

A NEW ORE MILL.

We give two engravings of a new and powerful grinding mill made by the Northwestern Fertilizing Company, Chicago, Ill., for grinding all hard substances, such as rock, iron ore, gold ore, cement, etc.

The advantages claimed for the mill are its great simplicity, its economy in grinding, a large capacity for work, and the complete adaptation of the mill to any class of grinding required. It is adjusted to any grade, either fine or coarse, by means of a simple set screw.

By a novel mechanical device, when large pieces of iron enter the mill the grinding faces open five inches and the iron is thrown out without any injury to the mill. The manufacturers inform us that its capacity for grinding rock to a sixty mesh screen is one ton per hour, twenty tons in twenty hours. The grinding faces are made of metal that resists the wear, but the chief advantage is in the construction of the mill which makes the rock pulverize itself rather than by rubbing against the grinding faces. This is accomplished almost entirely by centrifugal action. The cost of repairs is very light, the grinding faces being capable of running three months on rock without renewal.

It requires about twenty-five horse power to run the mill to its full capacity. No foundation is required, neither are bolts needed to hold the mill to place, its weight, which is 23,000 lb., being sufficient to hold it. When in position it is noiseless. It does its own crushing, and no preparation of the rock is required. The smaller engraving shows the mill closed ready for work. The larger one shows the mill open, with grinding faces exposed. The manufacturers have been running this mill on rock for the past eighteen months, and they claim that the mill is unrivaled for capacity and economy in reducing gold, iron, or other ores to powder. They have recently pulverized iron ore with it, at the rate of one ton per hour, to a degree of fineness that would permit it to pass through a sixty mesh screen.

"Cutting the Key Log."

The first thing to be done is to find out where the jam occurred, and then to discover what is called the "key log," that is to say, the log which holds the base of the "jam." An old experienced "stream driver" is soon on the spot, for the news is soon carried up stream that there is a "jam" below. Every minute is of consequence, as logs are coming down and the "jam" increasing in strength. The "key log" being found, there is a cry for volunteers to cut it. Now, when you consider that there are some hundred big logs of timber forming a dam, and the instant the key log is cut the whole fabric comes rushing down with a crush, you will see that unless the ax-man gets instantly away he is crushed to death. There are usually in a camp plenty of men ready to volunteer; for a man who cuts a key log is looked upon by the rest of the loggers just as a soldier is by his regiment when he has done any act of bravery. The man I saw cut away a log which

brought down the whole jam of logs was a quiet young fellow, some twenty years of age. He stripped everything save his drawers; a strong rope was placed under his arms, and a gang of smart young fellows held the end. The man shook hands with his comrades, and quietly walked out on the logs, ax in hand. I do not know how the loggy-road one felt, but I shall never forget my feelings. The man was quietly walking to what very likely might be his death. At any moment the jam might break of its own accord, and also, if he cut the key log, unless he instantly got out of the way, he would be crushed by the falling timber. There was

height than one-half of the length of the hinged sections forming the bedstead.

Mr. Alfred Michaud, of Paris, France, has patented an improved permanent galvanic vat. By this improvement the expense necessary for setting up the apparatus and maintaining it in working order is greatly reduced, the purity of the galvanic liquids is maintained, the galvanic action is regular and uninterrupted and its energy is increased, the manipulation is simplified, and, it is claimed, an economy of at least fifty per cent of the salts ordinarily employed is effected. The principal feature of the invention consists in

a feeding device for supplying new fluids continuously, and in a siphon arrangement for removing the spent liquid.

Mr. Joseph Fournier, Jr., of New York city, has patented an improved folding cabinet bed that may be raised or tipped upon one of its edges, so as to stand in a vertical position against the wall when not in use. When in a horizontal position for use the bedstead is supported upon leaves hinged to the ends of the bedstead, and these leaves are adapted to be closed or folded in, like doors, against the bottom of the bedstead, so as to give the bedstead the appearance of a wardrobe or cabinet when tipped upon its edge.

An improvement in boxes, patented by Mr. Charles Beiser, of Toledo, O., consists in a box provided with a two-part or divided slip lid, and in elastic connections of the divided lid with the body of the box, and of the lid sections with each other, whereby the lid sections are attached to the body

and are automatically opened when the elastic connection uniting them is released.

