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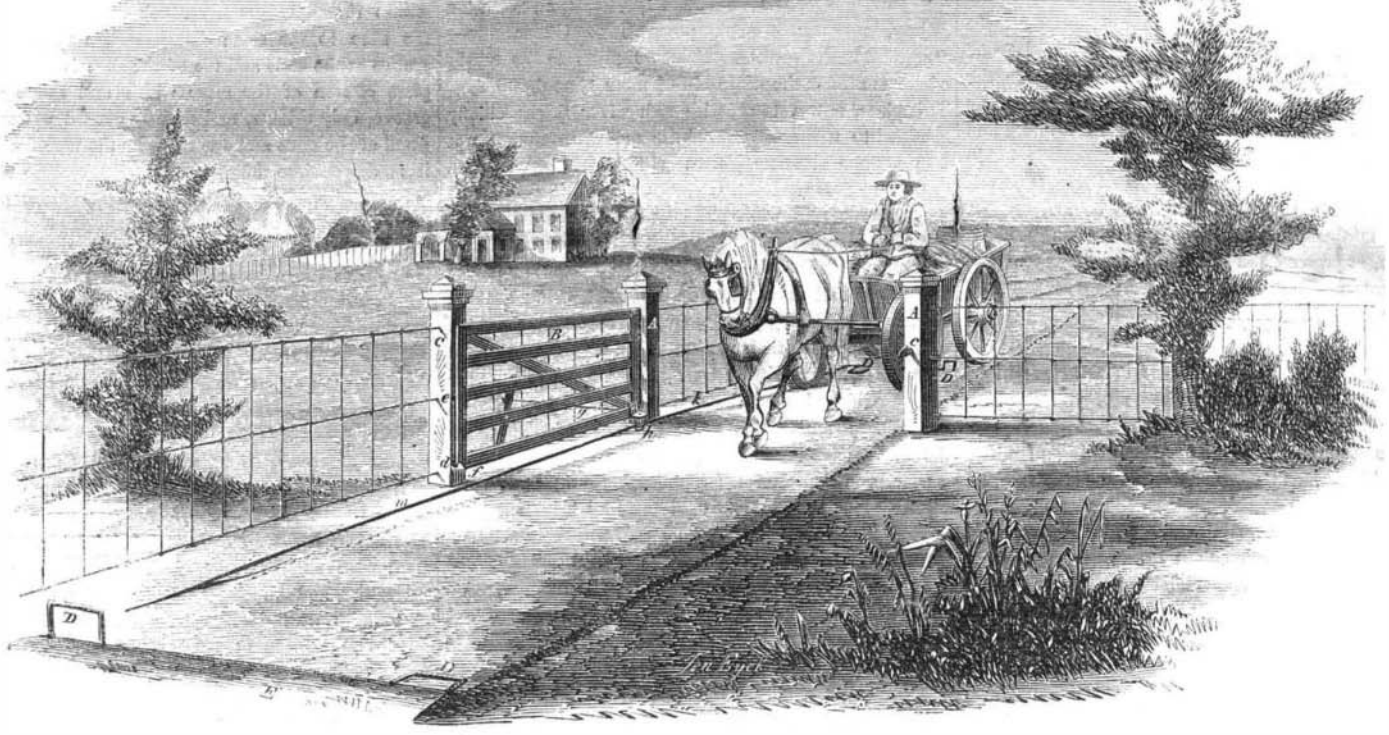
IMPROVED FARM GATE.

We have all of us been astonished in our younger days at that wondrous door in the rock, which, at the words "open sesame" opened without human aid and admitted the captain and his forty thieves into their secluded cavern. There are, however, greater wonders than this, around us and which we can all see ourselves and put in use if we so desire it, namely, gates which open without a spoken word, requiring no enchantment except the touch of the inventor's magic wand. Such a one is the subject of our illustration, and it has the advantage of simplicity, ease of operation, and not likely to be put out of operation by mud or snow. The traveler has not to get into the dirt to open the gate, as at his approach it flies open "like a charm," and closes when the vehicle is through.

