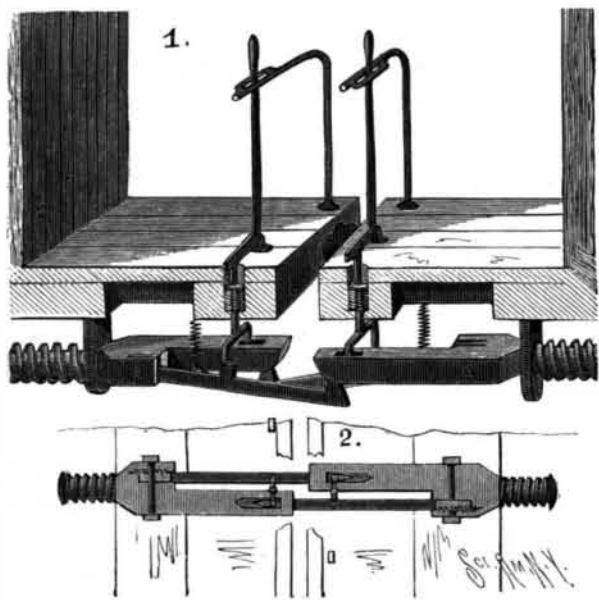


A SIMPLE AND INEXPENSIVE CAR COUPLING.

The coupling shown in the accompanying illustration is virtually composed of but two pieces, and is designed to be exceedingly simple, practical, and economical. It has been patented by Thomas Griffith, of the United

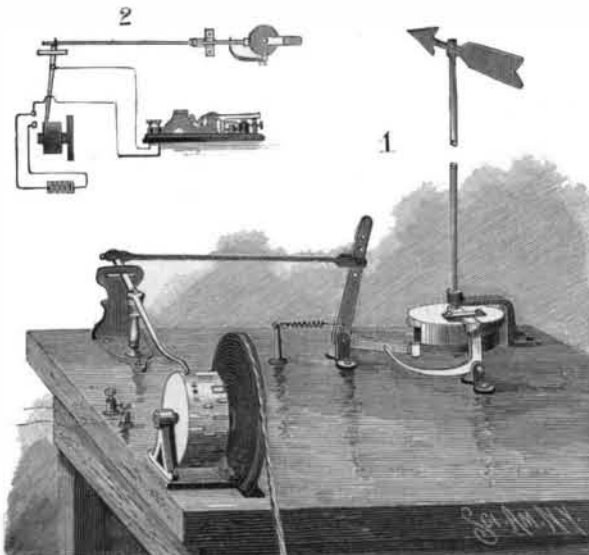


GRIFFITH'S CAR COUPLING.

States Army, Columbus Barracks, Ohio. Fig. 1 shows the improved coupling in position, portions of the car ends being broken away, and Fig. 2 is a plan view. The drawbar has the usual spring at the rear, and in front, at one side, is a forward extension vertically apertured in alignment with an inclined or beveled guideway on its underside. At the opposite side of the drawhead is journaled a coupling bar having at its forward end a hook adapted to slide in the beveled guideway to engage its hook in the vertical aperture of the drawhead of an approaching car provided with the improvement, the coupling bar being drawn upward by a spring extending from it to the underside of the car platform. The drawheads at adjacent ends of the cars to be coupled are exactly similar, except that the forward extension of one drawhead is opposite the coupling bar of the other drawhead. To disengage the coupling hooks, a two-armed lever having an upwardly extending handle is arranged for vertical movement in apertures in the car platform, coiled springs holding the arms normally in raised position, but on movement of the lever handle the arms are pressed down, simultaneously pushing down the coupling bar of one car and the hook of the coupling bar of the other car, as shown in Fig. 1.

AN ELECTRICAL SIGNAL TRANSMITTER.

To transmit electrical signals for record at a distant point, and more particularly for use in connection with a weather vane or other meteorological apparatus, the improvement represented in the illustration has been patented by W. H. Davis and Hugh C. Christy, of Como, Col. On the weather vane shaft is a helical cam engaged by the shorter arm of an angled lever pivoted in a standard, as shown in Fig. 1, and the longer arm of the lever is adjustably connected by a rod with one end of a pivoted contact lever whose other end rests on a revoluble drum, driven from any continuously revolving shaft. As the vane shaft is revolved in one direction by the wind, the cam moves the shorter arm of the lever down, and when the



