

A Singular Poisoning Case.

The *Pharmaceutical Journal and Transactions* for March 27 gives an account of a singular instance of poisoning in Nottingham, whereby two children lost their lives and two others were made very ill. The deadly dose in this instance was an apparently harmless cough mixture containing the following four ingredients: Sirup of violets, sirup of squill, wine of ipecac, and oil of sweet almonds.

The symptoms that appeared in two or three of the children that had been taking this medicine were very singular, the pulse being intermittent. In the case of one of the children that died, there was an intermission of every third or fourth beat of the pulse. The heart's action was very much interfered with, there being an intermission of one in four or five beats. The pulses of the third and fourth children also intermitted, so that it was evident that there was some peculiar action in their hearts. In considering these symptoms, it seemed to the medical men that there were only one or two preparations which were likely to produce that action. One was a mixture of digitalis, or common foxglove, and the other the sirup of squill.

In order to ascertain whether the action was due to the latter, and the result not due to any accidental mixing or dispensing of the medicine, the coroner had the prescription made up by an independent chemist, and a second time by the chemist (Mr. Wakefield) who originally dispensed it. These prescriptions were placed in the hands of Dr. Truman, the public analyst, who injected samples therefrom under the skins of frogs. In the case of the mixture made by the independent chemist there was no slowing of the heart in an hour and three-quarters, when he killed the frog. In the case of the mixture made by Mr. Wakefield there was a total cessation of the heart's action in seventeen minutes. The mixture made by Mr. Wakefield was much more bitter than that made by the other chemist.

Dr. Truman, on considering which of the four ingredients of the mixture was most likely to contain the poison, came to the conclusion that it must be either the ipecac or the squill. The wine of ipecac gave purely negative results in both cases. He then injected ten drops of the sirup of squill from an independent chemist into a frog, and that slowed the heart's action from twenty-four beats a minute to ten in two hours and a half, when he killed it.

The same amount of Mr. Wakefield's sirup of squill was injected in the same way, and it produced a slowing of the heart's action from twenty-eight beats a minute to fourteen in forty-four minutes, and a total cessation of the heart's action by death in two hours.

He afterward made another series of experiments, in which he took larger quantities of the sirup of squill, and he had quantities of it from two independent chemists as well as Mr. Wakefield's. He repeated the experiments in the same way. In the case of the first independent chemist there was no slowing of the heart's action in forty minutes. In the second case there was a slowing of from thirty-one to ten beats a minute in forty-seven minutes, and in Mr. Wakefield's case there was a slowing of from thirty-

six beats to one beat per minute in thirty-eight minutes. That fact, Dr. Truman thought, showed that the active agent was present in the sirup of squill. Mr. Wakefield's sirup of squill was very much more bitter and of very much deeper yellow than the other sirups. Both his prescriptions contained very strong heart poison which agreed in its essential

A COMBINED CRUSHER AND STAMP MILL.

It is rare that a new principle is applied in grinding machinery. The stamp, buhr-stone, and roll are the ancient and approved methods of rock reduction, and no successful machine has heretofore been constructed for rock grinding that has not adopted some form of these elementary machines. But in all old pulverizer

the process of grinding is a mutual one, the mill as well as the rock being ground. The Sturtevant mill, here illustrated, is a departure from all old methods, and the results accomplished are so remarkable, and the plan of the machine so entirely novel, as to constitute a matter of unusual public interest.

The Sturtevant mill is a combined crusher and pulverizer, seizing rocks of a large size and compelling them to pulverize each other in a most rapid and remarkable manner.

Making the rock do its own crushing and pulverizing is the novel and principal feature of the machine illustrated by the accompanying engravings. It is apparent that if by means of any mechanical contrivance the rock could be made to act upon and disintegrate itself without being crushed or ground between the faces of metal pieces, the machine would be subjected to a minimum amount of wear. Such

being the case, it would naturally follow that the power expended in doing a certain work would be greatly reduced, while the capacity, or quantity of rock crushed, would be greatly increased. These desirable results are accomplished by the Sturtevant mill, which, as will be seen from the following description and the cuts, is very simple in construction. And is so arranged that it reduces the hardest materials with scarcely any damage to itself.

