# Sumtifi Ammrimm 

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.
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NO. 37.

SCIENTIFIC AMERICAN,
 BY MUNN \& Co.
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## The Effects of Moonlight.

Professor Piazza Smyth, the Astronome Royal for Scotland, in his interesting account of a recent scientific expedition made by him to the Peak of Teneriffe, has set at rest the vexed question of the heat of the moonlight. He says that his thermometrical instruments were sensibly affected by the moon's rays, even at the lowest of two stations occupied by him at different elevations. In tropical cli mates meat which is exposed to the moonlight rapidly becomes putrid; and in the Indies, the negroes who will lie sweltering and uncovered beneath the full glare of a tropical sun, carefully muffe their heads and faces when exposed to the moonbeams, which they believe will cause swelling and distortion of the features, and sometimes even blindness.

## Improved Dumping Wagon

The advantages that are gained by constructing common road wagons, so that they will "dump" are so well known that it is un necessary to recapitulate them. The wagon which is the subject of our illustration dumps in two parts, the body being divided transversely at or near the center of its length, and the sections are hinged so that they can be tilted independently of each other. This arrangement avoids the necessity of shifting or sliding the body, even if madelong, independently of the frame, when it is desired to dump the load, as the front section can be dumped, and the truck then moved forward far enough to bring the rear section in proper position for dumping like the first, so that its load may be dumped on that deposited by the first section. Two different materials can be carried in this wagon and dumped separately, in different places, or in the same as desired.

In our engravings, Fig. 1 is a perspective view of the wagon, dumped. Fig. 2 is a side elevation of the wagon as ready for carrying a load, and Fig. 3 is a view of the mechanism by which the parts are dumped. A A are the wheels, and B B the axles of a common road wagon. D D are two side bars resting on the bolster of the front axle, and fastened permanently to the axle of the rear wheels. These bars are also connected to gether by stay-bars, E E. On the frame formed by the bars the body of the wagon is mounted; the section, G, being hinged at H , and the section, $\mathrm{G}^{\prime}$, being hinged at $\mathrm{H}^{\prime}$. The line, I, of division between the sections, is cut obliquely down through the body, so that the front section may descend without touching the rear one, and still a tight joint be maintained when the sections are locked together. The two sections are held up at the point, I, by the sliding bar, J, and by hinged catches, $a$. The bar comes underneath the division line, being arranged to slide back and forward in brackets, $j \boldsymbol{j}$, and when under the
line stops the front section from falling or tilt- lever, $L$, is held by a notched segment, M, in ing. The catches are hinged to the top of the proper position to prevent the sections from side bars, $D$, and enter holes in the side-board dumping.
of the rear section, and prevent it from tilting. From the foregoing description and refer$K$ represents a crank bar operated by the ence to the drawings, it is evident that if the lever, L, that moves J in its brackets. The wagon is loaded while in the position in Fig. 2,

COPE'S DOUBLE DUMPING WAGON.

neither part will tilt, and the load may consequently be carried to the desired place. It is also evident that after the load is transported to the place of destination, and the sliding locking bar, J, moved to the position shown in Fig. 1, the front section may be as easily
dumped as a short cart, and the other section can be dumped by withdrawing the catches, a. It was patented Oct. 20, 1857, by the inventors, M. Y. and T. J. Cope, of Centerbridge, Pa., who will be happy to furnish any further particulars.

## WOOD'S IMPROVED BREWER'S COOLER.



In the art of brewing it is essential that the wort, after being boiled with the necessary quantity of hops, and properly concentrated and rendered clear, should be cooled as rapidly as possible, to prevent acetification, or "fixing," as it is technically termed. The means employed at present to effect this object consists in having large shallow vessels constructed of wood, into which the liquor is poured, simple.
and employing horizontal fans, by which a powerful draft of air is created over the surface of the liquor. Success by this means is not always certain, and the liquor is often acetified before it is cooled.
This invention renders the speedy cooling of the liquor a matter of certainty, and the construction
simple.

In our engravings, Fig. 1 is a perspective view of the cooler, and Fig. 2 a section. Two plates of corrugated metal are laid on each other in the manner seen, $B A$, so that the corrugations form tubes, and they are closedslightly at the ends, and the depressions raised alternately, so as to open communication throughout the whole series. To this bottom are then placed sides, C, and a cooler is formed ; the wort is poured in, and cold water passing through the tube, D , into the tubes formed by the corrugations, passes through them in the direction of the arrows, and out at E. A continuously flowing stream of cold water is thus kept up, and the liquor is rapidly and surely cooled, when it can be removed by the pipe, $F$.

