

NEW INVENTIONS.

Improvement in Grain Drills.

Mr. Benjamin D. Saunders, of Holiday's Cove, County of Brooks, and State of Virginia, the inventor and patentee of a most excellent grain cleaner, has invented and taken measures to secure a patent for an improvement in Drills for sowing grain, the nature of which improvement consists in distributing the seed by means of cylindrical tubes, placed horizontally underneath the hopper, the said tubes have a rod working through them, on which are placed circular heads, a head working in each tube. A reciprocating motion is given to the rod and heads by a lever attached to one end of the rod. The lower end of the lever has a friction roller upon it, which is operated by a cam placed on the axle of the wheels, and this is set so as to give a faster or slower stroke to the rod passing through the tubes, so that the said rods, with their heads, which push the grain out of the tubes, distribute it faster or slower as may be desired. The grain is pushed out first at one side and then at the other of the horizontal tubes, by the rods, and from them it falls into troughs, and then is conveyed into the hollow teeth of the drill.

Improvement in Casting Iron Wheels.

Mr. William Dripps, of Coutesville, Chester Co., Pa., has invented and taken measures to secure a patent for an improvement in casting car wheels, with solid hubs, by which the contracting of the metal while cooling is made more uniform throughout the whole wheel, and this prevents cracking, and makes a much stronger wheel. A pipe connected with a reservoir of water passes through the centre of the hub, and the cold water passing through this pipe cools the wheel at the thickest part equally with the thinner parts of the casting. This pipe may be coiled round the hub or pass through it, as may be desired; the principle of the cooling is the same in both cases, the manner of application only is different.

New Paddle-Wheel.

A new Paddle-Wheel, termed the "Fan Paddle," invented by a Mr. Stephens, in London, has been tried on the Thames, on one of the steamboats. The improvement in the construction of the paddle consists in the use of fixed oblique floats joined endwise, and diminishing towards the centre in the shape of a lady's fan. A steamboat of the same build and the same power was run against the one with the new paddle, and the trial resulted in favor of the latter. The best way, however, to have tested the value of it, would have been to have taken its speed tried with the old paddle and then with the new.

Hospital on Ward's Island.

It is in contemplation, by our city authorities, to build a new Hospital on Ward's Island. We have examined the design of Messrs. B. E. & Ira Buckman, practical carpenters and builders, No. 94 Fulton street, this city. The design is a good one, in our opinion. It is proposed to heat the whole building by steam, conducted through hollow metal pillars, upwards, and horizontally through metal pipes. We have seen a building heated by Count Rumford's plan—very large steam pipes—and we liked it. The method of ventilation—a most essential feature for an hospital—is excellent in Messrs. Buckman's plan. There is an opening in each room, in the wall, communicating with a vertical passage like a chimney, to take off the foul air. Each passage is to be regulated by a slide, and thus every room can be kept properly ventilated and at the proper temperature, at all times.

Tubular Metal Tunnel.

A submarine metal bridge has been projected by a Mr. Cunningham, architect, of Liverpool, who has submitted a project to the directors of the various railway companies interested in the communication between Birkenhead and Liverpool, for all kinds of transit.

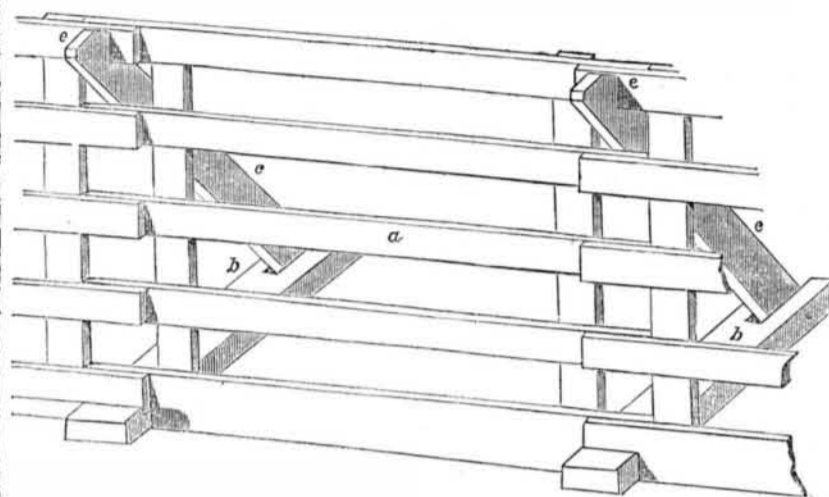
Mr. Cunningham proposes to sink an iron tube in the bed of the river, buried so completely below the surface thereof that there would be no more obstruction to the currents than at present. The tube would have perpendicular sides and an arched roof. It would be placed in a prepared bed, and would be protected outwardly by various contrivances.

