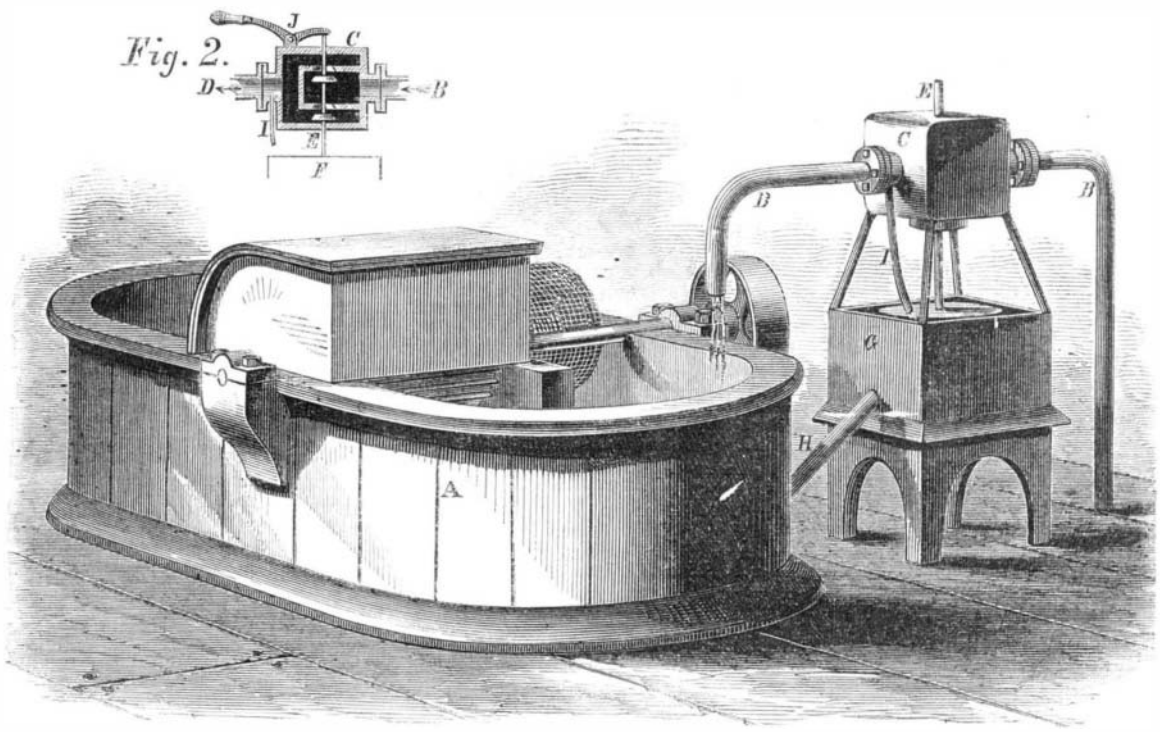
Device for Regulating the Flow of Water to Pulp Engines.

Annoyance and waste of stock is sometimes caused in paper making by the overflow of the engine tank, or by the insufficient supply of water. The design of the improvement herewith illustrated, is to prevent the occurrence of these difficulties by furnishing an automatic feed for the water by means of which the supply shall be regulated and governed by the level in the tank.

A, is the usual tank, shown empty in the engraving. B, is the supply pipe, by which the water is led to the regulator, C, from which leads the delivery pipe, D, that conducts the water to the tank, A. The interior of the regulator, C, is shown in the section Fig. 2. It will be seen that the water is admitted from a proper head, in the direction of the arrow at B, to a chamber, the walls of which extend across the regulator, and are pierced at top and bottom by apertures forming valve seats in which fit downward opening valves secured to a rod, E, to the lower end of which is attached a suitable float, F, sustained on the surface of water in a reservoir, G; the level of the water in the reservoir being kept at the hight of that in the tank by means of a connecting pipe, H. A dip pipe, I, leads any surplusage of water from the regulator, C, to the reservoir, G, and a lever, J, Fig. 2, may be attached to the top of the regulator, C, to open the valves by hand, if at any time it may be deemed necessary.

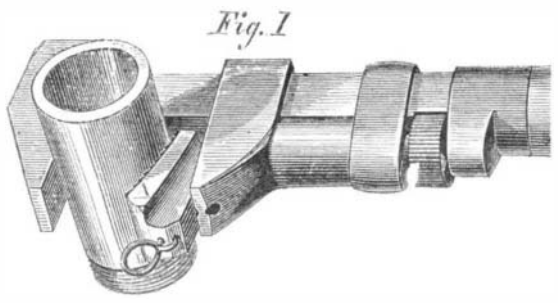
From the foregoing the operation of the device may be readily understood without further explanation. It was patented through the Scientific American Patent Agency, by David Hunter, North Bennington, Vt., to whom all communications relative to the device should be addressed.



