

## IMPROVED ROAD OR FARM GATE.

The object of the invention shown in our illustration is to afford a means of opening and shutting gates without requiring the occupant of the vehicle passing through to descend for the purpose. The device is at once simple and effective, and but few words of description, added to its graphic delineation in the engraving, are needed for its explanation.

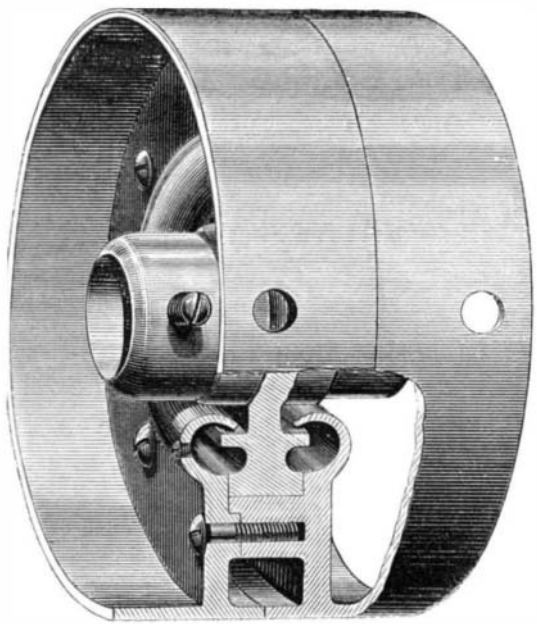
The gate is constructed, as shown, in a firm and substantial manner of any suitable material, and is freely suspended by means of a pivot passing through the extremities of the three braces represented as extending from the lower corners and from the center of the bottom rail, between two swinging posts. The upper extremities of the latter are connected together while the lower ends are arranged to pivot readily on the solid blocks of wood or stone set in the ground. The highest bar of the gate, it will be noticed, is prolonged, and passes loosely through a slot cut in the upper part of one of the adjoining fence posts. To the ends of the two uprights by the road side, one of which is represented in the foreground and the other beside the wagon, single pulleys are suitably attached, while at the top of the swinging posts which support the gate, a similar pulley is fastened. A rope passes through all three of these pulleys, its ends hanging beside the uprights.

The method of working this apparatus is as follows: The gate being closed, the driver of the vehicle pulls upon the rope, which extends down to a convenient distance from the pulley on the upright beside him. The other extremity of the line being stopped by means of a knot cast in it, the strain is brought to bear upon the swinging posts of the gate. These, moving freely on their lower pivoted extremities, are lifted from a diagonal to a vertical position, and then, swinging pass their center, fall as shown by the dotted lines in the engraving. The gate, which is guided by the prolonged bar before referred to, is bodily lifted, and its upper left hand corner describes the arc of a circle which, dotted in the illustration, it is represented as beginning to traverse. At the end of its movement, the gate is found to have been transported sideways clear of the road, and to rest beside and parallel to the fence. The position of its parts and the direction which the rope assumes are clearly represented by the dotted outlines. After passing through, it is only necessary for the driver to repeat the foregoing operation, pulling on the other extremity of the rope, when the gate returns to its former position and is closed. By the use of a balance weight, the gate may be easily lifted.

This device has been successfully employed in several of the Western States for some three years past. Further particulars concerning it may be obtained by addressing W. C. Hooker, Abingdon, Ill.

## GROSVENOR'S SELF-LUBRICATING LOOSE PULLEY.

The self-lubricating loose pulley which forms the subject of the present article was patented April 9, 1872, by Mr. J. P. Grosvenor, of Lowell, Mass., some of whose previous inventions in this and other directions have been already illustrated and noticed in the SCIENTIFIC AMERICAN.

