

Forging Iron by Hydraulic Rams.

Some time ago Mr. Henry Bessemer patented a highly ingenious form of hydraulic press for forging metals. An ordinary ram of a hydraulic press is in communication through a pipe with the usual force-pump plunger, driven with a crank on a shaft provided with a heavy fly-wheel. The barrel, in which is working the plunger, is unprovided with valves, and is continued as a simple pipe till it communicates with the cylinder of the press. The water between the plunger of this kind of pipe and the ram thus acts as a communicator of motion between the two, and they rise and fall through distances varying respectively as the areas of the plungers. It will be seen that the heavy fly-wheel does the principal work in compressing; for as soon as the rams—the propelling plunger and the driven plunger—meet with resistance, the inertia of the heavy fly-wheel at once comes into play. We do not know whether this invention has been found successful in practice; and a yet more recent patent of Mr. Bessemer embodies the plan of supporting the bearings of the bottom roll of mills for rolling armor plates on a hydraulic ram. This ram is in communication with water pressure, which can be let on or off, as required, by means of a valve. In case the armor plate being rolled should stick—as often takes place—the water below the ram is let out, with the result of relieving the plate from pressure.

It is scarcely possible to over-estimate the importance of the application of the hydraulic press for forging purposes, and it may be ranked almost as high in the scale of practical improvements in working iron as the introduction of the rolling mill, and at least as high as the introduction of the steam hammer. It would seem to fit in with the recent inventions, giving us a command over the production of steel in large masses, affording, as it does, means of working a substance of much more delicate manipulation than even wrought iron. Nor does the use of the hydraulic press seem to be confined to working of iron and steel in an incandescent state, as is evidenced in the remarkable production of steel tubes drawn cold by hydraulic pressure.—London Engineer.

Curiosities of French Restaurants.

The Paris correspondent of the London Star writes as follows:—

“Restaurants for the working classes in Paris have now-a-days recourse to every species of invention to attract attention. One has just been opened in the Faubourg Montmartre, which promises a dinner of two courses and a desert to whoever writes, in a legible hand, the answer to a rebus offered every morning for solution by the dame de comptoir. Another, in the Faubourg St. Antoine, hit on a still more strange expedient. He chose for his ensign a gigantic golden sausage, which he swung enticingly over the door of his restaurant, the words ‘A la saucisse d’or,’ in huge gold letters blazing beneath. His salon was large, its white walls decorated by festoons of the tempting edible so highly appreciated on the other side of the Rhine, and in every fiftieth sausage a five-franc piece in gold. His principle was, that as his customers called for sausages, they should be cut off in regular rotation from the string, so artistically arranged around the dining hall. The result may be better imagined than described. The eager anxiety depicted on the countenance of every ouvrier as he nervously examined and finally ate the sausage, would have supplied a physiognomist with many good subjects for study. The expedient proved most remunerative to the proprietor, but the quarrels that ensued were of so serious a nature that the police have interfered, and the master of the establishment has received orders either to shut up his shop or to proceed on a less exciting system.”

Free Lecture on Maryland.

By the proceedings of the Farmers' Club, it will be seen that Mr. Bayard is to deliver an address at the next meeting on the advantages which Maryland offers to Northern farmers who are seeking a more genial climate. Mr. Bayard has devoted a great deal of time and labor to the investigation of the subject, and will doubtless give an instructive address. The meeting commences at 1½ o'clock, P. M., on Tuesday, Dec. 6th, at Room 24, Cooper Institute, and all who are interested are invited to attend.

Postal Money Orders.

The Post-Office Department has completed the system of using postal money orders; they can be had at a trifling expense at the principal post offices throughout the United States. This is one of the safest and most economical methods of remitting money. We therefore advise our correspondents, when remitting subscriptions and patent fees, to purchase these orders whenever they can conveniently do so, as it is impossible for the sender to lose his money. For the convenience of our readers we publish a list of offices where orders can be obtained. It will be a useful table of reference, and we hope our patrons will make free use of it in their correspondence with us.