The inventor is Adam Wood, of Pittsburg, Pa., and he will be happy to furnish any further information concerning it. It was patented September 15, 1857.

## Air and Moisture.

Dr. Stark, Secretary to the Meteorological Art Society of Scotland, states that in Great Britain a certain amount of moisture in the air relative to its temperature is essential to health, and a deficiency in this amount is followed by an increasing mortality. By this is not meant the absolute amount of aqueous vapor in a cubic foot of air, but its relative amount. Thus, at a temperature of $30^{\circ} \mathrm{Fah}$. a cubic foot of air requires about two grains in weight of watery vapor to saturate it completely. But if the heat of that air be raised to $60^{\circ}$, it requires rather more than $6 \frac{1}{2}$ grailus in weight of aqueous vapor to produce the same amount of saturation. Yet both these airs are in the same relative state as to saturation with moisture, both have just that amount which they can easily carry. Meteorologists have agreed to reckon full saturation of the air with moisture, whatever be the temperature, as 100 ; and in Scotland the degree of humidity which appears to be most conducive to health ranges from $80^{\circ}$ to $85^{\circ}$ Thus, air at the temperature of $30^{\circ}$, with one grain and six-tenths of aqueous vapor, would be in the same state, as to moisture, as air at $60^{\circ}$ with $4 \frac{1}{2}$ grains in weight of watery vapor -both would indicate $50^{\circ}$ of humidity, and be in the best condition, in so far as amount of moisture is concerned, for the support of health.

Cisterns that will keep out Surface Water. A correspondent-C. A. White, of Burlington, Iowa,-informs us that the following method of building cisterns in moist ground will effectually prevent water soaking through them from the outside and inside also :-
"The bottom of the cistern is spread with hydraulic cement in the usual manner, then laid over with brick, upon which the wall is commenced about an inch, or an inch and a hall from the earth all around. When the wall is about four courses high, the interstices between the wall and the earth are filled with grout, or the ordinary cement, made very thin, and poured in ; then build up the wall, and fill in with grout as before. When the cistern is plastered inside, the wall is completely encased with a coat of cement, that prevents the passage of water both ways."

Two schooners have already cleared from Detroit, Mich., this season, direct for Liverpool, and seven more are to sail on like voyages during the present month. Their cargoes are principally staves and other small hardwood timber.

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Issued from the United States Patent Office or tar wrat ending may 11, 1858 Reported oflcally for the Scientific American.]














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 mechanism for twisting the bends around the grain in the reeeptacle, and $a$ diacharging deviee the whole
being attached to the machine, and arranged so that
 diecharged upon the ground.]














 foundation
founi inv
CThis invention consists in a plate of steel having its
transverse section formed with a concave arch for the transverse section formed with a concave arch for the
greater portion of itslength, and having float or file-like greater portion of itslength, and having float or file-like
teeth on its concave-arched face and eyes at its ends; which admit of tacks or screws to attach it to the frame
of a shate. The pencil is held in proper position and of a slate. The pencil is held in proper position and
scraped along it, and the teeth cut it to a point.] scraped along it, and the teeth cut it to a point.]
Crmer Mils-Michael Stevens, of Lucas, Ohio: claim the arrangement of the s.everal parts for the pur-
pose "of retaining the liquor," and in the manner set
forth.
 proper, C , ana placed relatively with the si
to operate as and for the purpose set forth.
Thiskle attached to the shoe at the outerend of the curter bar, and arranged so as to be operated from any of the bar, and arranged so as to be operated from any of the
usual reciprocating sickles, and at the same time to cut vertically and at right angles with the sickle proper. The object of the invention is to cause the cut grass or
grain to be perfectly divided from the standing grass or grain, so that a clean, close, and even swath is obtained, r the team.]
 provided with one or more tongues, i, attached to the
frame, A, at one end. by means of a sliding joint and
attached ant ane aposite end the frame by means of a
ath catch, h, and dove-tail connection formed by thie groove,
f, in the croos pioee, g, of the frame, and the
beveled front endee of pate, Be the whole being ar-
ranged as and for the, purpose get torth. ranged as and for the purpose set forth.
(There is a plate attached by a sliding joint to a There is a plate attached by a sliding joint to a
frame, the plate being provided with one or more
tongues, and so arranged in connection with a catch tongues, and so arranged in connection with a catch
that the tug can be readily adjusted so as to be of greater
or less length as desired, and at the same time the conor less length as desired, and at the same time the con-
nection rendered more secure than in the usual way.]

