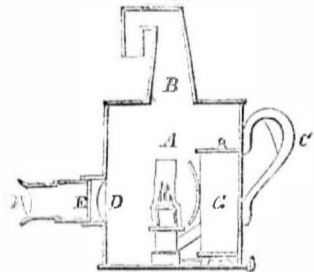




Who has not heard of all the wonders of the magic lantern?—how little figures painted upon glass become magnified into big comic men and women when seen upon the screen. It is not only a very amusing toy, but a very philosophical instrument, and we dare say that the inventor, Kircher, who was a celebrated mathematician and philosopher in the seventeenth century, little thought that children would be amused with it, because he intended it to be an object of study for the monks in their cells. This Kircher was an extraordinary man, he knew a great deal more than was common among his fellow monks, and he has since been called a man of "immense but undigested learning;" because he made the most extraordinary and random statements upon the deepest questions of philosophy. In one city of Europe, Nuremberg, many thousands of cheap magic lanterns are made every year, and they afford winter evenings' enjoyment to the children of the whole civilized world.

We will now describe the construction of this instrument, having reference to the engraving, which is a section of a magic lantern. A is a box of wood or metal having a chimney, B, and a handle, C. In a round hole in the front is placed a piece of glass called a lens, of convex form, that is, its back is flat and its front side is rounded from the center to the edges, as seen at D; this is called the condenser, because it collects or condenses the rays of light from the lamp, G, which is placed inside the lantern, A. Beyond D is a sliding tube, having at its extremity a lens, F, which is double convex, or rounded at both



its sides, in short, a magnifying glass. In a slit in this tube, the glass slide, E, having the figure, a picture, painted on it, is inserted upside down, and a white sheet being stretched across one end of a room, and all the lights, save the lantern, turned out, the exhibition is ready to commence. "Ah! but," says some young inquisitive who has seen the magic lantern's wonders, "how is it that you see the funny things so large upon the sheet when they are so little on the slide?" We will tell you. The light from the lamp has no escape except through the condenser, which throws a strong light upon and through the colors on the slide, and these colored rays, being confined by the tube, are passed through F, which spreads them out and so makes them meet each other at what is called the focus of the lens (of which we shall have more to say next week), and throws them very large upon the sheet, and there being no other light in the room, they become visible right side up, because the rays have been turned round or reversed by the lens, and it depends upon the distance of the lantern from the sheet whether the figures are large or small.

#### Improved Corn Planter.

Hand corn planters have now almost taken whole possession of some sections of the country, although a few years ago they were unheard of, and we have no doubt that many farmers will find occasions and places on their farms when and where the hand-planter will be the most advantageous. Among the many hand corn planters that have been invented and patented, none seems to us to fulfil more

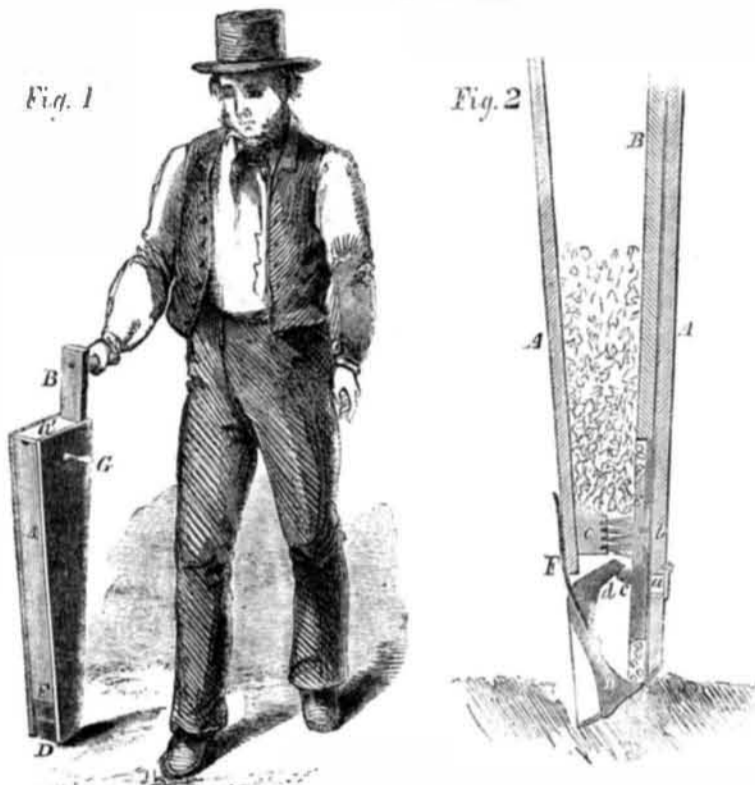
completely the functions desired than the one here described.