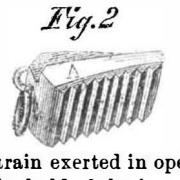
HUNTER'S PAPER ENGINE WATER FEEDER.

FARIES' PATENT SUPPLEMENTAL JAW FOR SCREW WRENCHES.

The object of this device is to provide a handy auxiliary jaw for the common screw or monkey wrench, by which the



ordinary wrench may be used for screwing up bolts by griping their cylindrical surfaces or for piping purposes instead of the gas-piper's tongs. Its value as applied to these uses is apparent at a glance.



The supplemental jaw, A, seen plainly in Fig. 2, is a wedge-shaped block slightly curved on face and back, the face being corrugated or toothed to give a better hold on the work, the serrations being so inclined that the greater the strain exerted in operation the more determined and positive the hold of the jaw on the work. A ring is fastened in the supplementary jaw by which it may be linked to the movable jaw of the wrench or suspended to the wrist of the operator if working on elevated places or in pits or excavations. In consequence of the slight curve given the auxiliary jaw, the points of bearing on the pipe, shaft, and the jaw of the wrench are directly in line with the force exerted, so that there is no transverse or wrenching strain tending to injure the wrench. It can be applied to or used with any ordinary wrench.

Patented June 23, 1868, by Robert Faries, who may be addressed for territorial and manufacturing rights, or the device itself, at Decatur, Ill.

Erie Water Works.

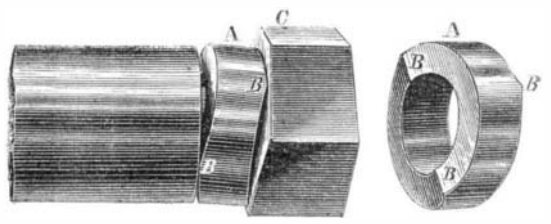
The people of the thriving city of Erie, Pa., have been for years dependent for their supply of water on local wells, aided by an inefficient system of supply furnished by a limited and unreliable congeries of pipes fed by springs of small capacity. But it is soon to be supplied from the pure waters of Lake Erie, than which no better water for drinking, lavatory, or manufacturing purposes is in use. The plan, under the superintendence of H. P. M. Birkenbine, a well known Philadelphia engineer, is to erect on the shore of the lake an engine house and stand-pipe, the latter of sufficient hight to provide a head capable of supplying the most elevated portions of the city.

The *Erie Dispatch* says: "The stand-pipe rises 234 feet above the level of the water, and stands on a rock 14 feet high, making the pipe 220 feet high; it is five feet in diameter, and is made of boiler iron 3-16ths of an inch thick at the top and 7-16ths of an inch at the bottom; it weighs 42 tuns. This is to be surmounted by an ornamental spire of bright metal fifteen feet high. This is the highest pipe on the continent, and probably in the world. It was raised in a very novel manner, the invention of the contractor, and is well worthy of a patent. It was done very much as the Irishman proposed to build a chimney, 'hold one brick up and put another under it.' It was done by commencing with the top section and adding the lower sections in their regular succession, hoisting the pipe as each section was added, by means of derrick and pulleys.

"Around this pipe is to be built a tower 9 feet 6 inches from wall to wall, and 190 feet high from the rock, surmounted by a balcony five feet wide. The balcony is reached by a spiral stairway of 250 steps. The stairway and pipe will fill the entire space in the tower. The tower will be of stone 22 feet, and the remainder of brick. The engines are of the Cornish pattern. Their cylinders are upright, and are 60 inches in diameter and 10 feet stroke. The cylinders themselves are of immense weight. The pistons work directly in connection with the pump rods. This connection is made in the lower or middle story. The pumps are in the basement story, placed directly under the engines. They are 21 inches in diameter and 10 feet stroke, and are capable of pumping 2,000,000 gallons each in 17 hours. Adjoining the engine house is the boiler house, which is 50 by 60 feet and one story high, made of brick. In this will be eight boilers, 30 feet long and 42 inches in diameter, with two 14-inch flues. They rest on brick and stone work, built up from the solid rock. Each boiler will be independent of the others, so the stopping of one will not affect the others. The fire will not be under the boilers, as is commonly the case, but will be in front of them, in combination chambers. The smoke stack is to be 100 feet high."

BOARDMAN'S DEVICE FOR FACING NUTS.

The accompanying engraving is a perspective view of a convenient little device for turning or facing nuts. It consists in providing a loose ring, A, with two rounded projections, B, on either side and at right angles with each other. This ring is placed on the screw-arbor between its shoulder and the nut, C, to be turned, and adapts itself to the irregular shape of the nut's rough surface, making an equal pressure on its opposite sides directly endwise with the arbor, and perfectly true with the thread. The engraving shows the ordinary style of arbor at one end, and the improved arbor and ring on the other.



