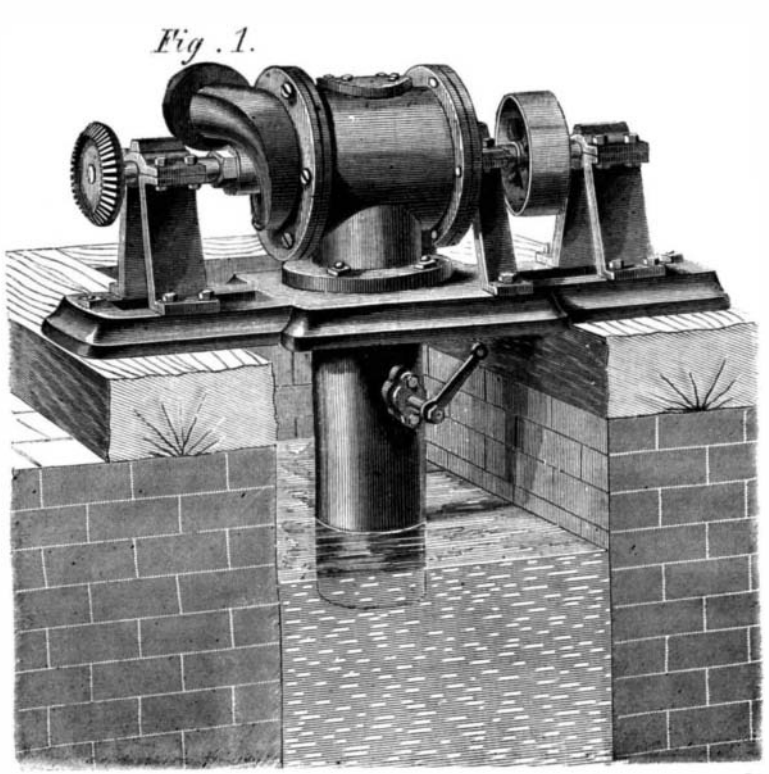
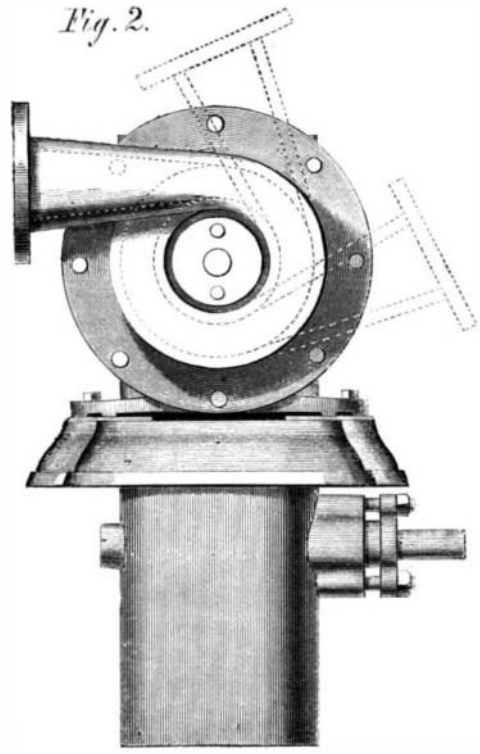
Improved Helical Turbine.

The annexed engravings represent a turbine wheel which combines the helix with the Jonval wheel proper on a horizontal shaft, with draft tube attached, thereby producing a cheap, effcient and durable turbine for all manufacuring purposes whatever. With high heads andfalls for which it is especially adapted, the inventor assures us that it will yield 80 per cent. of the useful effect of the water. The adaption of the helical curve to the Jonval turbine was suggested to the inventor of this wheel by experiments at the Fairmount Water Works, Philadelphia, in 1860, where it was shown that water applied by means of a helix to an ordinary wheel produced good effects. From this it was inferred that with a superior wheel, such as the Jonval, still better results might be expected. Practice has proved this view to be a correct one.

This wheel is very nicely adjusted so as to run with as little friction as possible. The step or bearing for the end of the main shaft runs in oil and is so arranged as to be easily inspected and replenished when necessary. The machine always sets above tail water; this is accomplished by means of a short draft tube, attached below, and the interior of the case can be cleaned from above. This is much more convenient and expeditious than getting down into a wet and dirty wheel pit; by merely opening a manhole on the top, and moving the wheel over endwise which does not throw the wheel out of line) anything which may have been accidentally carried into the case can be speedily dislodged. The wheel can be set above the race to any height not exceeding 30 feet, by the use of the draft tube, mentioned before. This saves a great deal of expense in building costly frames of timber; the machine is also very compact and may be set in the same apartment with the machinery driven by it; the case is water-tight and cannot injure the walls or ceilings below by drift or leakage. Water may be led to the wheel at any angle and by merely turning the helix, as shown in Fig. 2, by the dotted lines, it can be introduced on either side; thus making a straight supply pipe available, and lessening the loss of effect which occurs in passing currents of water through crooked passages before it gets to the wheel. It will be seen that this wheel is a simple and compact one for all light manufacturing purposes where water is at hand. In cities, towns and villages where municipal water-works are in operation or where mountain streams run to waste, the power can be made to work at a small cost for a wheel for it to act on. Country printing offices, millers, machine and carpenter shops, in fact all mechanics and tradesmen will find these motors useful, safe and economical. They are furnished in sizes from 4 to 36 inches diameter of wheel, and all interested should address J. E. Stevenson & Co., the inventors, at 200 Broadway, New York. Steps are being taken to procure a patent.

