

**AN IMPROVED COTTON PLANTER.**

A simple and durable planter of light draught and easily operated, in which the opening of the furrow for the seed may be easily regulated as to depth and the distribution of the seed will be regular, the seed being covered with soil to a suitable depth, is shown herewith, and has been patented by Mr. William T. Magruder, of Port Gibson, Miss. Immediately behind the cotter is a small shovel plow, followed by a block having a convex under surface to keep open the furrow, each side of the block having outwardly extending wings or fenders adapted to remove any loose clods near the furrow. The seed drum consists of two cone-shaped sections mounted on a drum-carrying wheel, rotating on an axle with bearings in each side of the frame, the cone-shaped section on one side being held close against the wheel, and the section on the other side being held more or less close to the wheel by a nut upon the axle, the distance between the base of this section and the side of the wheel forming the seed opening through which the quantity of seed to be dropped is regulated. This section is attached to the wheel by bolts which carry spiral springs, against which the nut on the axle holds the flange at the base of the section, and the wheel has a central aperture making the two sections substantially one seed reservoir. Each section of the seed drum has fingers upon its inner faces to prevent clogging of the seeds and cause them to flow regularly. A covering block, adapted to trail behind the planter, has outwardly inclined share-like shovels, adapted to project forward each side of the hopper wheel, covering the seeds with earth, which is compressed by the trailing tail block. The depth of the furrow is regulated by the leverage afforded the operator using the frame through the handles as a lever, the fulcrum being the drum-carrying wheel.

**AN IMPROVED AUTOMATIC CAR COUPLER.**

A car coupler designed to hold the link in horizontal position, and wherein the coupling pin, when raised to uncouple the cars, will be automatically released by the action of an entering coupling link, is illustrated herewith, and has been patented by Mr. Luther B. Sampson, of Rochester, N. Y. Fig. 1 is a central longitudinal section, representing the parts as they appear when the coupling pin has fallen to engage the link, and Fig. 2 shows the pin raised to couple automatically with an entering link. In the rear of the drawhead is a bore in which is housed a spring which bears against a bifurcated grip, the grip having a rearwardly extending shaft about which the spring is coiled. Upon the inner faces of the grip arms are ribs adapted to engage shoulders on a vertical shaft or bar, the lower end of this bar having a step or toe, and a coupling pin being connected to the upper end of the bar by a crosshead. Above the grip is mounted a catch, which is connected to a short shaft or bar in vertical apertures, the shaft and its catch being normally held depressed by a spring, and to the rear of the coupling pin, beneath the crosshead, is a weight or block. By raising the coupling pin and the parts connected with it, which may be effected from the top or sides of the car in any of the well known ways, the toe of the vertical shaft back of the pin will strike against the lower end of the short shaft attached to the catch, raising the latter, so that the spring around the rearwardly extending shaft of the bifurcated grip will force the latter forward into engagement with the notches of the vertical shaft connected by the crosshead with the coupling pin, and hold the latter in the position shown in Fig. 2. If the drawhead is entered by a link, when the parts are so adjusted, the striking of the link against the forward rounded faces of the grip forces the latter back, whereby the coupling pin is free to drop to the position shown in Fig. 1. With the parts in this position, the weight at the rear of the coupling pin, beneath the crossbar, bears upon the link to hold it in horizontal position, so that it will enter the drawhead of an approaching car.

**Remarkable Salt Vein.**

At a depth of 1,000 ft. from the surface of the ground, near Ithaca, N. Y., a vein of pure natural salt 250 ft. thick has been struck. The discovery was made during an experimental boring in search of gas.

