



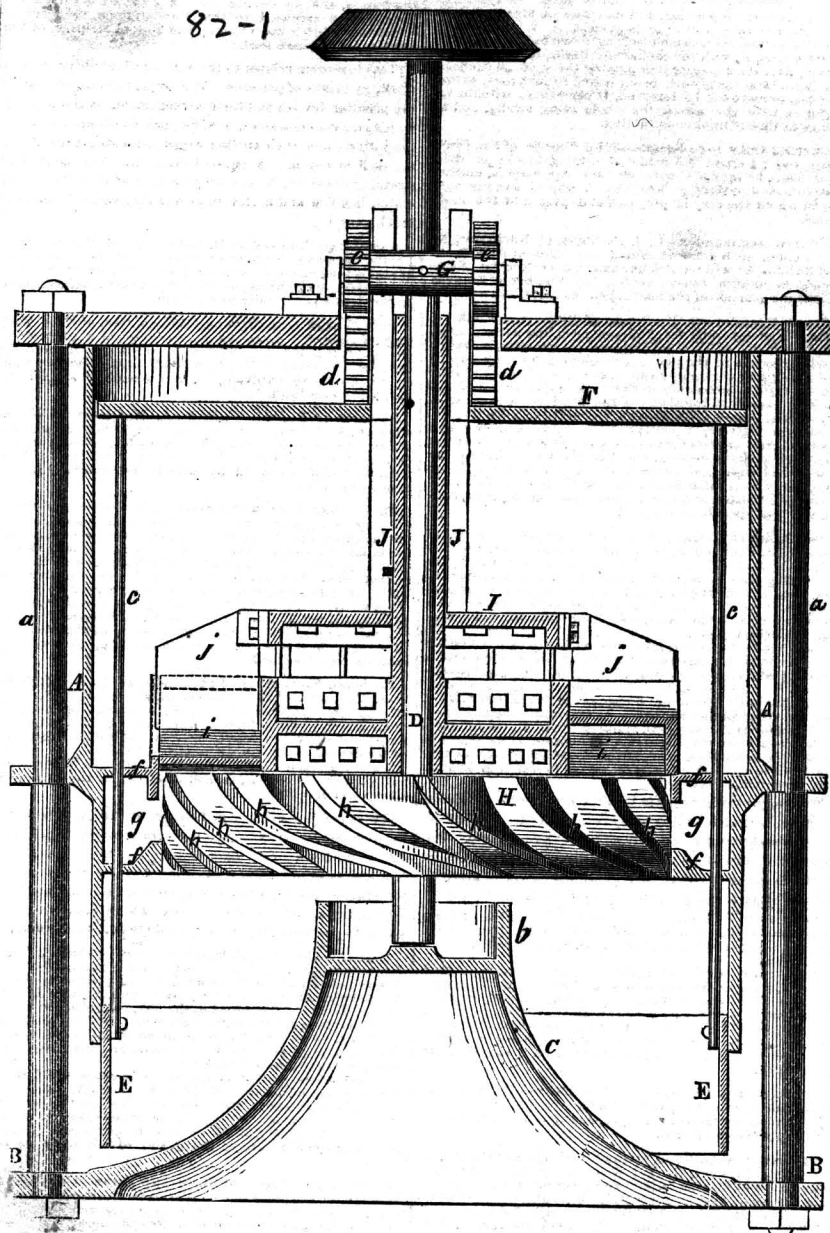
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VAN DEWATER'S TURBINE WATER WHEEL.

82-1



The accompanying engraving is a vertical section of the water wheel of Henry Van Dewater, of the city of Albany, N.Y., embracing an improvement on his patent of October 1863, for which he has just taken measures to secure a patent.

The improvement consists, first, in the employment of a concave guide at the lower part of the casing underneath the wheel, in combination with a gate which surrounds it, to regulate the discharge of water from the casing or wheel. Second, in the employment of a peculiar gate and a series of shuttes made and arranged to admit the requisite quantity of water to the wheel. Third, in surrounding the wheel with a chamber (filled with water) which, in connection with the peculiar form of the buckets, makes the water exert an upward pressure to relieve the bearing step of the weight of the wheel.

