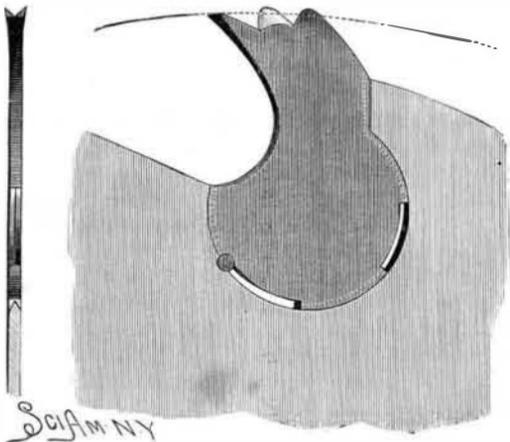


SAW TOOTH.

The saw plate is of the usual description. The removable tooth consists of a circular plate in which is formed a notch, at one side of which projects a cutter having a saw tooth point and the smooth cutting knife edges, which are formed on opposite sides of the cutter (as shown in the end view of the tooth and plate), and are bent outward slightly away from each other to bring them into engagement with the wood. These knives project outward beyond the cutting point, so that they will cut deeper into the wood than the point; the point of every tooth removes the material cut by the knives on the tooth in front of it. This construction insures a clean cut, without making any dust. The periphery of the circular part of the tooth and the back of the cutter



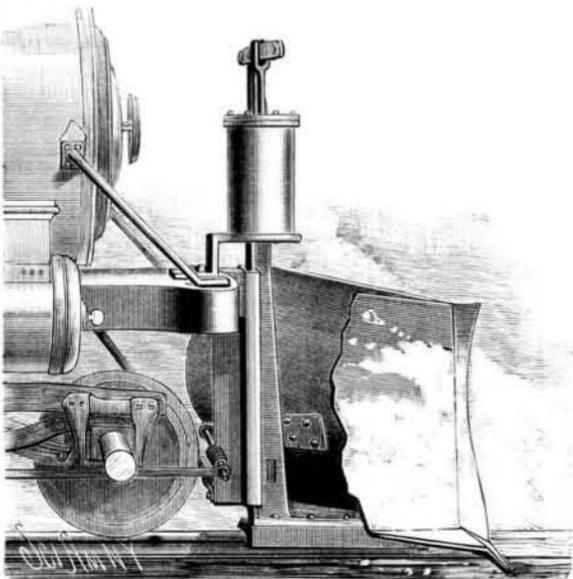
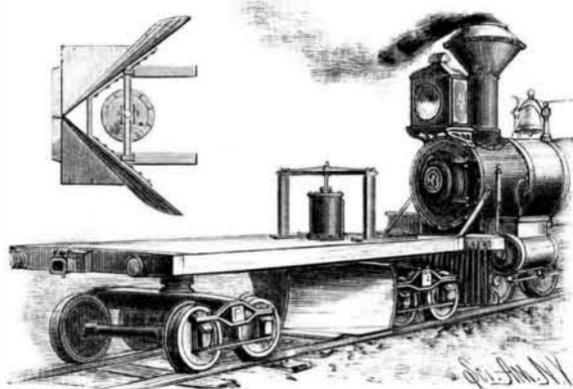
WILSON'S SAW TOOTH.

are provided with a V-shaped groove, which is adapted to receive a V-shaped tongue formed on the edge of the circular part of the blade; and portions of the edge of the tooth and of the plate are cut away to admit of placing the tooth in the circular notch before bringing the tongue and groove into engagement with each other. The tooth is held firmly in place by a rivet or screw, part of which enters both the tooth and plate. It will be seen that the tooth can be removed from the plate by turning it through a part only of a revolution. The backward movement of the cutter is limited by the shoulder formed on the plate and against which it rests.

This invention has been patented by Mr. C. J. Wilson, of 114 Clinch Street, Knoxville, Tenn.

IMPROVED SNOW PLOW.

