# Scimentific Amaritan. 

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL, AND OTHER IMPROVEMENTS

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pense, to the paddle wheels of steamers now should be carefully examined by engineers. in use. The parts are simple and can be made For further information address the inventor, as strong as circumstances require. The re- Wm. B. Godfrey, Auburn, Mahaska Co., Iowa, gulation of marine engines is an important or J. A. Knight \& Co., 334 Broadway, N. Y. subject, and any improvement relating thereto $|$| Patented May $27,1856$. |
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Combination Cotton and Hay Press. and hay press, which is so arranged that the Our engraving shows an ingenious cotton $\mid$ mechanism by which the pressure is obtained, renders the teeth tender and sensitive.
may be separated, at pleasure, from the press, and used, for other purposes, such as moving buildings, raising burdens, extracting stumps,

The press itself is of the usual simple construction, $A$, being the follower, and B the top board, C the hinged side board. The material to be pressed is placed between $A$ and B. The ends of the follower, A, are raised and the intervening substance compressed. D is a strong lever, one end of which is pivoted, and the other end is connected by strap, F, with a shaft, G, whose office is to wind up strap $F$, and pull down the end of lever D. (See fig. 2.) It is by the pulling down of lever $D$ that the follower, $A$, is raised, for it will be observed that chains extend from the end of $D$ to the top of strut frame H , and thence over friction wheels, $I$, to the ends of followers A. The lower ends of strut H rest on shaft E.
The necessary power for pulling down the end of D is obtained by a train of gear wheels connected with shaft $G$, in the usual manner, power being first applied at crank $J$, when the resistance is small and a quick motion ad missible. But during the last stag is of the operation, when an augmented pressure is wanted, power is appl ed to lever K, which, by means of its pawl, L, acts on a ratchet wheel on one of the gears. Suitable pawls hold the purchase as fast as obtained. After a bale has been compressed it may be removed and the follower, $A$, lowered, by reversing the crank, with great rapidity.
All the parts of this press are strong and simple. It possesses the, advantages of quickness of operation, unlimited power, cheapness, and portability The fact that the power mech nism can be detached from the press and applied to other purposes, as above indicated, will render the machine doubly valuable. This improvement is the invention of Mr. S. W. Ruggles. Patent applied for. Address Mr. G. D. Harris, assignee of the invention, Fitch burg, Mass., for further information.

## Deccase of Distinguished Inventors and

 Mechanics.We have recently recorded the decease of Paul Stillman and George Steers, of this city and N. J. Wyeth, of Cambridge, Mass., men distinguished for their inventive genius and mechanical skill, and now we have another name to add to the sad list. James Renton, of Newark, N. J., the inventor of a new furnace for manufacturing wrought-iron direct from the ore, named " Renton's process," died suddenly at Brighton, Pa., on the 26th ult. His furnace was illustrated and described on pages 169 and 172 Vol. IX, Scientipio AmerIOAN.

Action of Suzar on the Teeth.
The Charleston, S. C. Medical Journal states that M. Larez, in the course of his investigations on the teeth, arrived at the following conclusions :
"1st. Refined sugar, from either cane or beets, is injurious to healthy teeth, either by immediate contact with these organs or by the gas developed, owing to its stoppage in the stomach.
2ad. If a tooth is macerated in a saturated solution of sugar, it is so much altered in the chemical composition that it becomes gelatinous, and its enamel opaque, spongy and easily broken.
3rd. This modification is due, not to free acid, but to a tendency of sugar to combine with the calcareous basis of the tooth."
The foregoing conclusions are correct, and candies and condiments should be avoided. They should be kept from children especially. It is well known that maple sugar

[Reported Oficiallyfor the Scientific American.] LIS T OF PATENT CLA MN FOR THE WEEK ENDING SEPTEMBER 30,1856

 an arrangement. t , ame employment of a revolving barrel,
formed from a single piece of metal, with three bores of
for





 pins) of a single breech piece, provided with branches or
Ping fifting the several bores. and secured therein by a
right and len nut, tor the purpose specified.

 I also clain the peculiar construction, ar ananement,
and combinasion of hhe ham merr. main spring and trigger,
as adapted to the rest of the gun, and operating both to as adapted to the rest of the gun, and operating both to
hold the hammer cocked and down upo thenipple un.
til set free by moving the trigger, substantially as set
forth.


Gridrrons-Wm. Bennett, of New York City, I do
not claim either the gridiron over.
But I claim the pins or elevators attached to the bars But I claim the pins or ele evators attached to the bars
or esats of the rridion as set fort, used in oconnection
with th ventian coner
stantiall
 twated by the fixed portion of the kevy, in combination
with the sliding guard, actuated by the seomang key,
arranged aud operating as and for the purposes specified.






 STEAM BoiLEn s-David H. Fowler, of New Orleans,
La: In claim the arrangement of the central and ex.
terior flues. with the open space, $\theta$ e, and aperturos, g g . La.: I claim the arrangement of the central and ex-
terior fues.
substath the open space, $\theta$ and apertiliy as and for the purposes set forth. Jour NaL Box ALLoys-John Fidiler. of New Albany,
Ind. Iclain the composition of the ingredients named,
in the specified mode and proportions.




 softer
arter
forth.





 cal cutters, (G, GJ K K, horizontal cutter, H, mold boards,
LL, ard sedd droper, D, said parts being paced in the
rolation to eachother shown, substantially as and for the rolation tseach o
purpose set forth.
 bolt q. by which the sector on the fore truck is locked
with the rotaing shan, R, which carries the gear which
operates upa the sector to turn the fore truck, by mean
of a los


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Mavy-Wicerd Gandles-Benjamin D. Sanders,




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whether used in this limb or any other.



