has been returned to à vertical position, the weights on the levers, $G$ and $H$, will reset the parts, so that, by again moving the lever, an additional forcemay be applied to turn the wheels.

The braking mechanism consists of a rock shaft having arms carrying brake shoes. Rigidly connected to the shaft is a forwardly extending arm, $L$, which is coupled to the end of the lever, J. As the main lever is thrown to the right, the forward end of the arm, $L$, will be depressed, and the shaft-rocked to carry the shoes against the wheels. The same mechanism operates brakes bearing against the rear face of the wheels.


## neville's combination plow.

Upon the main lever being returned, a weight carries the parts to their normal position. Further informa tion concerning this patent, which is for sale, may be had by addressing the inventors, as above.

## COMBINATION PLOW.

Upon the plow here illustrated either wooden or metallic mouldboards may be used interchangeably: The iron standard is bolted to the under side of the beam, there being a plate upon the upper end of the standard through which bolts pass, The standard project downward and forward, and is provided with a flange, apon which rests the point; which is secured by a bolt and steadied by a rearwardly extending bar fitting in a reees in the standard, asshown in Fig. 2. Just back of the point is arranged a share, secured to the stand ard by bolts, and which projects unwardheriant the flange upon the sfandard. The mouldboard, Fig. $3^{6}$ has a flange fitting beneath the rear edge of the share, the extreme upper edge of the share abitting against a shoulder on the board. The handles of the plow ar united by braces, one being beneath the beam ; the landside handle is bolted to the rear end of the beam and to the rear end of the bar that steadies the point while the lower end of the other handle is bolted to th mouldboard when the latter is made of wood. When the mouldboard is of metal, the lower end of the handle is stepped in a socket secured to the rear face o the board. Althougha wooden mouldboard pulverize the earth more thoroughly than one of metal, it is not always desirable to use the former, hence the need of a plow having interchangeable mouldboards.
This invention has been patented by Mr. S. S. Ne ville, of Burnsville, Miss.

CULTIVATOR TONGUE AND SHOVEL
The engraving illustrates an invention which consists in a cultivator shovel, forming a combined tongue and shovel, capable of being adjusted laterally from a fixed


SAIDERS' COLTIVATOR TONGUE AND BHOVEL.
center or pivot. The lower part of the blade, which shown detached in the right hand view, forms the tongue part, while the upper portion forms the shovel The straight vertical edge is beveled on its under sur face to form a cutting edge, which adapts the blade to first plawibes. The lower angular end is also buveled
closer to the plant. The end being made slanting, forcing action is exerted toward or from the plant. The outer edge is straight below, but spreads out laterally and upwardly in a curve, and is also beveled. This construction provides for the surface of the ground being cultivated without disturbing the roots of the plant Above the curved portion the edge of the blade is rounded, the object being to prevent injury to the plant. The blade is secured to a standard by screw bolts arranged one above the other. Oneof these bolts rests in a countersunk seat formed in the sides of an oblong slot running in the direction of the width of the plate, to provide for the lateral adjustment of the latter from a fixed center formed by the other bolt. This adjustment of the blade, shown by the dotted lines, enables the operator to plow either close to the plant or away from it.
The blade may be used either with its straight side next the plant, as when the plant is small and requires the earth stirred close to it, but does not require the earth to be thrown toward it ; or the shovel may be turned so that its curved edge will be presented to the plant, when the roots will be left undisturbed and the earth thrown toward it. The sharp cutting edges permit the shovel to be readily shifted while in the ground, and hence it can be more easily managed than if the edges were square and blunt
This invention has been patented by Mr. James M. Sanders, of Morrisville, Ohio

## COMODSATION TOOL WRENCH.

This tool may be used as a hand and pipe wrench, wire cutter, wire nipper, screw driver, tack drawer, measuring rule, and for other purposes. The flat circular ends of the arms are connected by a rivet. On opposite sides of the rivet the circular ends are formed with notches, the outer pair of which form wire cutting edges, while the corners of the metal at the side of the other pair are rounded, to enable the arms to grasp wire for the purpose of stretching it without danger of cutting it. One arm is curved near its free end toward the other arm, and its extremity