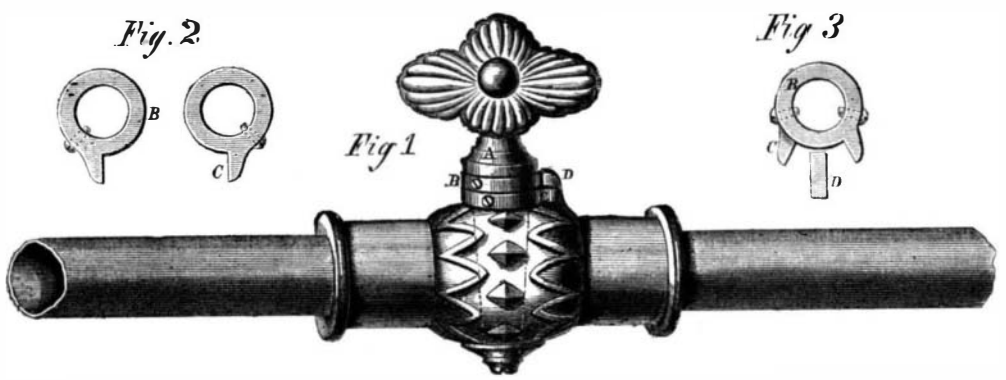




STEVENSON'S HELICAL TURBINE.

Improved Gas Faucet.

In lighting up public buildings, such as hotels or concert rooms, theatres, &c., it is a difficult matter to adjust the amount of gas admitted to the burners so that the glass-shades, or chimneys, which are sometimes used instead, shall not be broken with the excess of heat caused by the sudden ignition of a large flame. The faucet herewith illustrated by a very simple arrangement obviates this trouble, and permits the amount of gas which flows to the burner to be graduated with great nicety. It will be seen by referring to the engraving that the plug, A, has two rings, B, upon it, these rings are slipped over the plug before it is inserted in its seat. In these rings there are set screws, and one side is furnished with a lug, C, as shown in Fig. 2. The chamber the plug fits in is also cast with a shoulder, D, upon it, and when the rings are in place they appear as in Fig. 3, one ring on each side of the shoulder, D, on the chamber. The operation of this fixture is obvious, for when the key or plug of the cock is to be turned either on or off, it may be moved until the rings are in contact with the shoulder, D. From this it will be seen that a passage of a certain size is left open for the gas through the main pipes, and the light can thus be fixed, increased, or diminished at will. In the chambers of hotels, public halls, and also in street lamps, where servants or reckless persons are likely to waste the gas, this is a good fixture, and one that will work satisfactorily. The principle involved in this arrangement is in no way akin to the pin and stop generally used on gas fixtures, as that is not adjustable; where the pin is already in place, however, but one ring is needed on the key. This improved faucet can also be used to regulate the passage o liquids as well as gases, and would be a convenien appendage to the feed cock of a pump for supplying steam boilers with water. It can be applied to fixtures already in use at a small cost. It was patented on Feb. 16th, 1864, by Charles A. Shaw, of Biddeford, Maine. Further information can be had by addressing him as above.



SHAW'S GAS FAUCET.

SUPPLEMENT TO URE'S DICTIONARY.

"Ure's Dictionary of Arts, Manufactures, and Mines" has been regarded, ever since its publication, as a most complete and reliable cyclopædia of the industrial arts. But the progress of improvement is so rapid that the practice in many of the arts had advanced to a considerable departure from the descriptions in that work, and the enterprising English publishers determined to issue asupplement which should embrace the latest improvements. The editorship was undertaken by Mr. Robert Hunt, F.R.S., F.S.S., and the various articles have been written by the most eminent masters of the subjects which they severally treat. The work has been republished by Messrs. Appleton & Co., of this city. The "Supplement" is a large volume of 1,096 pages, profusely illustrated, and the whole work in three volumes contains 3,212 pages with 2,300 engravings. To all persons interested in manufactures or any of the industrial arts, it is of incalculable value.

THE *Waywayanda*, one of the new steam revenue cutters built in Baltimore, recently made a trial trip; she attained the speed of 16 knots an hour without extraordinary effort.

EXTRAORDINARY as it may appear, a piece of brown paper, folded and placed between the upper lip and gum, it is said, will stop bleeding of the nose.