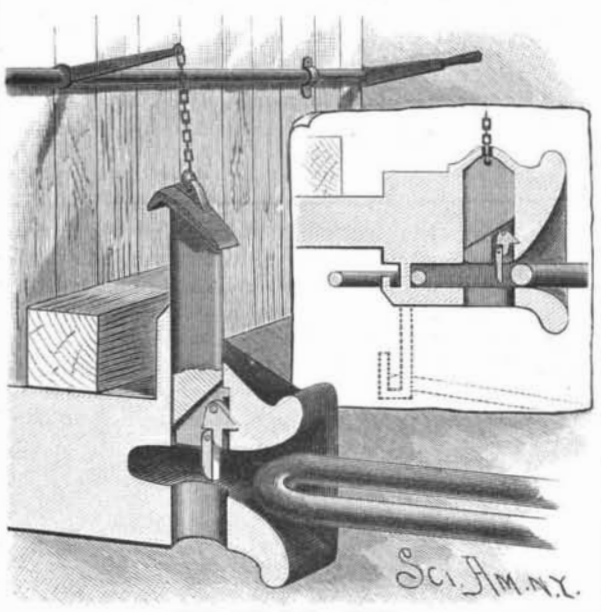
### A CONVENIENT SKETCHING BOARD OR BOOK REST.

A simple device intended to facilitate reading while standing or walking about, or for writing, taking notes, or sketching, has been patented by Mr. Wilson Small, of No. 336 Lorimer Street, Brooklyn, N. Y., and is illustrated herewith, the small figures showing a

SMALL'S SKETCHING BOARD.

side elevation and an inverted plan view of the device. The support or table has a block or flange at the rear edge, which, with the adjacent edge of the table, is made concave, to fit against the body of the user, the table being connected to a yoke consisting of a small rod of iron bent in U form and curved backward, to fit over the neck and shoulders of the user. The lower ends of the yoke pass through small orifices near the ends of the block or flange, and in the ends of the block are set screws for locking the table high or low upon the yoke. For holding paper or the leaves of a book on the table, wire arms are pivoted to the upper edge of the block



BYRNE'S CAR COUPLING.

or flange, the arms being acted upon by a spring secured to the flange which bears against a central extension of the wire forming the arms. Side hooks and a front hook are attached to the bottom of the table, and adapted to move longitudinally, being drawn toward the center by a spring, preferably of rubber, the hooked ends reaching above the table to confine the paper or the leaves of a book.

### AN IMPROVED CAR COUPLING.

A car coupling device in which the coupling pin has a hinged catch, on which is pivoted an arm, which, with the catch, can be folded into a recess in the pin, and which is designed to be simple and durable, while being automatic in operation, is shown in the accompanying illustration, and has been patented by Mr. Samuel Byrne, of No. 197 McCaul Street, Toronto, Canada. The drawhead has a flange on top serving as a protection to the pin from contact with the dead wood, its front end being so formed as to protect the gravity pawl of the pin from snow and ice. The pin is elliptical in form, with a corresponding aperture in flange and drawhead, and has a recess in its lower part in which is pivoted a gravity catch, adapted to engage a rest in the proper position in the drawhead. On the lower free end of the gravity catch is pivoted an arm having on its upper end a shoulder which engages a projection on the front part of the gravity catch, preventing the arm from swinging to the rear, but permitting its forward swinging motion. When the coupling pin is drawn up, the gravity catch swings forward and its shoulder swings into the rest, whereby the pin is suspended in vertical position, the pivoted arm extending downward, and its lower end reaching to within a short distance of the bottom of the drawhead.

As the link passes into the drawhead, its entering end strikes the pivoted arm and disengages the catch, so that the coupling pin drops down, causing the arm and gravity catch to swing out of the way, until the coupling is effected, when they drop down into their former position for uncoupling and resetting. The elevating of the pin is readily effected by means of a rod journaled across the end of the car, carrying an arm with a suitable short chain and hand lever, or by proper connection from the car roof. In the small figure is shown another form of construction, wherein there are two fixed pins, one of which will be always in the link, preventing its loss, the other being a stop to prevent the link retreating when entering an approaching drawhead, and having a space above it sufficient to allow the link to pass over and hang behind when not required.

### Beet Sugar at Two Cents a Pound.

We have some interesting figures from Germany, showing at what price sugar is now being manufactured in sixty-four first class factories, as reported by the association of Oderbruch and Pomerania. To think that it is possible by existing improved appliances to extract 11·31 per cent sugar from the beet, and an additional 0·65 per cent from the molasses, or a total of 11·96 pounds per 100 pounds of beets, is calculated to cause a thrill of satisfaction in the breasts of Americans who contend for the best welfare of their country. The cost of this sugar was *only two cents per pound.* These, however, are actual facts, and could, with very little additional expense, be repeated in the United States. Unlike sorghum sugar, of an unknown future, this beet sugar is placed on the European market in quantities sufficient for the entire American consumption. We only have to follow the example given us, to become the *masters* and not the slaves of the world's sugar trade. Why these great opportunities are neglected remains a mystery to those who have the country's industries truly at heart.—*The Sugar Beet.*

### AN IMPROVED COTTON STALK CUTTER.

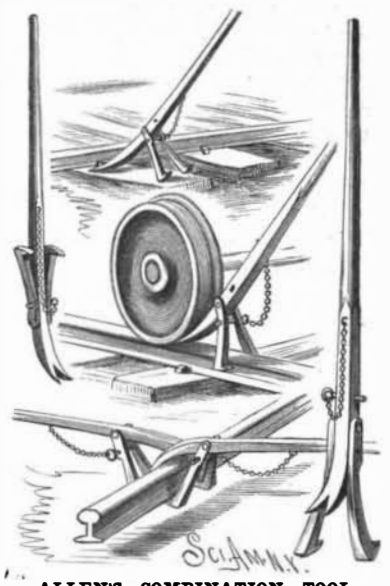
A machine adapted to cut down the stalks or plants left standing after harvest, and whereby the stalks are cut and severed in such way that they may be easily plowed under in preparing the land for the next crop, is shown in the accompanying illustration, and has been patented by Mr. John P. Lockwood, of the Wando Phosphate Co., Charleston, S. C.

