

## New Inventions.

## Bad Steam Boilers.

The Herkimer County *State Journal* contains an account of the investigation of the steam boiler explosion which took place at a cotton factory at Little Falls, N. Y., on the 31st ult., and from the evidence elicited, we are of the opinion that it was caused by too high pressure of steam in a defective boiler. The boiler could not raise a sufficient quantity of steam to drive the machinery of the factory, and the supply of feed water for it was sometimes insufficient, and it was stopped on this very account when the explosion occurred. It was customary to carry a very high pressure of steam in order to drive the machinery, and a few days before the explosion took place, a rivet was blown out by the over pressure. James Peel, the machinist, stated that he "doubted the capacity of the boiler from the time the rivet was blown out because the iron was bad."

A terrific boiler explosion occurred on the 8th, at Wilder's Safe Manufactory, in Brooklyn, L. I., by which three persons were killed, and sixteen severely wounded.

The evidence given in this case by G. W. Stillwell also proved the boiler to be defective. The iron was very brittle, and appeared to have been burned, as if it had oftentimes been deficient in water, and red hot. From the great number of explosions which have lately taken place, it appears to us that the practice of forcing steam boilers beyond their capacity is quite common. Many owners of factories appear to be guided by the stupid economy of saving money by using boilers of insufficient capacity to drive their machinery, hence they have to submit them to intense firing and an enormous pressure, by overloading their safety valves; and when the climax of this reckless conduct is a terrible explosion, by which numbers are killed and wounded, and much property destroyed, it is called an "accident." And it happens somehow by the testimony of those concerned in such accidents, that however high the pressure may be to which such boilers are generally submitted, or though they have sometimes been red hot for want of water, that at the time of the explosion there is always plenty of water in them, and the pressure much below the running standard. We have no confidence in such testimony, for it belies itself. Common sense ought to teach the owners of such boilers that "safety is economy," for it is well known that an explosion generally destroys more property in a few minutes than would have sufficed to purchase and run boilers of sufficient capacity, and to have paid for the best skill in attending them.

The boiler at Little Falls was sometimes shamefully overloaded; it would have required two of a like size to do the work endeavored to be extorted from it, and they would have done it more economically.

There ought to be a rigid inspection carried out with all steam boilers; this would be a good method to insure more safety, but then the difficulty would be to get proper men appointed or elected to fulfil the duties of such an office impartially and intelligently.

## Improved Sawing Machine.

The object of the improvement illustrated by the accompanying engraving, is to do away with the friction caused by pushing the stuff over the surface of the table, against the saw. Also to furnish a quick and easy means of removing the stuff from the table, when cut, so as to protect the operator from being injured by flying pieces.

The table, A, is pivoted to the uprights, B, and these are pivoted, at their lower ends to the base frame, C. The saw is sustained on a mandrel which extends across the tops of the uprights, D D. E F are cogged sectors attached respectively to one of the uprights, B, and D, and gearing together. K is a driving pulley, on whose shaft the lower ends of the uprights, D, are pivoted.

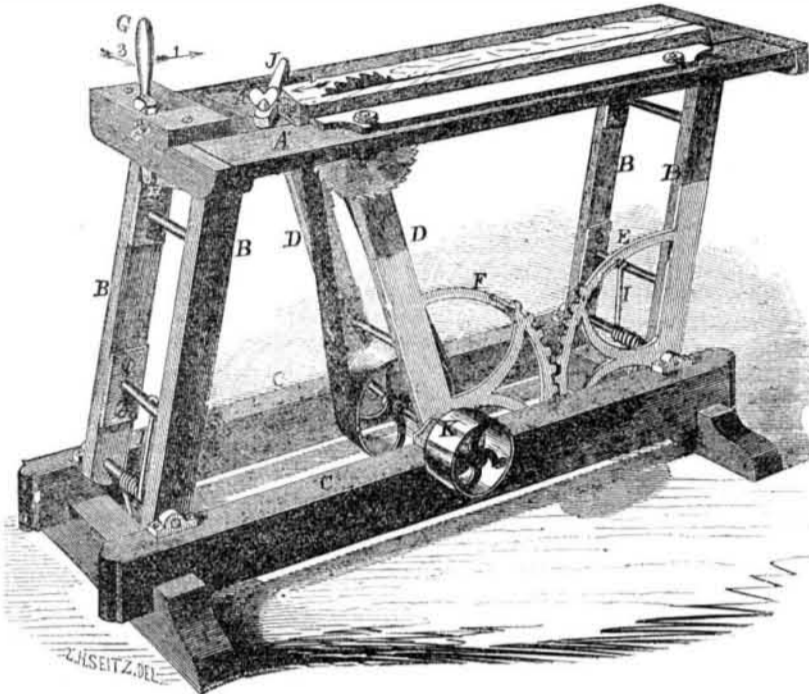
The stuff to be sawn is placed upon the table, and the operator places his hand upon handle G, and pushes the table in direction of arrow 1, causing it to lean, as shown in the

