



**Improvement in Wagon Brakes.**

It is a great relief to a team in descending an incline, as a hill, to have some means to release them from the pressure of the descending inertia of a loaded wagon. It is very hard on the horses in such a case to be compelled to secure their footing and at the same time to retain the pressure of the load. Such work is worse for a team than drawing a load up hill; as it is more straining and induces more or less of anxiety very dispiriting to the horses.

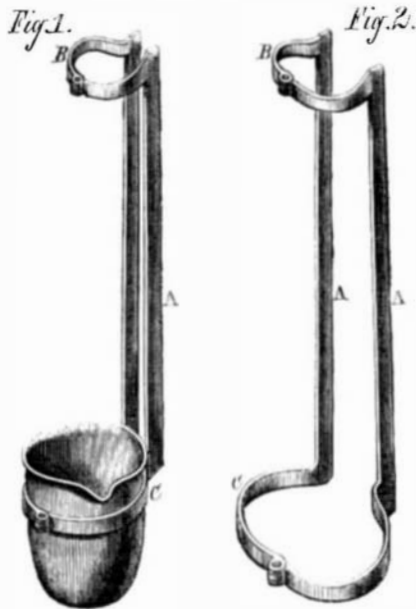
The object of the simple arrangement shown in the engraving is to provide an arrangement by which the wagon, itself shall afford the power, or, at least, designate the point for applying the brake. In the engraving the wheels, axles, bolsters, and uprights are the same as in any ordinary wagon. The reach, however, has a cross-piece, A, just in front of the hind wheels, which supports a bar formed, at each end into a bell crank, to which are hung the brake-blocks, B. The wrists of the cranks pass through slots in the blocks, in which they are adjusted by set-screws entering the tops of the blocks. The bar is pivoted to the cross-piece so as to turn in its bearings by means of an upright connected to one end of a rod, C, the other end of which is pivoted to the forward bolster on one side of its center. To the other end of the bolster is attached another rod, D, leading back to the hind bolster. This rod in the model merely represents the wagon body and is not necessary to the operation of the brake. The king bolt passes through the forward bolster and through a longitudinal slot in the forward end of the reach.

The operation is very simple. In holding back, the forward bolster is turned on the king bolt by means of the rod, D, or wagon body which acts as a fulcrum, while the forward axle and wheels are slightly backed, the reach sliding on the forward axle, and thus the rod, C, is made to push backward, and by turning the crank bar on A, forces the brake blocks against the wheels by a powerful leverage. The amount of force thus applied adapts itself exactly to the power exerted in holding back. When the team is pulling on a level the front axle is held forward, by which a reverse motion is effected and the brake blocks, or shoes, are lifted clear of the wheels. A friction roller is fitted into that end of the front bolster which passes under the wagon body when the team is descending a hill, in order to diminish the friction. The oblong perpendicular slots in the brake-blocks are to allow these blocks or shoes to be lifted by the backward rotation of the hind wheels when the team is backed. Thus it will be seen that under all circumstances the brake is self-operating and adjusting. It appears to be cheap, strong, efficient, and not liable to become deranged.

The contrivance was patented through the Scientific American Patent Agency, November 28, 1865, by C. A. Smyth. Rights for States, counties, or towns are for sale. For terms or other information, applicants should address Smyth & Parker, Independence, Jackson Co., Mo.

**VILLARD'S CRUCIBLE TONGS.**

The tongs seen in the accompanying illustration are in some measure adjustable, that is they will fit different sizes of crucibles, thus obviating the necessity of employing so large a



number of different sizes as are generally used in brass foundries, etc.

