New Inventions.

Prevention of Dust in Railroad Cars.

Mr. Wm. H. Muntz, of Boston, Mass., has invented an improvement in railroad cars, for preventing the rise of dust. It consists in running a line of perforated pipes along the outside of each car, in such a manner as to permit the simultaneous discharge of many jets of water, in a lateral direction. These jets are intended to spurt out 10 or 15 feet from each side of the car, forming a fine rain to prevent the rise of dust. The tank for supplying the pipes will be carried on a separate truck, or, each car may be furnished with its own reservoir.

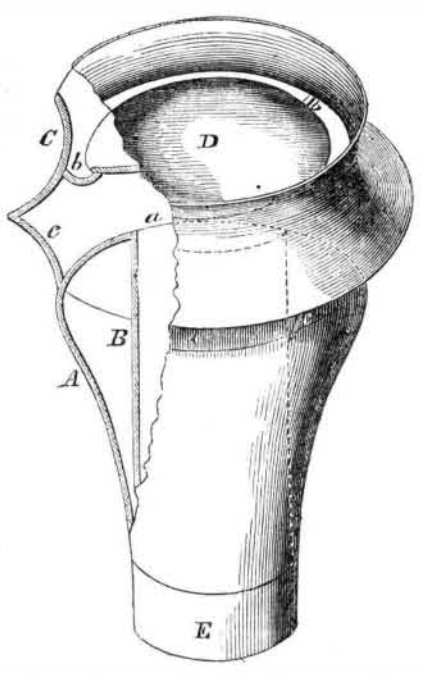
Turbine Water Wheels.

Since the appearance of our notice of Mr. Francis' work upon turbine wheels in Number 1, we have received several letters asking where it can be obtained. These inquiries should be addressed to Little, Brown & Co., Boston—the publishers.

Camp's Patent Chimney Cap.

The accompanying figure is a perspective view, partly in section, of a chimney cap, for which a patent was granted to Mortimer M. Camp, of New Haven, Conn., on the 4th of last month (September.)

The lower part of the chimney cap is made of cast iron, or other suitable material, and of the form shown. It is made of two parts, A A and B B, leaving an enclosed space or hot air chamber between them, to prevent the cold air on the outside from cooling the smoke before it arrives at the orifice, *a*. The part B B is largest at the top, to allow the smoke free



egress. Thr upper part, C, of the cap is made of sheet iron, and is somewhat larger in diameter than the largest part of A. This part, C, is made flaring both ways, as shown, and to its inside is attached a disk, D, which is larger than the orifice, *a*. This disk is sustained by braces, *b b*. The flaring cap, C, is sustained by braces, *c c*, as shown. It is now ready for being attached to a chimney by its lower end, E, which is substantially secured in position by any known way.

The patentee states that he has found "by extensive experiments and practice, that this cap increases the draft of a chimney when the wind is blowing without reference to its direction. By the interposition of disk D, and the curved flaring surfaces, a partial vacuum is formed at the orifice, *a*, on the opposite side of the cap to the direction of the wind, and the smoke flows upward towards it, and is carried away by the current of air." This, he states, has been found to be the way this cap operates, even when the chimney top is shaded by surrounding buildings. The non-conducting chamber between A and B serves to prevent the condensing of the smoke, and thus also tends to promote good draft in the chimney.

More information may be obtained by letter addressed to Mr. Camp, No 134 Chappel street, New Haven, Conn.

There are now in Georgia between fifty and sixty cotton factories, conducted in the most skillful and successful manner, with all the appliances in the way of machinery that are found in the same kind of establishments in New England.

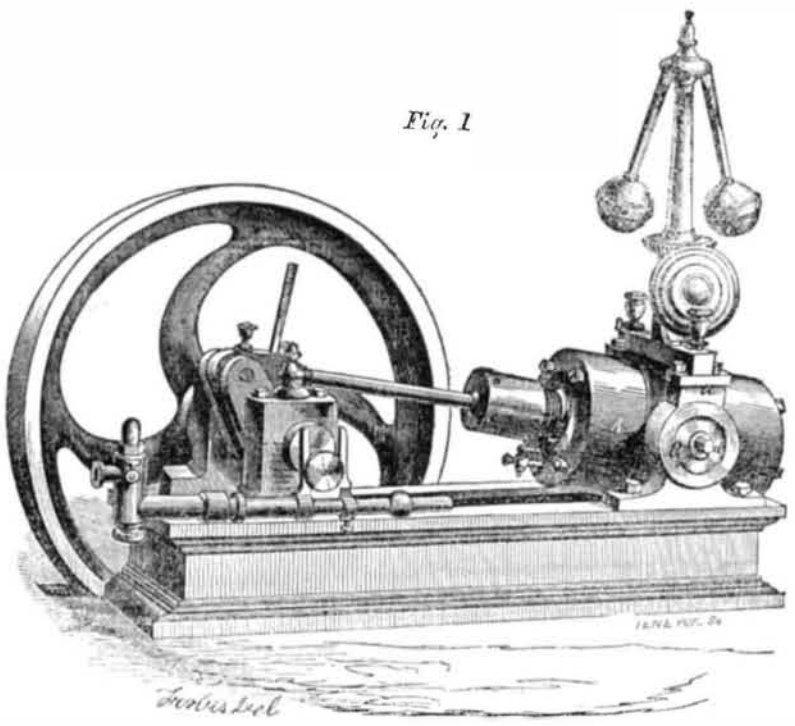
REED'S PATENT OSCILLATING ENGINE.

