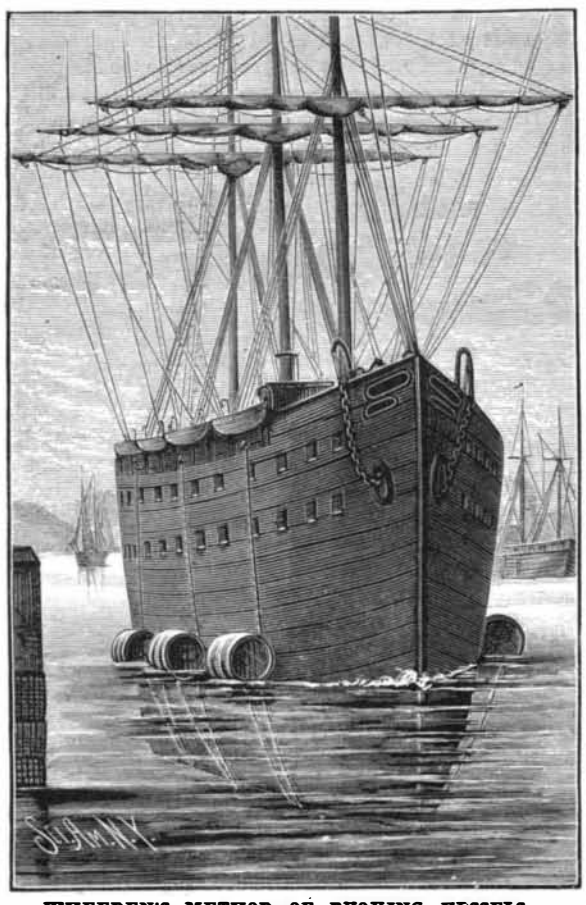
NEW METHOD OF BUOYING VESSELS.

The annexed engraving represents a novel method of preventing the careening or rolling of vessels while discharging in port. Ordinarily vessels without ballast are supported by spars or logs; this improved method consists in attaching a line to airtight casks floating on the water at the sides of the vessel, and passing a line from each cask under the keel and up the opposite side of the vessel, where it is made fast. The casks employed for this purpose may be the ordinary water casks carried by all vessels. If one cask on each side is insufficient to produce the desired result two or more may be used. By this arrangement the least inclination of a vessel to roll is checked, and the cargo may be discharged without fearof careening.



WHEEDEN'S METHOD OF BUOYING VESSELS.

This device is adapted to pontoon bridges, floating docks, and may be applied to great advantage to disabled and leaky vessels at sea.

Further information may be obtained from the patentee, Mr. James C. Wheeden, 97 South Broadway, Baltimore, Md.

NEW CHECK-ROW, CORN PLANTER, AND FERTILIZER.

The machine shown in the annexed engraving is designed for planting corn in perfect check-row, so that the rows will be straight each way, and for delivering a limited amount of fertilizer to each hill.