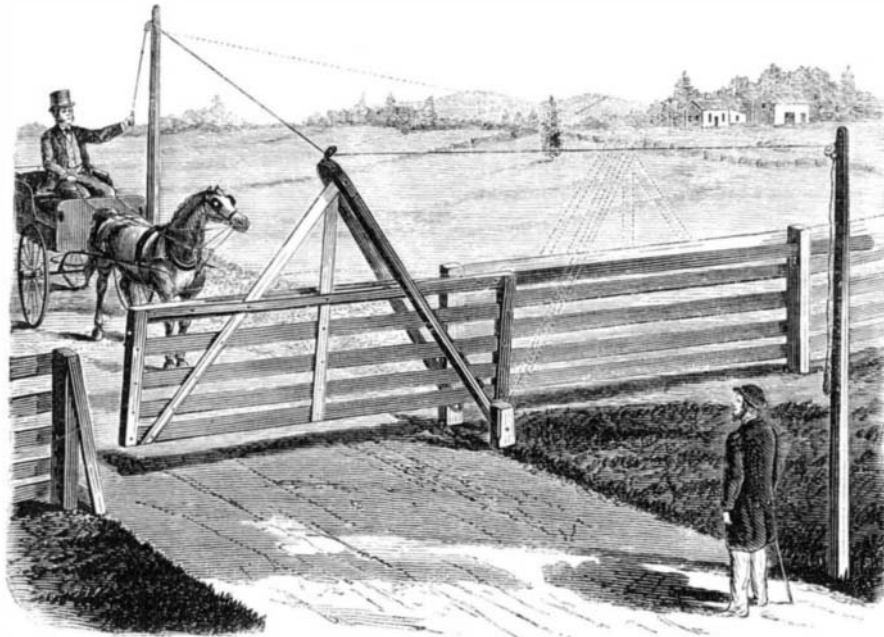


Our engraving represents the pulley, which has part of the face broken away to show a detail section of the working parts. It is composed of a hub and disk, which are made fast to the shaft by set screws, one of which is shown in the engraving. The pulley is made in two parts, as represented, and it revolves on the outer circumference of the disk. The parts are fitted together by an oil-tight joint, and are secured to each other by set screws, by which construction the disk is introduced within the pulley, to the interior of which it is fitted on its rim. The oil chamber is annular and runs entirely round the sides of the disk. It is formed by curving

the sides of the pulley outward, and then around and within the annular projections shown on each side of the disk. The chamber is supplied with oil by removing the set screw shown in one side of it.

As the pulley revolves upon the disk, every part of its bearing surface passes through the oil at each revolution, and at the same time the peculiar form of the sides of the oil chamber and the disk prevents any oil escaping while it is being carried round the top of the pulley by dripping down, for it is carried round to the lower side. It may be taken off the shaft and carried in any position without the oil escaping.

It will be seen that this pulley is constructed upon a novel principle, the oil chamber being placed within the circumference of the bearing upon which the pulley revolves. This



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insures the constant lubrication of all the parts by reason of the centrifugal force developed by its revolution; and it is stated that in consequence thereof there is hardly any wear in the pulley or its bearings. The inventor says these loose pulleys have been run at the rate of one thousand revolutions per minute for eight weeks without re-oiling and without escape of oil, and sufficient oil was then left in the chamber for a longer run.

Further information may be obtained of the patentee and manufacturer at the address stated above.

## Catching Shad with Hook and Line.

Mr. Thomas Chalmers, after repeated experiments, has succeeded in devising a bait by which he has been enabled to book shad without difficulty. He says: A careful examination of the stomach of the shad gave no light as to what they fed upon. Various kinds of bait, natural and artificial, were tried, and for a considerable time without satisfactory result. At length some flies were dressed in a peculiar manner, and these the shad took and were captured in considerable numbers with hook and line. In July, 1871, 168 shad were taken on two poles. Three flies were used on one line, and sometimes as many as three shad were taken at one cast—the whole weighing eight and a half pounds. The present season has not been so good, owing partly to roily water, but the sport has been fair. In one evening, between 7 and 8:30, himself and a companion took in twenty shad on hooks and lines. Mr. Chalmers says that from boyhood he has been given to sport with rod and line, and thinks the catching of shad with hook and line the best angling he has found. He desires that this method of shad fishing be tried in other waters than the Connecticut. His experiments were made in that river, at Holyoke, Mass.

## New Route between New York and Boston.

A new route for travel has just been opened between New York and Boston. Passengers take the cars at Brooklyn, N. Y., and ride to the east end of Long Island at Greenport, ninety miles, where they go on board a steamer and sail thirty miles, across Long Island Sound, to New London, Conn., thence by rail over the Northern and Boston, Hartford and Erie roads, one hundred and twenty-six miles, to Boston. Time, nine hours—about the same as the other routes. This Long Island route was operated some years ago, but, not proving profitable, was abandoned.