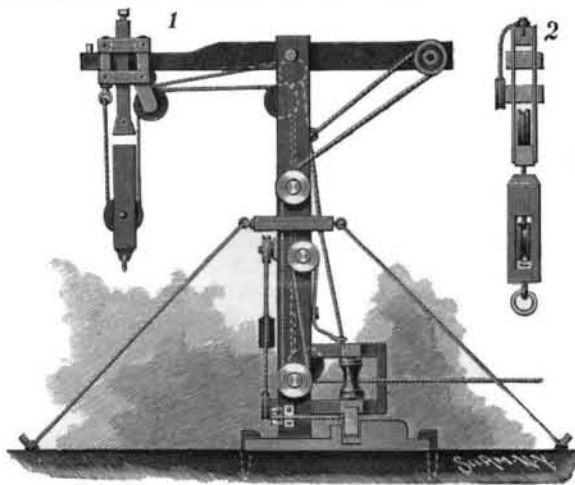
DAVIS AND CHRISTY'S SIGNAL TRANSMITTER.

deeper portion of the cam rides past the arm is raised by the retractile spring connected with the other arm. When the shaft revolves in the opposite direction, the short arm of the lever is carried down below the cam shoulder by an angled lever pivoted in a standard, a curved arm engaging the short arm of the lever, while the short arm of the second lever is en-

gaged by a spring-pressed toe on the cam, at a point about ninety degrees distant from the shoulder. The contact lever is thus swung to bring its free end into electrical contact with the contact surfaces of the revoluble drum. The latter is preferably made of metal with insulation at its periphery and cut away at points where an electrical contact is desired. With a recording instrument located at a distance, as shown in Fig. 2, one wire of the transmitting apparatus is connected with the contact lever and the other wire is connected with one pole of a battery whose other pole is electrically connected with the drum, on whose periphery are contacts representing "North," "South," "East," and "West," or as many intermediate divisions of the compass as may be desired.

A PORTABLE DERRICK.

The derrick shown in the engraving is designed to be readily moved from place to place and erected with facility, and to automatically swing its load-carrying arm to deposit the load and automatically return the arm to normal position for engagement with another load. It is especially adapted for handling forkfuls of hay and straw in forming stacks. A patent has been granted for the improvement to Jacob Sarver, La Junta, Col. Fig. 1 shows the device in perspective, Fig. 2 being a sectional view of the parts of the derrick. The base block is secured in position by headed stakes driven into the ground, and receives the lower end of a derrick post, held upright by guy ropes. On the upper end of the post a carrier arm is pivoted to rock, and on a reduced portion of the arm is a traveling frame from which is supported a sheave block,



SARVER'S PORTABLE DERRICK.

anti-friction rollers facilitating the ready movement of the frame.

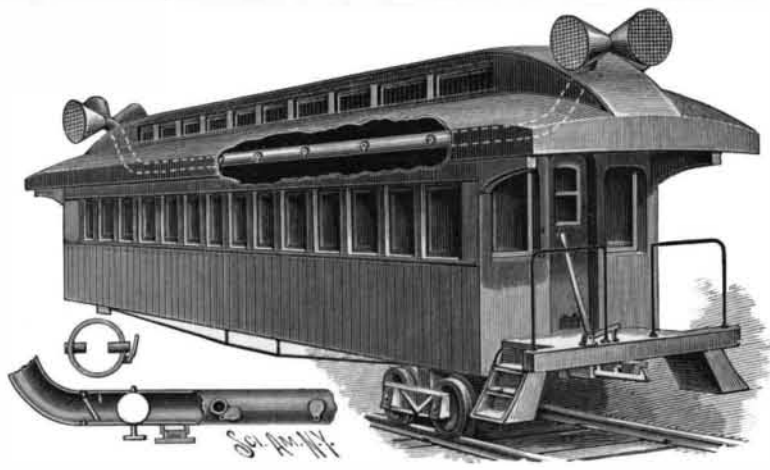
To rock the carrier arm and retain it at any desired inclination a rope extends from the post over a pulley on the rear end of the arm and thence over and around other pulleys on the post to a fastening point. The hoisting rope, secured at one end to the front portion of the traveling frame, passes down over a sheave pulley and up over a loose pulley of the frame, and thence over pulleys on the post and an idler pulley held in brackets at its base, extending horizontally for convenient connection with a team or other power. Convenient means are provided for locking the post and arm in position and for automatically releasing the arm and swinging it laterally after depositing a load, the provision for rocking or inclining the arm facilitating the deposit of its load at any required place on the stack. This derrick may be readily taken apart and packed on a wagon for convenience in moving.

Steep Gradients on Electric Roads.

