New Inventions.

Inventions Wanted.—Ventilation.

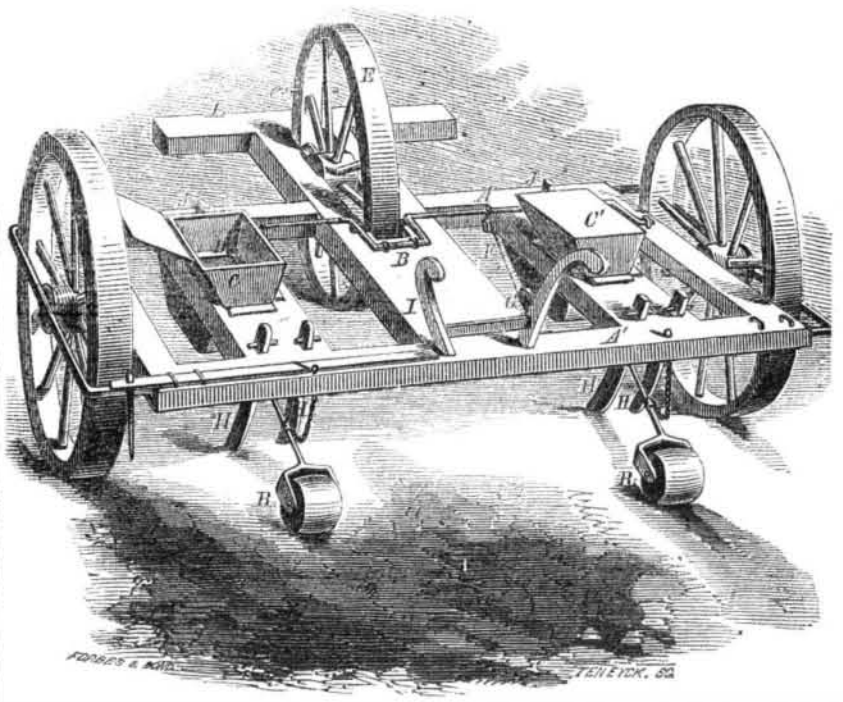
A great portion of the United States has a peculiarly dry climate, especially favorable for the preparation of dried fruits, etc., or for the curing of hay, and which renders unnecessary many expedients generally adopted in the more humid climate of Great Britain. Thus, for example, the practice of almost continually stirring the grass is here abandoned with advantage, and the labor of hay-making is much lessened by simply spreading, and only once turning over in a day. It is not true, as might be supposed from this, that we have less rain in a year than European countries, or a less number of rainy or cloudy days and hours, but the weather, when clear, rapidly assumes a state of great dryness, which has even been supposed by some injurious to health, but this supposition has not been borne out by statistical facts. It may be possible, however, that some portion of the difficulty experienced in finishing some very finely surfaced textile fabrics, expensive broadcloths for example, in this country, may be due to the hygrometric condition of the air, and it may be worth while to investigate the question how far the best condition may be attained by artificially preparing the air of manufactories. We conceive it would not be in any wise difficult, to afford proper ventilation in a large factory, and yet admit the air through a passage so provided with water surfaces or jets of steam that any desired degree of moisture may be added thereto, and it would not be absolutely impossible, even on so large a scale, to absorb moisture by the use of potassa or of sulphuric acid, and thus absolutely compel the air to assume any hygrometric condition desired. There are various pulmonary diseases and rheumatic affections, and very possibly many fevers, in which the moisture or absence of it in the air has a very important influence, and it might be of great importance to adapt such a device, if successful, to the ventilation of hospitals. We all know the effect of stoves in drying the air and producing stupidity and headache, and also the effect of water liberally evaporated thereon as a preventive of these bad effects. We merely throw out these thoughts as suggestions to the active minds of our inventors.

The Stirling Talabot Patent Process for Iron.

We last week described Stirling toughened iron as cast iron in which a quantity of wrought iron had been melted or dissolved by mixture, basing the assertion on the experiments as originally conducted some six or eight years ago at the —— foundry by the inventor. A patent, designated at the head of this article, by the same inventor, Morries Stirling, represented in French journals as being now brought more prominently before the iron trade, seems to be a modification, perhaps an improvement thereon.