The two cylindrical heads or cups are placed upon opposite sides of a case, into which they slightly project, facing each other, and are made to revolve in contrary directions. The rock is conveyed to the interior of the case (which is kept full) through an opening at the top, and is prevented from dropping below the heads by a cast iron screen. The rock is then immediately thrown out by centrifugal force from the two revolving cups, in opposite directions, and with such force that the rock from one cup, coming in collision with the rock thrown oppositely from the other cup, is broken and pulverized, and the grinding, which would otherwise be upon the mill, is transferred to the material, which is at once reduced to powder; in other words, the mill does not grind the substance, but simply provides the power that compels the rocks to crush themselves.

The cast iron screen, shown in Fig. 2, in which both revolving heads are drawn back, is composed of small sections which can be easily replaced whenever required. The wear upon this screen is slight, as it is always protected from the action of the rocks thrown from the heads by a cushion of interposing material formed by the rocks, which constantly fill the case and cover the screen. The crushed rock passes through this screen and falls into a bin. When necessary to reduce the rock to a greater fineness than the screen outlets al-

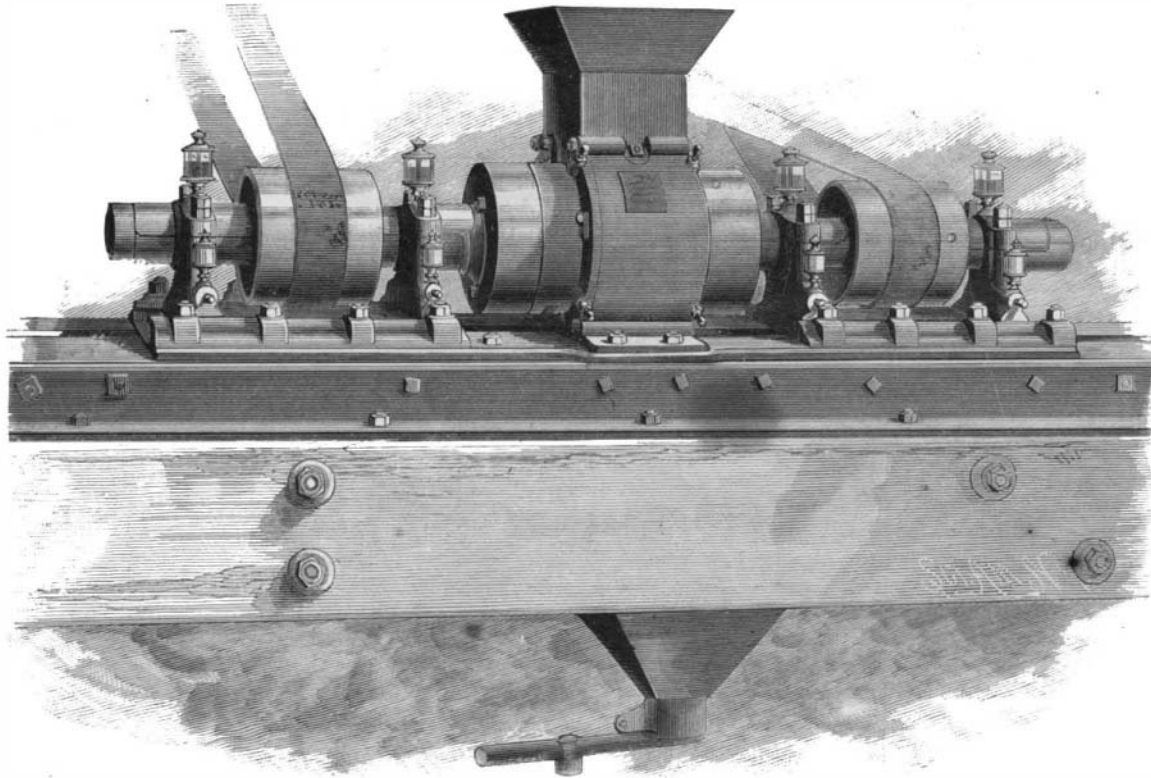


Fig. 1.—THE STURTEVANT COMBINED CRUSHER AND STAMP MILL.

characteristics with digitalis. The squill is a bulb gathered in Russia and Germany. In a squill there is found a minute and innocuous proportion of an active principle producing the same effect as digitalis, the quantity of which may be exaggerated by difference of climate, difference in the period of gathering, and it is also present to a greater degree in the outer scales and in the recent bulbs than in the inner part of the dry bulb. The vinegar of squill from which Mr. Wakefield prepared his sirup was purchased from a wholesale druggist, and probably contained an unusually large amount of the active principle of the bulb. Sirup of squill is in very common use as a remedy for coughs, and as it has hitherto been looked upon as rather a harmless medicine, this is an interesting and unique case.