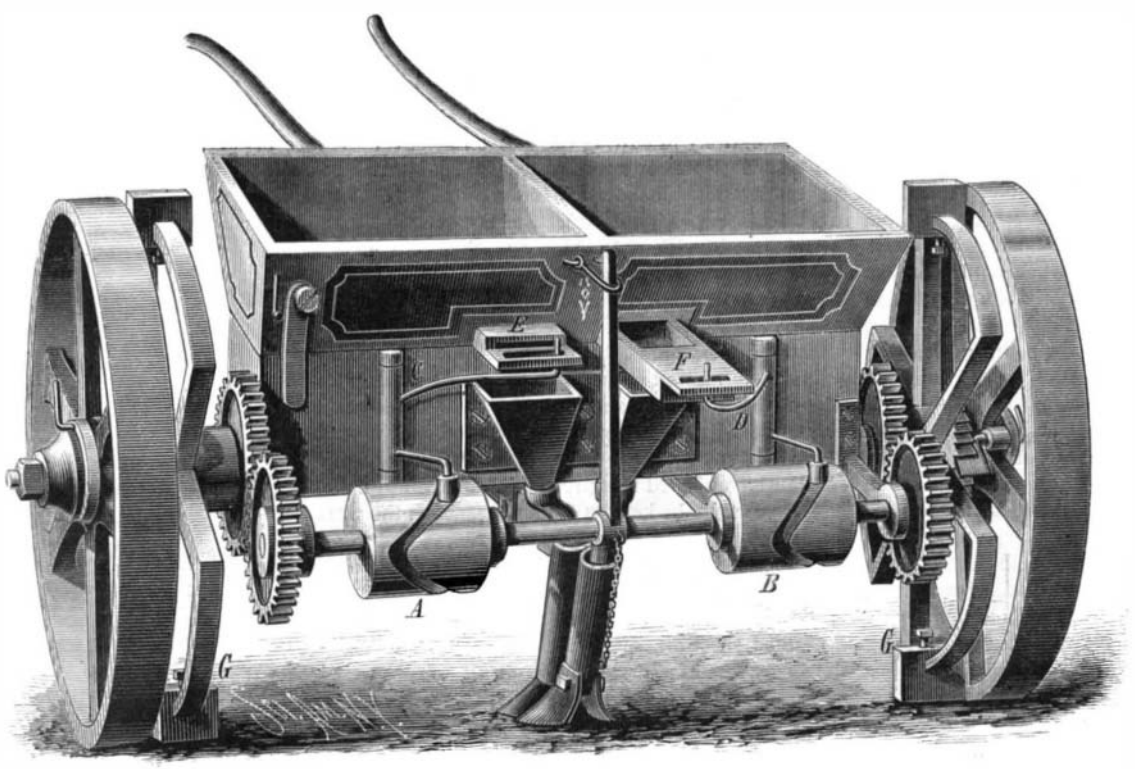
The running wheels and the markers, G, are mounted on a sleeve placed on a shaft which runs through the lower portion of the body of the planter. The markers, G, consist of three segments connected with a central hub, and having arc-shaped bars concentric with the running wheels and provided with feet or markers which, by indenting the ground, make an impression that serves as a guide for dropping the next row. As the relative position of these markers may at times require changing, they are connected with the arc shaped bars by clamp plates and bolts so they may be rea dily fastened at any desired point.

On the outer sides of the hubs of the markers there are ratchet wheels which are engaged by pawls carried by the running wheels, and the inner sides of the marker hubs carry spur wheels for driving the seeding and fertilizing devices. The pawls which carry the markers are provided with handles for easily operating them from the outside of the running wheels, and they are held either in gear or out of gear by a double-acting spring.

A shaft carrying two grooved zigzag cams, A B, is journaled in supports projecting from the rear of the body of the planter, and is provided with spur wheels at each end which take motion from the wheels on the marker hubs. The cams, A B, are arranged to oscillate the rock shafts, C D, which, in turn, operate the feed slides, E F, which are so arranged as to drop seed and fertilizer into their respective hoppers, E being the seed slide, and F the fertilizer slide. In the seed slide there is the customary space for the reception of a few grains of corn which are to be dropped. This little chamber is pulled through the side of the seed box and allowed to drop into the hopper communicating with the spout by a flexible tube. To prevent the corn from becoming packed in the slide, the seed box is made with an expanding opening, which expands and allows the grain to pass without mashing it. The slide, F, is made adjustable so as to vary the quantity of fertilizer dropped with the seed. The grain spout and the fertilizer spout are connected together with the grain spout in advance, and they terminate in a plow or opener, behind which there are coverers.

The engraving shows the planter in its simplest form, adapted to a single row of corn, but it is obvious that a machine may be constructed on the principle to plant a number of rows simultaneously.

Further particulars in regard to this invention may be obtained from the patentee, Mr. H. F. Graetzel, of St. Joseph, Md.



GRAETZEL'S CHECK-ROW CORN PLANTER AND FERTILIZER.

John D. Napier.

Mr. John D. Napier, of the well known firm of Napier Brothers, manufacturing engineers, Glasgow, Scotland, died Friday, March 12. Mr. Napier was trained as an engineer by his father, the late David Napier, the pioneer of deep sea steam navigation in Great Britain. In early life he took a prominent position among the practical engineers of London. Subsequently he spent a number of years in Australia; but for a considerable period he had resided in Glasgow, ranking high among the leading mechanical engineers of his day.

Illiterate Collegians.

Mr. Charles Dudley Warner says, in the *Christian Union*, that he was told not long ago, by a professor in one of our leading colleges, that a freshman came to him, after he had been recommending certain books in the literature class, and said he had never read a book in his life. This was literally true. Except his text-books, he had never read a book; he had passed a fair examination, but of reading he knew no more than a Kaffir. Another professor in another college, also one of the highest in the country (both of these are Eastern colleges, in the center of the best culture in America) told Mr. Warner more recently that a sophomore, who stood well in his class, came to ask him where he obtained certain facts which he referred to in the class room. It came out that the young man never had read a book, didn't know what the sensation was, or how to set about it, and had not the faintest conception of literature. He had no notion of the pleasure or profit to be got from reading; the world of books was absolutely beyond his imagination, and he could not conceive what people found in it. The professor at length induced him to read one of Scott's novels, but the boy found it a very tedious and uninteresting occupation.