A is the cylindrical casing of the wheel, which may be made of cast iron. It is secured in its upright position by the rods, a a, to a flanch, B, underneath the casing. This flanch is placed at the lower part of the guide or deflector, C, which is of a concave conical form, and projects upwards a suitable distance within the casing, A. On the upper end of this guide is the step or bearing of the wheel shaft. This step is secured by an upright ledge, b. Within the lower part of the casing there is a rim or band, E, which forms a gate. This gate works snugly within the casing, and has four vertical rods, c c, (two shown,) attached to it at opposite points. The upper ends of these rods are connected

to cross bars, F, to which vertical racks, d d, are attached; these gear with the pinions, e e, at the end of a drum, G. Within the casing, A, and directly above the guide, C, is the wheel, H. It is fitted between lateral flanches, f f, which thus form a chamber or recess, g, around the wheel. The top and bottom edges of the buckets are radial with the wheel, and the intermediate points are gradually curved, so as to leave the spaces between the upper edges of the buckets wider than the spaces between the lower ends; the figure shows the form of the buckets. Directly above the wheel there is a fixed series of shuttes or guides i, which are placed directly over the buckets, h. The shuttes are of a spiral form conforming to that of the buckets, and at the mouth of each there is a slide, j, connected to a circular rim, I, which encompasses the shaft, D. These slides, j, form the gate above the wheel. J J are two vertical racks attached to the upper surface of the rim, I. Two pinions in a drum (not shown) gear into these racks. By turning the drum, these pinions operate the racks, J J, and thus raise or lower the slides, j according to the direction the drum is turned. By turning the drum, G, the pinions, e e, take into the racks, d d, and elevate or lower the lower gate, E. The water from the flume flows into the upper part of the casing, and the slides, j, being open, it passes in and fills the entire casing, and is directed tangentially against the buckets of the wheel, the quantity being regulated by the guides and slides. As the spaces between the lower

The Chair submitted a communication from Frederick Graeff, Chief Engineer of the Water Department, calling attention to the settlement of the dam at Fairmount, as a failure of the dam would prove most disastrous to the city. Referred to Committee on Water. 82-5

edges of the buckets are narrower than those between the upper ones, the water presses upward to a certain degree against the under surfaces of the buckets, and thus relieves the under step of the shaft, D, from top weight, thereby decreasing the friction. The surrounding water in the recess, g, acts upon the wheel when at work. By regulating the gate, E, the unequal draft of partial vacuum upon the column of water descending from the bottom of the wheel is obviated. It will be observed that when the gate, E, is raised or lowered, there will be an equal space all around the deflecting guide, C, so that the draft is equalized at all points around the wheel. In the ordinary French turbine a valve is used for this purpose, but this causes unequal draft, and is therefore inferior to the guide, C.

82-2

These improvements on the Jonval French turbine wheel by Mr. Van Dewater are obvious. His wheels have a high reputation for efficiency. We have now a number of certificates before us, from persons in various parts of our country using his wheels, all testifying to their high percentage of power and excellent construction.

More information may be obtained by letter addressed to Mr. Van Dewater.

Chief Engineer Ogden—His Greasing and White-washing. 82-3

Subjoined is a particularly definite and telling document, which was picked up in a mutilated condition in front of the State House, which shows up Engineer OGDEN with unmistakable clearness. It proves that OGDEN, within six months, expended the whole items of appropriations for the entire year; appropriations, too, which were made from his own estimates.

Let it be observed, also, how or on whom they were expended. The SCHOFIELD mentioned in the bill below is a brother and partner of the SCHOFIELD in Council—a particular friend and white-washer of OGDEN. the WHEATHAM in the bills is Mr. P. O. WHEATHAM—the principal outside operator, borer, runner, and manager for OGDEN's reelection. No wonder that MESSRS. SCHOFIELD, WHEATHAM, and ALLEN "went in strong" for OGDEN; he goes in strong for them. The bills below show that they received 30 to 50 per cent. above the market price, for their oils and tallow.

The white-washing applied to Engineer OGDEN was not well made up. It will not stick. It falls off in big pieces and leaves big blotches exposed to view. The Engineer has only one resource. He must be mighty particular and square in his dealings and accounts hereafter, or else CORNMAN, CUYLER, and all the rest of the white-washers cannot save him from the exposures of HAGNER, the reform broom of uncle ANDREW MILLER, and the independent strictures of the TRANSCRIPT.

PROCEEDINGS OF CITY COUNCILS.

The regular stated meeting of City Councils was held yesterday afternoon, and the following business transacted:

SELECT COUNCIL.—Communications and petitions were presented as follows: Communication from the Board of Health, asking for copies of the Digest of the Laws of the city; communication from Mr. John McCarthy, Chief Commissioner. Highways elect, containing names of sureties; petition for water pipes in 22d and 23d streets between Pine and Lombard sts.; petition for a better supply of water in the 20th Ward; communication from Fred. Graeff, late Chief Engineer of the Watering Department, calling attention to the settlement of a portion of the Fairmount Dam, which must be remedied to prevent disaster; also to the urgent necessity for an enlargement of the Spring Garden Water Works, in order to give a sufficient supply of water to the northwestern section of the city; communication of the City Controller, containing the semi-annual statement of the affairs of the department, from Jan. 1st to June 30th; communication from the City Treasurer, stating the amount of city loans purchased since the last report—all of which were referred to the appropriate Committees.

Communication from the Chief Engineer...