engraving, and carries the stuff half its length against the saw. This movement of the table and its uprights also moves sector, E, which operates sector F, and thus causes the uprights, D, to lean just as far in the contrary direction, shown by arrow 2. The saw is thus pushed through one half the length of the stuff, thus completing the cut. The lumber or other article placed upon the table, does not require to be pushed along against the saw, and thus all friction and power necessary for that purpose is dispensed with.

The handle, G, is pivoted, and has a lateral movement in the direction of the arrow, 3.

One side of the table, A', is hinged, and opens laterally. This movable portion of the table, A', is connected by means of rod, H, with handle G, which is pivoted at G'. After a cut has been completed, the operator pushes handle G in direction of arrow 3, and opens A', thus causing the piece which has been cut off, to fall through upon a rack placed below to catch the stuff. I I are springs which equalize the weight of the table and

## IMPROVED SAWING MACHINE.

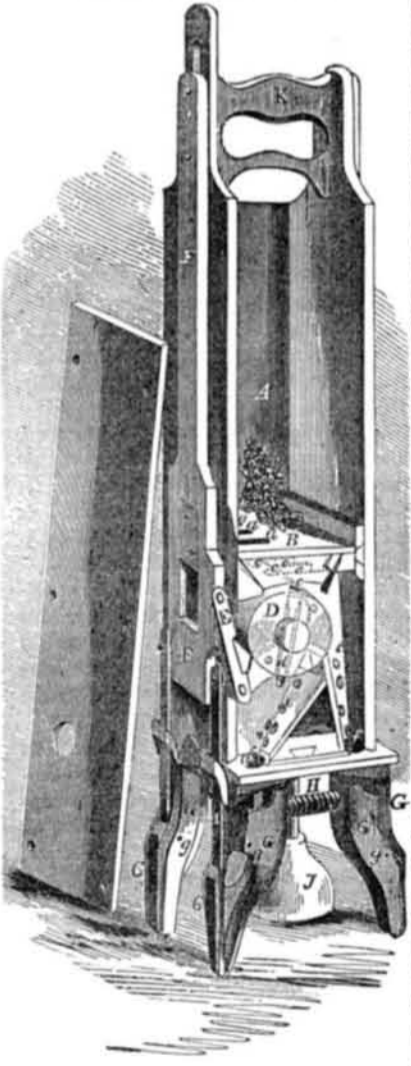


make it vibrate easily. J is a quadrant gauge attached to the table for mitering. When not wanted, it may be quickly removed, by unscrewing its thumb button.

This machine, when constructed for sawing wood, &c., is but three feet long, and the action of the equalizing spring throws back the saw, and makes it easy to operate; it is very convenient to pack for transportation to

any place, and can be set up in a few minutes. The parts are quite simple. It can be altered from cross-cut to rip, and vice versa, by simply changing the saws. We are informed that the invention operates with great success and gives much satisfaction. The inventor is Mr. Thomas J. Alexander, Westerville, Franklin Co., O., of whom further information can be had. Patented April 29, 1856.

## Improved Hand Corn Planter.



By S. L. Denny, Penningtonville, Chester Co., Pa.—This invention belongs to that class of planting contrivances which are carried in the hand of the operator, the seed being planted

by thrusting the lower part of the apparatus into the ground.

Externally the machine has the appearance of a slender box supported on four legs. The legs are hollow, and the corn passes down through them to the ground. In our engraving one of the side boards is removed in order to exhibit the interior mechanism.