Table with columns: Office, State, Office, State, Office, State. Lists various post offices across the United States.

RATES OF COMMISSION CHARGED FOR MONEY ORDERS.—Orders not exceeding \$10, 10 cents; over \$10 and not exceeding \$20, 15 cents; over \$20 and up to \$50, 20 cents. No single order issued for less than \$1, nor more than \$50. Parties desiring to remit larger sums must obtain additional Money Orders. Coin, United States Treasury Notes or National Bank Notes only received or paid.

The Decay of Conversation.

The ancient art of talking is falling into decay. It is an ascertainable fact that, in proportion to an increased amount of population, the aggregate bulk of conversation is lessening. People now-a-days have something else to do than talk; not only do they live in such hurry that there is only leisure for just comparing ideas as to the weather, but they have each and all a gross quantity to do, which puts talking out of the question. If persons remain at home, they read; if they journey by rail, they read; if they go to the seaside, they read; we have met misguided individuals out in the open fields with books in hand; young folks have been seen stretched underneath trees, and upon the banks of rivers, pouring over pages; on the tops of mountains, in the desert, or within forests—everywhere men pull printed sheets from their pockets, and in the earliest, latest, highest occupations of life, they read. The fact is incontestably true, that modern men and women are reading themselves into a comparatively silent race. Reading is the great delusion of the present time; it has become a sort of lay piety; according to which, the perusal of volumes reckons as good works; it is, in a word, the superstition of the nineteenth century.—Chambers' Journal.

A CANAL BOAT ARMED WITH A GATLING GUN.—Canal boats in North Carolina are armed with the Gatling gun as a protection against guerillas. The Gatling gun is a novel piece of ordnance; it consists of six chambers, which are made to revolve around a central barrel by means of a crank. The charges are poured into a hopper, and the gun is self-loading. It will throw from seventy-five to one hundred balls per minute, the number of discharges depending upon the speed with which the crank is turned. Officers here speak confidently of the success and effectiveness of this novel piece of ordnance; so that if the guerillas interfere with the Gazette, they will be greeted with a continuous shower of bullets. All the boats that ply on the canal will hereafter be furnished with the Gatling, or, as the irreverent term it, the “coffee-mill” gun.

Foreign Patent—Motive Power.

This invention relates to a mode of relieving the ordinary slide valve employed in steam and other motive power engine cylinders from pressure to any practical extent without materially increasing the rubbing surface. And for this purpose it is proposed to apply two slide valves, placed back to back, working on double ports, each set of ports being only half the area required for any size of cylinder. Thus two valve faces, with two sets of ports merging into one port leading to each end of the cylinder, would be adopted, or the ports from the two faces may pass forward separately into each end of the cylinder; or, the two valves and ports from the same may be so arranged that a full-sized steam port may pass from one valve to one end of the cylinder, and another full-sized steam port from the other valve to the opposite end of the cylinder, each valve face having one steam port and one education port.

SPECIAL NOTICE.

JUNIUS JUDSON, of Rochester, N. Y., has petitioned for the extension of a patent granted to him on March 4, 1851, for an improved power governor.

It is ordered that the said petition be heard at the Patent Office, Washington, on Monday, Feb. 13, 1865.

All persons interested are required to appear and show cause why said petition should not be granted. Persons opposing the extension are required to file their testimony in writing, at least twenty days before the final hearing.

The “Scientific American” a Religious Paper.

A writer in the Oneida Circular asks:—“Are not the honest mechanics, the practical men of science, who are the obedient servants of truth and principles, to become the real preachers of gospel truth? Are not such periodicals as the SCIENTIFIC AMERICAN, Country Gentleman, and kindred publications, more truly the organs of the gospel of Christ and the spirit of the Bible, than so-called religious papers in general?”

Our contemporary is one of those “who find sermons in stones, books in the running brooks, and good in everything.”

Crab-apple Cider.