The Elec. Jour. (San Francisco) for August contains an article by Lieut. Stuart-Smith, in which he gives descriptions of methods used in some of the Pacific coast cities. After giving an illustrated description of the well-known Kuhlmann counterweight system used in Seattle, he gives a detailed description, with illustrations, of the system in use in San Francisco on a 25.5 per cent grade. There are two tracks on this grade, for cars going in different directions. On the grade there is a conduit like that for cable roads, and it contains an endless cable passing over pulleys at the two ends. An up-going and a down-going car are attached to this cable by the men stationed at the grades, and the two cars then work together by the use of their own motors, the one going down hill assisting the one which is going up. The system was tested August 5 for the first time and was found to operate successfully. It has since been working to perfect satisfaction. It was found that the power of the down-going car is far more than is necessary for hauling the ascending car under any possible conditions of load.

AN EFFICIENT PASSENGER CAR VENTILATOR.

By the system of car ventilation herewith illustrated it is apparent that a moving car will at all times be abundantly supplied with fresh air, without the uncomfortable draughts caused by raising the windows. The improvement forms the subject of a patent issued to Thomas Griffith, of the United States Army, who has for years had the management of government hospitals, particularly as to ventilation and heating, and now located at the Post Hospital, Co-

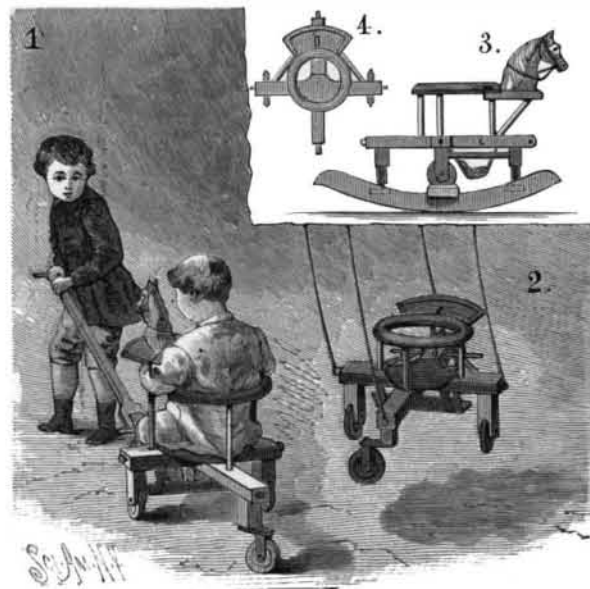


GRIFFITH'S RAILWAY CAR VENTILATOR.

lumbus Barracks, Ohio. As shown in the broken-away portion of the main view, a ventilating pipe extends lengthwise through the coach near its roof, its opposite ends being bent outward and provided with funnel-shaped cowls, whose mouths are covered with wire netting. Inside the car the pipe has air outlets consisting of short tubes at whose outer ends are deflecting plates, as shown in one of the small views, another view showing, near one end of the pipe, a valve opened by the air moving in one direction, and closed by an opposite current, while adjacent to this valve, near each end of the pipe, is a damper to regulate the air current. To permit the removal of cinders from the pipe, a collecting chamber is provided near each end with removable bottom covered by a screw cap. In the lower part of each car door is an air outlet having a covering of wire netting at one side and at the other side a hinged coverplate opening outward.

MORTON'S PERAMBULATOR, ROCKER, ETC.

A composite vehicle, adapted for exercising and amusing children or invalids, and readily convertible into a wagon, a perambulator, rocking chair and swing, is represented in the accompanying illustration, and has been patented by Mr. Ellis S. Morton, of Galena, Kansas. Fig. 3 is a side view, as it appears when used as a rocking horse, Figs. 2 and 3 representing the device with the rockers and tongue removed, for use as a perambulator or swing. On the main frame, as shown in Fig. 4, a ring-like guard piece is supported on posts, a curved table being secured on the front edge of the guard piece, while at the junction of the members of the frame is a seat board, a detachable foot rest being formed by hanger bars. A block simulating the head and neck of a horse is held on the curved table by means of a thumb screw, and at the front of the frame is hinged a tongue. In depending brackets are held castor wheels adapted to swing and



A PERAMBULATOR, ROCKER, ETC.,

revolve as required, and the castor wheels are adapted to be embedded in places provided therefor in the frame bars of a detachable rocker frame, thus adapting the wheeled vehicle for use as a rocking horse or chair. To enable the device to be used as a swing, it is supported by cords connected to the main frame by hooks and eyes, as shown in Fig. 2.