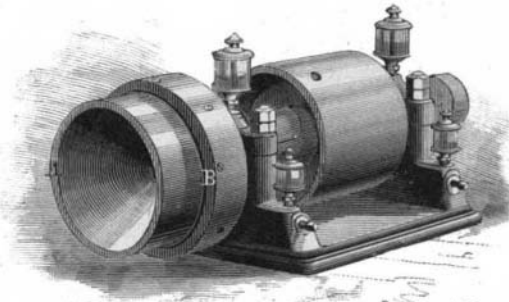


Fig. 3.—THE STURTEVANT MILL—THE REVOLVING HEAD.

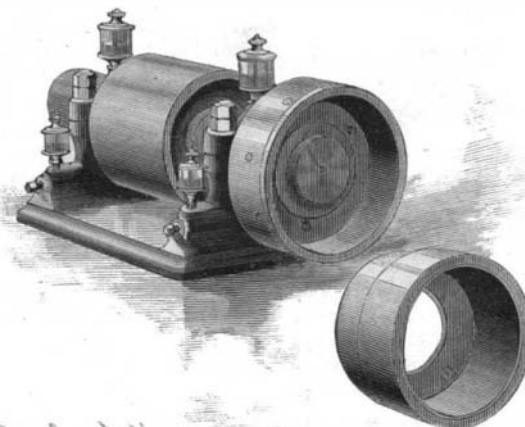


Fig. 4.—THE REVOLVING HEAD TAKEN APART.

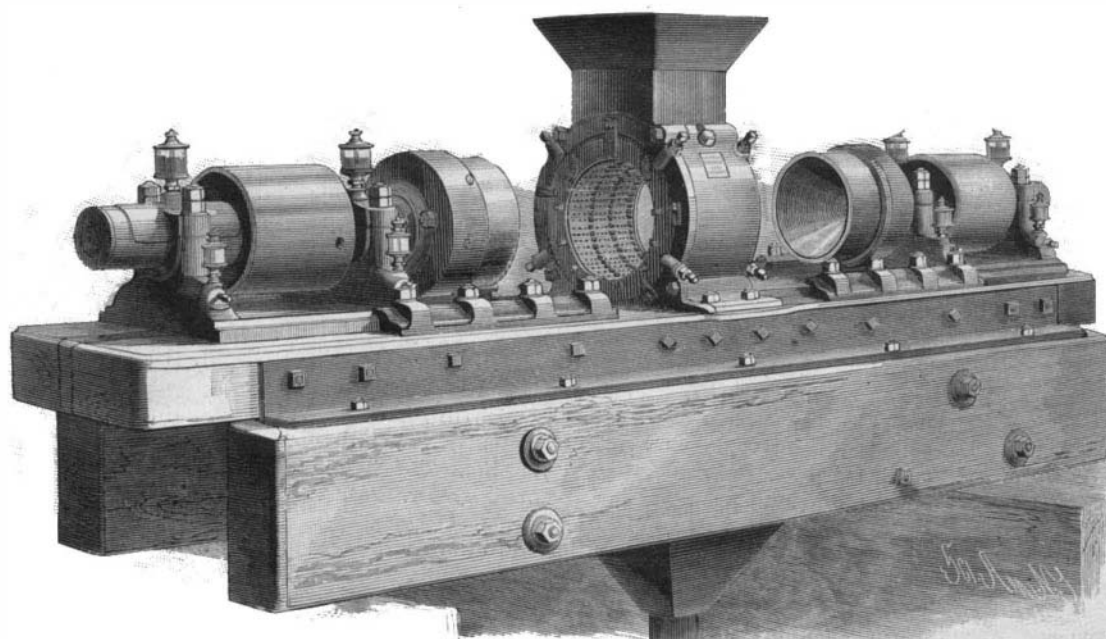


Fig. 2.—THE STURTEVANT MILL, WITH HEADS DRAWN BACK TO SHOW THE INTERIOR.

low, the coarser part of what leaves the screen is reconveyed to the mill by an elevator for regrinding; that which is fine enough being first removed by the usual apparatus adopted in milling. A suction blower causes the air to draw strongly into the mill, thereby preventing the escape of dust.

