

New Inventions.

Improved Blasting Wedge Tube.

Mr. Thos. S. Speakman, of Philadelphia, has invented a good improvement for blasting rock by forming his powder tube so as to retain the greatest amount of powder at the bottom, tapering towards the top, to split the rock laterally, instead of allowing the greatest force, as in the old way, to be exerted vertically.

New Steering Apparatus.

Capt. C. F. Brown, of Warren, Rhode Island, has invented a new and ingenious improvement in steering apparatus for vessels, for which he has taken measures to secure a patent, and which will, no doubt, arrest the

attention of nautical men. The head of the rudder post is made of metal, with a helical groove running down on each side of it and over this is placed a tube with two feathers on its inside, fitting into the said helical grooves. Over the top of this is another outside tube or cap, bolted by a flange to the deck, and on its top is the wheel, having for its axis a screw, which works into a thread opening in the second tube, and as the wheel is turned this second tube is raised or lowered, and its feathers, thereby working in the helical grooves of the head of the rudder post, turns it roundward and from one side to the other, thus operating the rudder and steering the vessel. The steering wheel is horizontal, and there is an indicating pointer on

the post head, which, as it turns, points to an index and enables the steersman to see every degree through which the rudder moves. Of all the steering apparatus that we have ever seen, this is the most compact and beautiful.

An Improved Machine for Planing Iron.

A planing machine of the largest class is now in full operation in this city that is worthy of some notice. It is made principally of cast iron, and weighs about 14 tons, the length being twenty six feet, height three feet and ten inches, and four feet in width. The sliding or planing part rests on a cast iron bed, 33 feet long, and forward like the bridge upon which the log is moved in an ordinary saw mill; a short distance forward of the centre is an upright iron frame, with a cross head which rises from its lowest point 4 feet, and will admit a piece of iron of that height to pass through, and be cut by the plane or chisel. The iron planed by it is intended for the parts of steam and other engines which are required to be cut in a variety of angles, to affect which rules and gauges are affixed to the cross head, with the angles and circles accurately marked, and these are made to communicate and to regulate the plane or chisel below. The whole cost is about \$2,500.—[Newark (N. J.) Adv.]

We do not know that we have ever seen or heard of any machine of this construction being in operation before, except one belonging to Mr. Frost which used to run in Brooklyn. The above description would answer in every respect for the one we allude to.

Something New.

A Yankee, in Boston, has advertised a new and important invention whereby pantaloons are moulded into the desired shape by a machine composed of heated plates and dies, which, under a high pressure of steam applied to the handle of the shears, produces the exact form required. In addition to the perfect symmetry in all cases secured, the form is more permanent than that produced by the old process.

[The above is from an exchange and we do not vouch for its authenticity, although we must say its possibility is not questionable.]

The steamship Pacific went to sea on her trial trip on Monday and returned on Tuesday. She gave abundant satisfaction of her qualities.

WILSON'S PATENT STONE DRESSING MACHINE.

This machine is the invention of Mr. Charles Wilson, of Springfield, Mass., and is patented by him, and is justly allowed to be the only machine ever constructed which embraces the true principle of operation, for dressing stones. The principle of the invention consists in having a number of circular or disc cutters fixed on an axis which are made to roll over the surface of the stone as it is carried by a carriage transversely to the path of the cutter's motion, making a beautiful surface on the stone, and not injuring in the least its crystalline character.

Figure 1 is perspective view of the machinery; *a* is the false or movable bed on which the stone to be dressed is placed. It is made of

cast iron, and the stone is fastened to it by suitable fastenings holding it on the sides and ends, the face to be dressed lying upwards.—Of those false beds there are two, in order that while the stone upon one of them is being dressed, the workmen can be fastening and leveling upon the other. They are fastened upon the permanent bed, *B*, by inserting a simple bolt at each end. They can be carried from the permanent bed to the place where it is convenient to receive the stone, either by a crane and pulley or by a railway, in which last case they are to be furnished with small wheels at each end, contrived so as to allow the movable bed to rest wholly on the permanent bed. The permanent bed carries the false bed with

low iron cylinder, alternately with washers, and this cylinder revolves on a fixed journal set into bearings in the metal box, *G*. (The engraving shows this box and carriage turned upon the one side.) This box is fixed in bearings at the ends, so that it can swing around, to change the cutting angle of the cutters, *A*. When the carriage carries the stone under the cutters, and the whole surface has been gone over once, the angle of the cutters is reversed, and when the stone traverses back, the cutters operate a second time to give a most complete dressing to the stone. The arrangement for changing the angle of the cutters, is a screw rod extending along over the top of the box making a flange hug the cutter box on the crown of its arch, and can be slackened and tightened at pleasure. The cutters are set to cut, from an angle of 25° to one of 45°.