## 









 [A notice
column.]

## 



 and





[This is an improvement on that class of washing machines in which an oscillating and curved corrugsted
rubber is employed in a box with a corrugated bottom. rubber is employed in a box with a corrugated bottom.
The improvement is in the hanging of the rubber and The improvement is in the hanging of the rubber and more perfect cleansing of the fabrics to be washed.]


 [This was refered to in conjunction with another ironing table by the eame invertor, of which we
ishee an en engraving andd deesription lisat week.]

 ment. 1








power, thee leabt this invention is to render available as
 scroll, and has hitherto been wholly lost, diminimbing
toa condiderable e eetree the maximum power of the

 get ofth.












## $\underset{\substack{\text { Inl } \\ \text { adj }}}{\substack{\text { al } \\ \hline}}$



 the purposes set forth.
Dregsing $\frac{\text { ND }}{}$ Stung Waps-william Bradey, of




 Harvergres-C. B. Brown, of Aiton, III. : ir amm
aware that endies aprons have been appiled to harvest-



 shownt ilaim placing the endless apron, F in an ob-
But
Iique position with the ickle, E , so as to operate as and
 eral parts are placed relatively with each other as
shown , eo as to operate as and for the purpose epecified [A notice of th
another column.]




 the whole are onstructed
for the purpose specified.
FAsteners ror SLEEVE Butrons-Henry Cogswell,
of Providence, R. $I$ i. I claim constructing sleeve but-

 [This invention consists in pivoting a bar to a projeceing secured to a projection at the opposite end of the plate by a "snap ;" the whole being so arranged that
ne button is made to answer the purpose of two linked one button is made to answer the purpose of two linked plates that have hitherto been used.]
Harrows-Jonas C. Conkey, of Washington, Ohio
I claim the combination of the tinge, i, axle
, I, and axietree, C , when arransed in conncection with revolv-
ing harrows, as described, for the purpose set forth.
 arranged dreatively with each other, substantially as
and for the purpose set forth. [This invention consists in the use of a beater and
screen peculiarly constructed, and arranged relatively with suction spouts and a fan, whereby a machine ex-
ceedingly simple and economical in its construction is obtained, and one that will separate smut. dirt, and all freign blances from grain.
Hos Macinse-Lovett Eames, of Kalamazoo, Mich:
I claim operating or fiving the teed movement to the
carriage, B , in which the mortising tool is fitted or
 ih, on the shaft, I, which is rotated from the driving
shat, F , the parts being arranged as shown, or in an equivalent way, to operate as described.
[An engraving and description of this will be found n another page.]
Reclining CuAIr-Augustus Eliaers, of Boston, chairdescribed, where by the back, foot-rest, \&ec., are
smstainec and atetuated as aneeciffed, and the foot-rest
made adjustable, and locked in any desired position, as

 arm, whereby $I$ am enabled to obtain a very long arm,
PIPES For Smosing Toisacco-James W. Evans, of
New York City I claim the combination of the bubl
or
 Watre Whels-J. H.Fairchild, or Jericho, Vt.: I I
do not claim, separately, the draft tube, F, for that has
ben
 whole being arran ged to operate as described. I allso claim, in combination with the wheel and
draft tuue, the gates, E E, arranged as described. [This is an improvement in that class of water wheels in which the water is made to act upon the wheel by
means of atmospheric pressure or suction, produced by a vacuun formed in a draft below the wheel. The invention consists in the peculiar construction of the
wheel and gates in connection with the draft, whereby Whece and gates in connection with the
the wheel is made exceedingly simple.]
 movable detents, as that has been used by John Harri
son and onthers (ive e. Reid on Clock and Watch-mak
ing., page 205). But I clain the invention of a verge with movable
detents, zo constructed that in thevibrations of the pen-
dulu dulun or balance each detent will be carried on, nearly
on, or past its dead center, so as to greatly lessen the
recoil of the movement.
PResReve CANB-Edwin W. Gilmore, of North Eas-
thon, Mases. I Claim the arrangement of the arm, and
the cam, and the bar B whereby the cam is not only made to operate to ald in strengthening the bar when
supported as described, but the arm is enabled to oper.
ate as a stop to maintain the cam in place while forcing