The accompanying engravings represent a snow plow that can be attached either to the front of a locomotive or to the middle of a platform car. The body



ORMEROD & CROSKY'S SNOW PLOW.

of the plow is composed mainly of a base portion and wings that meet at the center to form the front flange and is attached to the locomotive in such a manner that it may have both a vertical and lateral movement independent of the locomotive, so that it

will follow the track at curves and may be lifted from the track, and will not interfere with the sway or lurch of the engine. The raising and lowering of the plow may be done by lever or steam power, but it is preferred to employ compressed air, and for this purpose a cylinder is attached to the frame of the plow, the piston being so connected that, when it is operated by admission of compressed air to or its exhaust from the cylinder, the plow will be raised and lowered accordingly.

The construction is such that in rounding curves the locomotive will throw the plow into the center of the track. The upper surface of the base portion of the plow is extended to form a lip, which is cut away to span the rails, so that the plow may be lowered to remove the snow from the center and sides of the track, somewhat below the upper surfaces of the rails. The snow and ice are removed from the surfaces of the rails themselves by sharp edges running in contact with them when the plow is lowered for work. For properly guiding the plow body along the track, wear plates and flanges that run in contact with the rails are secured to the lower plate of the base.

When considered desirable, the plow can be mounted in the center of a short car, as shown, in which case the combination uniting the plow and truck can be dispensed with. The body of the plow is attached to vertically movable plates, and is raised and lowered by a piston in a cylinder placed on top of the platform of the car.

The inventors of this plow, Messrs. Thomas Ormerod and A. B. Croskey, of Leadville, Colorado, claim that by raising and lowering the body of the plow vertically in slides it does not clog up with snow or ice, thus being preferable to plows or flanges that are raised on hinges.

HANDLE FOR CANS.

The handle for fruit, meat, and paint cans here shown is folded closely against the side when the can is stored, but can be readily arranged as a handle



COLEMAN'S HANDLE FOR CANS.

when the contents of the can are to be removed. The rectangular frame of wire is curved to conform to the shape of the can, to which it is soldered at the middle of its ends, so that it will remain in contact with the can, and occupy very little room; when necessary, the wires can be bent outward to form the handle, as shown in the right hand view. To give the handle additional strength at the point of its attachment to the can, the iron can be bent inward at the middle of the upper and lower sides of the frame, as shown in the lower part of the engraving. After serving as a package, the can can be converted into a convenient household article.

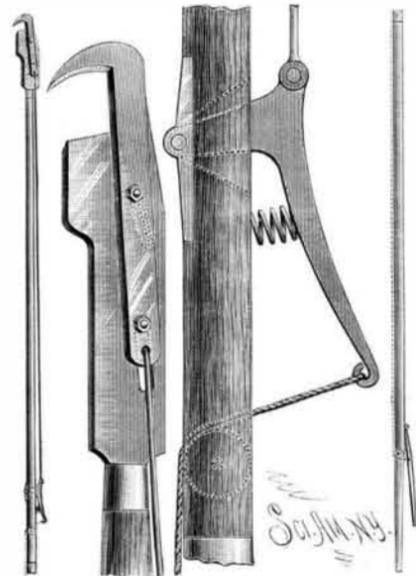
This invention has been patented by F. W. Coleman, M.D., of Rodney, Miss.

AUTOMATIC WATER WORKS.

The object of this invention, which has been patented by Mr. M. A. Laska, of 148 North Basin Street, New Orleans, La., is to provide water works for automatically delivering water without the use of a motor or other power machinery. One end of the siphon pipe is dipped into the water in the river or bay to a point below the low-water mark, and the lower end of the pipe is passed into a cylindrical cup having a closed bottom on which a packing piece rests. This cup is formed with numerous apertures and with lugs through which passes a rod also passing through guide lugs on the pipe. The upper end of the rod is screw-threaded and passed through a nut held to the pipe. This cup serves as a strainer, and can also be used to close the end of the pipe when the apparatus is to be put out of operation. On the upper end of the pipe is a casing to which the main water-conducting pipe is connected. On the casing is a cock, and above it is a neck for attaching a hose.