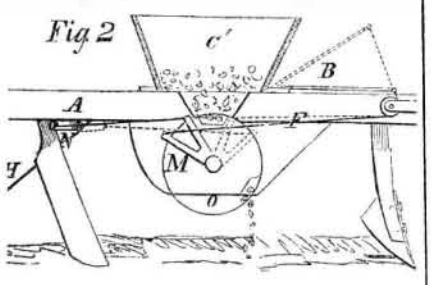
The present invention is described as consisting in running iron from the blast furnace, in the usual way, into molds of cast iron, sand, or other material applicable to the purpose, in which a mixture of oxyd of iron, with ligneous or other combustible matter has been previously placed. Hæmatite in fine powder—as free as possible from foreign matter, especially clay—mixed with an equal bulk of wood sawdust answers well. The character of the pig iron is changed by the chemical action which ensues on its contact with the mixture, and the resulting iron is much improved for particular purposes, especially for the manufacture of malleable or wrought iron. The advantages of the process are described to be, first, in puddling the pig iron so made there is a saving in time, varying from one-third to one-half, according to the nature of the iron, and, consequently, an economy in fuel to the same extent, with considerably less waste of iron. Second, the process of refining is rendered unnecessary, and third, the quality of the malleable iron is placed more under the control of the manufacturer by the combination of other metallic oxyds with the oxyds of iron; thus, by the use of zinc, increased fibrousness and strength are obtained; by the use of tin increased hardness with a crystalline texture; and by the use of oxyds of iron and woody matter alone, improvements in the quality is produced—the latter advantage being most perceptible in cases of inferior iron. Its advocates say that no change is required in the construction of any furnace or other apparatus used in making the iron, nor is there any change in the mode of working, and no addition to the expense of manufacture is caused by the use of the process, when oxyds of iron and woody matter are alone used, as the quantity of oxyd decomposed and absorbed is sufficient to cover the cost of the mixture. The saving in time in puddling applies more particularly to the Welsh and North of England iron. The saving in the use of Staffordshire iron, they allege, has been found to be from twenty-five to thirty minutes out of an hour.

GOODWIN'S CORN PLANTER.



The accompanying engravings represent a planter for which a patent has just been issued to Mr. Firman Goodwin, of Astoria, in this State. It is designed to operate by horse power, to plant two rows at a time, and to excavate, plant, and cover, at one operation. Provision is made for giving the rows any desirable distance apart, and for planting the corn in hills at variable distances in each row. Altogether the machine seems to be one of the best for planting on a large scale, as in the rich alluvial lands of the West.

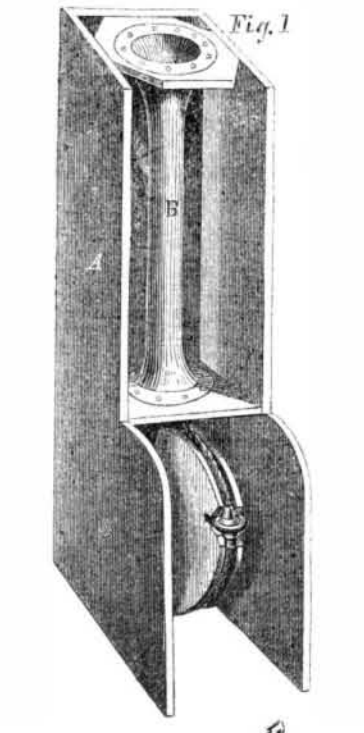
The body is a light frame, A, supported on two carrying wheels as represented, drawn by a horse attached to suitable thills at L—not represented. It is lifted at pleasure or controlled by the handles, I, held by the attendant. The wheel, E, traveling a little in advance gives motion to the dropping devices which latter are located beneath the seed reservoirs, C and C'. The portions of the frame on which these seed reservoirs, with their attachments, are supported, are moveable in the frame, A, and may be set and secured at any required distance apart. A side elevation of one of these parts, with its attachments complete, is shown by fig. 2. The plow, K, opens a shallow furrow in advance of the planting operation, and the plows or scrapers, H H, standing a little oblique to the motion of the machine, inclines the earth back again to cover the seed, while the roller, R, travelling behind ensures a smooth surface. The planting device itself is the chief peculiarity, and is shown most plainly in fig. 2.