BEE Hivge-Edward P. French of Nashua, N. H•: I
am aware that it is not new to place a feeding chamber in front of the hive, or the end therefof; also, that it it
not new to arrange a feeding chamber in one of the nocnew ro arrange a feeding chamber in one or line
secondary chambers or thoney boxes. I do not claim
such as in the one case the ced chamber is exposed to such, as in the one case the efeed chamber is exposed to
robber bees, while in the other it is arranged in an inn
convenient manner, and is objectionable in many re-
onect spects. Ilaim making the lower part, or both sides, of the
main chamber, B inclined toward the orifice of en-
trance trance, e, in combination with the arrangement of an
exercising and entrance chamber, $\mathrm{D}_{\mathrm{G}}$ chamber, F , feed.
in? box, h , warm air spaces, $\mathrm{G} G \mathrm{G}$, and air or venti-
 lating passage, o, eeading from the exercising chamber
phapard against the front sides of the secondary
chambers, and over their tops into the chamber, $\overline{\mathrm{I}}$, the

 several parts being arranged as respects each other, and
sonstructed as described, for the purpose setforth.
Printing Presses-G. P. Gordon and F. O. Degener,
of New York City: manner of hanging or arranging the reciprocating bed,
K, for that is alreay patented, as previously stated.
Nor do we clain, broandy, giving a continuous rotary motion to a cylinder, when used withl a reciprocating
bed, as this has been previousy done, and is common
to many cylinder presses in use Bany cylinder pressesin use.
Butaim communcating onotion to the cylinder
at the time of giving the impression, by and through the motion of the bed, while the revolution of the cyl-
nder shall be perfected by or through ordinary gearing, or other means entirely ind ependent of the motion
of the bed, thus alternating from one of these means to
theother, to give a fullrevolution to the ecylinder. [A n
Paint Conponnds-William G. Huyett, of Williams-
 known or used.
I claim as a new article of manufacture, a paint com-
pound convosed of ground calcined iron ore, lime,
and carbon, in about the proportions specified. [This is a cheap paint, and of great durability.]
Sora Dedstrad-John Irwin, of Philadelphia, Pa.: I I
am aware that the branches of gate hinges have been
 in its application to sofa bedsteade, forms, I beli ieve,
both an mportunt and a patentable inmpovenent. I claim the d escribed hinge, in combination with the
back and $\operatorname{seat}$ of soofa bedsieads, for the purposes sub-
stantially as set forth. Courvarors-L. W. Kelley, of Brunswick, Ohio : I
claim the comhination and arrangement ofthe teeth
beams, B B, with their attaching and adjusting bars, E beams, B B, with their attaching and adjusting bars, E
E and G , and the scrapers M M, with their attaching E and G G, and the scraperg, M M, with their attaching
and adjustog dors, Land ${ }^{\text {G }}$ G, with each other, , and
with the contral beam, A, substantially in the manner Copr Muls-Charles Leavitt, of Cleveland, Ohio: I

