic state, or used in making the muriate of tin in dyeing.

The mixed oxydes of lead and antimony can also be reduced by calcining them, mixed with coal and an alkali. To 20 cwt. of the mixed oxydes, 1 cwt. of coal and 30 lbs. of soda are added and all mixed together. These are roasted in a suitable furnace until the lead is converted into a red oxyde which may be washed and dried and used as a paint, or in the manufacture of glass. The antimony is separated in a metallic state from the lead.

This patentee also treats the sulphuret ores of lead in a reverberatory furnace gradually increasing the heat to expel the sulphur, after which the usual smelting process is continued.

SOAP.—Charles Thomas, of Bristol, Eng., patentee.—This patent is for pressing soap in the frames by fluid pressure of a fluid possessed of a greater specific gravity than soap, such as an alkaline solution. This is forced into the lower part of the frames as the soap shrinks by cooling. The temperature of the compressing fluid ranges between 160° and 200° Fah., in order that the soap may not be unduly cooled by contact with it.

SEPARATING SILVER AND LEAD FROM REFUSE OF GALENA.—H. L. Pattison, of New-Castle-upon-Tyne, patentee.—The patentee manufactures oxychloride of lead from galena, by the use of hydrochloric acid, but the refuse of the galena contains a portion of lead mixed with earthy matter and all the silver formerly existing in the ore is still retained. This residue is smelted in a reverberatory furnace with 1 part of common salt to 4 parts of the residuum, and a part of iron filings, by weight. These materials, when melted are run into a conical mould, and when cold, it will be found that the lead and silver have settled to the bottom and may be broken off, and the slag remelted on a common slag hearth.

### Our Last Number, and Engravings.

Our last number was not so well illustrated as we could have wished. It is not possible to have every number alike, owing to the subjects, which are to be described and illustrated. We have made up for the difference in this number, and our readers may always depend on us, to make every number a good and useful one, however different one may be from the other.

A manufacturer in Wurtemberg has invented a mode of applying a surface coating to sheet-iron, which enables it take freely the mark of a slate-pencil. It is said to be much lighter, and much less liable to injury, than a common slate.

The late advices from England have caused another rise in iron. Common bars have sold at New York as high as \$62.50 and rails at \$70 a ton.