In response to an article on the manufacture of cider which recently appeared in these columns, Mr. H. L. Physick, of Port Deposit, Maryland, has sent to this office a specimen of cider which he made this fall from the Hewes Virginia crab-apple. It is superior to anything in the cider line we have tasted this year.

THE IRON-CLADS “ETLAH” AND “SHILOH.”—The Etlah and Shiloh are light draft monitors with Ericsson turrets, built under the supervision of D. G. Wells, Esq., Engineer, at St. Louis, Mo., on behalf of Government. They each carry two guns, one 11-inch Dahlgren, and one 150 pounder rifle Parrott. Extreme length, 225 feet; breadth of beam, 45 feet; depth of hold, 11 feet; thickness side armor, 3 inches; thickness deck armor, 1 inch; internal diameter turret, 20 feet; thickness turret, 8 inches; internal diameter pilot house, 6 feet; thickness pilot house, 10 inches; number of motive engines, 2; diameter of cylinders, 22 inches; length of stroke, 30 inches; propellers, 2; diameter of propellers, 9 feet.

A \$50,000 MUSKRAT.—The late breach in the Erie Canal, near Rochester, which summarily closed the canal for the season and inflicted a damage of some \$50,000 on the State, is thought to have been caused by a muskrat. The canal runs through a swamp at that place, and the theory is that his muskratship bored the bank and let out a small stream, the water gradually enlarging the hole until the bank gave way, when the rush of waters set in. This shows that little things—even muskrats—are not to be despised.

HEAVY PATENT SUIT.—A suit is pending in the U. S. District Court for the Southern district of New York, between Professor Daniel Treadwell and Robert P. Parrott, in relation to the right of making the hooped cannon which are generally known as the Parrott gun.

THE Adams Express has carried 60 tons of Thanksgiving gifts to the soldiers from Boston.

**Improved Water-wheel Governor.**

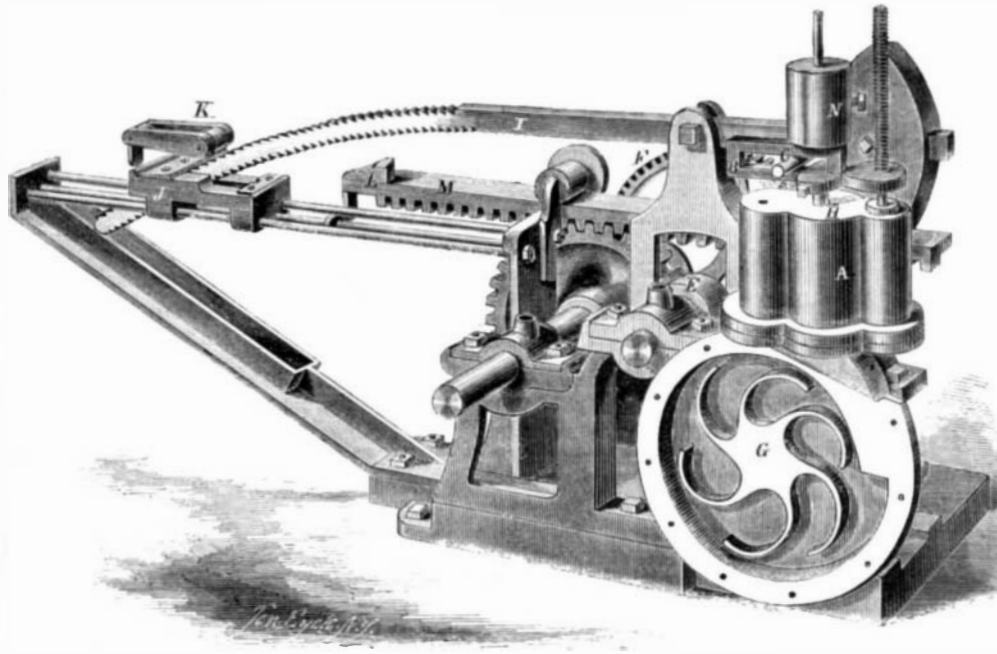
This machine is designed to regulate the quantity of water admitted to water-wheels of any description, and thereby cause them to run at a steady velocity. The principle involved in this machine is that of a piston resting on a column of liquid—oil by preference—said column being supplied continually by a centrifugal pump working directly below the piston. In the engraving the oil cylinder is A, and the piston rod has a slotted yoke, B, which the pin, C, of the vibrating lever works in. This lever vibrates on a center by the action of the eccentric, E, which, in turn, is driven by gears, F. The fan, G, in the pump raises the oil to the piston above through suitable openings in the pump chamber, and the oil is continually supplied to the fan through other openings not shown.

