

## NEW INVENTIONS.

## Improvements in Mill Stones.

Mr. Charles F. Campbell, of Phelps, Ontario Co., N. Y., has invented a useful improvement on Mill Stones, for which he has taken measures to secure a patent. He makes an additional set of furrows around and very near the eye of the stone. These furrows are cut in and across the ridges, near the eye of the stone, and form the main furrows. One edge of each of the ridges bounding the grooves, is curved, the groove or channel being enlarged at the eye of the stone, and it gradually lessens in width as it approaches the grooves of one set of the cross furrows near the periphery of the stone. The object effected by the employment of the additional set of grinding edges formed by the grooves being made, and the making one edge of each of the ridges curved, is, that the ridges serve as distinct crackers to break the grain more rapidly than by the old plan of dressing stones, and this affords a constant supply of cracked grain to the main and cross grinding ridges.

## Improvement in Securing Lamps in Lanterns.

Mr. P. J. Clark, of West Meriden, New Haven, Conn., has invented and taken measures to secure a patent for an improved mode of securing lamps in lanterns.

The nature of the invention consists in securing lamps in lanterns by means of a circular spring which encompasses a projection on the base of the lamp. Around this projection is a recess in which the circular spring fits; the bottom of the lantern has also a recess round its inner surface near the bottom, and by pressing the lantern downward till the recess in the lower portion comes opposite the circular spring, the said spring will expand and partially occupy the recess in the lower portion of the lantern. When it is required to detach the lamp from the lantern, the circular spring is compressed within the recess around the projection, and being thus freed from the recess in the lower portion of the lantern, the lamp can easily be withdrawn. The improvement is a very good one, and as lanterns are very extensively used and are very useful instruments, those who know how bothersome it is to fix lamps quickly in some of the lanterns now used, would be glad to see this invention applied to every new lantern made hereafter.

## Improvement in Power Looms.

Mr. James Greenhalgh, of Waterford, Worcester, Mass., has invented some very useful improvements on power looms, for which he has taken measures to secure a patent. The improvements relate to harness looms, and consist in the mode of hanging the treadles or jacks, whereby they are made to balance the harness, and raise and lower it with equal facility. The jacks are long double treadles, which are hung to effect the object stated.

## The Counting House Perpetual Calendar and Bill Register.

Mr. J. N. Ayres, of Stamford, Fairfield County, Conn., has taken measures to secure a patent for an improvement in these articles, the nature of which is set forth in the above caption, the improvement being to show, at a glance, to those persons in a counting house, or other place of business, whose duty or wish is to know, what bills are becoming payable or receivable every month, along with their precise dates and amounts.

## Improvement for Increasing the Draught of Furnace Flues.

Messrs. Francis Harris, Senr., and Francis Harris, Jr., of Elizabethtown, New Jersey, and Chauncey Barnes, of Brooklyn, N. Y., have invented and taken measures to secure a patent for an improvement in the flues of furnaces; the nature of which consists in placing a horizontal fan in the upper part of the smoke pipe, said fan having oblique fans, by the revolution of which, a vacuum is produced in the pipe, and the draught of the flues increased.

## Sharp's Breech-Loading Rifle.

"We understand that the Sharpe Rifle Company have purchased the large Butler lot on

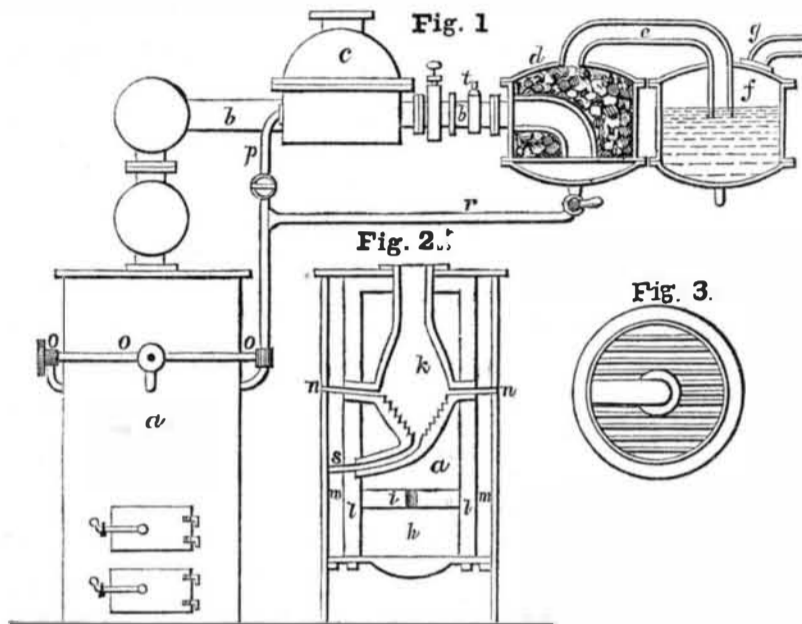
the north side of Pleasant street, east of the lower part of Village street. They will erect a large factory upon it, capable of accommodating from three to five hundred men; also a large foundry and machine shop. This will give new and vigorous life to all that part of the town. The demand for the Sharpe Rifle will be very great, for it is by far the most efficient and meritorious breech-loading gun ever invented. So rapidly can it be fired, that two balls may be kept flying in the air at the same time, from one of them; and this is done when the person who fires continues to load

