

Scientific Museum.

(For the Scientific American.)
Cornish Valves.

In looking over the Official List of Patents published in your valuable paper of the 26th, ult., we noticed the account of a supplemental valve to the equilibrium pipe of a Cornish Engine, the object of which appears to be to regulate the velocity of descent of the plunger

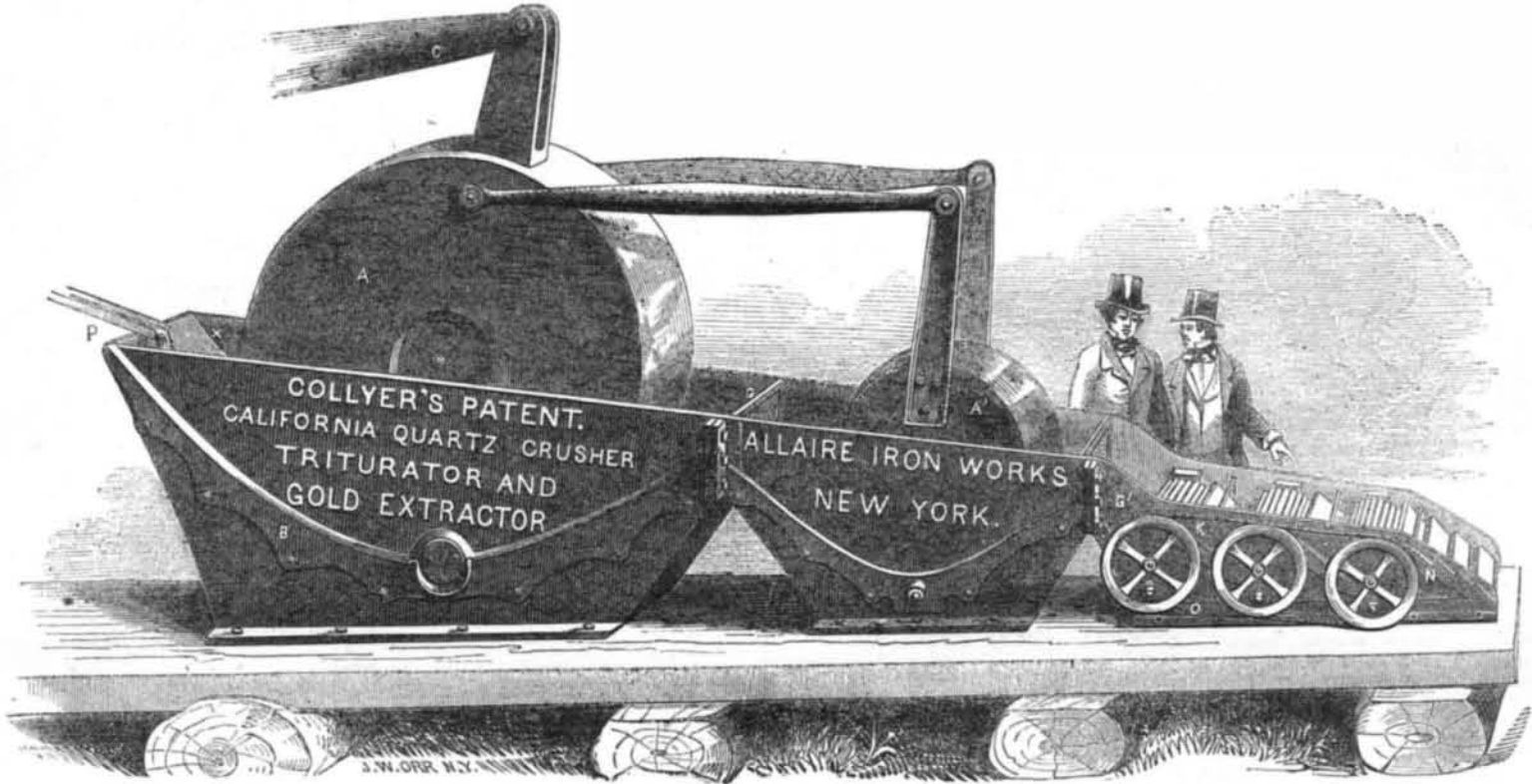
to the height of the water in the stand-pipe or reservoir, into which the water is forced by the plunger; and which we think is a useless appendage to an engine of this kind. Cornish engines, as they are now constructed, and as they have been for more than fifty years, have their valves arranged and worked by parts adapted to effect this very purpose, and they would not be complete without such adjusting apparatus. In fact the mechanical contrivances used to work the Cornish valve, are in principle per-

fectly adjustable to the various requirements of the engine, and to add an additional valve is nothing more or less than to have two appliances to accomplish the same object. There are various modes now in common use for adjusting these valves, and most of them are of the simplest kind: a wedge to slip under the valve balance weight, a thumb-screw to check the valve's motion, and a strap or rope to limit the range of the valve, are some of the methods which answer all intended purposes.

We cannot understand what manner of service this supplemental valve of H. P. M. Birkinbine can render, for if he constructs his equilibrium valve as it should be, and that is, as it is in every good Cornish engine, he has at once a valve adapted to every purpose for which his supplemental valve was designed to answer, why then go to the expense of adding another, and why increase the complexity of an engine without promise of real advantage.

OBSERVER.

