

New Inventions.

New Patent Hydrant.

This hydrant is made entirely of metal, the case being of cast iron, and the pipe and chest of turned brass. Our engravings and the accompanying description fully explain its construction and operation.

Fig. 1 is a perspective view of the hydrant, Fig. 2 is a vertical section, and Fig. 3 is a horizontal section of the water chamber or box, which can be round instead of square when economy of space is desirable, the discharge pipe being also bisected, showing the perforations at its lower end and also the valve.

A represents the case of the hydrant, of cylindrical, or other desired form. This case is sunk a suitable distance into the earth, so that its lower part will be beyond the action of the frost. The bottom of the case is perforated with holes, as shown at *a*; and the pipe, B, from the "main" passes into the lower end of the case, at its side; said pipe being bent upward, within the lower part of its case, at its center.

The upper end of the pipe, B, has a screw thread formed on it; and a box or chest, C, is screwed on the upper end of pipe B. The cover, *b*, of the box or chest is secured to it by screw bolts, *c*; and the cover has a neck or tube, *d*, cast with it, the neck or tube projecting upward a suitable distance. A leather strip is fitted to the under side of the cover, *b*.

D represents a pipe, the lower end of which is fitted and works in the neck or tube, *d*, the pipe passing through the cover, *b*, and having a valve, *f*, secured to its lower end by a screw, *g*. This valve, *f*, is formed of a square plate, having its sides made concave, as shown in Fig. 3, and the plate is sufficiently large, so that it cannot turn within the box or chest, and become unscrewed or detached from the pipe, D. The concave sides or edges of the valve also afford a free passage for the water in ascending within the box or chest above the valve.

The lower end of the pipe, D, has holes, *g'*, made in it, and the valve, *f*, rests upon a spiral spring, *h*, within the box or chest. The pipe, D, does not work tightly within the neck or tube, *d*; sufficient space is allowed for the escape of water up between the inner surface of the neck or tube and the external surface of the pipe, D. Around the pipe, D, and at a suitable distance above the neck or tube, *d*, a flanch, *i*, is secured, and a strip of leather, *j*, is attached to the under surface of said flanch.

The upper end of the pipe, D, is curved or bent in semi-circular form, and passes through the side of the upper part of the case, A, and a short vertical bar, *k*, is attached to the upper part of the pipe, D, this bar, *k*, having a lever, *l*, passing through its upper end, as shown in Fig. 2.

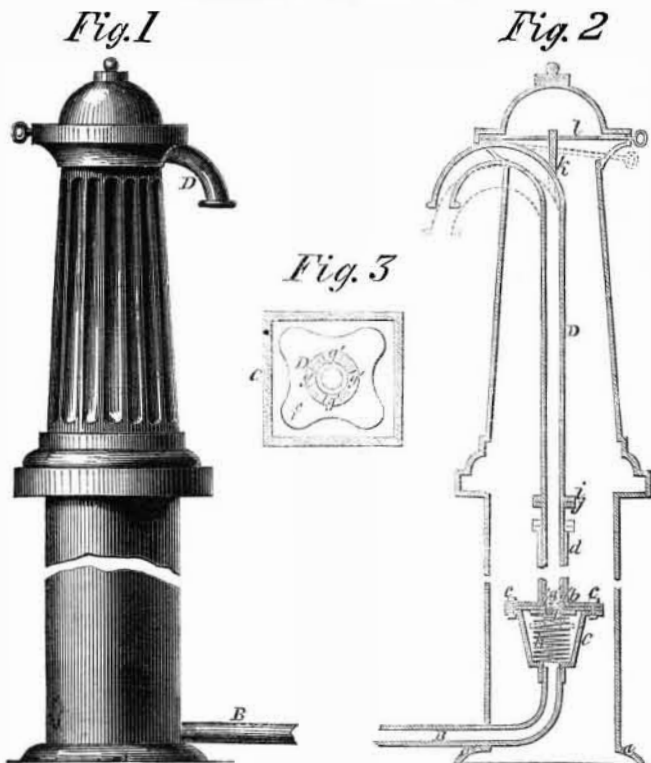
The operation is as follows:—When the lever, *l*, is left free, the hydrant is closed by the spring, *h*, in connection with the pressure of the water, keeping the valve, *f*, snugly up against its seat or leather. When, however, the pipe, D, is forced downward, by actuating the lever, *l*, the water will rush through the passages formed by the concave sides of the valve, and pass through the holes, *g'*, up through the pipe, D. When the pipe, D, is depressed, and the water is rushing up through it, the leather, *j*, on the flanch, *i*, fits over the upper end of the neck or tube, *d*, and serves as a cut-off, preventing the water from escaping into the case from between the tube, *d*, and pipe, D, as shown, in red, in Fig. 1. When, however, the lever, *l*, is left free, the pipe, D, will ascend; the valve, *f*, fitting snugly against its seat, and preventing the water from escaping up within the pipe; and as the flanch, *i*, is then above the upper end of the neck, *d*, the water within the pipe, D, will descend, and pass upward between the neck, *d*, and pipe, D, and escape into the case,

