

**Improvements in Brick Machines and Brick Molds.**

We illustrate in connection with the present article a brick machine and a brick mold, by the employment of which, it is claimed, considerable saving may be made upon the cost of making bricks in the ordinary pugmill and molding press, as the pressing is done automatically by a device connected with the mud-mill shaft, which shaft is propelled by the usual horse-power, or by other power, as may be convenient.

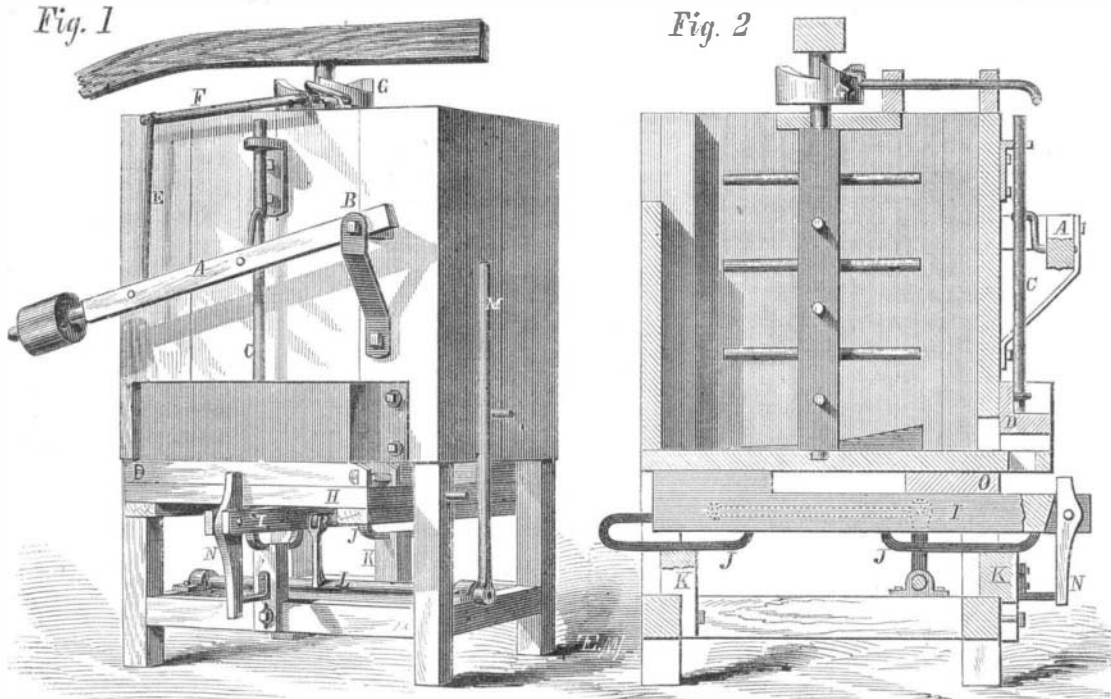
Fig. 1 is a perspective view of the machine; Fig. 2 a sectional elevation, and Figs. 3, 4, and 5, details showing the construction of the mold.

A is a weighted lever, pivoted at B to the side of the mud-mill, and connected to the stock, C, of the follower, D, Fig. 2, by a crank bolt or other device which will admit of the lever and follower rising and falling together. The lever, A, is connected by a rod, E, with the arm, F, of a crank shaft, mounted on the top of the mill, and having another crank arm, which is raised by the action of the cam, G, also raising the arm, F, and the weighted lever, A, and the follower, D, at the time the arms on the lower end of the mud-mill shaft are in position to fill the mold box, and allowing the whole arrangement to fall at the proper time for pressing the bricks in the mold. This simple movement automatically effects the pressing of the bricks.

The mold-box carriage, H, is mounted on a single strong beam, I, having slides, J, made of bent iron bars, attached to the under side and fitted in grooved supports, K, made vertically adjustable for regulating the carriage relatively to the bottom of the mold.

