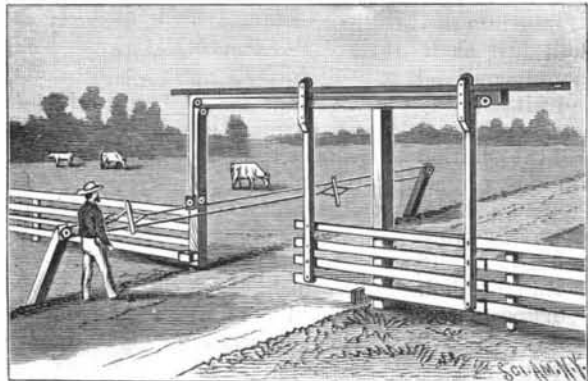


**IMPROVED GATE.**

The gate shown in the annexed engraving is not liable to be blocked by snow and ice, and may be readily operated from either side of the fence. The gate is hung upon rollers running in guides supported by posts. Attached to the gate is a rope, which is guided by pulleys, arranged as shown in the engraving, and is extended to inclined posts placed a short distance at either side of the forward gate post. It is evident that the gate can be opened and closed from either side by means of the handles carried by the extended ropes. To open and close from the same side, the handle is grasped and carried forward by the person as he approaches the gate, which, when reached, will be found opened wide. To close the gate, the handle is carried back, the gate being fully closed when the inclined post is reached. It will be observed that



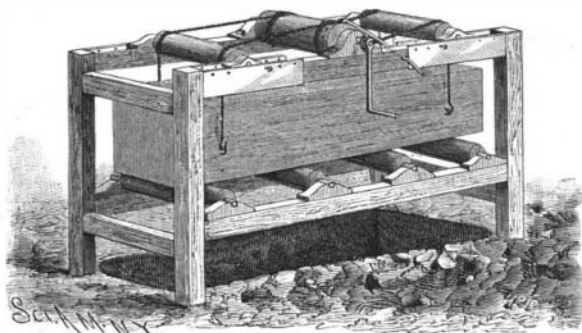
**GROSS' IMPROVED GATE.**

the operation of opening and closing, in every case, is in the direction in which the person would naturally walk or drive, and that it is accomplished simultaneously with the approach to or departure from the gate.

This invention has been patented by Mr. Thomas J. Gross, of Maple, Missouri.

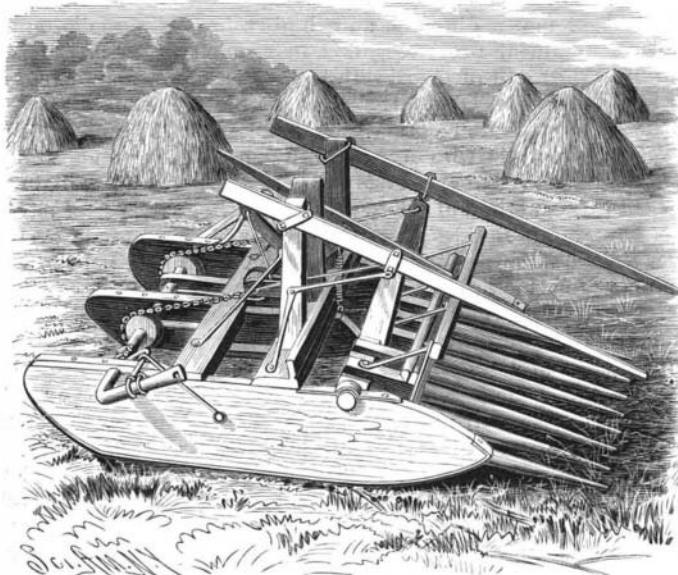
**DEVICE FOR LOWERING CASKETS.**

By means of the device here illustrated, a large or small casket can be readily and safely lowered into a grave or vault. In the upper edge of the lower side rails of the rectangular frame are journaled removable rollers, and attached to the inner and outer faces of the upper rails are metal plates which project above



**BEATTIE'S DEVICE FOR LOWERING CASKETS.**

the top of the rails, and are formed with registering apertures to receive pins. In the guides thus formed slide journal boxes carrying rollers; the pins serve to fix the positions of the boxes. In the middle of the top of the frame is journaled a drum, operated by a crank, and to which are attached ropes arranged as shown in the engraving. The drum is locked by a