A. The box or chest, C, is placed sufficiently low within the case, A, to be beyond the action of the frost.

In case any repairs are required, the box or

chest, C, may be readily detached by removing the head of the hydrant and turning the pipe, D, till the box or chest is unscrewed from said pipe, D. The box and pipe, D,

BINNY'S HYDRANT.

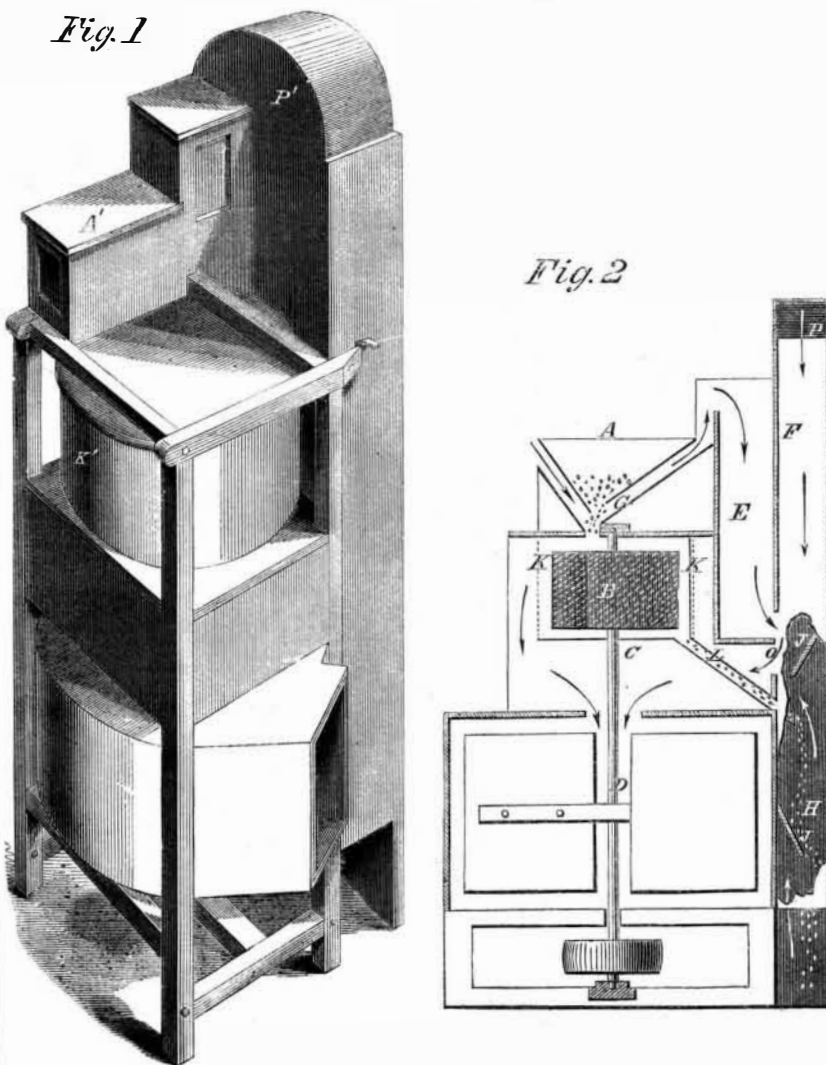


may then be lifted out of the case, and repaired with the greatest facility.