The accompanying engravings represent the improvements in oscillating engines for which a patent was granted to J. A. Reed, of this city on the 9th of last January, and patented since in France and Great Britain.

The nature of the improvement consists in arranging and placing the valves and the steam ports of the engine on each side of the cylinder, around the trunnions, to let the steam in on both sides of the cylinder at the same time, and at opposite points, so as to balance the pressure, and prevent the severe friction caused by letting in the steam on one side only. Also making the trunnion bearings of the engine adjustable by set screws, so that the trunnions may be accurately adjusted to their seats.

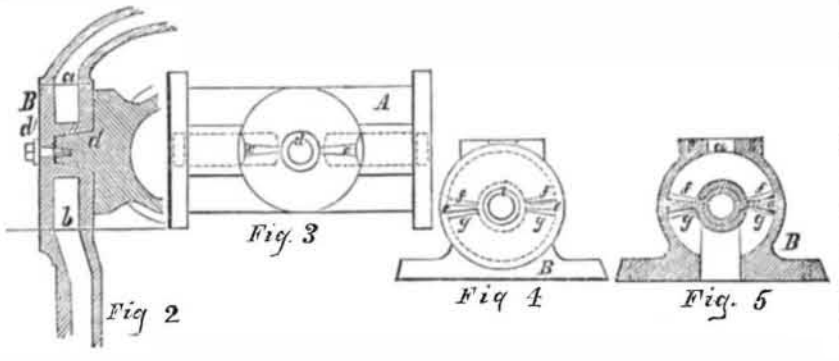
Fig. 1 is a perspective view of the engine, and fig. 2 is a transverse section of a portion of the cylinder, one trunnion, and the induction and eduction steam passages. Fig. 3 is a side view of the cylinder with the bearing removed, showing the ports. Fig. 4 is a face view of

Fig. 1



the trunnion bearings and valves. Fig. 5 is a section of one of the trunnion bearings transversely to the axis, showing the chambers in the valve. Similar letters, on all the figures, indicate like parts.

A is the cylinder, and B the trunnion bearings, which also constitute the valves. *a a* are induction pipes passing through the tops of the trunnion bearings. *f f* are openings in the valve through which the steam passes into the ports of the cylinder. *g g* are openings through which the steam passes from the ports of the cylinder to the eduction pipes, *b*. at the bottom of the trunnion bearings. *e e* are partitions in the trunnion seats dividing the induction and eduction chambers in the valves. *c c* are the ports in the valve seat, and *d d* are the trunnions



of the cylinder, A. There are set screws, *d'*, (one shown fig. 2,) passing into the trunnions through the ends of the bearings for adjusting them. The screw bolts which adjust the bearings of the trunnions to the bed plate, pass through slots, which thus admit of the bearings being moved to adjust the conical seat, *i*, to the trunnions.

As the cylinder oscillates on its trunnions, it successively brings the induction corresponding passages of the steam chamber and cylinder, and those of the exhaust pipe and cylinder into communion, to let in and exhaust the steam; and this is done with the like adaptations on both sides of the cylinder, each trunnion box being alike. The steam is then let in under the piston from opposite sides at once, by two passages, and is exhausted in the same manner, the cylinder cutting off and exhausting the steam through its trunnion boxes as it oscillates. The manner of thus arranging and placing the steam ports and valves on or around the trunnions on each side of the cylinder, must meet with much favor.

The object of adjusting the seat of the trunnions by screws, *d'*, is evident, viz., to make all the steam joints work close and tight. Two of these engines have been on exhibition at the Paris Exhibition; one about 15-horse power, and the other somewhat less. They have received much praise for the principles involved in their construction, and the beautiful manner in which they have operated on all occasions when running. Mr. Reed has devoted much time and attention to the steam engine, and has been very successful in making a number of very useful improvements.

