NEW INVENTIONS.

Improvement In Pianofortes.

Mr. Fredericke Mathushek, of this city, (N. Y.), has taken measures to secure a patent for a very excellent improvement in Pianofortes. The strings are arranged upon a new principle within the instrument for the purpose of obtaining a greater amount of power in an instrument of a given size than can be obtained in the ordinary arrangement. The metal plate is also extended over all the tuning block, and it is provided with stays running in about the same directions as the strings, for the purpose of resisting their strain, and for stiffening the tuning block and plate, and strengthening the instrument.

Improvement in Carriage Springs.

Mr. Thomas Goddard, of the city of Boston, has invented an improvement in Springs for Carriages, for which he has taken measures to secure a patent. The nature of the improvements consists in the employment of a part hoop or bow-shaped spring, constructed of wood, set to any desired inclination, the ends of which are attached to the shafts of the carriage a considerable distance forward of the axle. The bow is intended as a most improved substitute for the old-fashioned hanging bar, which was halved and fastened across the back ends of the straight springs. By the arrangement of this bow spring with loops. as soon as the weight is applied to the carriage a double action is obtained, whereby the horse is greatly relieved from the downward pressing weight, and at the same time the motion of the carriage is rendered more pleasant and agreeable.

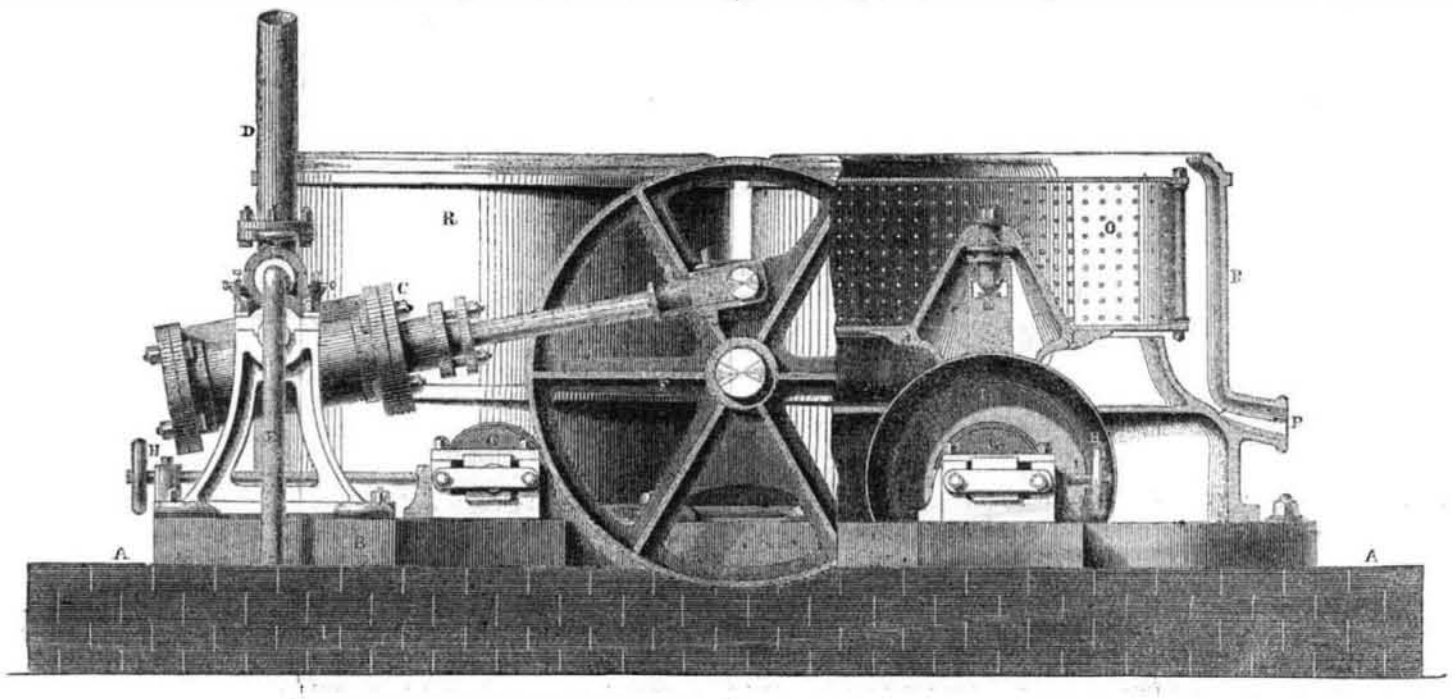
Improved Lamp.

