# Simititio lmeriran 

TIIE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECIIANICAL AND 0THER IMPROVEMENTS.

## VOL. XIII.

NEW YORK, NOVEMBER 14, 1857.
NO. 1 c .

## SCIENTIFIC AMERICAN,

 At No. 128 Fulton strect, (Sun Buildings,) New York, BY MUNN \& CO.o. d. munn, s. h. waies, A. e. beach.

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Pyroligneous Acid or Wood Vinegar.
When wood is subjected to destructive distillation or is greatly heated in close vessels, an acid liquor oozes over with the tar and gaseous products. This acid liquor is the pyroligneous acid. It is really an impure vinegar, from which acetic acid can be obtained, and the method employed is as follows: The pyroligneous acid freed from the tar, naptha, \&c., is saturated with chalk or powdered slacked lime, filtered, and evaporated in suitable vessels. By this means an impure acetate of lime is obtained. This is gently heated to destroy the oily matter without injuring the acid, and then mixed with sulphate of soda or salt cake as the manufacturers call it ; this affords a beautiful acetate of soda, in solution, which is then drawn off from the remaining sulphate of lime. The solution is heated, evaporated to dryness, re-dissolved and crystallized, and by these means the acetate of soda is procured in crystals. These crystals are then placed in a retort with oil of vitriol and heated, when acetic acid distils over, which being the active principle of vinegar, this useful acidifier can easily be made from it, and of the very best quality. The charcoal which remains in the retort in which the wood is distilled is excellent, and is largely used for the manufacture of gunpowder.

## Seren

A Tennessee correspondent, after informing us that we are indebted to an article on this subject by Hoe \& Co., in the second number of our present volume, for many subscribers in his locality, proceeds to give the following practical information:-
"As wcll as the number of teeth being proportioned to the hardness of the timber to be sawed, their number should also be proportioned to the power used. Each tooth of a saw can only cut advantageously a certain distance forward in passing through the log, which distance depends on the hardness of the wood; but if a saw has a great many teeth, and is driven by a weak power, each tooth will not cut so far forward as it should do, and there is a loss of power. If the power is
great, and the number of tecth fcw , then each tooth will have to cut too far forward."

## Sorghum Molasses.

Dr. F. Stewart, of Philadelphia, has sent us a sample of molasses made from the Chinese sugar cane. The yicld from which the sample was taken was equal to two hundred and forty gallons to the acre, and is very good, being quite as rich and sirupy as that from the ordinary cane. We are still of the opinion, however, that it is not capable of producing crystallizable sugar; but if any of our readers
have succeeded in making it, have succeeded in making it, we should like to see a specimen.

WILLMOTT'S "LITTLE GIANT" BOOT CRIMPING MACHINE.


This machine is intended for crimping or wood, and faced with brass, fastened by slidforming the fronts of boots. There are already several machincs in the field for this purpose, while, to a great extent, "crimping" is performed by hand-that is, by stretching the leathe over a wooden form, and rubbing it into shape, without the intervention of any machine. This process, however, is so tedious, that machines of some kind are fast coming into use, and the inventor of this crimper claims that it will not only accomplish more work, but that it performs the operation with greater perfection; all wrinkles are rubbed out, the corncrs are stretched, and the crimp is put into the boot with greater solidity and without injury to the leather; while the operation is performed with such rapidity that twenty pairs of boots can be crimped in an hour, and even this number has bcen exceeded by a skillful workman, hence its name-"The Little Giant."
Fig. 1 represents the whele machine, in which A A are the lega supporting the frame, B. C C are leg screws, by which means the wachine is held firmly to the floor. D is the handle (broken in our engraving) attached to the "former," E, on which the leather is stretche l. This "former" is shown in Fig. 2. F F are two jaws, made of iron, lined with
ing in a groove in the frame, B , and are separated at the bottom by screws (not seen in our engraving; the jaws are kept together, and the pressure upon the leather regulated by the hand whecl, H, which works a screw,
G, passing through both jaws. The handle, $D$, is connected with E , and on the top of this arc mounted two standards, I I, carrying on their top the drum, J, which contains a powerful coiled spring, by whose means the ratchet whecl, K, is turned upon the screw, L. MM are pincers, so arranged that when the ratchet wheel is turned in the proper direction, they are lowered, and open to receive the corncrs of the boot front; while, by the same movement the spring is wound up in the drum, J . This is held wound up by the pawl, $k$, until the leather is adjusted, when the pawl being tripped, the spring is left free to act.
Operation.-The leather being cut to shape, and wet in the usual manner, is laid over the jaws, F F, in a suitable position, the "former" bcing first thrown back, and the jaws graduated to the thickness of the leather to be crimped; the "former" is then brought down forcing the leather between the jaws for a short distance; the pincers are then lowered, and the corners secured within them. The
process is continued by working the handle, D, up and down, which rubs out the wrinkles, while the spring exerting its force upon the ratchet whecl, keeps a constant strain upon the corners drawing them out to the proper shape; when finished, the leather will appear on E , as scen at Fig. 2, $\mathrm{E}^{\prime}$ being the leather without crease or wrinkle; all that now remains to be done is to loosen the pincers, remove the boot front, and tack it on a form to dry.
This machine is the invention of W . W. Willmott, and was patented Aug. 25, 1857. Further information and particulars may be obtained from the manufacturers and assignces, A. H. and C. H. Brainard, of 90 Utica strect, Boston, Mass. A machine may be seen at the machinery warehouse of S. C. Hills, No. 12 Platt street, New York.