These two instances Mr. Warner thinks extreme only in degree, and insists that it is a common thing for undergraduates to be ignorant of everything but their text-books. There is a popular prejudice that young men who have been graduated at college are "liberally educated," and that no one else can aspire to that honorable title. Yet it is a common thing for untaught mechanics, used to reading good books and a paper like the SCIENTIFIC AMERICAN, to have vastly more real learning, and that of a more useful kind, than the average collegian carries away from college.

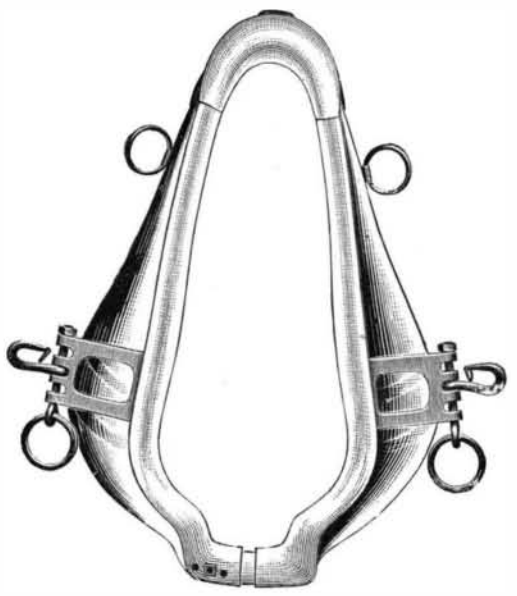
IMPROVED STEEL HORSE COLLAR.

We give herewith an engraving of an improved steel horse collar recently patented in the United States, Canada, Great Britain, France, Belgium, and Germany by Messrs. Fisher & Watson, and is being manufactured and introduced by Mr. R. Carter, of Brooklyn, N. Y.

This collar is swaged out of thin plates of steel, and is light, strong, and low priced.

A great difficulty has been encountered in attempting to provide metallic collars with suitable couplings or fastenings, which will not only connect the two halves or flanged sections of the same with the requisite security and rigidity, but also permit convenient adjustment, for the purpose of enlarging or diminishing the capacity of the collars, so as to adapt them for use on horses of different sizes, or on the same animals under different conditions. After many experiments Messrs. Fisher & Watson have succeeded in producing a flanged metallic collar whose fastenings are of such a character as to permit easy and quick adjustment for varying width or length without weakening the connection and lessening the rigidity of the collar, and are at the same time light, compact, and durable.

With this collar no hames are required, as the traces are connected directly with the collar. It is perfectly smooth



STEEL HAMELESS HORSE COLLAR.

and hard, absorbing no perspiration, and cooling the shoulders by the hollow conformation, always exposed to the air; fitting closely to the neck and shoulders, all lateral motion is prevented, as well as any folding or creasing of the skin so often caused by the stretched or loose lining of the padded collar; it will never gall, and upon sore shoulders will exercise the same healing properties as the well-known zinc pad. Further information may be obtained in relation to this invention by addressing Mr. R. Carter, 305 Quincy street, Brooklyn, N. Y.

MISCELLANEOUS INVENTIONS.

Mr. Ebnezar H. Sturges, of Wing's Station, N. Y., has patented a compact and convenient safe or receptacle for receiving and keeping housekeeping utensils conveniently and handy for use. It consists in a safe having compartments for knives, bottles, sugar, spices, and other articles.

Mr. Max Rubin, of New York city, has patented a bottle stopper provided with a discharge spout, and so constructed that the spout may be covered and uncovered by closing and opening the stoppers.

An improved store counter has recently been patented by Mr. Henry H. Henderson, of New Glasgow, Nova Scotia. The invention relates to means for supporting the hinged covers of the sections; and it consists in two jointed bars or rods, one pivoted on the inside and the other provided with an eye that slides on a keeper attached to the under side of the cover, in combination with a notched cam on the inside of one end of the section, so that the pivoted rod catches behind the shoulder when the cover is opened and holds it firmly in position.

Mr. John D. Richardson, Jr., of Newport, R. I., has patented an improved electric call bell. The object of the invention is to permit the operation from the central station of any one bell in the circuit, whereby one station may be called without giving an alarm at any of the others.