

## New Inventions.

## Wealth of Atlantic Cities.

The Boston *Traveler* gives the following account of the wealth of certain cities:—"The wealth concentrated at the great commercial points of the United States is truly astonishing. For instance, one-eighth part of the entire property of this country is owned by the citizens of New York and Boston. Boston alone in its corporate limits owns one-twentieth of the property of this entire Union, being an amount equal to any three of the New England States, except Massachusetts. In this city is found the richest community, *per capita*, of any in the United States. The next city, in point of wealth, according to its population, is Providence, R. I., which city is one of the richest in the Union, having a valuation of fifty-six millions, with a population of over fifty thousand. The bare increase per annum of the wealth of Boston is equal to the entire valuation of many of the minor cities, such as Portland, Salem, New Bedford, Chicago, Louisville, &c."

## Accumulating Power Press.

The engraving illustrative of the present invention has already been once published in the *SCIENTIFIC AMERICAN*, but in consequence of a misapprehension on the part of the editor in regard to the operation of the machine, an error was made in the printed description; we therefore deem it but an act of justice to the inventor to reproduce his drawing, and set him right before the public. By reference to fig. 2, on page 80, the arrangement and action of the small interior levers on the ends of the large levers, C C, confined between the standard plates, E, will be understood.

The nature of this invention consists in so arranging a series of horizontal and vertical knuckle joint levers below the screw and bed-plate, that a powerful pressure upward in a straight line, may be exerted upon the article under operation, by reason of its gravity, with that of the moving portion of the press.

A A are standards which, connected by the cross-tie, *i*, and rods through their feet, constitute the permanent frame of the press. *m* is the top and F the bottom beams, connected by the side rods, *o o*, constitute a moving frame, which is supported by, and moves freely up and down within the permanent frame, holes being formed in the cross-tie, *i*, and the lugs, *k k*, of bed plate, J, through which the side rods, *o o*, and standard, H, may freely move. C C are the main levers, placed diagonally across the press, the inner ends, *b b*, have sockets formed in them at the top and bottom, those of the latter fitting snugly over, and resting upon semicircular projections on the bottom, *e*, and thus form socket joints. The outer ends, *a a*, have semicircular projections, which fit in sockets formed in the vertical levers, *d d*, and rest on them, these levers, *d d*, have sockets on their lower end, which fit over and rest upon semicircular projections on the bottom of the standards. The small vertical levers are formed with circular ends which fit snugly in the sockets formed in the top of the inner ends of the main levers, C C, and the standard, H, in which sockets are formed to receive them,—loose knuckle joints at all these points are formed. The standard, H, being made hollow, a portion of its length receives the screw (seen through the slot in H,) which carries the bed plate, J, to which it is secured—a recess or shoulder being formed on its underside.