Internally there would be two lines of rails running on each side of the tube, with a passage way for pedestrians. The entire work, it is estimated, would not cost more than £250,000.—[Boston Journal.]

[This we believe is a feasible project, and will be carried out at no distant day. A few years ago the people of Albany, N. Y., got out a charter for building a tunnel upon the plan

of the London one, under the bed of the Hudson. Here is a more practical project in every sense of the term. We hope they will take the hint. It would be a good undertaking to be superintended by Mr. Seymour, whose state office is now at an end. Let the people of Albany think of it. The heavy city tax we suppose, would be the only objection.

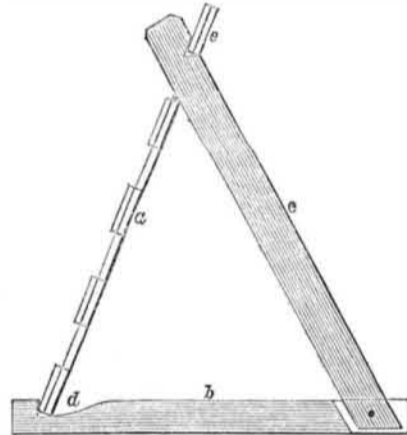
PATENT HURDLE FENCE.—Fig. 1.



The accompanying engravings represent an improvement in Hurdle Fences, invented by Mr. Cyrus Cole, of Rushville, Ontario Co., N. Y., and for which a patent was granted on the second of last month (Dec., 1851).

Figure 1 is a perspective view, and figure 2 is a cross section. The same letters refer to like parts. The improvement is upon the perpendicular fence, and consists in the mode of

Fig. 2.



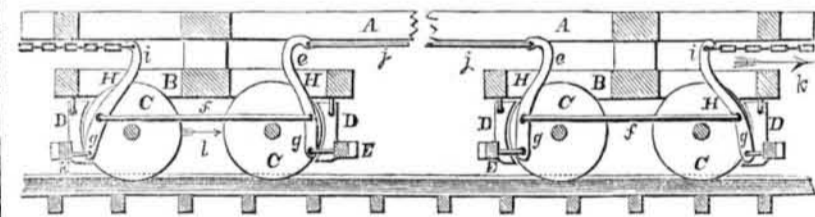
setting up and connecting the brace pieces therewith. Panels are formed of ten or twelve

feet, according to the length of the boards, and by placing four or five strips parallel, and nailing cross strips to them at right angles, the panel, *a*, is made; the brace pieces consist of a strip of scantling, *b*, which rests upon the top of the ground, and has firmly affixed to one end of it a brace, *c*, that extends up in an inclined position over the ground sill, *b*; at the front end of the sill, opposite where the brace is fixed, there is a notch, *d*, into which the lower edge of the panel rests, and another notch, *e*, in the upper end of the brace locks in between the upper and second horizontal strip of the panel, and the whole is compactly fastened; the second panel overlaps the first, as shown in the engraving, and so the fence is continued, there being a brace at each junction of the panels.

It will readily be seen that by this means a cheap and durable fence can be produced, any panel of which can be removed for a gate, and the whole can be taken up and housed, if need be, in winter. The claim is for the method of locking and supporting the same by means of the notched sills and lock braces, as described.

More information about rights, &c., may be obtained by letters addressed to Mr. B. F. Gage, of Canandaigua, N. Y., who will attend promptly to the same.

PATENT RAILROAD BRAKE.



The accompanying engraving represents an improvement in Railroad Car Brakes, invented by Mr. Francis A. Stevens, of Burlington, Chittenden Co., State of Vermont, and for which a patent was granted on the 25th of last November. The improved brake is attached to an eight wheeled car. The brake is constructed in such a manner that the friction shoes of all the wheels of the car are brought into action simultaneously, and each shoe throughout the whole series is pressed against its respective wheel with the same amount of force.