Progress of the Age.
The great deeds done by men of old, and the accumulated discoveries of the ancient sages, have all been surpassed in the last half century. Before the year 1800, there was not a single steamboat in existence, and the application of steam to machinery was unknown. Fulton launched the first steamboat in 1807 ; now there are three thousand steamboats traversing the waters of America, and the time saved in travel is equal to seventy per cent, and every river in the world is a highway for their encroachments. In 1800 the word "railroad" had not been coined, and to travel forty mittes an hour was animpossibility. In the United States there are now some twenty-five thousand miles of railroad, costing in the neighborhood of seven hundred and fifty millions of dollars, and about thirty-seven thousand miles of railroad in England and America. The locomotive will now travel in as many hours a distance which in 1800 required as many days to accomplish. In 1800 it took two weeks to convey intelligence between Philadelphia and New Orleans, now it can be accomplished in minutes by the
electric telegraph, which only had its beginning in 1843.

## Trinidad.

This small island is situated off the coast of South America, not far from the mouth of the river Orinoco. It has long been noted for the production of a superior kind of coffee, but is now about to enter the commercial world in a far more important way. Beds of coal, sulphur and good ochre have recently been found there. Asphaltum, petroleum, gypsum, good lime, a compact sandstone, and clay suitable for bricks have been known for some time, and all that was wanted was the coal, to aid in their productive development. There is also every reason to believe that $g$ )ld is to be found in some of the northern streams. An American firm has recently established itsclf at the famous Pitch Lake, and crected works, now nearly completed (they make the crude oil already); for the extraction and refining of oil from the asphalt-the supply of which is, no doubt, practically inexhaustible. With regard to the coal, there are seams of eighteen to forty fect, and one measuring horizontally the enormous width of fone hundred and twentytwo feet-a veritable quarry.
The Mining Chronicle gives the above information, and, should it be true, this discovery will be a most valuable acquisition to the maritime world. A coaling station has long been wanted in that locality, and it would seem that Trinilad will be able to fill the vacancy.

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Issued from the United States Patent Once for tite wiek ending novenbers 3,1857 .



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the trme and bed of a steam engine. This Ido not
che Cllim. Int Ilaim makingt the bed of af ateam engine hollolvir,
and so as to form a geam chamber and arranging the
 exthuast stemen in the chan
in the $p$ incs, as set forth.









 work in one of gaid grooves being station ary and the
whole bieing arranged and made to operate as described.




 TFull particulars of


 of the
torth.

 delphia, Pa. I I clamim the working and twistingof candy
bopmears of a machine constructed subetantially as set
forth. ${ }_{\text {forth. }}^{\text {[By }}$
[By the use of two conical rollers and a taper screw,
the candy is rolled and twisted at one operation, and
much much
use.]



 purpose set forth
[This machine
such as for the box ond locks; it bends them perfectly,
and gives a oood sharp angular and gives a good sharp angular e edge.]


















 | to vib |
| :---: |
| forth. |






 patagm
set forth.


 scribedird, The combination of the diigging wheel, the
carriers and the shield, tor the purposes set torth.




 corvered claim the cleaning and polishing of green coffee
by subbjectin it to the ombined action of heat, friction
and motion as see forth and $m$




 deeired point, as set forth.
[For more information

## [For more information notice on another page.]



 I claim the
manner described.
[Theses shutters are much cheaper than the usual iron
ones; they fold side by gide as they descend, and shu up in a box or recess underneath the window-sill whe



 eion baces, in the manner and for the purpose as speci
fiel
ealach claim conneting the top faps of the gate with
each that the two shall move to to ether by by


SMooririva Iron-James Goodin Jr., of Cincinnati
Ohio $I$ I am aware of gas having been used for heating


 tributing
iron, an,
cation.



 obtained.
[This invention relates to that class of tires that ar not in a continuous band, but are secured by a screw
The inventor cusses the ends so to overlap that in an position of the screw they form a good and perfect

## 

 pistons, irrespective of the ararangement shown.