When the fan is driven at a certain velocity by a belt or gears, the piston on the rod, H, stands at a fixed point, and the bar, I, which has ratchet teeth cut on one end, pushes the carriage, J, out to a stated point on the slides. The catch, K, hooks over the stud, L, on the rack, M, which is in direct communication with the gate of the penstock, so that as the bar, I, works, it advances or moves back the carriage, J, thus completely controlling the velocity of the water-wheel to which the apparatus is attached. When the catch, K, is thrown back, as in the engraving, the gate is disconnected from the governor, one revolution of which will completely open or shut the gate. An advantage in this machine is, that it is always in gear to shut the gate, so that if the latch is not dropped, through carelessness, the wheel can never run too fast. The inventor states that it will run the gate from wide open to shut close, in six seconds. The velocity of the wheel, for a certain speed, is regulated by applying weights, N, to the cross-head so as to increase the resistance to the piston. Many of these governors are now in use, and have been giving great satisfaction for two and a half years. Governors for steam engines are also made on the same principle. Patented by J. E. Gillespie on the 7th of January, 1862. For further information address the agents, Messrs. Oliver Brothers & Co., 45 Liberty street, New York.

**Oil-stone Fountain.**

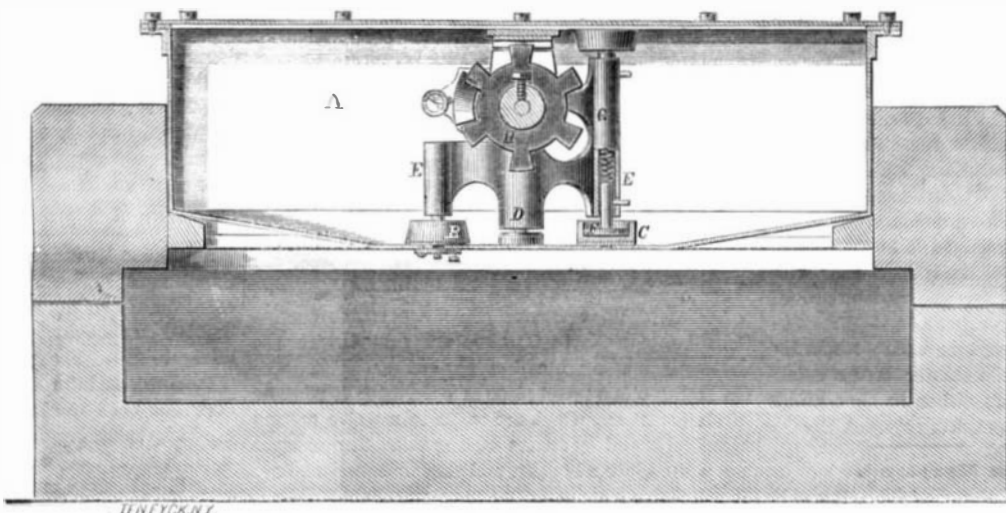
This convenient article is one that will supply an existing want, which is to have the oil always at hand so that it can be used immediately on oil stones. By the use of it, also, the exact quantity of oil required is dropped on the stone, so that the surface of the latter is kept clean and free from gum, for if just as much as is required is put on the stone, it will be all used and no waste will occur. This fountain is constructed as follows:—The metallic fountain, A, is set in the top of the oil-stone box within a short distance of the stone. In the bottom of the fountain there are two apertures covered by cork-faced valves, B and C. These valves are attached to the casting, D, which is in one piece, and has the arm, E counter-bored to let a spring play in them. These