In our engravings we have represented one of these, seen in perspective and as used in Fig. 1, and in section at Fig. 2. A is a seed box having a door or lid, *a'*, at its top, and a planter or movable slide, B, provided with a handle whereby it can be operated, passing through it. Inside the box, A, a brush, C, is fixed, and to the sides of A a shoe of cast iron, D, is hinged, being also connected with the

spring, F, which has the tendency to force it back, making at the same time a clicking noise, thus indicating that the seed has been planted. The planter or slide, B, is shod with iron, and has in it a groove which carries the seed from the box downwards. This groove can be made to hold a greater or less number of seeds as desired, by the slide, E, and screw, *b*, which can be adjusted through the little hole at the back of the planter, *a*.

The operation is very simple. The opera-

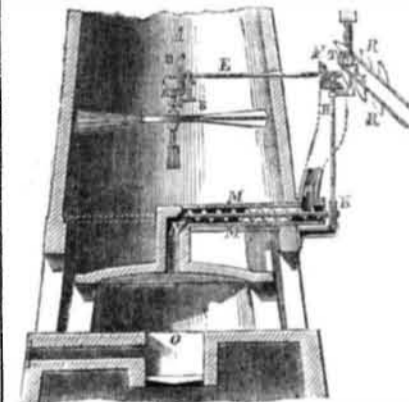
### BOECKLEN & BOSSERT'S CORN PLANTER.



tor grasps the handle at B, behind which there is a gage to regulate the depth at which the seed is to be buried, and pushing the box into the ground, a certain number of seeds are carried by B past the brush, which sweeps off the excess into the lower space. Another step is taken, the planter again pressed in the ground; but this time as B is being pushed down, the little projection, *c*, releases its hold on *d*, which F pulls away and allows the seed to fall into the ground, the iron shoe of B following them and pressing them the required depth; when B is lifted, the projection, *c*, catches *d*, and forcibly causes D to come back and presses the soil upon the seed.

#### Wright's Apparatus for Feeding Furnaces.

This figure is a vertical section of a self-acting apparatus for feeding furnaces with fuel, secured by patent in England as the invention of W. Wright, of Newcastle-upon-Tyne, and described in the *London Engineer*. It is intended to supply fuel regularly to the fire, is especially designed for glass furnaces, and is operated by the draft of the furnace



itself. A is the cone of the glass stack or house; it is furnished with a screw fan-wheel, B, set in the wall, and revolving horizontally in the stack. The bevel gear, C D, operated by the fan, gives motion to the shaft, E, on which are gears, F G, that give motion to the vertical shaft, H, the lower end of which has a worm wheel on it that meshes into another,

G is an extra handle that can be used should the ground be a little hard, to give the operator more power to force in the planter.

The advantages of this method of planting seeds are obvious, as the seeds being all buried at an equal depth, and each covered with the same amount of soil at the same pressure—that is, that the ground is made equally tight around each seed—the probabilities are that the crop will be more uniform than when there is an irregularity in the planting.

Further information can be obtained by addressing Boecklen & Bossert, No. 57 Essex street, Jersey City, N. J. A patent was secured by R. Boecklen, Feb. 10, 1857.