 diaphragm, M, upon which the grind in the manner specified. Also dividing the surfaces of
the two grinders into an unequal number of parts or
 the diaphragm, M, when arranged in relation to the
support of the gpidle, , and grinder, R , and the col-
lecting and discharging on the lection and discharging of the meal at one point, as
epecined. these everal devicee
as described, and appliied whan to the purpose set forthnged
 ingit, with a can having an arrangement for discharg-
ing is contents in auch a manner, that whenever any
oud is drawn off, air. or foud is drawn off, air, or gas deprived of the primany
couse of decomposition, shall suppy its place, substan-
tially as and for the purposes specified.
 by a ongitudinal rotary and under the truck, combined
with camb, C C $\mathrm{C}^{\prime}$, urranged and operating snbstantially
es described. I also claiim, in combination with the rods and cams
of the several cars, as deseribed, the universal joint
coupling H, constructed and coupling H, constructed and operating substantially
as specifed, to connect the aforesaid rods throughout I frain.
Ifther claim transmitting the power to rotate the
rodthrough aspringininicating apparatus, substantialSAAB FAARTENER-F. W. Brocksieper and J. B. Sar
gent (assignorsto J. B. Sargent), of New Britain, Conn. gent (assignorsto J. B. Sargent) or New Britain, Conn:
Ve claim the obot, D, an an attachment a soan fas:
tencr, operating substantially in the manner as de-
 he screw, a, and nut, , , In combination with the ropes
oprataing in the manner substantially as set forth.
Second, And in comblnation with the above, we Second, And in comblnation with the above, we
claim the described tightening apparatus, or any equiv-
alent thereof, arranged in thc manner set forth for the purpose specined. combination with the described ar-
Third, And iu
rangement of ropes or chains as applied to "mechanical steevers," we claim the enployment of springs operat-
ing as described for the puriose specified. Candy Maobinvg-G. P, Farrington and Samuel
Brovn Jr.
ofssigncrs to themelves and D. B. Tiffany), of Xenia, Ohio: We do not ciaim the endiless apron, al.
thongh we do onot know of its ever being used in the manherdescribed.
What we claim is
 rops witcione stroke of the knife working vertically
n connection with the eadjustable pitman, or any other means substantially the same, producing the same
effect.
 as shown and described of the head, B, joint, C, strap,
c, , plate d, leo E, and cord or wire, F, whereby all projecting arms are dispensed with, so that the instrument
when not required for hoisting purposes may be used
ws a [J̌ee a descript
 asphalt, coal tary, resin orshellac, or othersimilar subpreviously y nissolved by meaber, nor with val canized rubber
solvents. solvents.
But I laim the restoring of waste vulcanized rubber
by grinding it and mixing it with asphalt, coal tar, resin, pitch, sheilac, or other similar sinbetances, so that
it can be used again in the manufacture of vulcanized rubber fabrics, and be as serviceable, or nearly sor as
whenthe abrics are made with the use of the native
rubber.








 [This invention was noticed on page 99 of the present
volume, and has now been re-issued in an amended Volume,
form.]





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 fied as essential features, substantialy asd eseri beed, or
any equivaleats for any or all of the said features. DRsians.
Toou Boxes-Herrick Aiken, of Franklin, N. H.

 ${ }_{4}^{\text {chato }}$


## Petrif ying Wells.

Let us away to the hills, to the green meadows decked with daisies, to the field path, to the banks of Derwent's stream. This is the village of Matlock, nestling in the bosom of mother earth, a charming spot in the plains of Derbyshire, famous all the world over for its petrifying wells.
These are the Hights of Abraham; that towering rock is High Tor, "frowning at night and smiling in the morning;" between them flows the river Derwent. From the sides of these rocks little streams issue, and
(marvelous as it may seem) everything this (marvelous as it may seem) everything this fiction, runs over turns to stone! This is no you take a favorite rose bush, and so place it as to allow the stream to drip down its thorny side, it will, in the course of twelve moons, become petrified-a rock of beauty, in fact, def ying the sculptor's art. No matter what you put there, the effect is the same. Some of the wicked wags of Matlock went over to Ambergate one evening, and stole from John Wiggins his wig, which they placed in the petrifying well, and it was turned to stone The favorite things to petrify are birds' nests and eggs, which are very beautiful. The three petrifying wells here are literally filled with all sorts of things undergoing the rockification process. Many of these things have been brought from a great distance, (even
from Canada and Ceylon,) as tokens of affection and love. Toys, once the favorite playthings of a now departed child, are here petrified ; and thus they become a real treasure the only one mamma has left.
With very few exceptions, springwater contains lime, magnesia, and other stony stuff dissolved in it, which accumulates during its subterranean travels. You know that if water runs over a bed of sugar, a sweet well is the result. In Cheshire there are salt beds; these produce salt or brine wells, from the springs of water that come into contact with them. Thus we have also water containing lime, magnesia, strontia, and baryta. The petrifying springs that trickle out of the perpendicular sides of Mount Abraham and High Tor, at Matlock, are highly charged with lime; on exposure to the air, a large portion of the water evaporates, and the lime remains; whatever this reduced quantity of water trickles over, theref ore, soon becomes coated with a thin film of lime, which increasing in substance partakes of the property of limestone. Woody fiber that will absorb the water will have lime deposited within its cells, and which, hardening to the consistence of stone, imparts at length that solidity which we call petrifaction.
The petrifying wells, however, are not the only natural curiosities that are to be seen at Matlock. You can, if so disposed, penetrate into the earth's crust. What is called the Speed well lead mine is in truth a crystal cavern of resplendent beauty, full of stalactites and staglamites, spar, dogtooth crystals of carbonate of lime and doubly refracting spar.