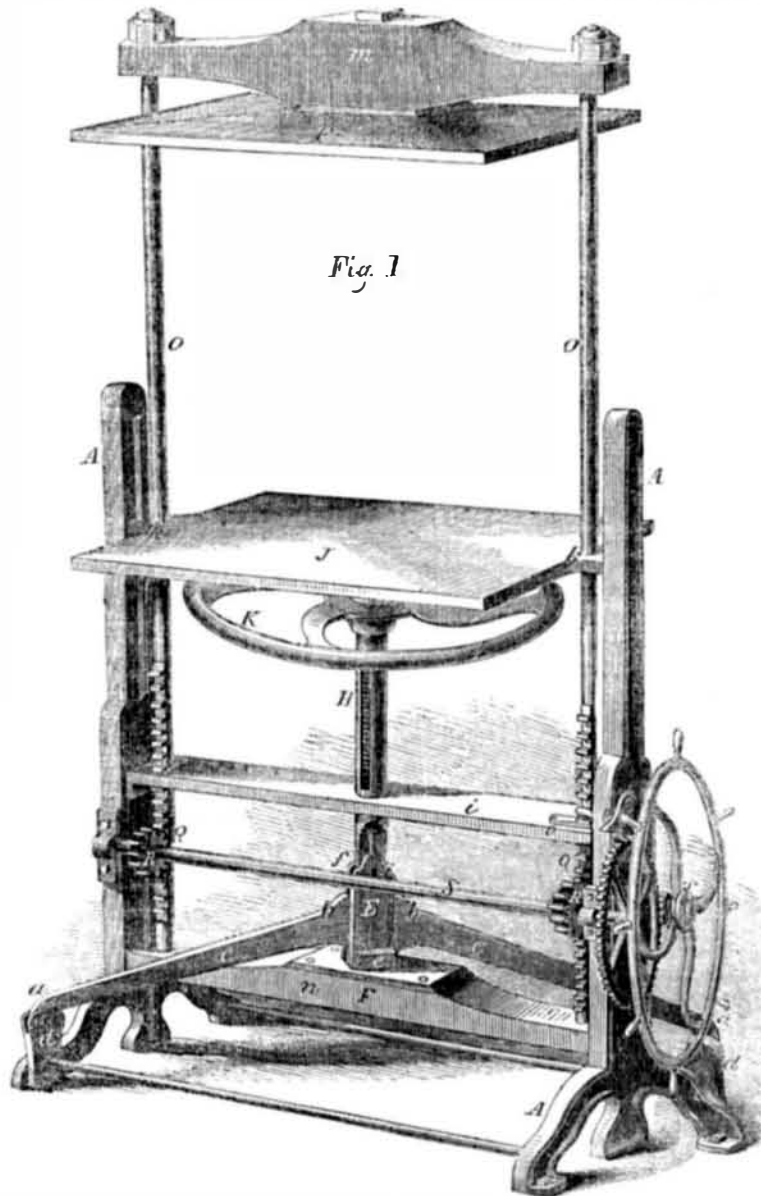
The nut wheel, K, is made to rest, and turn freely on the top of the standard, H. By turning this wheel forward and back, the bed plate is raised or depressed at pleasure. The top platen, P, is secured to the top beam, *m*, by a ball socket joint bolt. E are plate standards, (one on each side,) secured to the bottom beam, F, between which the knuckle joint levers freely move. The side wheel, T, carries a pinion, which drives the gear wheel on the shaft, S, which is secured to the outside or permanent frame, A A. R R are pinions working in the racks, Q Q, on the rods, O O, of the inner or moving frame.

**OPERATION**—When the article to be pressed is placed on the bed plate, J, the inner or moving frame is raised by the side wheel, T, the

pawl, *o*, retaining it in position. This operation causes the main levers, *c c*, and the small levers between the plates, E, to assume angular positions. The bed plate, J, is also caused to recede from the top platen a considerable distance; by turning the wheel, K, forward, the bed plate is again raised, and the substance pressed as hard as convenient; the pawl, *o*, is then raised from the gear wheel, and the inner frame, together with the substance under operation, is sustained upon the outer ends, *a a*, of the main levers, C C, which are thereby

forced toward horizontal positions, the small levers between E E are forced towards vertical positions, and the standard, H, is forced upward towards the article to be pressed, with a severe and constantly increasing pressure. If more power is required than the gravity of the press and the articles under pressure will give, the side wheel, T, and pinions, R R, are brought to bear on the racks, Q Q, by which an immense power is obtained with a slight exertion. Should the main levers attain a horizontal position before a sufficient pressure is

## DAVIS' SELF-ACTING ACCUMULATING POWER PRESS.

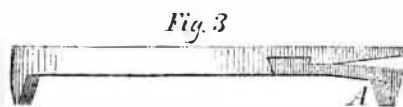
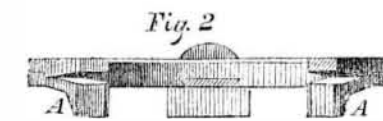
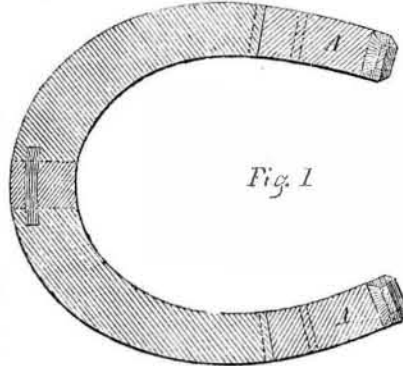


obtained, the movable frame is raised as before described, by means of the side wheel, T, the wheel, K, receives a few turns to block up the press, which brings the levers again into effective operation. When the operation is completed, the movable frame is raised sufficient to relieve the nut wheel, K, which may be turned back, the press let down, and the article removed.

The patentee says, "this press is particularly adapted to pressing books, paper, cloth, oils,

and all substances which are in themselves somewhat compact, but require a very severe power; it possesses decided advantages over the common screw press, and some advantages over any press in use, in that the power is constantly increasing as the substance under operation becomes more compact. A silver medal was awarded this press by the American Institute, at their 27th annual fair held at the Crystal Palace.