The revolving heads, shown with the parts assembled in Fig. 3 and separated in Fig. 4, are each composed of two parts, one of which, A, a simple hard iron cylinder, called a bushing, is removable, and when worn can be easily taken out and replaced. As soon as the mill has been put in operation, a curious formation is made inside of the head of a conical, cup-like stone lining (Figs. 3 and 5), formed by the caking within the head of the material being ground. This lining is of the utmost importance, as it is a complete shield to these parts of the machine. With the exception of the edges of the bushings, the entire interior of the machine is completely protected from wear by the rock itself.

The elementary parts of the mill are clearly shown in Fig. 5. The end of each shaft carries a head holding a bushing that projects a little way into the case. Within each bushing is shown the hollow stone cone, formed by the packing of the rock. The hopper is filled with rocks that drop into the case between the heads. The arrows on the shafts indicate the direction of revolution of the two shafts. Immediately after starting, the stone cones form themselves, and become as hard as the rock itself. When these stone cones have been formed, it is apparent that the centrifugal force given by their revolution will hurl out all the rocks forced into them, in the general direction indicated by the arrows. The flying rocks are sure to collide with those moving in the opposite direction, as their journey is made through an atmosphere of the same material, for the mill is kept constantly filled. These collisions result in rapid and perfect crushing, and the rocks expend their force upon each other before reaching the iron work of the machine.

The iron screen is of very small diameter, and the ground rock is let out at once. This is a great economy, for to strike rock after it is once reduced to the fineness wanted is a serious waste of power, and, in metal-bearing rock, to leave a particle of free metal in a machine to be churned and pounded over and again many times, and worn away, would be often to suffer a great loss.

These mills are manufactured by the Sturtevant Mill Company, of 89 Mason Building, Boston, Mass. They are made in six sizes, with heads from 4 to 36 inches in diameter.

Some idea of their capacity may be obtained from the fact that the 20 inch mill will discharge from sixteen to twenty tons of hard rock per hour, and the 36 inch mill will reduce 1,500 tons of hard rock per day.

These giant grinders are of small size, and all of the power transmitted by the belts acts directly upon the rocks reducing each other.

The Inventor of the Postage Stamp System.

Mr. Patrick Chalmers, of Wimbledon, has issued a pamphlet claiming that his father, James Chalmers, bookseller, Dundee, was the inventor, in the month of August, 1834, of the adhesive postage stamp. It appears that evidence has come to light, from papers bequeathed to the South Kensington Museum Library by

NEW CLUB HOUSE OF THE ST. LOUIS JOCKEY CLUB.*

The three illustrations herewith bring at once before the mind a good idea of the general plan and principal details of a new club house now being erected by the St. Louis Jockey Club, which it is expected will cost \$50,000. Externally, the outline of the building, as presented in the view from the southeast, is broken into many projections—towers, gables, galleries, and porches being combined in such way as to present a most attractive appearance; but on the opposite side, that which looks toward the race course, there are to be two lines of galleries, 16 feet wide, running the entire length of the building, the ends shown at the right in the first engraving indicating their position.

The second line of balcony and porch will have its floor stepped from the face of the porch back to the wall of the building, as with a grand stand, to give the occupants a better view of the races. The interior of the edifice will be handsomely finished and tastily furnished, after the designs shown in the engravings, for the use of members of the association and their families. Bowling alleys, a billiard room, and gymnasium are to be included in the arrangement.

The floors will be of polished yellow pine and the basement and first and second stories will be finished in hard wood. The walls of the ladies' reception room are rough cast and to be finished with gold bronze. The second story is to be devoted to private parlors and dining rooms. The main hall has the principal staircase recessed in it, inclosed by arches and lighted by a skylight.

Manufacturers Must be on the Alert.

The manufacturer who hopes to hold his own in the fierce competition which characterizes modern industry must of necessity keep a sharp lookout for valuable improvements in machinery, and must introduce them promptly when they are presented. The movement of the industries is always forward. Thousands of ingenious minds are continually studying out methods for making processes easier and more economical. Every month some kind of a device for bettering the way of doing a thing, or for saving a little labor, is patented. The manufacturer who simply ignores these things and runs along heedlessly in the old way, with the old devices, will be left behind and beaten assuredly as the earth rolls around the sun. A mill built and filled with machinery twenty years ago, and left unimproved, could not begin to compete with a modern mill containing all the new mechanical improvements. And the way to keep a mill property from deteriorating is to add in every important improvement as is it put on the market. The most successful mills are the mills that do this very thing; and they succeed because they do it.—*Textile Record.*

* We are indebted for our illustrations on this page to the *Illustrated Graphic News*, of Chicago, a recently established pictorial weekly newspaper, which presents many interesting features, and will obtain, without doubt, a large circulation in the West.

