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### Compressing the Bulk of Flour.

The Albany *Journal* states that Louis Napoleon, in 1853, conceived the idea that it would be practicable to compress flour so as to diminish the bulk, and yet not injure its quality. In July of that year, an experiment was made by his command to test his views. Flour, subjected to a hydraulic pressure of 360 tuns, was reduced in volume more than twenty-four per cent. On close examination it was found to possess all the qualities it had previous to its violent treatment. It was then put into zinc boxes and sealed up. At the same time, other flour manufactured from the same wheat, but not compressed, was sealed up. In October, thereafter, several boxes containing both kinds of flour, were opened and examined. The pressed was pronounced to be the best. Twelve months after this, in October, 1854, another examination took place, and with the same result. The two kinds were kneaded into loaves and baked. The pressed flour made the best bread. In March, 1855, more of the zinc boxes were opened, and on examination, the loose flour showed mouldiness, while the pressed was sweet, and retained all its qualities. Made into bread, the same differences were observable.

### Useful Cement for Cast Iron Joints.

Take two ounces of salammonia, one of sulphur, sixteen of cast-iron borings or filings and bray them well in a mortar, and keep dry. When required for use, take one part of this powder and mix it with twenty parts of clean iron filings or borings, and mix them in a mortar into a stiff paste, with a little water, and it is then ready for use. A little of the fine sand obtained in the box of a grindstone improves this cement. This cement is pressed into the joint, cold, with a chisel, like putty, and allowed to stand three days, at least, before the vessel or article is used.

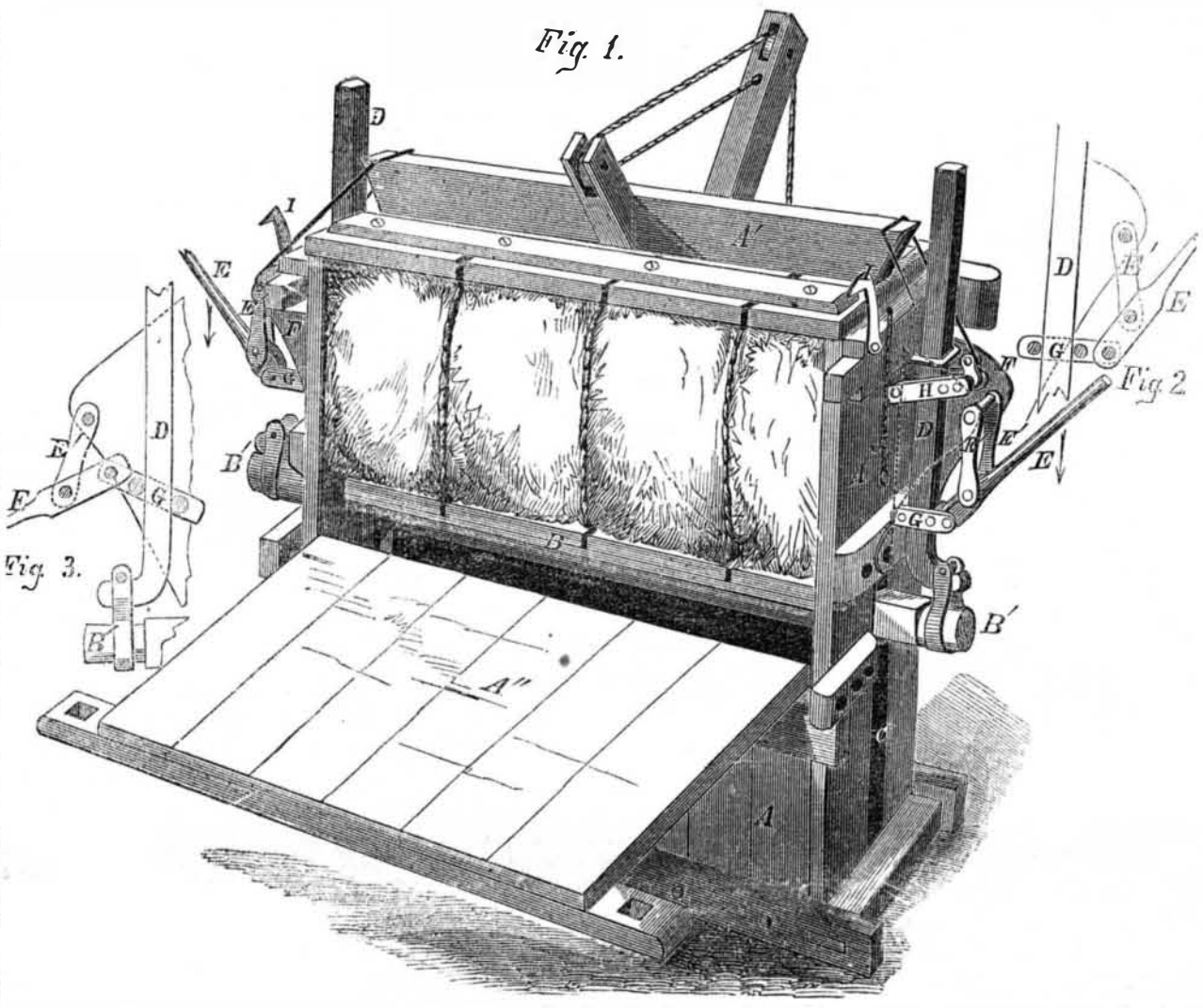
### Filling around Cellar Walls.