COLLYER'S PATENT QUARTZ CRUSHER.



The engraving herewith presented is a perspective view of a machine invented by R. H. Collyer, of San Francisco, Cal., as a Quartz Crusher and Triturator. A quantity of quartz rock, or other ore, is continually thrown into the main crushing chamber, at X, and by a suitable arrangement, a constant supply of the necessary quantity of water, admitted in a continuous stream, is poured upon it from the pipe, P. Motion is communicated from the driving power to the main crusher, A, by the connecting rod, C, and at the same time is continued to the smaller roller, A', by the connecting rod, C'; thus a constant vibratory rubbing and rolling action is kept up by means of which

the ore in the first chamber, B, is broken until it is sufficiently small to pass through the screen, G, into the small chamber, where it undergoes a more perfect pulverization by the action of the smaller roller, A'. The ore being now finely reduced, is carried with the current of water through the finer screen, G', into the amalgamator, where it is forced through the fluted rollers seen in the engraving. If any particles of gold should escape the action of these fluted rollers, they will be caught by the riffles, N. O is a plug, at which the mercury or amalgam can be drawn off at pleasure.

The main crusher is 6 feet in diameter and

weighs six and a half tons, or its weight may be increased by filling its interior with sand. The smaller crusher or triturator, A', weighs two tons, and may in the same manner be increased in weight. The machine presents nearly four thousand five hundred square inches of crushing surface.

The advantages claimed for it are, that when one portion of the surface of the crusher is worn, it is so constructed that another may be presented; that it scours or rubs off the impure coating of the auriferous particles, that it thoroughly effects their amalgamation with the mercury; that it preserves the mercury in bulk instead of separating it in globules; that it is

easily cleansed, simple in its arrangement, and not liable to get out of order.

For further particulars address the manufacturers, T. F. Secor & Co., at the Allaire Iron Works, 466 Cherry street, New York.

The Scientific Dog.

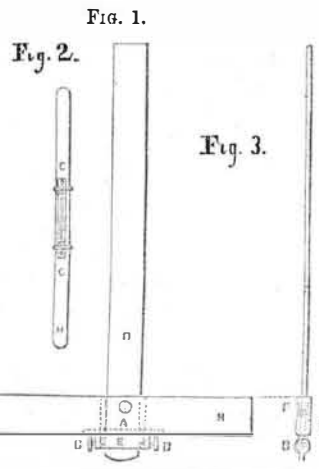
The Editor of the "Portsmouth Journal" recently made a visit to E. Merriam, at Brooklyn Heights. Mr. M. is a meteorological observer, and has made records from three instruments, every hour, day and night, for eight years, many of which have been published in the "Scientific American." The editor inquired:—

"But, sir, how do you manage to keep your record through the night hours—you would seem to want some time to sleep: how do you manage?" The reply was, "One member of the family keeps the record from seven in the morning to seven in the evening. Another keeps it from seven to eleven in the evening, and I and my dog keep it the other eight hours. I retire regularly, my dog is stationed in the entry by the clock, and at its striking immediately scratches at the door. I rise, make the record, and in a few minutes am regularly asleep again until the dog gives notice of the expiration of another hour."

"We saw," he says, "the intelligent animal which has been so faithful in aiding his master in his scientific researches,—and also the evidence of labor performed on the door of the sleeping room of his master. His regular service for three years he has deeply recorded in the panel of the door by an hourly scratch."

The Olive Crops promise to be most abundant in the Ionian Islands, particularly in Corfu, where the branches of the trees are actually breaking from the extraordinary weight of the Olives.

Taggart's Improved T-Square.



The accompanying engraving represents a new mode of adjusting the tongue of a T-Square to a right-angle with the stock. A Drawing Square made in this way is perfectly manageable; it can be taken apart with dispatch and without injury to the parts, to admit of straightening the edges when the material of which it is composed springs or becomes crooked. To a draughtsman this is a valuable improvement; it affords a cheap and tasteful square, its angle being at any moment under his complete control. Those who have used the square having the stock and tongue fastened permanently together, cannot fail to appreciate the advantages of this improvement.

DESCRIPTION—Fig. 1 is a view of the Square ready for use. A is a screw passing snugly

through the stock, H, and tongue, D, as shown by the dotted lines at F, fig. 3. E is a metallic adjuster through which the tongue passes; the adjuster is fastened to the stock, H, by two screws, as shown at C, C, fig. 2. B B are set screws operating on the tongue, D, adjusting it to a right angle with the stock, H.

S. Taggart, of Indianapolis, Ind., is the inventor, to whom all communications should be addressed.

The Indigo plant thrives well at the Sandwich Islands, in all moist situations and grows spontaneously wherever it once gets rooted. In fact, from a single plant, it spreads with great rapidity, covering in a few years, many contiguous acres, and rooting out everything else, even the thick sod of a heavy sward.

Photography on Linen.

Messrs. Wulff, of Paris, have placed before the French Institute some specimens of photography on linen, oil cloth, chintz, &c.

PRIZES!! PRIZES!!

The following Splendid Prizes will be given for the largest list of mail subscribers to the Scientific American, sent in by the first of January next:

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\$75 for the 2d largest list.	\$25 for the 8th ditto
\$50 for the 3d ditto	\$20 for the 9th ditto
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