More information respecting the above engine may be obtained by letter addressed to Reed & Tousley, 95 Maiden Lane, this city.

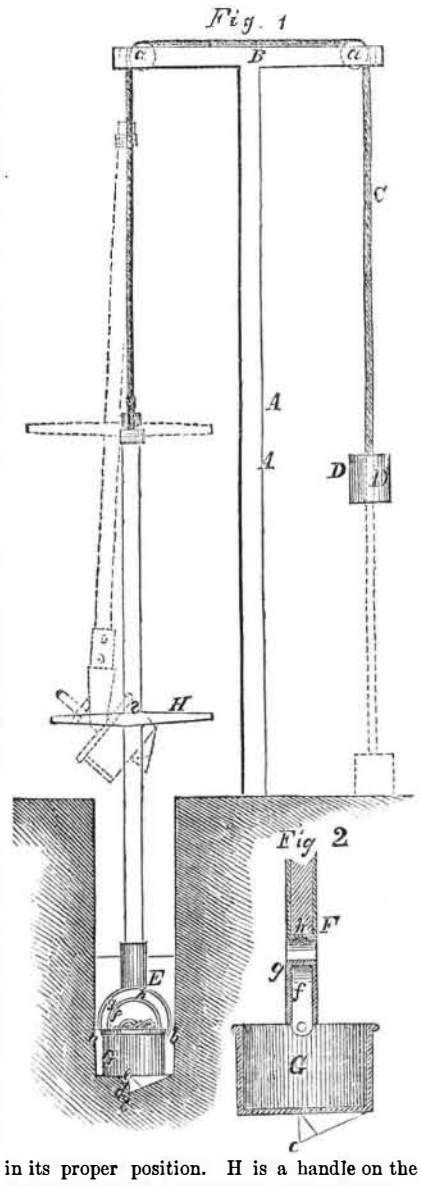
Adams' Patent Implement for Boring Wells.

The annexed figures represent an improvement in implements for boring wells, for which a patent was granted to J. J. W. Adams, of Sharptown, Somerset Co., Md., on the 30th of last Jan. Fig. 1 is an elevation of the implement, and fig. 2 is a vertical section of the boring tool or auger. Similar letters refer to like parts.

The nature of the invention consists in the employment or use of a spring attachment applied to an auger or borer, arranged as will be hereafter fully shown and described, whereby said auger or borer is held in its proper position while being operated, and at the same time allowed to be turned so as to be emptied of its contents.

A, fig. 1, represents a vertical post firmly secured in the ground; the hight of this post should somewhat exceed the depth of the hole to be bored. B is a cross-piece framed to the top of the post A, and having a pulley, *a*, at each end. C is a rope or chain which passes over the pulleys, *a a*, and has a weight, D, attached to one end E, is the shank or pole of the auger, the upper part of which is attached to the end of the rope or chain, *c*, opposite to the end to which the weight, D, is attached. To the lower end of the shank or pole, E, there is permanently secured a bail, F, of semicircular form, to the lower ends of which there is secured by pivots, *b b*, a cylindrical vessel, G, having a spur, *c*, at the center of its bottom, and a cutting edge, *d*, and an opening, *e*, which extends from the spur, *c*, to the edge of the bottom of the vessel. The lower ends of the bail are attached to the upper edge of the vessel, G, which, with its spur, *c*, and cutting edge, *d*, on its bottom, form a hollow auger or borer. The auger is provided with a semicircular handle, *f*, to one side of which there is secured one end of a spring, *g*, which is also of semicircular form, and having a knob or projection, *h*, on its outer surface, which knob or projection, when the auger is in an upright position, fits in a corresponding cavity in the under side of the bail, F, and keeps the auger

Fig. 1



in its proper position. H is a handle on the shank or pole, E, said handle being allowed to move up and down on the shank or pole, and prevented from turning upon it by a key, *i*.

Operation.—The operator turns the handle, H, and thereby rotates the shank or pole, E, and auger, G, which works its way into the earth by cutting and forcing the earth within it through the opening, *e*. A few revolutions of the handle, H, is sufficient to fill the auger, when the shank or pole and auger is raised by the operator, the weight, D, by its gravity assisting. The auger is raised to the surface of the earth, or a short distance above it, and the operator grasps the outer end of the spring, *g*, and depresses it, thereby drawing the knob or projection, *h*, out of the cavity in the bail, and the auger is then turned or inverted, swinging upon the pivots, *b b*, and its contents fall out, as shown by the dotted lines, fig. 1, the auger readjusting itself. The auger is then replaced in the hole and the above operation repeated until the hole is made the required depth.

More information may be obtained by letter, addressed to the patentee, at Sharptown.