〔By giving the pistons a variable motion-that is
causing them to descend with greater rapidity tha they ascend, ond connecting the cylinders by water
passage, these pumps give a continuous stream of wate passages, these pumps give a continuous stream of wate
which is equal in force in any position of the pistonas.]
 materiaven, at the ta me trinted is kep that the paper or other
roller bothect the fith the
poses syecifed, substantially as and for the pur-BAROMETER-T. R. Timby, of Medina, N. Y.; I I claim
the elastic tube between the stop cock and barometer
tube as set forth tube elaim set forthe mechanical arrangement for supporting I claim the mechanical arrangement for supporting
the barometer tube withint the suspension glase case, the
same consisting of the bracing rods, $t, t$, passing through
 a, asd the sct
as forth.
HARVEsTERS-Hosea Willard and Robert Ross, or Vergennes, Vt.: We do not claim broadly attaching previoustly done.
But we claime combination of the hinged finger bar
L, with the adjustable bar, 1 , lever, $P$, regulating se screw, f, and whieel, $o$ the whole being constructed and
arranged in relation to the main frame for joint opera
tion in the manner
 ombination with
clutch, Q, for the pur
bar, L , as described
[This improvement consists in forming the cutters, so round, orelevated bodily, when moved from place to place.]

[This is a cheap and simple carriage top.]
Mioninger for Burning Woon on Trie Pert-John
Waterhouse, of Little Falls, N. Y. I I claim, frst, The
combination of the feeding apparatus, which holds and
 constructed and operating substantially as set forth.
Secoud, I Ilaim the combination of the
olle beile
 Third,, claim, in combination with the holding and
prosenting rollers, he feeding rollers, $F F$, one said
ollers, $F$, being elastic, and the other non-elastic, as
 one of the holding and presenting rollis on the main
frame and heir fellowi upon a traveling carriage, for
the purpore of facilitating the introduction, turning and
removal of the pelt, as set forth.
 and in quite common use.
N Neither do Io claim zeparaly or in themselves con-
sidered the guards or fenders ind ependent of the man ner in which they are arranged or applied to the bed
stead
Eut $I$ chaim applying or attaching the guides or fen-
 side pieces, b, in connection with the grooves, $f$, in
the inner sides of the posts, $D$, for the purpose speci-
fied.
[This improvement is described on another page.]
 machine of A. B. Wilson. patented 1854, a tri-pronged
spring presure pad isemployed. The entral prongo of
this pad presses or holds the cloth against the periphery of the feed wheel I disclaim the spring pressure pad
and aldo the holding of the cloth against the feed whee
by a spring. In the device of said Wilson, the pressure by a spring. II the device or said Willon. the pressure
pad is stationary, he feeding of the cloth being accom.
plished by a serrated wheel. I am allo aware that in the device of E. H. Smith,
1857, the pressure pad is slotted, and has a separate
paring withe spring within the slot which presses the cloth upon a
horizontally moving do. The cloth is fed by said dog Whizontally moving dog. The cloth is fed
Which is. .elow the table.
I do nologment the employment of two foot pieces or
feeding plates in any other way than as described. But Iflaim the emplorment of a supplementary ser-
rated feeding iate, fited within a sot ine princi.
 [This is a useful little improvement in the feed mo non of sewing machines, and is appicable to any ma chine.]
Print
 not claim separately or in itself consid ered the recipro-
cating carriage, provide with fingers or nipery for
feeding the blank sheets to the form, ono do I I claim the
 sebment J. provided with a weight box, h, or any suit.
abhe or equivalent device by which the ounterpoisi of
the segment may be varied or graduated to be commenthe segment may be varied or graduated to be commen-
suratewith the espeed of t the segment. $I$ alloo claim the
reciprocating rolling pressure segment, when arranged
to Second, I claim the reciprocating carriage, 0 , pro-
ided with the fingers or nippers, w, in combination with the segnenent, , for tor teeding the sheetst to the form.
I also claim, in combination with said segment, J, the
 ing conjointly with the segment, J, as described.
inchine
Third, Iclaim the rails, $m$ m, applied to the machine nd operated substantially as shown, orin any equiva-
lent way so as ot raise orelevate the face, $k$, of the seg ment above the form duringone one movemement, k , ond the allow
ming
ing to descend and rest upon the bed during the other movement in order to give the impression to the sheets.
And $\bar{T}$ also claim the bar, Z when used in conection
with the rails, m , and having the bar, $\mathrm{j}^{\prime \prime}$, connected with it as shown, whereby the segment, may be raised
an any time, and the sheets also prevented from being
fed to the form. Forthe form.
Fourth operating the lateral vibrating ink
rollers, W X, by means of the T -shaped lever, Y , as de-
cribed. ${ }_{\text {scribed. }}$ [For information about this invention we refer to