**SPENCER'S IMPROVED HAY RAKE.**

pawl. In operation, the frame is placed over the grave and the casket entered upon the rollers. The top rollers are then adjusted toward the center or ends, according to the length of the casket, and the hooks at the ends of the rope are engaged with the handles. The drum is then turned so as to slightly raise the casket and permit the removal of the lower rollers. The casket can

then be lowered into the grave, the hooks automatically disengaging themselves as the casket reaches the bottom.

This invention has been patented by Mr. James H. Beattie, of Conway, Kansas.

**PORTABLE SWITCH TABLE AND CAR REPLACER.**

The object of the invention here illustrated is to provide an improved apparatus for facilitating the replacing of cars and locomotives on the tracks in case of derailment. The platform shown in the upper part of the plan view, Fig. 2, is formed with a wing beveled from the platform downward, so that its lower end will rest on the ties when the platform is on the rail. The platform is provided with downwardly projecting side flanges, parallel with which are ribs provided with lugs resting against the head of the rail, which enters between the flange and rib, and is held in place by a screw passing through the flange. At the side edges of the upper surface of the platform are two longitudinal ribs. In the other platform, shown near the bottom in both views, the ribs form a V-shaped figure, at the apex of which is pivoted a tongue to slide over the wing, which is formed with two side flanges on its upper surface.

The devices are used in the following way: They are placed on the ties at the same sides of the two rails in such manner that the platforms rest on the rail heads and the ends of the wings on the ties, the device having the tongue being on the outer side of the rail. The tongue is then swung against the outer flange to guide the wheels running up the wing toward the rail. The treads of the wheels run on the ribs, and the flanges on the platforms and wings. At the ends of the platforms the flanges drop into notches and the wheels drop upon the rails. The devices can be reversed and used on either side of the rails, and by means of the fastening screws are clamped firmly to the rails, so that they cannot slip. The replacers are intended to be carried on all trains.

This invention has been patented in the United States, Canada, England, France, and Belgium by Mr. Arthur Durieu, of 109 Canal Street, New Orleans, La., who may be addressed for all further particulars.

**IMPROVED HAY RAKE.**

This rake is so constructed that it can be moved in either direction without changing the point of attachment of the horses employed to drag the rake, the parts being so arranged that in reversing the direction of travel, after gathering the load, the points of the rake teeth will be automatically raised. The main frame consists of two side runners rigidly connected together. The head of the rake proper is made up of a rigidly connected framework consisting of a crossbar to which the rake teeth are attached, and the rounded ends of which are journaled in bearings formed near the forward ends of the runners. Journaled in the rear parts of the runners is a shaft whose extending ends are bent forward, and which carries two eccentric wheels, to which are secured chains extending forward to connect with rods secured to standards carried by the shaft or axis of the rake head. Pivotaly connected to the rake head is a latch which serves to hold the teeth in a raised position, but which may be automatically released by a bell crank lever, to the rear end of which is connected a chain extending downward and under a sheave, the end of the chain being secured to the rear shaft. Upon the center crossbar are two standards, to which are attached forwardly extending arms, which serve to hold the load of hay upon the rake after the points of the teeth have been raised and during the time that the load is being drawn to the stack. To operate the rake, a horse is hitched to each of the arms of the rear shaft. After a load has been obtained, the horses are turned around so as to face in the opposite direction, the arms of the shaft then being moved toward the rear. This movement of the shaft raises the rake teeth, which are prevented from falling accidentally by the latch. As the teeth are raised, the load is held by the arms and prevented from falling or spilling from the rake. Upon reaching the stack, the teeth are allowed to drop into position to deliver the load.