The carriage is moved back and forth by the oscillating shaft, L, and hand lever, M, in the ordinary way. N is a short lever pivoted to the front end of the carriage so that the short-end will project upward in advance of the brick mold, and the longer arm hangs down so as to be arrested by a stop just before the termination of the inward movement of the carriage, whereby the short end will be forced against the mold box and clamped firmly against the plate, O, or other part of the mill to hold it while filling

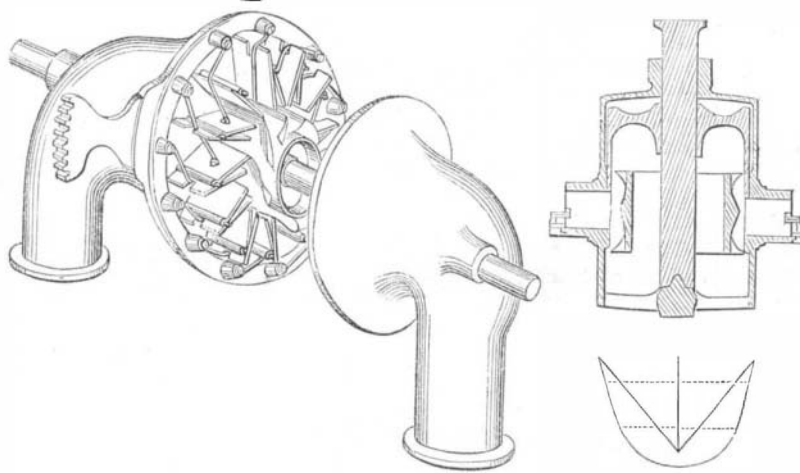
plied for admission to the Tombs prison in order to visit James Thompson, a notorious and desperate burglar, now awaiting trial at the General Sessions. She had a dinner pail in her hand, containing coffee, and a large dish containing baked beans, which she pretended to have brought for the prisoner. The woman acted in a nervous manner, and so attracted the attention of the keeper, and he proceeded to examine the pail, finding it made with a false bottom, which was filled by a coil of rope fully thirty feet long, and neatly covered by hot coffee. Minnie was at once arrested, and the cell occupied closely examined, the search being rewarded by the discovery of two old knife blades, a patent jointed steel jimmy, and a couple of roughly-made spring saws, in-

**TAYLOR'S BRICK MACHINE.**

tended to sever iron bars. When the prisoner was arraigned before Justice Dowling, at the Tombs Police Court, she was fully committed for trial, in default of \$1,000 bail. After Minnie was removed to a cell the plate of beans was examined and found to contain a handsomely-made spring saw handle, a small steel wedge, and ten or twelve beautiful watch-spring saws. With all of these tools, had he obtained possession of them, Thompson would have found no difficulty in escaping from his cell, and probably from the prison, during the night.

**IMPROVEMENT IN WATER WHEELS.**

Our engraving shows an improved water wheel, invented by John C. Trullinger, of Oswego, Oregon, and patented by him, Feb. 11, 1868. The wheel is to be used both as a perpendicular and horizontal wheel. The wheel upon a horizontal shaft in the cases is set on the floor of the penstock, and the apertures cut in the floor for the escape of the water from the cases. The water is admitted to the buckets of the wheel through apertures of stationary guides, by gates, which are moved and adjusted by means of a series of levers, attached to the base of a movable ring. The direction given to the water by the guides causes it to impinge against the fore part of the buckets at the greatest diameter of the wheel, and, by means of the peculiar curve of the buckets in discharging, reacts upon the outer edge of the buckets and greatest diameter of the wheel, so that, it is claimed, the smallest quantity of water is used with as great a percentage of power as the largest quantity.



When the wheel is set upon a perpendicular shaft, the water is admitted by means of a gate-rig in the same manner as when the wheel is on a horizontal shaft, and impinges upon the bucket and reacts in the same manner, but discharges down through a lower case, and up over and down through the center of the wheel. The wheel is suspended by means of a hoop and hub, which is attached to the upper portion of the wheel, and rests upon a step in the lower case. The hoop and hub are inclosed by the upper case. The wheel being suspended by means of the hoop and hub, has no arms, and the water which discharges over the top and through the center of the wheel meets with no obstructions.

**The German North Polar Expedition.**

In a letter from Gotha, dated the 1st of October, Dr. Petermann thus sums up the results of the expedition:

"The results and successes of the second German North Polar expedition are manifold in character, and relate to various branches of science; they prove the approachability of East Greenland in high latitudes; a comparative fullness of animal and vegetable life in the interior of the land, the existence of beds of brown coal, navigable fjordes, going deep into the country, immense mountains, as high as fourteen thousand feet, and for these latitudes a not unfavorable temperature.