Mr. Wm. H. Bull, of Meriden, Conn., has invented a new and useful improvement on Lamps for the burning of spirit fluids, whereby the common lamps are rendered capable of doing so without using a screw cap, as in the common kinds of spirit lamps. Lugs are cast on a collar of the lamp under the cap, which catch into a groove in the neck of the lamp, and thus firmly secure the cap and lamp. This kind of lamp can be made cheaper than the common kind, and the cap can be put on and taken off much quicker. The right of this improved lamp has been assigned to Mr. W. W. Lyman, of Meriden.

Improvement in Taps for Cutting Screws.

Mr. Alonzo B.Bailey, of Portland, Middlesex Co., Conn., has invented and taken measures to secure a patent for a valuable improvement in Taps for cutting screws. He makes the tap hollow, with its end open, and with a longitudinal groove cut in it, through which the liberated chips are carried during the cutting operation, thereby freeing the tap from all obstructions and from choking.

HURD'S CENTRIFUGAL SUGAR MACHINE.



The accompanying engraving is an elevation partly in section of this sugar depurating machine, exhibiting the manner in which it is driven, and the machinery employed for that purpose. Let us first present the description.

A A represents a foundation of masonry; B is a heavy cast iron foundation plate to which the engine and whole machine is attached; C is an oscillating steam cylinder and piston rod: D is an exhaust pipe of the engine; E is a steam pipe in which there is a cock (not seen) which regulates the supply of steam from the boiler to the engine; F is the main driving wheel connected to the piston rod, C; G G are two first driven friction pinions, covered with leather, which receives their rotary motion by friction from the first driver. The friction pressures are produced by the two screws, H H, which press against the composition boxes which the pinion shafts revolve in. I is a bevel second driver attached to the first driver pinion shaft, which revolves against a cone or bevel leather-covered pinion (partly shown) attached to the perforated copper and wire gauze drum, O, which is made to revolve by friction produced in the same manner as the first driven friction pinions, G G; J is the bottom of the drum made of heavy wrought iron plate; the top ring of the drum is also of wrought iron plates, the top and bottom plates are connected by a number of collar bolts (one shown in engraving) placed outside of the copper drum, O. K is a cast steel centre pin secured to the cone of the drum; L is an adjustable composition bush for centre pin; M is a heavy wrought iron stud around which the drum revolves and is secured to the strong exterior casing of cast iron R. N is a cast steel step on which the whole weight of the drum revolves; P is a spout for the discharge of the molassses.

It will be observed that between the adjustable composition bush, L, and the seat of the step, N, a recess is formed to contain oil which keeps the point of the centre pin and step constantly immersed, and obviates all tendency to heat or wear.

Mode of Working.—The sugar should be left in the coolers about twenty-four hours, which will complete the granulation, it is then placed in the drum, O, which is put in motion by turning the cock on pipe, E, admitting the steam in cylinder, C, which gives motion to the piston rod, and revolves the driving wheel, F, and by merely turning the screw, H H, the motion to the drum, O, will commence slow and gradually increase in velocity until in less than one minute it will have attained a speed of 1,000 revolutions as a constant velocity. The sugar by the centrifugal action is driven against the interior of the drum, O, while the molasses is forced through the spout, P, the crystals being retained within the drum can be brought to any degree of whiteness, by purging it of the molasses and by introducing (while in motion) white syrup, cane juice, or water.

Directions for Putting Down and Starting the Machine.—Select a location as convenient to the coolers as possible, and where a steam pipe can be connected from the boilers to the engine.

Make a foundation of masonry five or six feet deep, (the foundation bolts connected the same as would be done to put down a steam engine) cover the masonry with boards or planks, on which secure the foundation plate firmly and level, bolt the machines and engine to the plate, B, and connect pipes, and it is ready for operation, drive the engine about 120 revolutions per minute, which will give 1,000 revolutions on the drums, O, which, by many experiments, has proved to be the proper speed to do the work most effectually. Each drum will contain about 260 lbs. of green sugar, which will yield in running from 5 to 10 minutes, from 170 to 180 lbs. of beautiful dry sugar. The engine will consume steam of less than three horse power.