The sulky on which the rearwardly extending stalk cutting mechanism is supported has short axles, on which the wheels are journaled, the axles extending far enough inside the sulky frame to allow levers to be fulcrumed on them. To the back end of each of these levers is journaled a shaft carrying a toothed pinion which meshes with an internal gear wheel or circular rack fixed to the inner face of the adjacent sulky wheel. To each of the shafts is fixed a cutter-holding frame, made preferably of two long and two short bars crossed at the center, where they are fixed to the shaft, each of the bars carrying at each end a laterally projecting cutter, which as the frame rotates cuts the standing stalks. The cutters not only sever the plants at a point about four to six inches from the ground, but, from the arrangement of the cutters on the longer and shorter bars, the severed stalks are cut into comparatively short pieces, which, with the short stumps left standing, may be easily plowed under when preparing the land for the next planting. The long arms of the levers carrying the cutter-holding frame, and fulcrumed upon the sulky wheel axles, extend forward to opposite sides of the driver's seat, where they are provided with foot plates, which, when depressed, will raise the cutter frames and cutters, either at one or both sides of the machine, as may be required, to avoid projections in the field, as rocks or stumps, the raising of the cutter frames and cutters not ungearing them from the sulky wheel gear.

LOCKWOOD'S COTTON STALK CUTTER.

### AN IMPROVED COMBINATION TOOL.

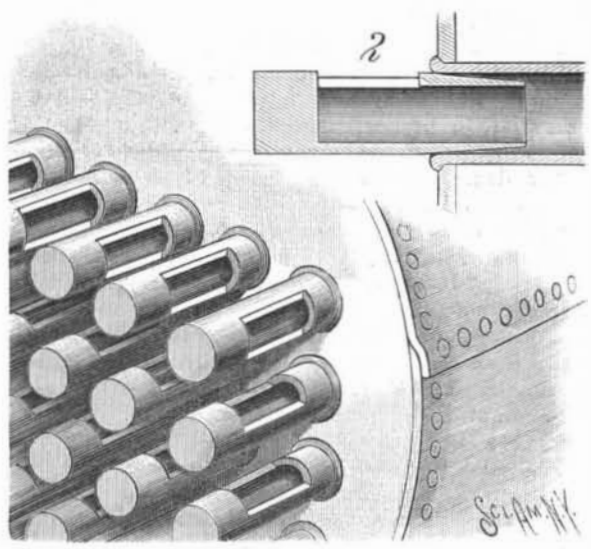
A tool which can be effectively used either as a cant bar, pry bar, pinch bar, spike claw, or rail lifter is illustrated herewith, and has been patented by Mr. William W. Allen, of No. 1126 Tyler Street, Topeka, Kansas. The tool consists of a claw bar with the usual claws, with dogs pivoted on each side of the bar on a pivot common to both, the dogs being each flared outwardly and slightly beveled on their inner edge, and having their front edge curved to prevent them being pushed off of a close grip. The dogs also have transverse apertures through which can be passed a pin to hold them in a locked position when not in use, the pin being hung on a chain, while to the outer end of each dog is secured a forwardly and slightly downwardly extending hook.



ALLEN'S COMBINATION TOOL.

### AN ANTI-CLOGGING BOILER FLUE PLUG.

A boiler flue attachment which is designed to prevent dust, sparks, or unconsumed portions of the fuel from entering the flues is represented in the accompanying illustration, and has been patented by Mr. John Kelly, 24 Ann St., Los Angeles, Cal. It consists of a plug, preferably slightly tapered at one end, provided with a central recess opening into the boiler flue, and an opening through the wall of the plug communi-



KELLY'S BOILER FLUE ATTACHMENT.

cating with such central recess. The plug is driven with its tapering end into the front end of each of the boiler flues, the outer openings in the plugs being turned to the sides in the top row of flues, and upward in the following rows. The plugs are thus arranged so that the dust and cinders thrown up against the crown sheet, on being downwardly deflected, will, on striking the top row of plugs, fall again into the fuel, the next rows of plugs having their upwardly turned openings partially protected by the top rows, to prevent cinders from being drawn into them. The outward opening in each plug is to be made of about the same area as the cross section of a flue.

### Frogs in Commerce.

Almost all the frogs used for experiments in vivisection in the European universities are supplied by an old fisherman of Kopenich, who, for forty-five years past, has devoted himself to this pursuit. Sometimes he has succeeded in catching as many as a thousand in one night. The traffic must be quite profitable, as the frogs sell for an average of two to four cents apiece.—*Period. Espan.*

A ROADBED OF SALT.—In the Colorado desert, near Idaho, there is a large bed of rock salt, and the Southern Pacific Railroad, in laying the track to the salt bed, has been obliged to grade the road for 1,200 feet with blocks of these crystals. This is the only instance where the roadbed is laid and ballasted on salt. The sea, which once rolled over this place, dried up and left a vast bed of salt nearly fifty miles long. The supply is inexhaustible and the quality excellent.