"As the principal results may be assumed, that with this expedition a new path to the final exploration of the North Polar regions is opened, new ground trodden, a new direction taken, and a new basis won. From the lands lying nearest to East Greenland, for example, the west coast of Spitzbergen and Greenland, scientific circles had long possessed large natural scientific collections of every description, which have given of late years important insight, especially in regard to the geology and history of our earth; it is easy at any time to bring whole ship-loads of collections relating to these departments to Europe; but it was not so with East Greenland, this extended *vis-à-vis* of our quarter of the globe. Of this hitherto almost unknown, scientifically, great district, every exploration, every collection—every single petrification for example—is of especial value toward filling up the knowledge of our earth; Ober-Lieutenant Payer gathered on his various land excursions in East Greenland not less than

twenty boxes of geological specimens, among them being many petrifications. With his theodolite he ascended up as high as seven thousand feet, accompanied by Dr. Copeland and Peter Ellinger. No other land possesses such magnificent characteristics, navigable fjordes, with a high temperature of water and air, immense mountains rising to a height of fourteen thousand feet, great herds of musk-oxen and reindeer, etc., as Greenland.

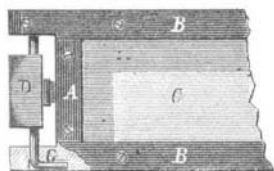
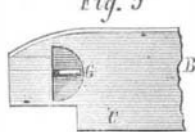
"That a German expedition of discovery, fitted out from voluntary contributions from prince and people, has here opened up the way to the Pole, will bring imperishable fame to Germany. For more than five years great exertions have been made in England, France, and America to set afoot a scientific expedition for the exploration of the Central Arctic regions. Germany, however, has gone first into actual duty, and has achieved already great results."

**Sewing Machines.**

The number of these machines made by twelve principal companies during the past year amounted to 320,669, which, at the average price of a first class machine, say \$75, aggregated total, \$24,050,170. The first class American sewing machine is to be found in all quarters of the world, and the supply comes principally from this city and Boston. There are many cheap machines which are sold all the way from two to twenty dollars, which are not counted in these figures; also many cheap imitations of the best American machines manufactured in England and on the Continent which are sold as of American make. Germany, in particular, does a very large business of this kind, Hamburg having no less

than six large factories running, and finding a market principally in Russia, with which country we have comparatively little direct trade. Notwithstanding this competition, the machines sent from this country command high prices abroad, on account of excellence in workmanship and finish, and are exported in large numbers annually. All of the largest manufacturers have agencies in the principal cities of Europe, and receive large orders from abroad by nearly every steamer. The largest number made by any one concern in a year was 86,781. Notwithstanding the large amount of work which can be done by these ingenious contrivances, which used to be done entirely by hand, there seems to be no diminution of hand work in many branches of business. As the cost of manufacturing good machines varies from \$12.50 to \$60, and the prices at which they are sold range from \$60 to \$350, the profits of the business are enormous.

**THE AMERICAN DESERT.**—R. S. Elliott, Industrial Agent of the Kansas and Pacific Railroad, reports upon extensive experiments to cultivate the soil of the great plain, or American desert, along that road. Irrigation was dispensed with, and success is claimed, the result being thus summarized: Forests can be established in all parts of the plains, even without artificial irrigation. Much deeper plowing will be required than for winter grains or forage plants. The most rapid growers are the best trees for first planting. Planting seeds is better than to transplant young trees.

**Fig. 3****Fig. 4****Fig. 5**

The forward movement of the carriage releases the lever from the stop, so that the mold box may be drawn off the front over the short end of the lever, which will be turned down by the box.

Fig. 4 is a plan view of a portion of the mold box; Fig. 3 is a longitudinal section of the same, and Fig. 5 a partial side elevation.

The end pieces, A, of the mold are pivoted to the side pieces, B, near the bottom, C, or to the bottom itself, so as to swing outward, to release the pressed bricks when the mold is turned bottom up for discharging them, and the side pieces are also capable of swinging outward. For closing the ends and sides and holding them closed, pawls, D, are employed, pivoted near the edge and next the ends, A, of the mold, so that when the mold is right side up and held in the hands by the outside edges of the handles, the latter will turn on the pivots and cause the metal tappets, E, Fig. 3, placed on the inner edges, to bear against the plates, F, on the ends, A, and thus close the ends; and the crank arms, G, Fig. 4, will be forced down on inclines formed on the side pieces, thus forcing them together.

By this arrangement also the handles will be turned to release the ends, A, and sides, when the molds are turned bottom up and held so that at the time it is required to discharge the bricks they will be released from the friction on the ends and sides and escape more easily than if the ends and sides are immovable.

Patented, through the Scientific American Patent Agency, Nov. 29, 1870, by S. H. Taylor, assignor to himself and Le Grand Parker, either of whom address for further information, at Jacksonville, Ill.

**Rope Coffee and Spring-saw Beans.**

A city paper says that Minnie Lee, a nice-looking young woman, residing at No. 128 West Tenth street recently ap-