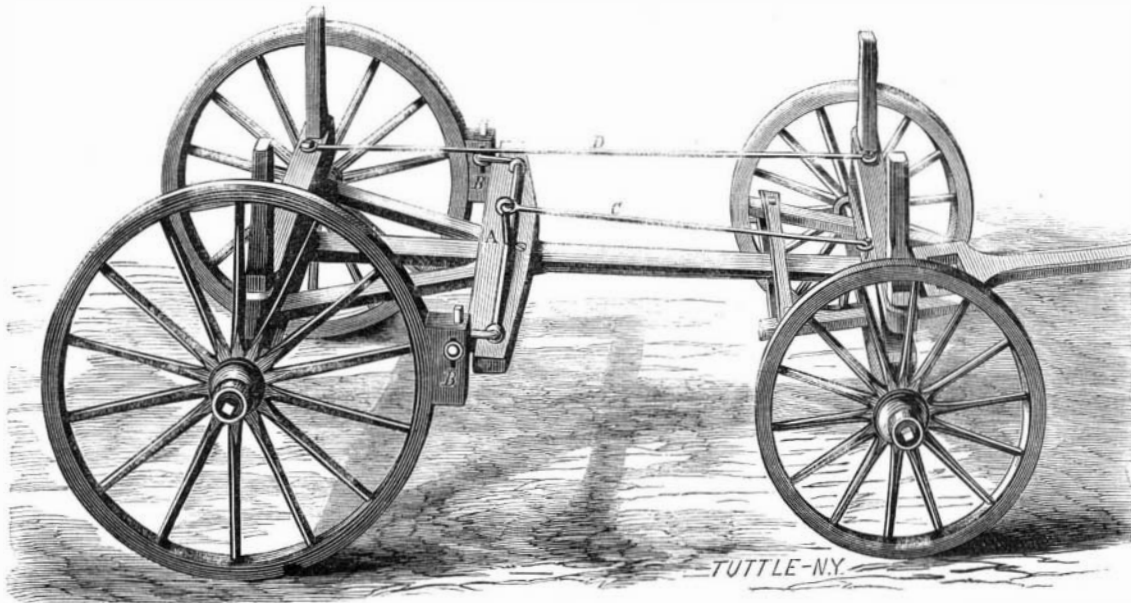
A, A, in both the figures, are bars of iron or steel, long enough to permit the pourer to use the crucible containing melted metal without discomfort from the heat. These bars are bent at each end into segments of circles, B, and C, nearly approaching semicircles, the length of the bars being perpendicular to the planes of the circles of which the segments are parts. The segments are hinged together, and those at one end of the tongs differ in diameter from those at the other end. Fig.

2 shows the tongs open, and Fig. 1 embracing a crucible. The elasticity of the bars when compressed by the hand will cramp the segments around a crucible with sufficient force to prevent it slipping in the tongs when canted to pour the metal.

These tongs were patented through the Scientific American Patent Agency, Jan. 29, 1867, and have been sufficiently tested to prove their superiority. They can be made at small expense. For further particulars, address Fred. Villard, Mount Eaton, Wayne Co., Ohio.

**Simple Mode of Preserving Eggs.**

A correspondent, J. S. G., of Nassau, New Providence, Ba-

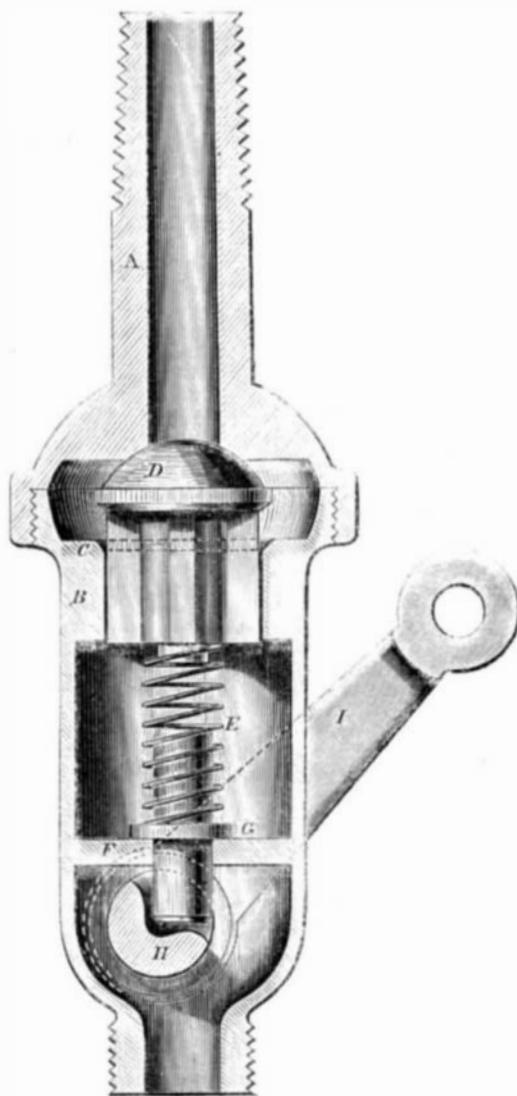


**SMYTH'S IMPROVED SELF-ACTING BRAKE.**

hama Islands, sends us the following recipe for preserving eggs: "Smear with the finger the shell of a newly laid egg, using a slight quantity of butter. This is effectual; I have tried it for years and have, for experiment, kept eggs thus prepared as long as nine months, and that in a tropical climate, and at the end of that period the eggs appeared and tasted as fresh as though not more than a day old. It is a *sine qua non* that the eggs when buttered be perfectly fresh."

**DAVEY'S STEAM TRAP.**

Since the first introduction of the steam engine the importance of keeping the cylinders clean and free from condensed steam has been sensibly felt, and many ingenious devices have been applied for this purpose, but hitherto the disadvan-



tages and objections have always been such as to materially detract from the real practical value of those improvements.