To the remarks on page 209, on the above subject, E. Lowe, of Bangor, Me., states, in a letter, that they may lead to the adoption of a practice better than the one intended to be superseded, but still an unsafe and bad plan also. He states that for fifteen years no cellar walls have been packed around with gravel in Bangor—it had been tried and abandoned for clay filling. The clay is beaten down close to the wall, and it resists the entrance of water, consequently it does not contain moisture like gravel, or sand, or mold, and does not expand by frost. It has been found to be the best filling that can be used for cellar walls.

In Siberia and on the west coast of Africa large deposits of malleable native iron exist in a state of great purity. This iron does not contain a trace of carbon, and it is distinguished from that which is called meteoric iron by the absence of nickel in it.

The stalk of sugar cane gives forty per cent. of white paper pulp.

## IMPROVED HAY AND COTTON PRESS.




### New Press for Hay, Cotton, &c.

In this improvement the box or frame, A, in which the material is placed to be compressed, is made in the usual form, as shown in our engraving. The box is filled from the top, for which purpose the lid, A′, opens, being drawn up by the pulley ropes. After the bale has been tied, it is removed by letting down the side door, A″. The compression is effected by elevating the platform follower, B, and this is done through the medium of leverage applied at the ends, B′, of the platform. In the ends of the frame, A, there are slots, C, in which the ends, B′, of the follower platform, B, traverse. The follower rods, D, are attached by means of streps at their lower ends, to the platform ends, B′; if, therefore, the rods, D, are lifted, platform B, will rise correspondently and compress the hay. When the press is to be filled, the platform, B, is lowered to the bottom of the box.

The follower rods, D, are lifted by means of the levers, E, which have swinging, changeable fulcrums in the straps, E′, the latter being attached to supporting plates, F, which project from the box; one of the plates is removed, in the cut, in order to show the parts. The inner ends of levers, E, are attached to the clamp straps, G, between the bolts of which the follower rods, D, pass.

When power is applied to the levers, E, the clamp straps, G, are slightly thrown up, and their bolts grasp the follower rods, D, with a force corresponding to the power applied at E, and the followers, D, rise. The operation of the levers and clamp straps is shown more clearly in the diagrams, figs. 2 and 3. The purchase obtained at each move of the levers, E, is held by another clamp strap, H, constructed on the same principle as G, but reversed in position, so as to bind on the follower rods, in their descent; every iota of compression is therefore securely held, as fast as obtained. The straps, H, have small cords, J, attached to them, by which the follower rods, D, are liberated at pleasure by the operator, so as to descend. When the lever, E, is thrown up, the clamp strap, G, becomes loose on the follower rods, D, and descends so as to take a new hold; the position of strap G, in this movement, is shown in diagram, fig. 2.

During the first stages of compression, the throws of lever E, may be made full and long, and the pressing platform, B, will rise rapidly; but towards the close of the operation, where greater power must be applied, the strokes of the lever will be necessarily shortened, and the lever will not move far from a horizontal position; when the levers are in this position their fulcrums, in consequence of the upward incline of straps, G, are brought nearer the weight to be lifted, and the power is applied with greater effect.

It will be observed that this press is extremely simple and cheap in construction, while at the same time it is strong and powerful; it is also very compact and convenient, readily moved from place to place, &c. It may be employed for pressing cotton and other substances, with the same facility as hay. We regard it as a very excellent improvement.

Mr. Simon Ingersoll, of Greenpoint, L. I., is the inventor; the Farmers and Mechanics Manufacturing Co., of that place, being the assignees. Address the Company for further information.

### Great Dams for Gathering Water.

The Columbia, Cal., *Gazette*, gives a description of a dam, of immense proportions, which is in progress of construction by the Tuolumne Water Company. This dam is situated on the South Fork of the Stanislaus river, about 45 miles east from Columbia, at the foot of a flat three-fourths of a mile in length and half a mile in width in the widest part, through which the river takes its course. The mountains rise on both sides of the flat, at a very steep angle, and are chiefly composed of bare granite. At the lower end of this flat the bed of the river passes through a narrow channel of naked rock, about sixty feet at the bottom, and rising nearly perpendicular on each side of thirty feet, and then sloping back gradually to an immense hight. In this pass the dam is being constructed, and its object is to back and hold a large body of water, which is to be kept in reserve for use when the river gives out. Hundreds of acres will be covered and a supply sufficient for 50 or 60 days kept in the dam or reservoir. Its bottom is 100 feet in the direction of the base of the river, and when finished will be 50 feet high; its length on the top will be about 300 feet. It is built of logs, (cut and barked in the vicinity,) laid crossing at right angles at a distance of eight feet, notched down and securely pinned to each other. The compartments thus formed are filled with rocks. This done, the whole face of the dam will be covered with hewn logs, laid close together, securely fastened down, the seams and joints caulked, and a stratum of sand and gravel laid on top. The gates for letting out and regulating the water will slide on the face of the dam, and move by cast-iron rack work and pinions.

Six weeks' supply can be had, during the summer season, when heretofore mining has been entirely suspended. The average depth of water will be twenty-five feet, and the supply one hundred tom streams, day and night.

### What one Saw did.

At the saw mill of Warren & Co., Georgetown, Cal., one circular saw recently sawed out 7,500 feet of boards in 11 1-4 hours.