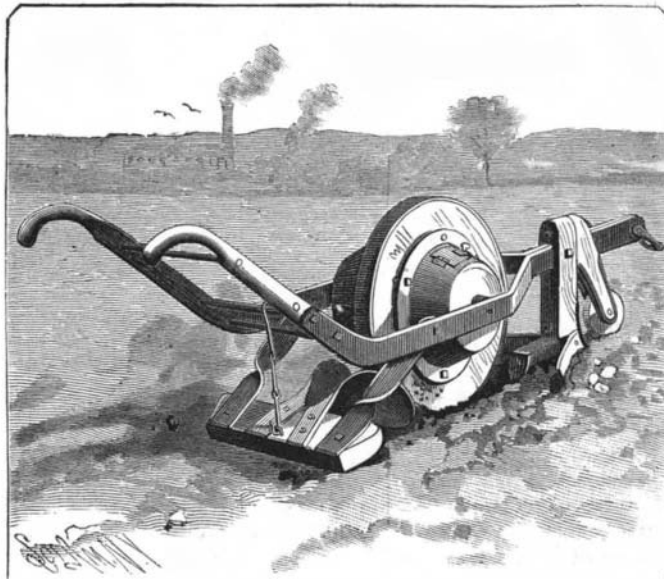
**A Water Bicycle.**

Prof. Alfonso King has a water bicycle, which consists of two spindle-shaped tubes about 12 ft. in length and 1 ft. in diameter. The tubes are united by an iron framework, which also carries a light water wheel with pedals and a bicycle saddle. This novel boat was lately tried by the inventor in N. Y. harbor. The wind was blowing a small gale, and a strong flood tide was running, and the sea was being chopped into angry waves,

which aroused doubts as to the seaworthiness of the novel craft. The little boat skipped over the waves, and the professor worked his pedals with admirable energy. In forty-five minutes from the time of the start, at Liberty Island, the bold navigator ran under the Brooklyn Bridge. Distance, about three miles.

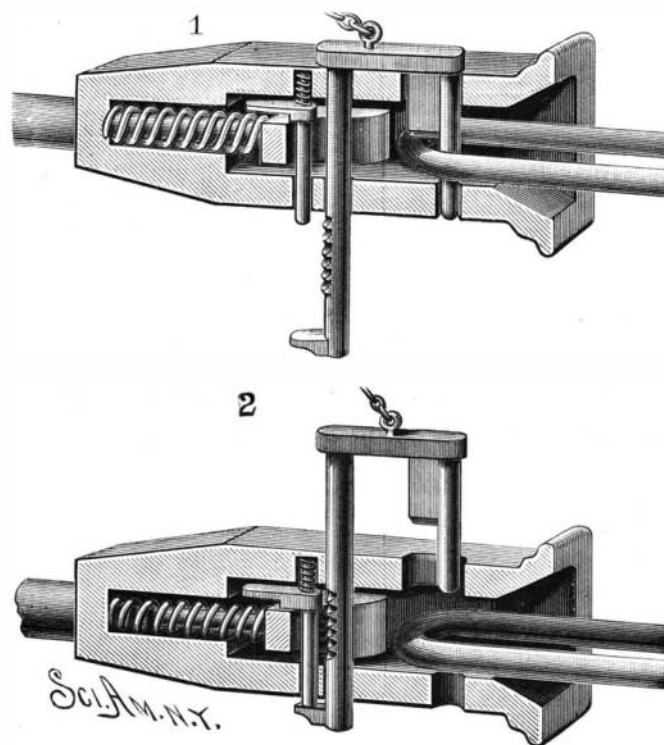
**The Brotherhood of Locomotive Engineers.**

The twenty-fourth annual Grand International Convention of the Brotherhood of Locomotive En-



MAGRUDER'S COTTON PLANTER.

gineers was held in Chicago on the 19th October, with delegates present from all parts of the Union. The Grand Chief Engineer, P. M. Arthur, with his usual rare good sense, said in the course of his annual address: "We are enemies only to wrong in its various devices and garbs, and can assuredly say that political schemes and aspirations have no place nor part in our association. A mighty army of men, representing 365 divisions, has gathered about a nucleus of 12 men who, 24 years ago, assembled in the city of Detroit and started an organization destined to be more than they knew or dreamed. To-day we number 25,000 men, and while our numbers are great, we would not have you consider only the quantity, but the quality as well. To be a Brotherhood man, four things are requisite,



SAMPSON'S AUTOMATIC CAR COUPLER.

