

Improved Farm Gate.

There is nothing more annoying to individuals passing in and out of gates in the country, than the sagging or dropping of the end, so that it drags upon the ground, and cannot be opened at all unless the whole structure is lifted bodily up. This defect has been remarked by every observing person; and the evils arising from it are not confined to the mere inconvenience of it. When a gate sags in this manner, it is hardly ever shut, and allows a free entrance to all animals astray upon the highway. Many a promising crop of corn, and garden patches generally, have been ruined by leaving the gate open; for which neglect there was always the excuse that "it wouldn't shut;" in too many cases literally true. An enterprising inventor at the West, deeming that the shiftless method of hanging a gate on hinges, and leaving it to sustain itself, had gone quite far enough, has devised the self-sustaining gate here-with illustrated. It will be seen that the body of the gate is very strong, as also are the posts to which the hinges are connected. To the bottom of these latter there is fastened a cast-iron shoe, A, in which the foot of the diagonal brace, B, sits; the top of this brace has also a cast-iron head upon it, over which the tie rod, C, passes, the opposite end being secured to the main post

by a nut and washer. From the head of the diagonal brace a second tie rod, D, proceeds to a second brace, E, the upper end of which fits in a casting let into the upper rail, while a third tie rod, F, connects with the outer rail, G. The plan of this gate, and its advantages, are so apparent to the observer as to leave little margin for an explanation. From the construction of the braces and the arrangement of them and the tie rods, it will be seen that the weight of the gate is wholly supported by the hinges, and through them by the large stone or wooden post, H; the first series of braces and the rods constituting a literal derrick (such as is used for hoisting heavy weights), and thereby affording a reliable support to the whole structure. Provision is made in the nuts on the ends of the rods for bracing the gate anew, whenever it may have been racked or strained by the weather or bad usage. There is no reason why this gate, if well made, should not do all that is claimed for it, completely obviating the objections existing against ordinary gates, and furnishing a safe, sure, and easily operated means of closing entrances about farms or residences. Small gates are readily made upon the same plan, but do not require more than one diagonal brace; an elevation of a small gate may be seen on the right of the engraving.

Patented through the Scientific American Patent Agency, on June 30th, 1863, by William C. Herider, of Miamitown, Ohio. For further information address the inventor at that place.

MILES'S WAGON STAKE.

The light castings and fastenings represented in the accompanying engravings, are those recently invented by O. E. Miles, for a new and improved wagon stake. The inventor informs us that many persons are using them, who assure him that these stakes save in iron work on every set used, and give better satisfaction than others of the ordinary kind.

The usual mode of constructing the main uprights, and securing them to the bolsters of wagons, is probably so familiar to most of our readers as not to attract their particular attention. Wooden stakes, or standards, are mortised through the bolsters at their ends (thus greatly weakening them), and are secured thereto by several wrought-iron braces which are attached by bolts and rivets. Besides these, a band is usually required around the end of the bol-

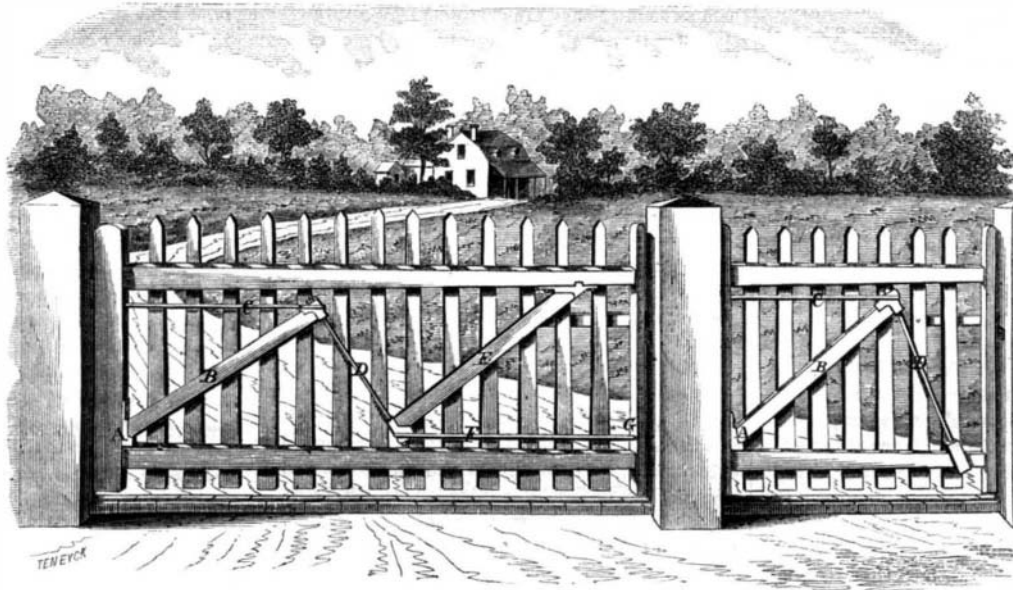
ster, to prevent it from splitting. All this, from its complicated nature, is expensive and troublesome; and if the parts are broken, a very expensive job of repairing is involved.