A is the frame of the car; B B are the frames of two four wheeled trucks. Each wheel, C, of each truck is fitted with a friction shoe, D, and the two friction shoes of each pair of wheels are connected by a brake beam, E, extending across the truck. Each brake beam is connected at its middle with the lower arm of an upright brake lever, H, and the fulcrums of the two brake levers of a truck are also connected by a link rod, *f*. The upper arm, *i*, of the brake lever which is nearer the end of the car is connected by a rod or chain with the brake wheel, and the

upper arm, *e*, of the brake lever nearer the middle of a car, is connected by a rod with the upper arm of the corresponding brake lever of the other truck.

If a force is applied to draw the chain at one end of the car in the direction indicated by the arrow, K, while the chain at the opposite end remains stationary, the whole series of levers and shoes will be moved, and the shoes will all be pressed against their respective wheels with equal force, for the force exerted upon the first lever is propagated by means of the link rods to the succeeding ones.

Thus, for example, if the longer and shorter arms of the levers bear to each other the relation of 3 to 1, and the chain be drawn with a force of 100 pounds, the pair of shoes operated by the first brake lever, will be pressed against their wheels with a force of 300 pounds, while the fulcrum rod, *f*, will be drawn in the direction indicated by the arrow, *l*, with a force of $300 + 100 = 400$ pounds. The fulcrum of the next succeeding brake lever, having thus a force of 400 pounds applied to it, and as its arms bear to each other the foregoing stated relation of 3 to 1, its

shorter arm will press forward its shoes with a force of 300 pounds, while the longer arm will act through the link rod, *j*, upon the longer arm of the next succeeding brake lever with a force of 100 pounds. This latter will act upon its respective shoes in the same manner as the first lever in the series, and with the same force; the pressure upon its fulcrum will also be communicated to that of the last brake lever, which will act in the same manner as the second one in the series. It is therefore evident that by connecting the brake levers alternately by their arms and fulcrums, as herein set forth, the force exerted to move one will be propagated throughout the series of any number.—This system of brakes is not confined in its application to a single car; the force applied to a single brake wheel may be propagated throughout the whole train by merely connecting the brake chain of each car with the succeeding one. In this case, the upper one of the last brake lever in the train will become the fixed point in the whole series, and all the levers will be moved to press their respective friction shoes against their wheels with the same force as the one which is moved directly by the brake wheel chain. This arrangement of brakes may be variously modified without affecting the principle of the invention. The claim for the invention is the arrangement whereby each wheel of a car is retarded with a uniform force, when the brake is put in operation.

This brake is in use in the Rutland and Burlington Railroad (Vermont), and L. Bigelow, Esq., the Agent, and John S. Dunlop, Esq., the Superintendent, have said that it is the best brake in use, and that it has advantages over all others. The uniform and equal application of the retarding power, to all the wheels, will at once be recognized. It must effect a saving upon some of the wheels, over the common brake, and in this respect its advantages are of no small consequence.

More information may be obtained by letter addressed to Mr. Stevens.

House-Heating.

Say what you will, the heat derived from the best cellar-furnace is unpleasant, suffocating, and unhealthy. The open coal grate makes dirt and wasteful consumption, almost equal to the furnaces. Close stoves of all kinds, where there are ventilating flues to keep the air circulating, are the best contrivance we have for economy and comfort; yet they give out an eye-smarting, throat-drying something that is disagreeable, and cannot be healthy.

We have thought of coarse porcelain, such as is said to be in use for wood-stoves in Germany. Iron seems to let through its pores something deleterious from the fire, whether you burn wood or coal. It may be that it is a disturbance of the electric condition of the air that is produced—probably this is the evil. If porcelain could prevent this, the benefit to the public health and comfort would be immeasurable.

Is it within the knowledge of the Scientific American to say where such porcelain cylinders can be had to order? We will adventure the expense confident of success.

ANTHRAX.

New York, Dec. 21, 1851.

[We do not know where such porcelain can be had; and for burning anthracite they would not last very long unless encased with iron, like our stoves that are lined with fire-brick. The brick answers the same purpose as the porcelain. Fire-brick stoves and flues are common in Russia; for workshops they should be more common with us; they are much healthier than iron stoves.—Ed.]

Alta California.

California is a great country in more respects than one, and for newspapers, we believe, she is about at "the top of the heap." The *Alta Californian* is one of the handsomest papers in the world.

Circular Saws.

We will present some very excellent and practical information on this subject in our next number. This subject has excited a great deal of attention, and no wonder, for the lumber interests of our country are very great, and becoming more so every day.