## The Adaptation of Electricity and the Telegraph to General Use.

The telegraph and electricity are yearly entering more and more intimately into the daily service and convenience of the people. It sounds the alarm and brings speedy succor when fire threatens devastation and ruin. It furnishes to every merchant, broker, and business man who desires it, in the more important business centers, a constant record in his own office or counting room of the condition and transactions of our exchange, and the quotations of leading articles of traffic and commerce. It calls messengers and assistants, when needed, to any locality, at all hours of the day and night. It furnishes communication between the offices, manufactories, and places of business of merchants, manufacturers, shippers, and others. The editors of our great newspapers can sit in their libraries at home and direct, by means of telegraphs, easily operated by themselves or members of their

families, the management of their papers. The liability to danger and destruction on railroads is greatly lessened, and disasters averted, through the use of electrical signals. The engineer, as his locomotive dashes along the iron rail at a speed which outstrips the wind, can, at a glance at the signal by the road side, know the condition of the line for miles ahead, and whether other trains are likely to be encountered, or misplaced switches and open drawbridges invite him to death and destruction. Our bells are rung by electricity, our clocks are regulated by the electrical current, the fidelity of watchmen is assured or their lack of vigilance recorded with unfailing accuracy by the electrical tell-tale. The concealed wire and electric circuit betray the operations of the burglar and thief, and our gas is lighted by electricity.

The uses to which the electric current and the telegraph have been and shall yet be adapted are so numerous even now as to surpass our comprehension. It is the mightiest agency of modern times, the true wizard's wand, which manipulates and controls the affairs of mankind.

In the science and administration of this mighty agency, many thousands of people are constantly engaged, and their number is yearly and almost daily augmented. They constitute a large community, and upon their intelligence, capacity, and fidelity the most momentous and important interests constantly depend.

It is impossible even now to predict what advances and discoveries may yet be made in electrical science and telegraphy. Astonishing as these have already been, there is undoubtedly much yet to be learned, and new adaptations will continue to be made; and those who would profit by them professionally must be diligent and persevering in their studies and efforts to acquire and maintain an advanced state of knowledge and information. In science and art, there is no royal road to success.—*The Telegrapher.*

## WHEEL AND ROLLER SASH CATCH.

The sash catch herewith illustrated is a most simple contrivance, and apparently of a very effective character. It consists simply of a wheel and roller cast in one piece, and is fixed in position to do duty very readily.

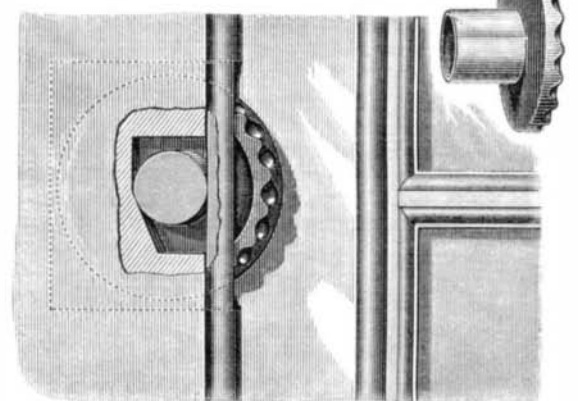
Fig. 1 shows the catch applied to the frame and sash, and Fig. 2 gives a perspective view of the wheel roller.

A is the sash, B the window frame, and C the covering strip. In order to insert the catch, the wedge-shaped hole exposed in the frame is cut to receive the roller, and a mortise is also framed for the reception of part of the wheel, while a recess is formed on the under side of the covering strip for the remainder of the latter to pass through. The roller and wheel are placed in the excavation made for them, and the covering strip is attached, when the parts occupy the position represented in Fig. 1, where the situation of the covered part of the wheel and the mortise are indicated by dotted lines. For the better understanding of the foregoing, the reader will bear in mind that, in our engraving, parts of the frame and covering strip, together with such part of the wheel as would be otherwise disclosed by their removal, are broken away in order to show the shape of the recess and the position of the roller therein.

The operation is as follows: The tendency of the roller is to press downward, into the wedge-shaped cavity formed by the frame and the juxtaposed sash, by its own weight, and when a very slight partial rotation is caused in it by the friction of the descending sash, this tendency is so much augmented as to instantly wedge it tightly therein, and thereby secure the sash at whatever altitude it may happen to be. To release the sash, all that is necessary is to push up the projecting edge of the wheel, which is very easily done, as it is

Fig. 1

Fig. 2



sufficiently roughened to be readily rotated by the fingers. The window stops instantly at whatever point it is pushed up to, and is so firmly wedged there as to prevent rattling of the sash, should the same be loosely fitted.

The catches are said to answer well for weights of house sashes; they are not liable to break or to get out of order, do not mar the sash, and are furnished very cheap.

The device was patented July 23, 1872, and further information in regard thereto may be obtained of the inventor, T. McDonough, Montclair, N. J.