Machines for Folding Parer-Cyrus Chambers, wyself to the precise form or method of onerating the
various moving parts of the manhine, the they may be
coniderabiy modifide without alterine the result.








 Forth.
Eithth, So constructing and arranging machines for
foldingsheets of paper, that the two halves of one sheet folding sheets of paper, that the two hale os of one gheet
(gaid sheeth having been printed on both side from the
same form) may be separated from each ofter, and folded in succeession.
Ninth, Packing the Ninth, Packing the folded sheets by means of a recip.
rocating pluger againta frietlonal plate in a trough,
so that the bscks and head
with each other. Tenth, The employment of the devices described, or
any equivalent tot the same wherevy the operator can semarate the imperrect from theperfect sheets.
Eleventh, Preventins the retur of the packed shets
of paper, by means or the eatches situated above, and in ope correrof the trough.
Twelfth, The combination and arrangement by which Twelfth, The combination and arrangement by which
the operations described are performed simultaneously
or in succession to each other in the same machine.
 raised, turned, and operated as above described, of the
supplementary spring, for the purpose of contronling
she re-boundmg of the drill, G, in the manner as set
forth $\begin{aligned} & \text { supplem } \\ & \text { the } \\ & \text { fe- } \\ & \text { forth. } \\ & \text { 「See }\end{aligned}$
.

VANE Governor For STRAM ENGINES-C. Whitier,
of RRoxbury, Mass.: I Iclaim supending he fans or vands
D on the crank (or its equizalent) nitached to the D, on the crank (or its equivalent) attached to the
Bpindle of the regulator valve, whereby the resistance
of the atmosphere causes them to spinde of the reguiator valve, whereby the resistance
of the anmosphere causes them to operate the valve in
the manner as set forth.
 eescribed of equalizing the paying out of the strands
from the bobbing for the purposes set forth. Second, Thearrangement of a friction or rubbing col-
lar, m, operated by $a$ plunger, o, passing upward within
 Mantracturg of Iron-Wm. Kelly, of Eddyville, derstood as claiming broodly the act of blowing blastg
of air into molten iron, as that has been done in processes dissimilar to mine ap and througla a mass of tiguid of aro, either hot or cold,
ar come oxy gen in the
 addttonal inprovenent.
 prraight tube, d, in combination with a simple cup or
receptecle, Eubstantially as and for the purposes de-
cribed.
Stoves-Wm. T, Coggeshall, of Fall River, Mass. Note-In the above list of claims we recognize
FIFTEEN cases which wereprepared at this office. Under the present efficient and liberal management of the Patent Office, there has never been in our opinion 8o
good a time to present applications for patents as now Cases are early taken up for examination. and a liber ality is shown by the Examiners which is truly comnot devote their time more profitably than to an cflort to invent something new, or make some improvement on machinery used in their respective trades.

## Charcoal.

As the result of experiments with charcoal, an English chemist avers that for the reduc tion of metallic oxyds, the charcoal of the heavier woods (as that of oak and the beech) is preferable; and that, for common fuel, such charcoal gives the greatest heat, and requires the most plentiful supply of air to keep it burning, while those of the lighter woods preair; and that for purposes where it is desirable to have a steady and a still fire, charcoal should be employed which has been made from wood previously divested of its bark, since it is the cortical part which flies off in sparks during the combustion, while the coal of the wood itself seldom does.

## Statistics of Consumption.

Medical statistics appear to prove that consumption, where prevalent, originates as often in summer as in winter, and the best authorities declare that it is more common in hot than in cold climates. There is more consumption in the Tropical Indies, both East and West, than in the almost arctic Canadas. The number of the British troops attacked with this disease in Jamaica is annually twelve in one thousand, while in Canada it is only about six. The British government have accordingly resolved upon sending their consumptive soldiers to a cold climate in preference to a warm one.
Cheap Corn.-South of Springfield, Ill., on the railroads, some of the farmers are fierd ; others at $\$ 5$ cents