SPARHAWK'S COMBINATION TOOL WRENCH.
is provided with a chisel-edged angle hook, which is inclined toward the pivot. The other arm is thickened near its free extremity, curved outward and formed with sharp edged teeth inclined outwardly, and upon its extreme end is formed a screw driver edge. The inner faces of the arms are graduated into inches and ractions thereof, so that the device nay be employed a measuring rule. The hooked end is used for drawing nails and tacks and for engaging one side of a piece of pipe or a nut while being turned, the op posite side of the nut being engaged by one or more of the teeth on the end of the other arm. The screw driver is applfed to a screw in the usual way, and the other arm may be employed as a lever for turning the screw. The arms fold compactly together, the screw driver edge coming directly opposite the edge of the hook. The outer corners of the arms are rounded, to permit of using the tool without injury to the hands, and also to prevent them wearing the pocket.
This invention has been patented by Mr. W. W Sparhawk. Further particulars can be had from $\mathbf{M r}$ J. M. Marsh, of Scotia, Neb.

## CULTIVATOR BEAM AND POINT.

The point shank is pivoted to the beam by a bolt Attached to the beam is a spring, so arranged that it ceits a constant backard pressure upen the shank ahove its pivot. The spring thus holds the shank and point to their work until the pressure on the point overfomes the tension of the spring, when the poin and point shank will spring backward and therehy les sen the pressare upon them. The lower end of the spring is attached to a yoke secured to the beam, and in held in a socket formed in a lover iu rumed to a yoke on the beam, and is connected by od a arm pivo to arm is conrrected to the point ghanky eoupling hel
shank above the point. In case the pressure upon the point is more than equal to the tension of the spring the point will move backward, the shank moving for ward. This movement will draw the bent arm forward and the upper end of the lever downward, and thereby increase the tension of the spring which, upon the re moval of the pressure, will return the parts to their original position. In case of over-pressure, the ent arm will strike the back of the shank, and thus lock the lever and shank, so that no injury can be done the spring. The distance the arm moves is regalated by a set screw in its lower end. Should the point enter the ground too deeply or strike an obstruction, the-shank will yield, so that the point will automatically ru more shallow in the ground, or pass the obstruction


## ADY * HAITH'S CULTIVATOR BEAK AND POINT.

without injury and without jerking the plowman or
This invention has been patented by Messrs. N. J Ady and J. W. Haith, of Rockport, Atchison County, Missouri.

## IMPROVED TOBAGCO PLANTER

The accompanying engraving illustrates a planting wachine especially adapted for antomatically setting tobacco plants, but also applicable for setting and resetting other plants or seeds. In the frame of the planter is journaled a large wheel which carries the plants to the ground. The forward end of the frame is supported by inclined wheels, which throw the earth back into the furrow and pack it around the roots of the plante. To the froint of the frame is held the fur-row-opening prow, winen may ve aujustuea rervicany to work at any required depth in the ground, and may be set nearer ${ }^{\text {to }}$ or further from the plant-carrying wheel. The plow has a sharp nose portion to enter the round easily and has two rear wings which stand the $n$ chl open a clean furrow somewhat wider than the tread of the wheel, and to
protect the plant clamps, which are held to the righthand side of the wheel rim. These clamps consist of clip blocks pivoted to lugs on the wheel, and pressed at their outer ends to or toward the wheel by springs. Behind the wheel is a plant-holding table having an opening, into one part of which the rim of the wheel enters, while in the other part is pivoted a plant-holding bed, upon which the plants are held in proper position to be seized by the clamps. To a hanger fixed to the frame is connected a plate, which is preferably elastic, against which the tails of the jaws of the clamps strike, to open them at the proper time for dropping the plants into the furrow. Another block, fixed to the frame, is so arranged as to open the clamp jaws as they rise to the table to grasp the next plant.


One of the clamps-the number of which it gavorned by the alistance apart at which the plants ape 0 beset in the ground-grasps a plant and carries it around forward until it is held, root downward, in the furrow. The clamp then opens, its tall striking the blooly; and the plant drops into the futinow, when the inclined wheels roll the earth back into the fur-