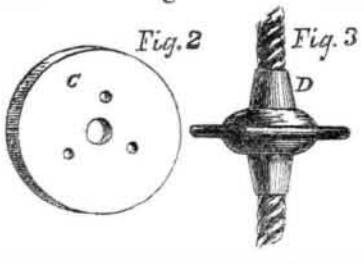


The wheel, O, containing a cavity in its periphery to receive the seed, is partially rotated on its axis, so as to empty the contents into the furrow as often as the string, F, attached to the arm, M, is pulled. This string, after passing through a pulley as represented, is attached to the lever, B, which extends continuously along the frame, as represented, and receives motion at intervals from pins, *e*, inserted in the sides of the wheel, E. Two, three or more of these pins may be inserted at pleasure in the wheel. and the seed will consequently be planted at corresponding intervals. A spring, N, is provided, which by its tension moves back the parts of the planting devices to their original positions so soon as the lever, B, is released. The result of the whole combination is a continuous excavation for and covering of the seed, and a quick intermittant action of the planting devices as each pin, *e*, acts on and lifts the lever, B, and the corn is planted in hills under the perfect control of the attendant, though without any labor on his part.

Fuller information concerning this invention may be obtained by addressing Mr. Goodwin, as above.

Improved Chain Pump.





The accompanying engravings illustrate an improvement in Chain Pumps, patented by Mr. Edmund Morris, of Burlington, N. J., Feb. 10th, of the present year. Mr. Morris claims that this is a "perfect pump." It operates on a principle now first developed in its application to pumps, namely, that instead of packing the bucket the log itself is packed.

In the cut, A is a wooden chamber—the front taken off to exhibit the interior—in which is placed a tube, B, of india rubber, flaring at each end, and supported in a vertical position by cross-blocks above and below. The lower block fits water-tight; the upper one has its corners taken off, so as to allow the water from above to descend through the corner holes and surround the tube in the chamber so as to press it into water-tight contact with each bucket as it rises through it. Below is the lower reel for the chain to pass over, with notches for the buckets to fall into.

The proportions adopted by the inventor for ordinary domestic and farm purposes are such that the chamber is about 4 inches square inside, and the rubber tube 18 inches long by 1 1-2 inch bore, and 1-4 thick. The chamber, thus containing the whole real working part of the pump, is spliced at the top by adding a rough addition long enough to reach to the top of the well, and is then lowered to its place at the bottom.

The reels, crank, and top are nearly similar to those in common use. But the chain and buckets are usually constructed differently. The chain used is made of galvanized wire rope, very strong, very light, perfectly flexible, and working almost noiselessly. The bucket is formed chiefly of a brass disk, C; being placed in a mold of suitable shape, and the cord passed through the center hole, melted solder is poured in, to fill the remaining cavities, and the bucket, D, comes out perfect, and firmly cemented to the cord. This chain is very durable, and is made very cheaply. But the common link chain now in use may also be used by those who prefer it.

Now the bucket being about one-eighth of an inch wider than the bore of the tube, and the tube hugging it very tight as it passes up, a vacuum is immediately created, and the water follows it as it does the piston of a well-packed syringe. Before one bucket escapes from the tube another enters it, and the whole friction of the pump is confined to the tube itself.

Nor does this pump lose its water. it is alleged, like most chain pumps, but a single turn of the crank causes it to flow. The pressure of the column of water in the log, acting through the openings in the upper block on the outer surface of the tube, creates an unintermitted binding of the tube against the bucket, which effectually prevents the pump from losing its water.

Further particulars may be had by addressing the patentee.

Speed of Millstones.—Tempering Picks.

A correspondent, W. O. Jacobi, of Mellenville, N. Y., answers the query with regard to the best speed of millstones, that he runs a stone 4 feet in diameter 160 revolutions per minute, and always calculates to run the periphery of the stone at the same absolute velocity, no matter how large or small the stone is. On tempering mill picks he agrees with our former conclusions, and adds that charcoal or bituminous coal should be employed. Cool in water prepared as per G. S., as published in our last issue.

Automatic Oven.

The mammoth establishment constructed by Mr. H. Berdan, in Brooklyn, capable of baking into superior bread 540 barrels of flour in twenty-four hours has proved quite successful, and a number more are to be constructed on the same plan in this and other cities.

A correspondent, Mr. W. Westlake, of Wis., recommends sulphur as an excellent article to set tinner's solder when it is rough, in case rosin will not do it.

Wrought iron will crush together under a smaller strain than is required to rend it by a direct pull. With cast iron the reverse is true. These facts should be borne in mind in selecting material.