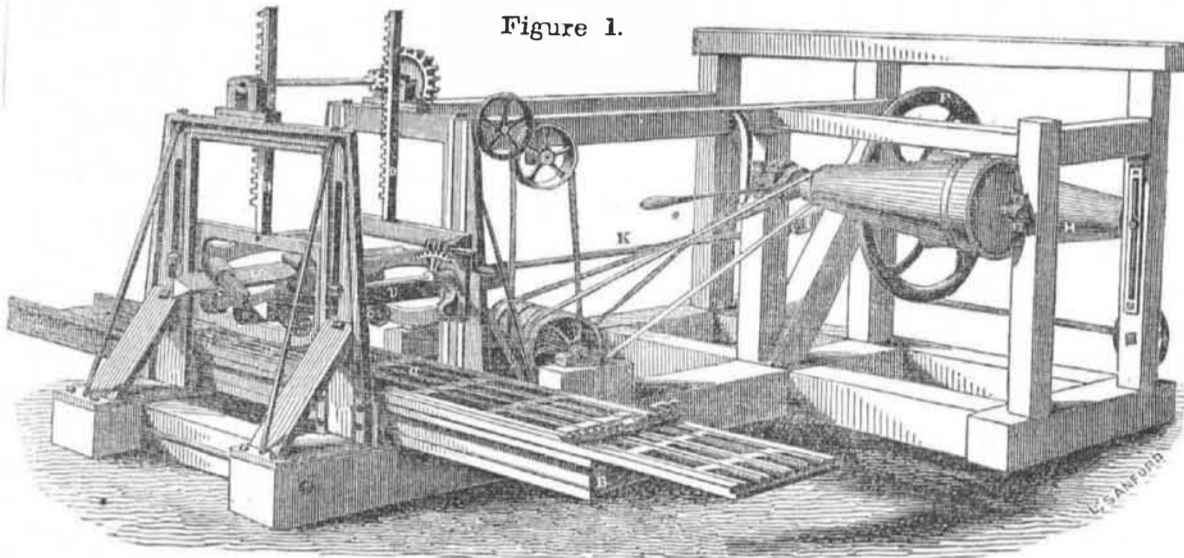


Figure 1.

C C are the rollers, which guide the carriage; they hug the *V* rail bed (fig. 1) one wheel of a pair being above and the other below, and thus allows the cutters to pass backwards and forwards to act upon the stone in a very excellent manner. *B B* are double sheets of strong leather to follow the action of the cutters and sweep away the chips—A broom may also be used. The cutters are propelled like the wheel of a carriage upon a road.—The whole frame of this cutter carriage, is made of iron well put together bolts, &c. When the cutters are blunted they are easily ground down to an edge and it has been found that the wear of these cutters is very little. It will therefore be understood that when these cutters are in operation

the stone on it under the action of the circular cutters, at such rate as their operation will allow, usually at the rate of about one foot per minute. The movement being effected by a cogged strip, on the under side of which a cogged wheel works. *F* is a fly wheel fastened to the drum. *H* is a flange from the axle of the fly wheel to which is attached the reciprocating rod, *K*. This rod or arm is attached at one end to a flange, and at the other to the cutter head by the revolution of the fly wheel made to drive the cutter head back and forth across the surface of the stone, as the latter is moved along underneath the cutters and subjected to their action. The length of the stroke of the arm and cutter head driven by it, is regulated by shifting the point of the arm and flange by means of slots or holes in the arm. The feed or process of moving the stone to the action of cutters is regulated at pleasure in the ordinary way.

The angle at which the cutters are brought to bear on the face of the stone is about forty-five degrees—but the angle may be varied as the material to be dressed requires, being adjustable by a proper apparatus, and the same apparatus reverses the aspect of the cutters to meet the stone when coming from either direction.