The manufacturers, G. B. Hartson & Co., have, by a series of experiments, succeeded in bringing this machine to that degree of perfection, that, at however great a speed it may be revolved, not the least jar or shake is perceptible, and is it as little liable to disarrangementas the plainest steam engine; in fact, the whole arrangement is so perfectly simple that any plantation negro with ordinary intellect could attend them without the least fear of accident.

This great invention will unquestionably prove as valuable to sugar makers as the gin has to the cotton grower. Each machine is capable of purging from 8 to 10,000 lbs. of sugar per day, and the sugar is ready for market the day after it is boiled. The actual yield is from 20 to 25 per cent. more sugar from the same quantity of cane juice; it improves the quality from 3-4 to 1 cent per lb. over the present method and leaves the sugar so thoroughly tree from molasses that no loss is made by drainage in shipping.

These are but few of the advantages it has over the old process, but, from the above, any person at all acquainted with sugar making will perceive that these machines will be indispensable to all planters, and, to enable all to participate in their benefits, the established prices are such that they put them within the reach of the smallest planter.

It will be observed that the machinery is exceedingly compact, and the drum is driven in a most novel and ingenious manner. There is no cog gearing, no teeth on the bevels, but we have the same change of motion as that produced by the bevel cog gearing, through the instrumentality of friction cone pulleys. We admire the combination and arrangement of this machinery; it does credit to the constructor and designer. Belts and cog wheels are laid aside entirely, and we have here a great enlargement of the field, for a better adaptation and arrangement of all kinds of machinery.

It will be noticed that the engine is turning two centrifugal machines, and the first driving wheel and one drum are sections.

The proprietors of the patent are Messrs. W. H. Aspinwall, and E. J. Woolsey, this city; Messrs. Fellows & Co., New Orleans, are agents; G. B. Hartson, & Co., agents and sole manufacturers, New York.

For further information address or apply to Messrs. Fellows & Co., or G. B. Hartson & Co., Globe Iron Works, 33rd and 34th streets, near 11th avenue, this city.

Improved Seed Planter.

Mr. Myron Corey, of Jerseyville, Jersey Co Ill., has made an improvement in machinery for planting corn and other grain, for which he has taken measures to secure a patent. The nature of the invention consists in constructing the machine in such a manner that the corn or grain is conveyed from the hopper to plant the same in rows lengthwise or crosswise of the field, or as it is termed "sowing both ways." It also embraces the property of planting as many or as few hills as may be desired in a row by a very simple arrangement. There is also an indicator connected with the machine for marking the distance the corn or grain is to be dropped in hills or rows. This indicator marks out the spots on the ground, but it can be thrown out and in gear at pleasure. The machine is also adapted to plow, plant, and cover the seed all at one operation.

Smoke Condensing Grate.

Mr. Daniel Tompkins, of this city, has invented a new and useful improvement in Fire Grates, for which he has taken measures to secure a patent. The improvement consists in the employment of a condenser, which condenses the smoke and prevents chimnies from smoking; and, in connection with this, there is an arrangement of devices for shutting off all the draught, when desired to remove ashes or clean out the grate.

As grates have become very common, many improvements will no doubt be made on them. There is certainly a great field for improvement in the grates of our common stoves. There is not a single one in use that exhibits a just regard to convenience in cleaning out the fire and removing the ashes. There are grates which are complicated by countless complications, but their very complexity is the objectionable feature.

Improved Machine for Drying Clothes.

Mr. C. Martrat, of Valatie, Columbia Co., N. Y., has invented and taken measures to secure a patent for an improvement on the horizontal rotary Clothes Drier. The improvement consists in remedying a defect on the old kind, which consisted in the tendency of the arms to sag, and finally break down. The arms of the improved machine are so adjusted and arranged that their outer ends may be elevated above the inner ends at the centre, and there are small set screws by which the said arms are elevated to the proper distance and secured by clamps, which so effectually secure them that the arms will not be depressed by any weight of clothes that may be put upon the lines of the Drier. The assignees are B. E. & I. Buckman, No. 94 Fulton street, N. Y.