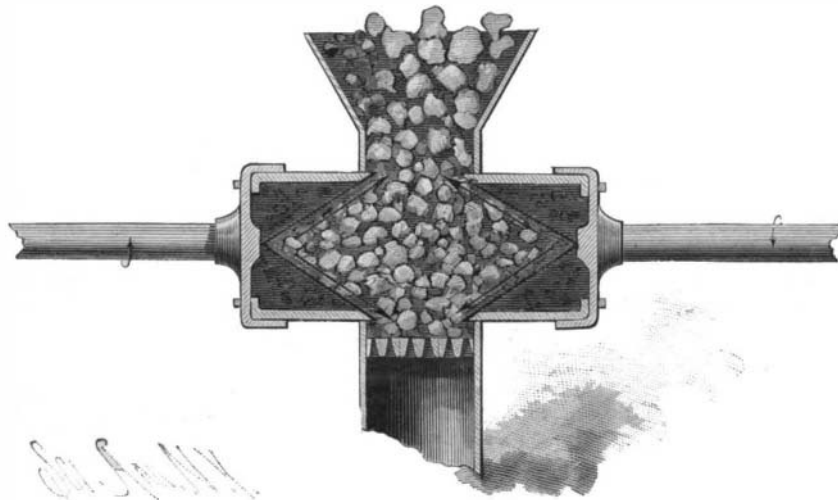
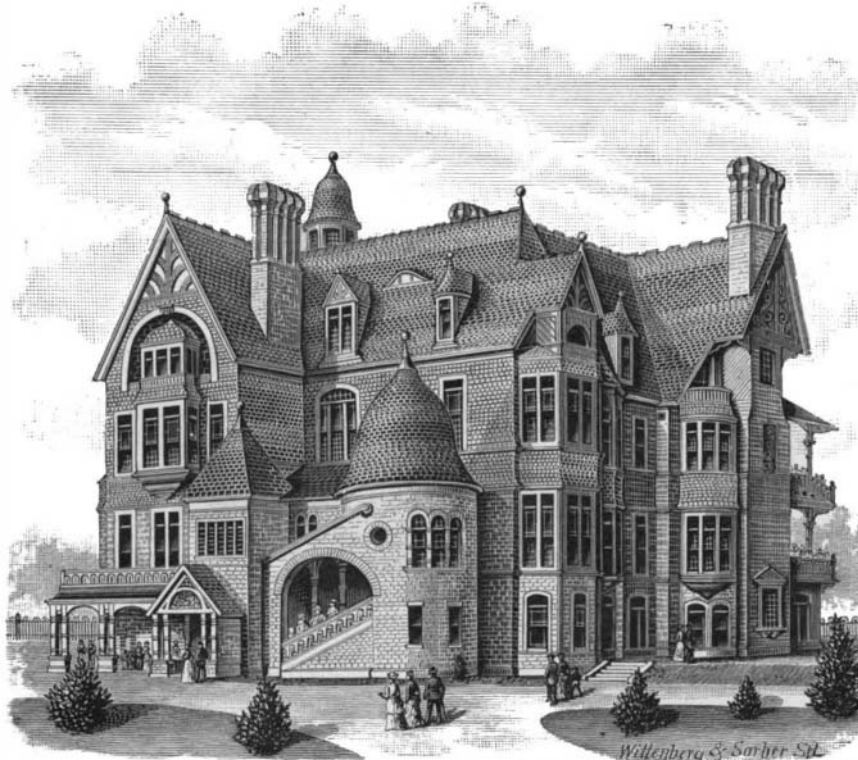


Fig. 5.—ELEMENTARY PARTS OF THE STURTEVANT MILL.

the late Sir Henry Cole, of the original plan by James Chalmers of the adhesive postage stamp, to be printed from a die of various values, for use according to weight of letters, on sheets of paper specially prepared for the purpose and afterward gummed over with an adhesive substance, to be sold in sheets, in lesser quantities, or singly, as required, at post offices or by stationers—all as subsequently adopted by Mr. Rowland Hill, and in use to this day.

Mr. Chalmers makes out a case that is practically impregnable.



ST. LOUIS JOCKEY CLUB—SOUTHEAST VIEW OF CLUB HOUSE.



THE MAIN HALL AND STAIRWAY.



LADIES' PARLOR.