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of mechanical ajitation simultaneously with chemical













## Opinions on the new $\begin{gathered}\mathbf{P} \text { oce } \\ \text { turing }\end{gathered}$

M. Truran, author of "The Iron Manufacture of Great Britain," in a letter to the London Mechanic's Magazine, severely criticises Mr. Bessemer's paper, which he read before the British Scientific Association, describing his process for manufacturing malleable iron and steel from crude iron. He asserts that Bessemer is neither correct in his theory nor is conclusions; also that iron produced by his process neither possesses the qualities of wrought-iron nor steel.
He says :-" The mere removal of a portion of the impurities in the iron by fusion does ot, of itself, convert cast into malleable iron castings with a slight degree of malleability nd in temperature, are common in England they lose this quality, are equally brittle with other cast-irons, and are utterly devoid of the welding principle. . . . The cast steel of excellent quality which it is to produce-cheap as finers' metal-has yet to be made and exhibited in articles of cutlery. A few pieces of refined iron were exhibited at the meeting, but hese were no more like bars of iron or steel than chilled cast-iron is like tempered steel."
These are the same views as those expressed by Mr. Sanderson, which we presented two weeks ago. The editor of the Birmingham Journal entertains the same opinions, but thinks the process will prove to be a great improvement
We believe that Mr. Bessemer exaggerated not only the importance of the process, but also misstated the results he obtained. In all blast furnaces the refining of the metal in a degree is now performed by streams of air ; the new process only carries out this feature a little farther.
J. G. Martien does not advance the idea in his patent that he can make wrought-iron by his process; he only specifies it to be an improvement in refining the iron preparatory to puddling. We have previously informed our readers that the descriptions of this process, peared to us and the London daily papers, ap ber facts.
In our last number we stated that when the facts of the case in relation to Mr. Martien's claims were known by the public, Mr. Besse-
mer would find his plumes considerably ruf-
fled. It affords us much gratification to pay a marked tribute of respect to the acknowledged honesty of the British Press, in relation to this case. Since we penned that article we have received several British papers, which defend Mr. Martien's claims. The London Land and Building News says :-
"Of Mr. Bessemer we know nothing individually. He stands prominently forward as an illustration and instrument of that injustice we have before alluded to, (unscrupulous Englishmen who appropriate foreign inven-
tions) otherwise his name would not be found under our pen. The British Association has
und robbed the true inventor of his fair fame, and given credit to one to whom it is not due. If
Mr. Martien be proved to be the first inventor, to him be all the honor, glory, and profit thereof. If not to him, to some other who may have preceded him, but not Mr. Bessemer, who has succeeded him."

The Birmingham Journal, whose editors understand the subject completely, asserts that the intelligent application of jets of steam to the manufacture of iron has yet to he made, but speaks favorably of air. It gives the credit to Reuben Plant, of Dudly, for using a pressure blast, blowing through molten iron in the puddling furnace, in 1849, but says: "The blowing of air in small jets through molten iron after it has left the blast furnace, is clearIy the property of Mr. Martien.'
David Mushet, the well-known scientific Martirgist and author, also defends Mr. London Mining Journal.

## Feats with Wood on Railroads.

The N. Y. T.ibune of the 2nd inst., describes the feats of some locomotives in running great distances with a small quantity of wood. It states that a locomotive on the Pacific Railroad (Mo.) lately hauled three passenger trains with 106 passengers, and one baggage car, 125 miles in 7 hours with one cord of oak wood. On the Ohio and Mississippi Railroad, a locomotive recently hauled the night express train 149 miles with one and a quarter cords of wood ; the time not given. On the Norwich and Worcester Railroad a locomotive regularly hauls the accommodation train, back and forth- 12 miles-making 32 stops, and standing one hour at Worcester, with only seven
feet and a half of wood-or 8 cubic feet less than one cord. It also states that the average performance of locomotives is only from 25 to 50 miles per cord of wood.
We have noticed the performance of the locomotive, on the Pacific road in a former number, and allude to it again in connection with the other two, to say that the feat was not a miles per hour. The womption of fuel by locomotives, is in proportion to their sp:ed, the load hauled, and the resistance overcome. A locomotive may be run 150 miles with one cord of wood, while another equally economical will require one cord for 20 miles. It is the work done, and not the distance run, which is the true test of the economy of fuel on railroads. The account of the running on the Pacific Railroad is somewhat satisfactory, because the speed and size of the train are given, but the statements respecting the other two locomotives-neither speed nor load be ing given-amounts to an absurdity so far as it relates to their economy.

Reapers in California.
The California Farmer states that various harvesters are employed in that great State and each has its admirers-McCormick's, Hus sey's, Manny's-yet it says:-"We wan stronger machines. The machines sent to this country were made for grain that yielded sixteen or twenty bushels per acre, with short light straw; here we have tall heavy straw, and grain yielding twenty-five, forty, or even sixty bushels per acre, and often straw six or eight feet hight, and sometimes higher, consequently we need stronger machines."
We hope our manufacturers of reapers will ake this as a sufficiently strong hint how to make their machines intended for California.
The children of the Church Education Schools in Ireland- 90,000 in number-have been instructed by their teachers to des
every weed they see. Good instruction.