namely: Sobriety, truth, justice, and morality. This is our motto, and upon this precept have we based our practice. We have paid out during the fiscal year just closed, to widows and orphans, \$259,500, making a total of \$2,244,669.61 that we have paid since the association was established. Our *Journal's* circulation has now reached 22,000; from which we derive a revenue of \$8,922.84 per year. Taking all things into consideration, our relations, both to ourselves and with various railroads employing Brotherhood men, are amicable. When we consider the dissatisfaction which is everywhere manifest about us, our few troubles pale in insignificance. There have been times and incidents when the 'strike' was the only court of appeals for the workingman, and the evil lay in the abuse of them and not in the use of them. The methods used to bring about a successful termination of strikes, the abuse of property and even of persons, have brought the very name into disrepute, while the troubles of

the laboring man are receiving mere cant, and sympathy for him is dying out. More and more clearly defined is the line becoming which divides the honest man, satisfied with a just remuneration which he has truly earned, until by his own effort he can rise to a higher position in life, and the loud-voiced 'bomb thrower,' who, scarcely able to speak the English language, seeks to win his own comfortable living from those who have worked for it, presuming upon the imagination and arousing false hopes in the hearts of those who are still more ignorant than himself.

Among sensible men the day for all this is past. Let 'mercy season justice, and justice be tempered with moderation.' A wise arbitration looks to a long result rather than to immediate satisfaction, and accomplishes more than intimidation ever can hope to do.

"It is not my intention," said Mr. Arthur, "to impose upon this convention any dogma upon the drink question; but I cannot refrain in honesty to my own convictions from deploring the sad havoc that intemperance is making in the ranks of our fellow men. So great is this evil that no man or woman who is striving to improve their fellows can help taking it into account. It is, indeed, an important factor for evil in our midst. Not only from the physical and moral standpoint is it working mischief, but from the standpoint of labor. The man who has so little self-control that he cannot resist the temptation to degrade himself is always in danger of bringing disgrace upon his brethren. He has lost his self-respect and, to some extent, his independence, thus making an easier victim to the greed of a selfish employer. I would therefore urge upon you the necessity of abstaining from everything that will in the slightest degree impair your usefulness as citizens or your efficiency as locomotive engineers."

**Progress of Electrical Improvements.**

Electrical progress has been almost in keeping with the inconceivable speed of electricity. But a few years back, within the memory of all our readers, what a paltry corner of usefulness was occupied by electrical invention! A few improvements in batteries, and the then wonderful development of the electric telegraph in its various modifications, comprised about the whole crop visible in the field. At the Centennial in 1876, only eleven years ago, some feeble attempt was made to show that electric light could be produced from a dynamo, which was spoken of as a "very interesting exhibit." Professor Bell's first crude telephone attracted thousands of curiosity seekers, and the verdict was "a beautiful conception, but a mere scientific toy." Professor Gray exhibited various forms of what has since become one of the mighty arms of multiplex telegraphy; but most people looked askance at the models as the "in'ards of a church organ," and passed them with indifference.

To-day, only eleven years later, the arc lights of the United States are fast approaching two hundred thousand, while the incandescents have long since passed the million mark. It would be but a one-horse telegraph company that did not use the duplex and quadruplex systems almost exclusively; the harmonic's dainty song is heard everywhere; electroplating has got to be an indispensable adjunct to a great body of industries; the telephone has become the business man's *fidus Achates*; a solid phalanx of electric motors are slowly but surely pushing the small steam plants into the scrap pile, with the moral support of thousands of domestic motors, sons of the same sire; and the knell of the poor street car horse has been tolled. We are surrounded with a myriad of small devices, such as alarms, annunciators, gas lighters, mine exploders, impossible to catalogue here. And we have several very sturdy infants growing. Already electric smelting has taken a strong position commercially; electric welding—or more generically electro-smithing—has come to stay, and will soon take its place in the rank and file of labor-saving inventions; storage batteries are gradually giving up their secrets and becoming amenable to scientific law, and they have a vast field of usefulness awaiting them. The review becomes bewildering, and the mazes of possibility are inexhaustible. Where will it end? Nowhere in our lives. As the years swell into decades, and the decades round into centuries, it will be found that the true flood gates of improvement were opened by the discoveries and practical applications of electricity in the decade now completed, and the onward and ever widening torrent will end only at the crack of doom. —*Electrical Review.*

**A Spring of Acid Water.**

About fifteen miles south of Meridian, Miss., there is a spring near the foot of a hill. The water is almost as sour as lemon juice. With the addition of sugar it makes first-class lemonade, with a slight taste of iron. The spring was recently discovered, and it is not supposed to possess any value except as a curiosity.