## Improvement in Spring Heel Horse Shoes.



For the safety of horses, to prevent them slipping and falling, it is imperative that their

shoes should be well corked for traversing the streets of this and other cities, especially during frosty weather. And yet, it is a fact that there is nothing more painfully common just now than to witness horses falling and injuring themselves on our slippery streets, owing to their not being well shod with corked shoes. The cause of this is, no doubt, the great expense entailed in keeping the heel and toe pieces of the shoes in good order, because the shoes have to be taken off the animal for the purpose of corking them.

The accompanying engravings represent an invention designed to afford a remedy for the evil, and for which a patent was granted to Wm. H. Towers, of Philadelphia, on July 25th, 1854.

The nature of the invention consists in attaching spring corks or plain springs to the heel of the shoe, by means of dovetails, swedging, or other firm means, in such a manner as to enable the corks and springs to be removed and replaced, in case of wear, without the necessity of taking the shoe from the horse's foot, which saves time and expense, allows of shoes being kept cheaply corked, to prevent the animal slipping and falling in wintry weather

besides the advantage obtained by the elastic heel acting as a relief to the shock experienced by the horse in the violent planting of his feet on the ground.

Figure 1 is a view of the under part of a horse shoe, with the improvement attached. Fig. 2 is a view from the rear end of the shoe, showing the spring heels, A, on either side, and the detachable dovetailed toe in front, and fig. 3 is a side view of the shoe, showing the manner of attaching the spring heel, A.

It will be understood that the shoes are made with dovetailed or wedge recesses, as represented, and springs are made to fit firmly in these recesses, the heel corks being welded on the outer or flexible end of these springs. No further description is necessary to explain the invention.

We have been informed by the patentee that this improvement has been successfully applied to horse shoes, and has been very beneficial to horses, both as it respects the cheap and easy method of re-corking and the prevention of some horses stunning their limbs by plunging their feet violently, which is prevented by the spring heels, A.

Further information may be obtained by letter addressed to Messrs. Towers & Safford, (box 2000, post office, Philadelphia,) who have obtained favorable testimonials of this elastic horse shoe from veterinary surgeons and blacksmiths of the highest character.

## Economy of Fuel.

"The expensive and wasteful manner in which most houses are warmed with coal calls loudly for reform. A moderate sized house, with a furnace in the cellar, a stove in the dining room, and a range in the kitchen, consumes from 15 to 17 tons of coal per annum, at a cost exceeding that at which such houses were warmed with wood before coal was thought of. True, our houses are warmer, and some persons think more comfortably now, than they were then; and so they ought to be at the increased expense. But if coal is to be as advantageous as it was at one time supposed it would be, then we should have our houses a little warmer and more comfortable than we had when wood was the fuel, and at a lower price. Cannot some of our ingenious mechanics invent a warming apparatus that shall possess all the necessary requisites, at a greatly reduced cost?"

In Russia, where the winters are much longer and colder than they are here, their houses are heated by a kind of furnace or stove called, if I remember right, a *peche*, by which a bundle of fagots, morning and evening, certainly not more than three times a day, introduced into the *peche*, will keep the rooms at a uniform temperature of about 70 degs. Fah. This would certainly be cheaper than our present mode of heating our houses by coal; but if some enterprising mechanic who has seen these Russian stoves and understands their construction, would erect something of that kind, only using coal instead of wood, it might become very popular, and thus induce families to use separate houses, which would encourage building, and enable many families to pass through the winter comfortably, who now almost dread to see cold weather approaching.

The man who will invent a cheap and efficient mode of warming moderate sized dwellings would make a fortune."

[The above is from a correspondent signing himself "Reflector," in the Philadelphia *Ledger* of the 10th inst. For his benefit (and others who may wish to obtain like information,) he will find one of the Russian furnaces described and illustrated on page 28, Vol. 5, *SCIENTIFIC AMERICAN*. The Russian furnaces are not peculiar to that country. They are easily built, and coal can be burned in them as well as wood.

## Robert Fulton.

We are indebted to Messrs. Reigart and Dellingler, of Lancaster, Pa., for a handsome colored lithograph of the birthplace of Fulton. No doubt many of our readers would like to possess this picture as a memorial of this celebrated man. It can be had of the publishers as above.

A good newspaper is like a sensible and sound-hearted friend, whose appearance on one's threshold gladdens the mind with the promise of a pleasant and profitable hour.