In the device herein represented it will be seen that there is little if anything to be desired more than is found in the actual working and capacity of this little trap.

The engraving represents a vertical section. A, is the stem

which is screwed into the cylinder in the same manner as the ordinary cock, into which is screwed the lower portion of the trap, B, in which is the valve seat, C, of the valve, D, on the lower part and below the wings of which is the short stem which serves as a guide for the spiral spring E. Transversely across the chamber is the cross bar, F, which forms a seat and guide for the adjustable spring seat, G. Below this bar and guide is a faucet barrel into which is fitted a key secured in the usual manner; in the center of this key is cast a recess so as to form a cam or eccentric, H, as will be seen in the engraving. This key does not close the lower part of the trap, which is open at all times.

The operation of this trap will be readily understood; being screwed into the cylinder, the steam presses down and closes the valve, D, until the steam in that end of the cylinder "exhausts," when the valve immediately opens and allows the water to escape, thus leaving a continual opening in the cylinder, but without the escape of any steam; should it become necessary, the valve is raised by moving the handle, I.

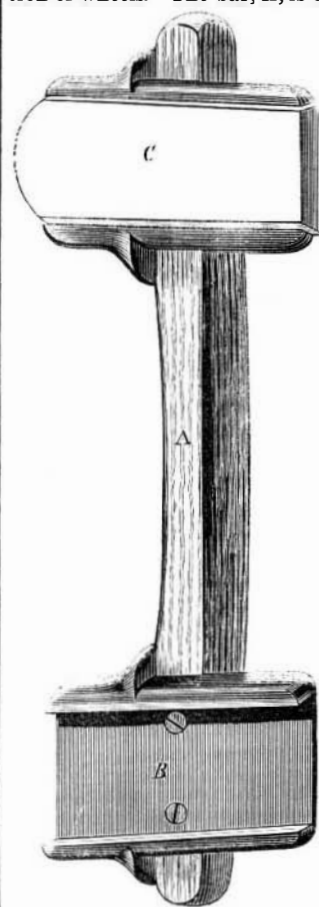
The advantages of this steam trap consist in instantly relieving the cylinders from water or other matter; allowing it no time to accumulate, but giving it egress at every stroke of the piston without loss of steam; in enabling the engineer to have full control of the apparatus, thereby permitting the raising of the valve if necessary, as is sometimes the case in the priming of the boilers and consequent flooding of the cylinders; or, as is often the case, when the cylinder cocks of a locomotive are far more effective in scaring cattle from the track than the bewildering effects of the whistle; and it can be placed in the same hole as the old cock without any alteration or other expense than the mere cost of the trap.

These traps are already adopted on several railroads in Ohio, Indiana, and Kentucky, also on stationary engines, where they are highly commended. The whole, or the right for the Eastern States, for sale. Address, Thos. N. Davey, Jeffersonville, Ind.

This trap can be used in any position, horizontal or vertical, and is not liable to get out of order. At all times the cylinders to which it is applied may be cleared of water or condensed steam. Patented through the Scientific American Patent Agency, Dec, 18, 1866.

**KOCHENSPIERGER'S BRAKE HOLDER.**

The object of this improvement is simply to provide a proper and efficient seating for those wheel brakes where India-rubber, or some similar material is used as a resistant to the action of wheels. The bar, A, is of wrought or cast iron, or of



wood, according to the situation it is to occupy, and the work it is to perform. Secured to its ends are the holders, B, for the resistants, these holders being dovetailed to receive the rubbers, one of which is shown at C. As commonly used, the brakes, or rather, the rubbers on brakes for wagons, cars, and other wheeled vehicles, are held in place by screws or bolts, and when they become worn they must be removed and others put in their places by means of similar bolts. With this, however, the rubber can be removed and replaced by another with very little expenditure of time. As will be seen, the holder is so formed that it slopes outward at the top to adapt the rubbers to the flare of the wheels; consequently, when cast, two patterns should be used, so as to make the holders rights and lefts. There is no necessity, when using this apparatus, to remove bolts, etc., and there can, consequently, be no trouble from

loss of nuts or bolts.

Henry C. Kochensperger, of Thornville, Ohio, is the patentee, who may be addressed, as above, for additional information. The date of his patent is May 28, 1867. The entire right is for sale.

**BENEVOLENCE EXTRAORDINARY.**—A society has been formed in Germany for the collection of cigar ends, and smokers throughout Bavaria are appealed to for contributions of this kind, it being intended to apply the proceeds arising from their sale to the clothing of poor children. It is calculated that upward of £200,000 a year may be obtained by this means.