his gun at every shot."—[Hartford (Conn.) Times.

[For an engraving of this rifle see page 196, Vol. 6, Scientific American. It is, we believe, the most simple breech-loading rifle in the world.

Jackson (the American Deer) has been beaten in a great foot race in England, for the championship. He never found his match here. The winner was a fellow named Frost. We hope Uncle John will give up the brutalizing ideas of prize-fighting and devote more attention to the harmless efforts of foot racing.

## IMPROVEMENTS IN THE MANUFACTURE OF GAS.



These improvements are the invention of Mr. George Robbins Booth, of London, and were recently patented by him in England, an account of which was first published in the London Patent Journal. The improvements are worthy of the attention of factories and all places where a great supply of gas is not required. They refer to the manufacture of gas from oil, tar, or other resinous or fatty matters, and is specially applicable to places where coal gas cannot well be introduced or made, or where any fatty matters are cheap.

Fig. 1 represents this apparatus in side elevation, complete; *a* is the stove or furnace, in which the retort is placed; *b* is the pipe leading from the retort, by which the gas is carried off; *c* is the oil cistern, by which the supply of oil is maintained for the retort; *d* is a vessel containing pumice-stone or other analogous substance, through which the gas permeates, passing thence, by the pipe, *e*, to a vessel, *f*, containing water, into which the pipe, *e*, dips. From the upper part of the vessel, the pipe, *g*, conducts the gas to a gas-holder, for consumption. Fig. 2 represents the furnace and retort in section; *h* is the fire-place; *i* is a covering of fire-brick material, having an aperture in the centre, through which the heat passes to the retort, *d*, which is suspended from the top by the neck. The space containing the retort is lined with fire-brick, *l*, and again surrounded with pounded coke or charcoal at *m*, and the whole encased within a metal casing. Passages, *n, n*, are formed on either side of the retort, with which pipes, *o, o*, are in connection; these branch off from a main pipe, *p*, leading to the oil cistern, *c*, by which the supply is maintained to the retort. Index taps are provided at each orifice, by which the supply is regulated to the condition of the retort. The fire having brought the retort to a cherry-red, the oil taps may be turned on, by which the oil will be distributed on the serrated sides and bottom of the retort, by contact with which it is generated into gas. Should the oil at all abate the heat of the retort, the supply must be reduced so as to maintain that temperature. The gas thus generated, passes over, as before described, through the pipe, *b, b*, to the coke or pumice-stone vessel, where any oil carried over is deposited in the bottom of that vessel. The pumice-stone is supported on a grate, shown in the plan, fig. 3, through which the gas has free passage, and ascending up through the pumice-stone, passes over to the vessel, *f*, as before mentioned. The vessel, *c*, should

contain about  $4\frac{1}{2}$  gallons, and at each time of filling that cistern, the residual oil in the bottom of the vessel, *d*, is to be drawn off in the following manner, before turning on the fresh supply of oil:—The tap from the oil cistern is turned off, and the tap at the bottom of the vessel, *d*, turned on, when the oil contained in that vessel passes, by the pipe, *r*, into the retort by the regular emission apertures, where it is converted into gas. A residuum will now be formed in the retort, which must be removed before further operation. For this purpose, an opening is provided at the bottom of the retort, at *s*; this is usually stopped by a plug. Another opening also exists at *t*, or some other convenient part of the pipe, *b*. This opening has a long tube affixed to it, to act as a chimney. By opening both these passages, air will be allowed to enter the bottom of the retort, which, being at a red heat will induce combustion of the carbon deposited in the retort, which will pass off in a gaseous form through the vent chimney, *z*. This will also burn out the soot in the pipe, *b*, and globes therein, rendering the whole free and clean, and adapted for further operations. The chimney for the passage of the products of the combustion is not shown in the engraving, but it will be readily understood as a necessary adjunct to the furnace.