The machinery for driving the cutters by the reciprocating arm, *K*, being well known, need not be further described, but as the cutters move in a carriage, the frame which guides them is peculiar. It is made of strong well braced parts to support the frame of the carriage, which has triangular side bearings, *v v*, which guide the rollers of the cutter carriage and support them. These side bearings, *v v*, are secured to a frame which has cross heads with racks, *D D*, fixed in them, which mesh into a pinion above, by which the carriage bed, *v v*, is elevated by its frame being raised in

tion, this carriage is secured in the frame, fig. 1, to move the cutters backwards and forwards on the face of the stone, by the reciprocating motion of the arm, *K*, (fig. 1.)

This principle of action of the cutters is most effectual in dressing stones of the softest and hardest qualities. We have seen two of these machines in operation at the Empire Stone Works, Messrs. Sherman & Howdayer, at the foot of 28th street, East River. Marble, the hardest Staten Island granite, and even the now celebrated Georgia Burr Stone, have been dressed by one of the machines mentioned, in a period of time surprising to every body who witnessed the operation, and with but little wear of the cutters. The cutters work over the face of the stone at the rate of about one square foot per minute and cutting to the depth of about 1½ inches. We have seen a stone cutting machine with chisels set on a Bramah disc wheel, but it was no machine at all to compare with this one. The face which is put on the stone is beautiful, and in comparison with hand labor—well, in point of economy, there is no comparison.

More information may be obtained by letters (*p. p.*) addressed to the proprietors in this city, Messrs. Shelton & Flagg, No. 12 Wall street.

Circular Saws.

The Middlebury Galaxy states, that Jeremiah Hall of that town first invented, and put into successful operation, the circular saw, and his widow has in her possession the first circular saw ever used in this country. Had Mr. Hall claimed and secured his legal right, it would have placed him in independent circumstances. He never took out a patent, consequently he never received the first dollar's remuneration for his useful invention. "He died in extreme poverty in 1842, but has left a rich legacy to posterity. His name ought to be rescued from oblivion, and enrolled with those whose ingenuity and extraordinary invention entitle them to the lasting gratitude of mankind."

[We suppose that the above may be correct, so far as the inventor was aware, but circular saws were employed for cutting the teeth of watch and clock wheels by Dr. Hook, the famous mathematician and mechanic, who died in 1702.]

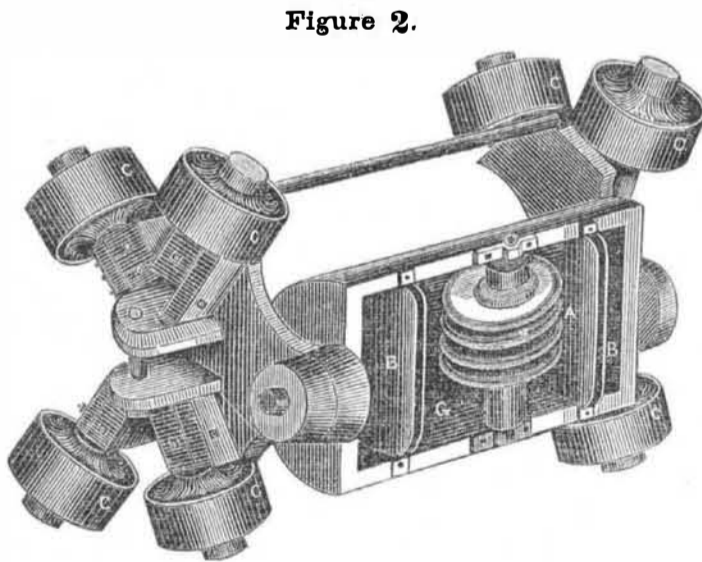


Figure 2.

slots in the posts. The cutters have to be elevated and depressed for stones of different thickness and for going over a stone twice or oftener, to make the surface perfectly level. The cutters can thereby be set, to cut a small or large chip, for different kinds of stone. This is an important arrangement, *c c*, are the rollers of the cutter carriage, and will show the arrangement of them as they are drawn backwards and forwards by the arm, *K*, to dress

the face of the stone as it is carried transversely on its railway bed below.

Figure 2 is a perspective view of the cutters in the carriage. This view exhibits them on a larger scale than figure 1. *A* are the disc cutters; (each cutter is formed on both sides, like the outside of a quoit;) they are made of wrought steel, are nine inches in diameter, one-fourth of an inch thick, tapering to a blunt edge. There are four of them set on a hol-