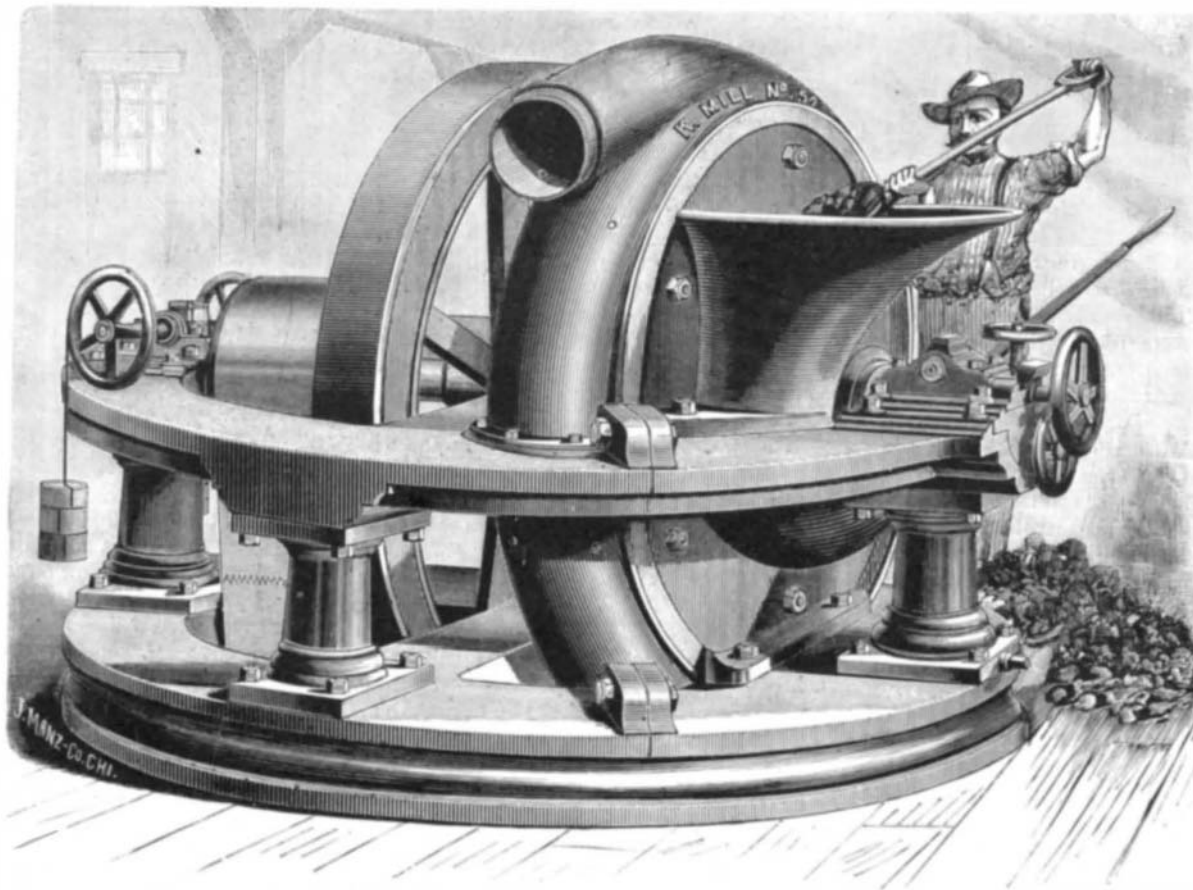
An improved straw-conveyer belt has been patented by Mr. Alton J. Park, Jr., of Virginia, Mo. The object of this invention is to prevent the straw from catching in between the ends of the slats and the conveyer belt, and to secure the ends of the slats more effectually to the belt.

Mr. Edward E. Schermerhorn, of New York city, has patented a new and improved milling attachment for vises. The object of this invention is to furnish a handy, efficient, and labor-saving tool for the shop, for doing the work by hand that is usually done with files. It consists in a milling tool carried by adjustable devices, by which it may be attached to a vise or directly to the work.

Mr. John Brush, of Albany, Oregon, has patented an improved grain separator for separating oats from wheat or other grain and for removing chaff from wheat or other grain. In this machine all of the sieves are easily inserted and removed, and the machine is readily adjusted for different kinds

of work. It runs lightly, and is easily and cheaply constructed.

A whip attachment for horse powers has been patented by Mr. J. L. Crawford of Pine Grove, Miss. This invention consists of a rod having a crank at one end and a whip at the other, the rod being attached to the lever to which the horses are attached, the rod being adapted to be moved longitudinally to bring the whip into position for whipping either horse.