K, on the outer end of the archimedeal screw shaft, M, working in a round casing, the inner end of which opens into the passage, N, leading to the furnace, O.

The fuel is carried up by an elevator, R R, which is also operated by the shaft, E, through a worm gear, S, on its outer end meshing into a worm, T. The fuel is deposited by the buckets of the elevator into the receptacle, H, thence passes down the channel, P, into the case of M, and is conveyed forward to the furnace passage, N, by an archimedeal screw. As the fan wheel, B, is operated by the draft of the furnace, it follows that after it has started, it will supply fuel when properly set for the purpose in quantities proportioned to the combustion, thus forming a constant supply. As there are quite a number of glassworks in our country, this is a subject for the consideration of those engaged in the glass business. The apparatus is also applicable to other kinds of furnaces.

While boring an artesian well at Lafayette, Ind., very recently, after penetrating to the depth of 216 feet, a subterranean stream was reached, which, in an incredible short time, filled the well to the top. The *Courier* says that "Arabs in the desert could not have been more delighted" than were the citizens of that city. This experiment of an artesian well was made at the expense of the county.

#### Literary Notices.

**NEW AMERICAN CYCLOPEDIA**, Vol. I. D. Appleton & Co., New York. The value of a really good cyclopaedia is inestimable, because it is the collection and condensation of the facts contained in many libraries, without the dressing and adornment with which the original authors thought proper to clothe them. A learned divine was once asked by a rich man, what was the use of a library containing so many books? "For," continued the man of money, "you can never read them through." "Let me," said the divine, in reply, "let me ask you, what is the use of your dictionary? you never read it through." "Oh! the dictionary is of great use." "Then sir," replied the other, "what the dictionary is to you, my library is to me—a place of reference." This is exactly the case of cyclopaedic literature; one does not expect ever to read a volume through, but it is necessary that almost every person should have a copy on their shelves. Concerning the cyclopaedia we are now noting, we have to remark that the first volume—the only one published—is as near perfection as may be: and what is best of all in our opinion, it contains an index to itself—a thing that has long been wanted. It promises to be bulky, but as it is being issued in parts, there can be no inconvenience in that, because the price places it within the reach of everyone, and we should advise every one to take it, for we have no doubt that it will long remain a standard, and prove a lasting honor to George Ripley and Charles A. Dana, the painstaking, accurate and talented editors. We shall take occasion to give a more critical examination of this work as we receive the subsequent volumes.

**THE LONDON QUARTERLY REVIEW**, January, 1858. Leonard Scott & Co., New York. This number has a fine article on "The Difficulties of Railway Engineering," another on "Tobias Smollett," and an excellent description of Woolwich Arsenal, together with many others of equal merit and utility.

**HOUSEHOLD WORDS**, conducted by Charles Dickens, for March. Jansen & Co., New York. In this spirited, interesting and entertaining British periodical there are so many articles that deserve special notice that we are afraid to venture on the task. We may, however, say that in the one entitled, "A Deep Design upon Society," the master hand of the conductor is plainly visible.

**AMERICAN FARMERS' MAGAZINE** for March. J. A. Nash, editor and proprietor, 7 Beckman street, New York. This is a most valuable publication and should be in the hands of every farmer in the country, as it gives them all the information that they require on subjects which possess interest and value to their business and labor.

**AMERICAN DRUGGISTS' CIRCULAR AND CHEMICAL GAZETTE**. H. Bridgeman, Beckman street, New York. This is a journal which contains information not only for the druggist, but everybody who has any desire to be taught and to hear of the discoveries and inventions which are taking place in the chemical and medical world.

**EDINBURGH REVIEW**. This able Review, for this quarter, published by Leonard Scott & Co., No. 64 Gold street, this city, contains nine sterling essays. The leader is on the "Prospects of the Indian Empire," and is a subject of intense interest at the present moment. The author of it appears to be well acquainted with the subject and to have access to the views of the British Ministry.



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