The style of arbor now in use is shouldered down below the bottom of the thread, to allow the nut to be faced to screw up to its shoulder, and when the highest point of the nut strikes on one side of shoulder, and is screwed up hard enough to turn or face up the nut, the arbor will spring and the nut will cramp over on the few remaining threads of the arbor, and be faced out of truth. This improved arbor gives a thread bearing to the nut its entire length, and is not weakened by having the thread turned off, but is left full size of outside of thread. This invention was patented April 21, 1868, by Byron Boardman, of Norwich, Conn., and assigned to himself and Frank Douglas of the same place. For further information, or the patent rings, address Frank Douglas, Norwich, Conn.

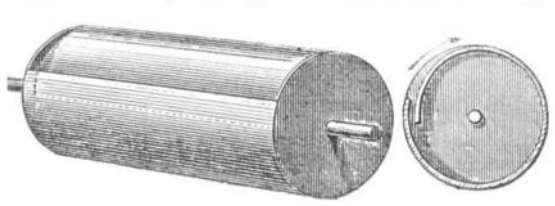
Carbolic Acid a Cure for Snake Bites.

The following extract from a letter written by John W. Hood, M. D., from Australia, gives the results of the application of carbolic acid to the cure of bites of poisonous snakes:

"An unfortunate experiment, resulting in the death of the principal performer, as to the efficacy of a so-called antidote for snake bites, took place here some few weeks since, and of which I send you a report. The cure of persons bitten by the venomous snakes of Victoria has long been a favorite subject for experiments among the medical profession here. I, living in a city, have not the opportunity of meeting with any human subjects to experimentalize upon, and have to rest contented with quadrupeds—most of which suffer death. However, I have long entertained the opinion that carbolic acid, taken internally and used as a caustic to the wound, would be found to be beneficial, and, perhaps, a specific cure. That I am right, to a certain extent, is proved by the fact that a friend of mine, a medical man living at Warranambool, Dr. Boyd, successfully treated two cases of snake bite with carbolic acid. I am not aware of more particulars than that the first case was a young lad bitten by a tiger-snake, the most venomous these colonies produce, and Dr. Boyd, six hours after the boy was bitten, administered ten drops of pure acid, in brandy and water, every few minutes. He writes: 'The effect was magical—from a pallid countenance, slow pulse, and semi-comatose condition, the patient rallied to a bright expression, ruddy glow, and quick pulse, and the recovery, though slow, was continuous and certain.'"

IMPROVED TUMBLING BARREL AND COAL SIFTER.

The tumbling barrel is a very efficient means of cleaning small castings from sand, and brightening and polishing small metal work of all descriptions more effectually and much cheaper than can be done by hand. It is a cylinder suspended on an axle and having an aperture for the reception of the work to be cleaned, which may be closed and secured when the barrel is charged. For large work and where the tumbling barrel is kept nearly constantly in operation, it is built quite heavy, the staves being strong ribbed iron castings and the heads made to correspond, the whole bolted firmly together; but for light work an ordinary barrel or wooden



cask is used, or a square cornered box of wood is swung on journals and rotated. But all of them must have a door or trap which has to be secured so that none of the contents can escape while the barrel is performing its revolutions. Evidently there are objections to the ordinary tumbling barrel or rattling box, as time is required to open and close the aperture, and, as it is generally situated midway between the heads and the barrel is usually cylindrical, it is not easy to deliver the contents.

We present herewith a plan which we consider an improvement on the ordinary tumbling barrel. This one is always closed, and yet always open. Instead of being a cylinder it is in cross section a scroll, as seen. So long as the barrel rotates in the direction of the arrow its contents will remain inside, but if stopped and turned in the other direction until the aperture comes underneath, the contents are readily discharged. One advantage of this plan is that the opening extends the whole length of the cylinder and the contents drop at once from the whole of the interior. Facility of charging is another advantage, and the projection inside, of one edge of the casing over the other, makes a fall for effectually rattling and mixing the contents. The inner edge should pass the outer only sufficiently to prevent the escape of the contents.

As a coal and ashes sifter, flour and meal bolt, for sifting molding sand, etc., this device is equally well adapted, a wire screen or bolting cloth taking the place of the solid covering used in the tumbling barrel. It may be constructed of any material, wood or iron, boiler or cast, and still preserve its form and its advantages.

We do not claim to have originated this device, but received it from an enterprising mechanic, Mr. Boynton, formerly of Hartford, Conn. We believe there is no patent on its application, and we deem it worthy the attention of foundery men, hardware manufacturers, and others.

AN Ohioan has invented a car brake which acts directly on the axle, instead of the wheel. It is asserted that it will, by a quarter turn of the brakeman's wheel, bring a car to deadlock, and that a train can be stopped instantly, though that, of course, would destroy the train.