This improved stake, as will be seen by the engraving, Fig. 1, has a body, A, with a foot, *a a' e*, having a shouldered recess in its under side, which, when the bolster, B, is dressed to a proper form, and the end rounded to a compass mark, is easily and quickly fitted thereto so as to be secure against slipping, either endwise or laterally. The flange, *e*, on the under edge keeps the stake in position, laterally, and prevents water from getting under the casting; while the part, *a'*, of the foot is let into the bolster,

means. Such an adjustment or substitution is beyond the skill of the most intelligent wagoners, with the ordinary mode of construction.

Another feature of this stake, which makes it superior to the ordinary kind, is the socket, *f*, with which it terminates at its upper end, furnishing an ever-ready means of lengthening it to any height desired, by the insertion of a suitable extension piece, which may be a simple wooden bar. This is found necessary when very bulky loads are carried, such as rails, sugar-cane, &c. The opening, *g*, admits a key to confine the top stake if desired.

Many wagons are now constructed with an extra box, to be used on the top of the other when the loading requires it. This upper box is ordinarily secured to the lower one by cleats screwed to the upper one, and passing through staples inserted in the lower box. These cleats and staples are very liable to get out of repair. With this invention a set of extra stakes may be screwed to the upper box with their lower ends fitting into these sockets, *f*. And a further use for these sockets, the inventor, writes, will be found when we come to celebrate the re-establishment of the authority of our Government, "what convenient places they will be to set our flag staffs, carrying, if we choose, four at once."



HERIDER'S PATENT FARM GATE.

as indicated by the dotted line, so as to hold the casting very firmly against slipping endwise. The casting is held down by a clip and bolt, the clip, *c*, passing around the under side of the bolster, B, and up through the foot, *a*, on each side, secured by nuts. A countersunk bolt also passes down through *a'*, having a nut, *d*, on the under side of the bolster.

This structure is so shaped and applied as to se-

Fig. 2 represents a modified form of this stake, intended for trucks and sleds for drawing logs, &c. The foot and fastenings are the same as Fig. 1, with a simple rectangular socket, four inches in height, which admits of a log being easily rolled over it. This casting receives a wooden stake, of suitable form and of any desired height.

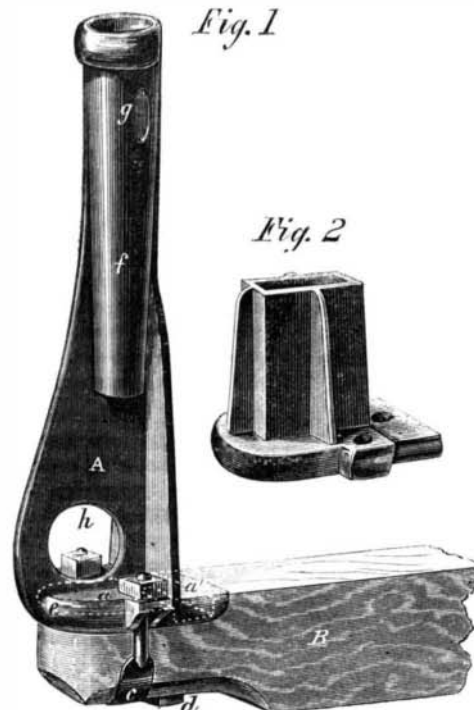
Further information may be had concerning this device, by addressing the inventor, O. E. Miles, at Aurora, Ill., who has taken steps to secure a patent.

A Tremendous Shock.

Dr. Jerome Kidder, of New York, has lately enjoyed the happiness of receiving, with perfect safety, a shock of electricity sufficient, according to the previous ideas of scientific people, to kill fifty men. The experiment took place at the Cooper Institute, under the direction of the eminent Professor Van der Wede, of that institution. The battery consisted of six of the large Bunsen cups and a Ruhmkorff coil, of sixteen miles of wire, made by E. S. Ritchie, of Boston—one of the best makers in the country. A most formidable battery truly! The New York Tribune states that Dr. Kidder had observed that the longer the wire was used the greater the tension, and consequently the greater the ease with which the current is conducted through the body. Hence he argued that the enormous length of the wire in the Ruhmkorff coil must render the current so highly conductible that, in spite of its great power, it would not lacerate the tissues of the body. He staked his life on his opinion and won it.

Force of Habit.

As an instance of the force of habit, a lady remarked to us the other day that so accustomed was she to wearing her thimble when sewing, that she now never sits down to her sewing-machine without putting it on, although it is of no service to her in the management of the machine. Her finger does not feel right without it. Yet, notwithstanding the power of habit, this little implement seems in danger of going out of use, along with the bellows, the fire-dogs, tinder boxes, and many other familiar articles of domestic use now superseded by similar invention. All sorts of sewing are done by machinery; and the time will come when the needle and thimble will be as little seen in the hands of women as the staff and the spindle now are.



cure the necessary strength and stiffness with these simple fastenings; and it is claimed that it weighs even less than the ordinary wooden stake with its wrought-iron work attached.

The opening seen at *h* furnishes convenient means for securing a binding rope when one is used. In case of this stake getting loose by the shrinkage of the bolster, it may be tightened with the greatest facility by an ordinary wrench. In the event of one getting broken, a new one, previously provided at slight expense, may be substituted by the same simple