The seed is contained in the upper part of the box, A. B is a partition which supports the grain. It has four perforations, a, corresponding to the four legs of the machine. Immediately below B is a seed cylinder, D, having four pockets, c, to receive the seed which falls from the four apertures, a. The pockets, c, are furnished with plungers, d, the lower ends of which pass through cylinder D, and project from its periphery. D is united by rod E with a slide, F, and this latter is connected with the handle of the apparatus, K, in such a manner that by the act of thrusting the legs of the machine into the ground and then lifting them for a new stroke, the cylinder will be partially rotated, first in one direction and then in the reverse.

During this operation the pockets, c, are brought directly under the apertures, a, and the plungers, d, fall by their own gravity, so as to leave space for the reception of the seed. The rotation of the cylinder, D, being now reversed, the ends of plungers d come in contact with one of the sides of the machine, and are pushed up, and the seed is ejected from the pockets, c, into the chambers, e e, of which there are four, one for each leg. f f are apertures leading from the chambers into the legs. Each pocket, c, communicates respectively, by means of a channel, e, with one of the hollow legs.

The legs are composed of two parts,—G, which is fixed, and G', which is movable, the movable parts being pivoted to the fixed parts at g. The lower ends of the movable legs are kept closed against the ends of the fixed legs, in order to prevent the entrance of dust, by means of spiral springs, H.

I are plunger rods, which open the legs at the proper moment, and push the grain down into the ground. These rods are attached above to the slide, F. When the slide rises, rods I also rise into the interior of the legs, and the corn falls down under the bottom ends of the rods, ready to be pushed down and out. When the legs are thrust into the ground, the slide, F, is pushed down, and with it rods I, and the corn is thus forced into the ground. The seeds are thus driven into the soil, and embedded with some little force. The ground in which they are embedded is also slightly compacted by the action of the legs; the grains are also planted edgewise in the soil. Thus all the conditions for rapid germination, such as securing moisture around the seed, imbedding, separation of the seeds, etc., are fully obtained. Only one kernel of corn is planted from each leg at a time, leaving four kernels to each hill, properly separated, and scientifically planted. J is an adjustable buffer head, by which the depth to which the legs enter the ground may be regulated at pleasure.

This invention strikes us as one of peculiar merit. It is light, simple, effective, and convenient. It deposits each kernel in the most approved manner, fulfilling every requisite that could be desired in an instrument of its class. We predict for it a very general introduction. Patented June 3rd, 1856. Further information may be obtained by addressing the inventor, as above, or Messrs. C. & H. Umble, Gap, Lancaster Co., Pa.

## Heating Cold Water by Friction.

In the number for this month of the *Journal of the Franklin Institute*, the editor says:—"Our readers may have had their attention attracted by the wonderful accounts in our would-be scientific papers, of a machine exhibited at the French Exhibition by which water was to be heated and steam of any power raised by the heat generated by friction. It threatened to be a second Caloric Engine, but the committee to which the French Academy of Sciences referred it, have shown that for raising steam it is by far the most costly means yet proposed, and that cooking by it is impossible. By it, 8 men, working for 4 1-2 hours, were unable to raise 1 1-3 gallons of water from 42° to 169° Fah."

Last year, when so many paragraphs were floating around respecting the wonderful feats of this engine, we pointed out their absurdities, and stated that it would prove a total failure; that it was unphilosophical in principle, and besides, it was not new. The above paragraph confirms all that we stated respecting it.

## Page's Saw Mill Patent Suit.

We would invite the attention of our readers to the advertisement of Geo. Page, on another column, where they will find a correct statement of the patent trial which took place at Canandaigua. We published the account of that trial as taken from an Elmira paper, and gave it credit for the same. It seems the statement was wrong, and this we find to be generally the case with accounts of patent trials scientific experiments, &c., which appear in our daily papers. We attribute this to the general want of correct information respecting such subjects on the part of the reporters and editors.

## A Patent Extension.

On the 13th inst., a Bill extending the patent of the "Adam's Printing Press," passed the House of Representatives by a majority of 40 votes. It has also passed the Senate by a handsome majority.

## A Picture of Hampden.

The Senate, on the 13th inst., by a vote, accepted an original portrait of the patriot John Hampden, presented by John McGregor, Member of Parliament for the City of Glasgow, and Secretary to the Board of Trade, in England. It is to be placed in the White House.

## Revolving Boiler.

A steam boiler to revolve on an axis, like a coffee-roaster, has lately been invented in England.—[Exchange.]

Nothing new in this boiler, and nothing practicable. An engraving of such a boiler will be found on page 217, Vol. 2, SCIENTIFIC AMERICAN—published eight years ago.