springs keep the valves tight against the bottom of the fountain, through the agency of the plungers, F. The arm, G, on the casting, D, has its upper end extended so as to form another valve similar to those below. This valve covers an aperture for the admission of oil to the fountain; but there must be another hole in the top, in addition, to let the air in the fountain out, as the oil is poured in. By the action of the wheel, H, the arms of which are cam-shaped on the back, and strike similar cam faces on the casting, D, the valves are moved away from the openings beneath them, and quickly closed again by a spring (not shown) attached to the casting, D. The wheel, H, is on a shaft which runs through the

**GILLESPIE'S WATER-WHEEL GOVERNOR.**

box; it has a milled head on the outside to be turned by the thumb and finger. This operation lets one drop of oil issue from each valve at the bottom at a time, so that the quantity is very perfectly regulated. Thick and heavy oils can be used in this fountain, for it can be set on the stove and heated without injury. The several parts of this mechanism are quite simple and few in number. When properly made they will not get out of order in a long time. This oil stone will no doubt command a ready sale among wood-workers.

It was patented through the Scientific Amer-

**FUNK'S OIL-STONE FOUNTAIN.**

ican Patent Agency on the 19th of April, 1864, by James Funk, of Beverly, Ill. For further information address the inventor as above. [See advertisement on another page.]

The new 10-cent postal currency will be printed on paper made of corn husks.

**A NEW SCIENTIFIC SOCIETY.**

A movement is on foot for the establishment, in this city, of a new scientific association, which, if properly managed, may exert a great, beneficent and long-enduring influence. A meeting for organization was held at room 24 of the Cooper Institute, on Tuesday evening, November 29th. Dr. John H. Griscom was chosen chairman, and a committee was appointed to draft a constitution with instructions to report on Tuesday, Dec. 6th.

Abraham Hewett, Esq., stated that, by the terms of the trust deed of Peter Cooper, conveying the building in which the meeting was assembled to the Trustees of the Cooper Union, provision was made for the formation of such a society, requiring that the large hall of the Cooper Institute should be appropriated one evening in every week, free of charge, for its meetings. Mr. Hewett, on the part of the Trustees, invited the gentlemen present to organize under that provision. The committee on organization were accordingly instructed to confer with the Trustees of the Cooper Union.

The meeting was in some respects very promising, and in others very unpromising. The room was nearly filled, the appearance of the men was remarkably intelligent, several who addressed the meeting are admirable speakers, and certainly no more dignified, courteous, intelligent and in all respects able, presiding officer could be found than Dr. Griscom. If he can manage to obtain the earnest co-operation of men like himself, of learning and character, the meetings will be largely attended, and the society will command the respect of the community and will exert a very powerful influence.

But among the active promoters of the new organization were several men who are far more fond of hearing their own sweet voices than they are of interesting the people to whom they are talking. By their long-winded papers and speeches before the Farmers' Club and Polytechnic Association, they have made themselves such insufferable bores to those

societies that the members refuse to listen to them, or listen with extreme impatience. They occupied a large share of the time on Tuesday evening; one of them introduced his dry hobby, "meteorology," and another craved the courtesy of the audience for time to "pitch into the mathematicians." Unless some device can be found for putting a bridle upon the tongues of these men, the meetings of the new society will make a sorry appearance in the great hall of the Cooper Institute.

**A REMARKABLE OIL STRIKE.**—We understand that Messrs. Pennock, Ball & Co., of this city, who,

for several months past, have been sinking a well on Buck Run, not far from Zanesville, Ohio, are now obtaining one hundred and sixty barrels of oil a day. Its specific gravity is said to be thirty, and is selling at twenty-four dollars per barrel at the well. This is one of the most remarkable strikes in the history of oil.—*Pittsburgh Commercial.*