## Riddle's Fair in New York.

We see that the Tribune calls this contemplated small second-hand Fair, "The World's Fair." This requires a great amount of telescopic examination. It is not an "American Fair," for there are no national rewards offered, nor have any national feelings been consulted about it. It is a speculation, and will be a failure (there can be no doubt about that) to the projectors of it. It will turn out like Mr. Barnum's "Fire Annihilator's." The off-cast things are to be sent here to gull the Yankees, and a Yankee projector is to draw the wool over the eyes of his countrymen. It may, pleasingly to some, break down the American Institute—which may commence to groan now, as its days are numbered by Riddle & Co. These men think to make great fortunes out of it, but they will be disappointed, unless they can change it into a travelling caravan; for our American folks don't want such a thing to last over three months; they can all see, and all learn what they want out of it, in that time. It is to be erected so far out of New York City, too, and among so much mud and dirt, that but few will go, to see it except when the sun shines,

after a long spell of dry weather. If it was to be a decent affair, one to confer honor on our country, we could speak well of it. We are sorry we cannot, for we believe it will be a disgrace to us.

## Modest Mr. Adams.

Voluntarily, we never criticise a cotemporary, for that would be ungentlemanly; we never thrust our advice upon a brother editor, for that would be pedantic. At two separate times we have been the special object of Mr. Julius W. Adams' attention: first, in a small, very small, critique, and advice; secondly, in what he terms a correction, and a very flip-pant one it is. It happened on this wise: a short time ago a correspondent sent us a table of the melting heat of various substances, (it was not ours), and asked for information respecting Fahrenheit's thermometric scale. We gave him the precise and exact information he wanted, by quoting a short extract from Prof. Brande's Dictionary; Mr. Adams blames us for not giving due credit for the same. We had reasons for not doing so. We know that many men arrogate to themselves wonderful airs for compiling books, much matter of which they derived from periodicals like the Scientific American, without giving any credit for the same; Mr. Adams has done this. A short time ago D. Appleton & Co., of this city, published a Dictionary of Mechanics and Engine Work; the ostensible editor was Oliver Byrne, but Mr. Adams claims to have edited the work from letter F. There is a question of veracity (one, happily, with which our name never was associated) between Mr. Byrne and the semi-editor; therefore we shall not now speak of the main part of this work; the Appendix, however, is Mr. Adams' compilation; and on pages 945-6, there are three engravings and a full description of Wilson's Sewing Machine, taken, word for word, from page 369, Vol. 5, of the Scientific American, without any credit. There is another paper, with two figures, in the said Appendix, the author of which was the Editor of the Scientific American; and there is another paper in the same Appendix, with five figures; which was prepared in our office,—no credit is given; we asked none, and we have never spoken of this before. Perhaps Mr. Adams claims the authorship of these papers because he had the honor of handing them to the printer. We have never been indebted to him for an extract or a single idea, and in all likelihood never will be. He presumes to correct us for conduct such as he has been guilty of towards us, but which we never have manifested towards him. 'Tis him who needs reproof, not us. As for his advice, we know our own duties better than he does. We have flourished under the jealous attacks of much abler tilers with the pen; and when he becomes tolerably initiated into the profession of journalism, he may, if he puts eyes on the back part of his head, learn what to say, to whom, and when.

## Gwynne's Centrifugal Pump.

The London Mining Journal publishes engravings of Gwynne's Centrifugal Pump. One of them is now being used in the city of Glasgow, Scotland, for pumping the water out of coffer-dams, where a new bridge is erecting over the river Clyde.

It is said to work well and is highly praised, but there is not the remotest idea among the people there, that it is anything more than a good rotary pump. None but the most stupid of men would ever attempt to prove that it delivered more water, by weight, than the power applied could raise to the same height; yet this is what the centrifugal numskulls contend for here.

## California and Australian Gold.

The gold of Australia is said to be still abundant, and the public mind of that country in a state of ferment about it.

The number of emigrants to California is greater at the present moment than at any other period since the gold discoveries. The streets of New York are swarming with men bound to the golden land. The State of Maine is sending out a prodigious number of hardy gold seekers. There is a company now ready to sail from London, called the Anglo-Californian Gold Company. What the result of these things will be it is difficult to tell.