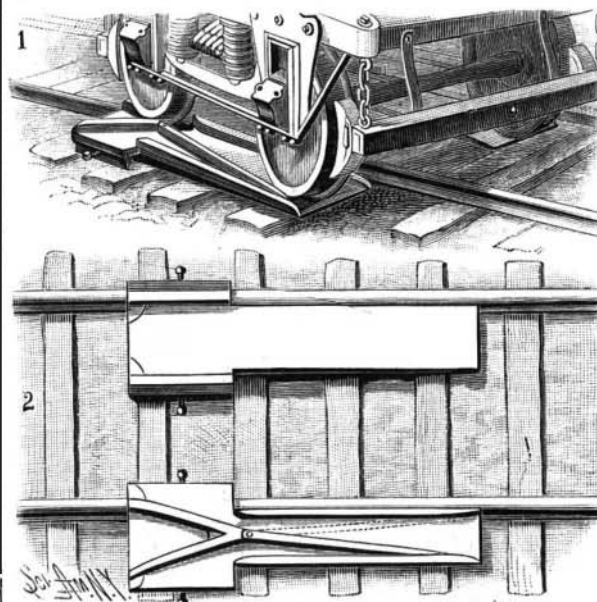
This invention has been patented by Mr. Joseph M. Spencer, of La Plata, Missouri.

**A FROST PROOF STEAM TRAP FOR CAR HEATING.**

The illustrations herewith represent a perspective and a sectional view of a recently patented frost proof steam trap, designed for use on railway cars and in other exposed

places. It consists of a shell with two outlets, one in the bottom and the other in the top, each having a valve and a thermostat for operating it. Its size is 5 by 8 in., and the weight is 30 lb. The valve is in each case automatically controlled by the temperature in the trap body. When steam is shut off, the trap cools, opening first the lower outlet wide, and at

170° or less opening the upper outlet, creating an inlet for air and allowing all the water in the trap to fall out instantly. When cold, both valves are wide open, a stiff spring forcing them from their seats and pushing the flexible surface of the expansion vessel back to its furthest limit. Steam being let on, all the air and water passes out freely until the temperature in the trap approaches the point at which it is set to close. The valve controlling the upper outlet is set to close at 180°, closing before steam reaches the trap,



**DURIEU'S PORTABLE SWITCH TABLE AND CAR REPLACER.**

leaving the lower outlet, set at 210°, to control the flow of condensation. The inlet is tapped for 1½ in. pipe, and the outlet ½ in. This steam trap is made by the Curtis Regulator Company, of Boston, Mass.

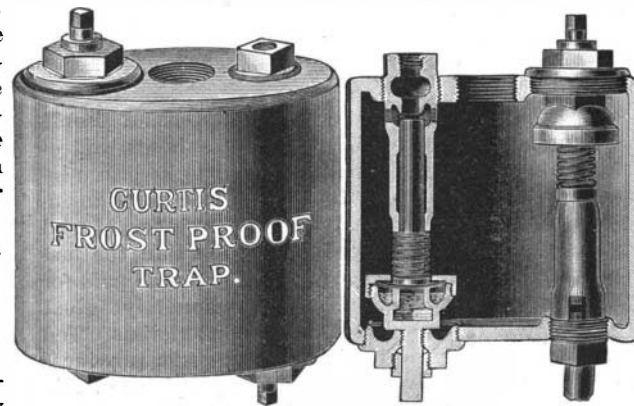
**ALPHABET CASE.**

This case is designed as a toy to be used for the amusement and instruction of children. In the oppo-



**SAFFORD'S ALPHABET CASE.**

site ends of the case are semi-cylindrical tape supports, arranged with their convex sides outward. Endless tapes, carrying letters, figures, or characters, extend around the supports, in the inner faces of which are inserted the ends of guides, which serve to keep the tapes parallel with each other. The central portion of the outer edge of each guide is cut away. Across the top of the case are secured strips, between which is a space through which one letter upon each tape may be displayed. The tapes are formed with apertures for receiving the point of a pencil for sliding the tapes around their supports to bring the desired letters into view in the space. By this means any desired letter



**A FROST PROOF STEAM TRAP FOR CAR HEATING.**

may be displayed, and as each tape is provided with a blank space, only as many letters as are required need be brought into view. The device is used in arranging letters to spell short words, after which the words are to be copied on a slate to fix them in the memory.

This invention has been patented by Mr. Albert M. Safford, P. O. box 1329, Providence, R. I.