The main pipe is conducted underground in the desired direction, and to it are connected numerous branch pipes which conduct the water into tanks or

cisterns. The bottom of each cistern is below low-water mark, and the delivery pipe enters the cistern below the low-water mark, or, if it enters at the top, it must extend below the low-water line, as shown to the left in the upper engraving. When the pipe is carried over an elevation, it is extended below the low-water line at both ends of the bend, and a pipe extends from the highest point of the bend down below the water line, and then returns to the surface of the ground, where it is provided with a cock. The inner end of the main pipe is connected with a

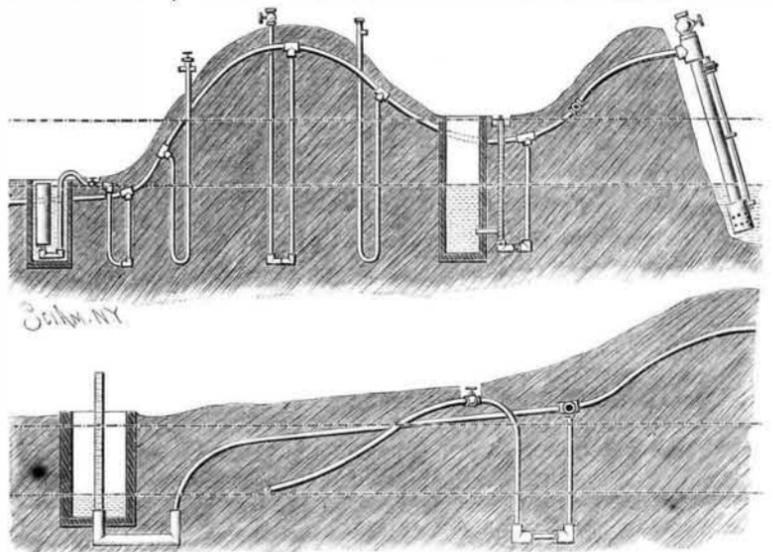


BROWN'S ACME THORN CLIPPER.

glass gauge-tube in a cistern. At the wells is a pipe extending to the surface of the ground and connected at its lower end with the delivering pipe. Extending through the vertical pipe is a rod carrying a valve at its lower end and a hand wheel at its upper end; this valve shuts off the supply to the well. When the pipe enters the top of the cistern, the outlet is provided with a float operating a valve, so that if the level of the water in the river should rise to such a height as to flood the country, the float would rise and close the valve, thereby shutting off the water. The pipes are first filled with water through a hose connected with the neck of the casing at the inlet. This starts the siphon, and the water runs into all the cisterns until the level is equal to that in the river.

PRUNING IMPLEMENT.

The chisel secured to the upper end of the pole is formed with a lower longitudinal slot and with an upper inclined one. A hook having a cutting edge at the bottom of its prong is arranged to slide on the side of the chisel, and is guided by screw bolts passed through the slots. Connected with the lower end of the hook is a rod whose lower end is connected with an angle lever, the shank of which is passed through a slot in the pole and pivoted to a clip. To the other end of the lever is attached a cord passing over a pulley in the pole, as shown. On the lower end of the rod is a ferrule to receive the upper end of an extension rod, near the lower end of which is a pulley over which the lower part of the cord passes, the end of the cord being secured to a lever pivoted on the extension rod, as shown in the right hand view. The cutting edge of the chisel being placed against the branch to be cut, the lower lever is swung from the rod, thereby moving, by means of the cord, the lower part of the upper lever toward the rod. The hooks are thus pulled downward, but as it is guided by the inclined slot it is also moved slightly toward



LASKA'S AUTOMATIC WATER WORKS.

the edge of the chisel, and a shearing cut is made. When the lower lever is released, a spring under the upper one presses the lower part outward and raises the hook. This invention has been patented by Mr. William H. Brown, of Dunedin, Fla.