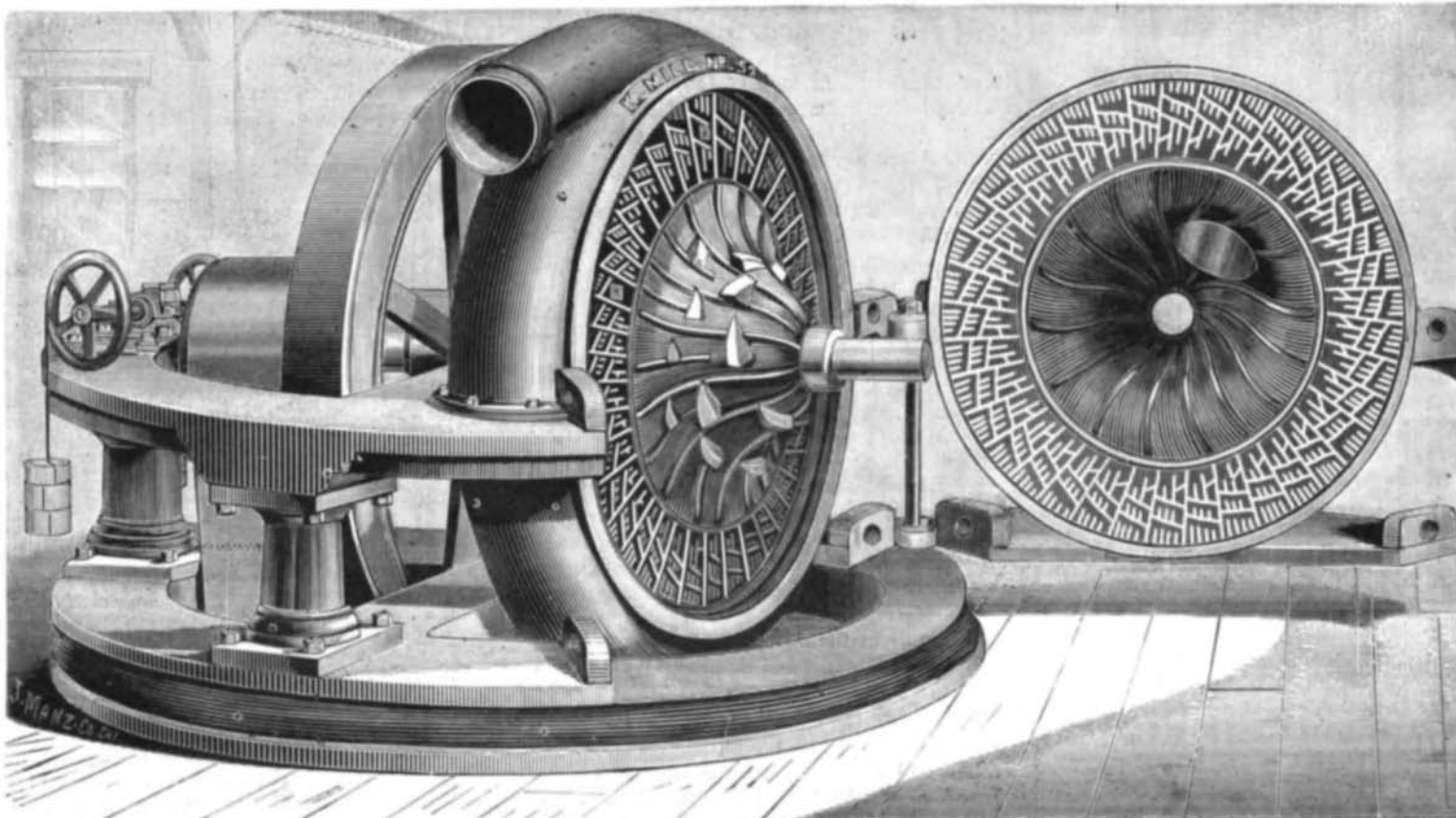


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a dead silence while the keen ax was dropped with force and skill on the pine log. Now the notch was near half through the log, one or two more blows, and a crack was heard. The men got in all the slack of the rope that held the ax-man; one more blow and there was a crash like thunder, and down came the wall of timber, to all appearances on the ax-man. Like many others, I rushed to help haul away the poor fellow, but to my great joy I saw him safe on the bank, certainly sadly bruised and bleeding from sundry wounds, but safe.—*The Field.*

MISCELLANEOUS INVENTIONS.

A novel folding bed has been patented by Mr. Charles M. Morrison, of New York city. This invention relates to that class of folding beds which are hinged in the middle, the parts folding toward each other and having the appearance of a desk or *chiffonier* when folded. The object of the invention is to balance the bedstead without the use of counter-weights, and to permit of making the legs of less



ORE MILL WITH SIDE REMOVED.