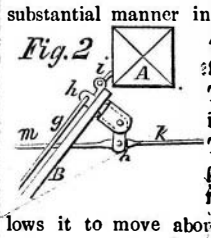


HAMILTON'S IMPROVED FARM GATE.

Fig. 1 is a perspective view, and Fig. 2 a diagram of the working parts. The gate B, is hung in the ordinary manner on the posts, A, A, opening against the post C. It is operated by the alternate pulling and pushing of the rods, *k* and *m*, in the following manner. The team approaching the gate finds one crank of the road lever, D, erect, and drives one wheel against it, bearing it down to a horizontal position, and passing entirely over it. This causes that portion of the lever, which projects downwards into the trench, E, to swing backward, pulling the long rod, *m*, which is attached to the latch lever, *h*, that works on a pivot in front of the gate; the other end of the latch lever passes under the gate and pull the latch rod, *e*, drawing the latch, *e*, out of the catch, *c*, and releasing the gate, which the continued pulling of the rod, *m*, swings entirely open, and the lower latch, *d*, fastens on the catch, *f*, holding the gate open while the team passes through. The opening of the gate pulls the rod, *k*, which is attached to the upright crank of the outside road lever, bringing down the upright crank, and erecting the other ready for the wheel to strike after the team comes through the gate; the wheel striking the crank, bears it down, raising up the other crank, which pulls the rod *k*; this swings the latch-lever, *h*, back again, *pushing* the latch-rod, *g*, which vibrates the swivel bar, *p*, pushing the *upper* latch, *e*, forward ready to catch when the gate shuts, and drawing back the *lower* latch, *d*, out of the catch, *f*, releasing the gate from the post, C, and the rod, *k*, still pulling, shuts the gate. When the team passes through the gate, as just described, that is, *going out*, it will be seen that the upper cranks in the engraving are on the left of the team, and are used to operate the gate; which is *pulled* open by the rod, *m*, and *pulled* shut by the rod *k*. In approaching from the other direction, in *going in*, the two lower cranks in the engraving are on the left of the team, and are used to operate the gate, and the gate is *pushed* open by rod *k*, and *pushed* shut by rod *m*,

The gate is any common swing gate; the pivot upon which the latch-lever, *h*, works, should be secured in a substantial manner in front of the gate, at an angle of 45° with the hinge, and distant from it about 15 inches diagonally. The manner of attaching it is not important, provided it is *firm*. The longer arm of latch-lever *h*, passes under the gate, and plays freely in an iron stirrup, which allows it to move about an inch and a half lengthwise of the gate: this works the latches by means of the rod, *g*. The shorter arm of *h*, to which the rods *k*, and *m*, are attached, need not be over 4 inches long, and turned down at the end. The two rods having each an eye through which the end so turned down passes, and a nut below keeps them from falling off. The shorter arm of the lever, *h*, should continue the same diagonal line formed by the pivot and the hinge, 45°, in front of the gate.

Fig. 2



This gate has been subjected to a public test and found to operate remarkably well. The inventor is A. J. Hamilton, of Lacon, Marshall county, Ill., who will be happy to give any further information if addressed as above. The patent is dated March 8, 1859.

MECHANICS IN OUR COMMON SCHOOLS.

At the National Convention of Teachers, held in Washington, D. C., on the 11th, a paper was read advocating instruction in mechanism in our common schools. This instruction was recommended to be illustrated by labor-saving devices adapted to the household and the farm, and that sewing and other machines should form the regular apparatus for all school-rooms. It was also recommended that instruction should be given in machinery for workshops and factories. These are apparently very commendable suggestions, and such studies might well take the place of some which now form part of the programme of almost every school. We do not advise, however, a single innovation in our common schools by an increase of studies, as it is well known that they are far too numerous now. Scholars learn a little of everything, and nothing well. It should never be forgotten that schools are designed merely for elementary instruction; the family, workshop and warehouse, for education in the practical arts. Some good works on machinery in school-libraries are desirable, and we would recommend this to our School Commissioners.