The inventor is W. W. Binny, of Seneca Falls, N. Y., who may be addressed for fur-

ther information, or N. P. Lindegreen, No. 5 Commercial Wharf, Boston, Mass., who owns half the patent; both have rights for sale. It was patented June 2, 1857.

KELLY & FROST'S SMUT MILL AND SEPARATOR.



The purpose of this excellent machine is to remove everything contained in wheat that is lighter than thirty pounds to the bushel, whether it be blasted wheat, foul grain or smut. To effect this the wheat in passing through the machine is subjected to three distinct separators, by the full suction powers of the machine. The first separation is obtained as the wheat enters the machine, by

which the smut balls and loose dirt are removed before the grain is admitted to the scourer.

The second separation takes place within the scourer, where the wheat is acted upon by the blast and beater with the full force of the machine, and allowed to flow from the mill thoroughly scoured and freed from smut and dust of all descriptions, and in this

condition reaches the separator, where it is acted upon for the third time, and entirely cleaned from any foul grain that may have escaped the former processes. The inventors believe that a full and complete separation before scouring has never been satisfactorily attained by combined smut machines, while a second separation, between the heaters, has never been attempted.

The machine is constructed in a substantial manner, and can hardly be surpassed for durability and simplicity of operation. It is run by a single belt, and occupies less than three feet and six inches square of room, and operates so as to keep the mill perfectly clear of the dust and dirt thrown off in the separating process.

In our illustration, Fig. 1 is a perspective view of the machine, and Fig. 2 is a section. A is a hopper through which the grain passes into the separator, B, being previously met by the blast at G, where the first separation takes place. Passing into the separator, it is acted upon by the beaters and thoroughly scoured, while the dust and smut are drawn through the perforated cylinder or concave, K K, through the chamber, C, and blast fan, D. The wheat passes from the smut mill, B, through the spout, L, with the passage, H, where it is acted upon by the blast that passes up over the partition at P, and down through the opening at O, chamber C, and fan, D. J J are valves intended to regulate the blast in the passage. In Fig. 1, A', K', and P' are the cases of A, K, P, Fig. 2.

It was patented May 4, 1858, by the inventors, J. C. Kelly and Amos Frost, of Edinburgh, Johnson county, Ind., who will be happy to give any further information that may be required.

The Maryland Institute.

They are practical people in Baltimore, and have not let their Institute "for the promotion of the mechanic arts" dwindle into a mutual admiration society, as some other cities have done. From the report, which we have just received, we find that in the past year, sixteen lectures have been delivered on interesting and useful subjects, a School of Design has been eminently successful, and a course of twenty lectures on chemistry have been delivered to attentive audiences; altogether, the Maryland Institute is really working for its country's good. The last Annual Exhibition was eminently successful, and the next (the eleventh) will commence on Tuesday, the 5th of October, 1858. Inventors wishing to have space allotted to them should apply early to the Actuary, John S. Selby, or to the Superintendent, Samuel Hindes, Esq.

The Patent Office Bureau.

The Washington correspondent of the Baltimore Sun, in speaking of the labors and responsibilities of the departments at Washington, says:—

"The Patent Office Bureau is one of sufficient importance to justify its organization as a department. The Commissioner of Patents is a judicial, as well as ministerial office, and we frequently have occasion to notice that in his decisions are involved questions of greater magnitude, in a pecuniary point of view, not only as between individuals, but as between them and the public at large, than any other that are ever before any other branch of the government. Thus, the late decision in favor of the application of Charles Goodyear for the extension of his patent for vulcanizing india rubber, involves some millions of dollars—that is, the extension applies to manufactured products amounting to eight millions of dollars a year, and upon which the manufacturer makes a profit of fifty per cent. If the patent were thrown open to the public, the profit of the manufacturer would be reduced and regulated by competition. The history of this case, as presented to the bureau, occupied the space of fourteen volumes octavo. I mention the above only as an instance of the labors, responsibilities and powers of the bureau of officers."