As you walk through the Straud, in London, the shop of Mr. Tennant, the mineralogist, will be likely to arrest your attention, for in the window may be seen a fine specimen of this double refracting spar from Derbyshire. If you draw a black ink line on a piece of paper, and look at it through this glassy spar, there will appear two lines. Everything, in fact, appears double that is seen through it. Now the production of all these beautiful cry stals, these stalactites, these staglamites, these spars, has been the work of many hundreds of years. Chemistry assures us that they are all composed of the very same ingredients as are now found in the waters of the petrif ying well.

Septimes Piesse.

## The American Horse.

It appears to be a matter of history that the horse, which is now so extensively distributed, both in a wild and domestic condition, throughout our continent, was not an inhabitant of it when America was discovered by Columbus. It is stated that the first European horsemen were taken to be strange be-ings-the horse and his rider as one person-
by the aborigines of our country. Although this is probably true of the horse, yet recent scientific explorations go to prove that he was an old resident of the New World as well as the Old.
Professor F. Holmes, of Charleston, S. C., has discovered several fossil teeth of the horse in a post-pleiocene deposit on the Ashley river, and several teeth have also been exhumed by Col. McChesney, of Troy, N. Y., in his garden. The fossil American horse appears to have been cotemporary with the mastodon; and some of our naturalists have been speculating on his age, and the unity of the species. Agassiz, who is at the head of our naturalists, does not believe in the unity of the species of men or brutes, and the tendency of the belief of his school of naturalists is, that the horse and man were inhabitants of this continent many thousands of years before this world was created-according to the popular belief-about six thousand years ago. It is all vanity to speculate on these questions of time in regard to natural events, they never can be settled. It would be more wise and profita ble for these philosophers to devote attention to the discovery of the caise or causes which led to the extinction of those horses which once inhabited America; because the same causes which operated then to destroy large numbers of animals-completely annihilated them-may operate again to produce like effects. In our opinion, there was at one period perfect land communication between the Old World and the New. The old tradition that there was once a great, rich and populous country, known to the ancients, and called "Atlantis," which was swallowed up by a storm in the Atlantic ocean, may be founded on fact.

## Yield of Maple Sugar.

The Montpelier (Vt.) correspondent of the Boston Traveler writes that the maple sugar season is about over, the crop being a full average one, or a trifle less than three pounds to the tree. Last year was an extraordinary season, the yield being over five pounds to the tree, or nearly enough, if equally distributed, and all kept for home consumption, to have supplied every family in the State.

## Eth nography.

This science, one of modern creation, describes the customs, religion, and, in fact, everything which is characteristic of a nation. The importance of pursuing it as a study cannot be too highly estimated in this traveling age, and it takes an equal place with geography and history, for without them it cannot be understood, and at the same time its facts throw much light on them.

## Correction.

In our last number, in the description of $W$. Vandenburgh, Jr.'s ironing table, we stated that it was patented April 6, 1856; it should be 1858 .

Atmospheric Railways
In the article on this subject in the "New American Cyclopædia," just publishing, there is considerable information in relation to what has been done in this branch of the engineer ing art in Europe, but there is nothing said about what has been done in America. This is to be regretted, as considerable inf ormation might have been obtained to have redeemed the work from the charge of "an incompe tent compilation," and which might have made its character more in accordance with its name, as an American work. If the pages of the Scientific American had been consulted, the editors would have found Ira Avery's atmospheric railroad illustrated on page 273, Vol. III, for which an American patent was granted in September, 1847; and on page 265, Vol. VIII, they would also have been enlightened with an illustrated description of Richardson's atmospheric tubular railway, which made considerable noise in Congress a few years since on account of appropriations being asked, for to construct a government line.

Recent Patented Improvements.
The following inventions have been patented this week, as will be found by referring to our List of Claims :-
Hemp Harvester.-C. B. Brown, of Alton, III., has invented an improved machine for harvesting hemp, the invention in which consists in the employment of an endless apron and guide rods arranged relatively with each other and the sickle or cutting device, whereby the hemp as it is cut, and one swath formed, is conveyed back from the sickle and deposited on the ground at a sufficient distance from the standing hemp, to allow an unobstructed walk or track for the team when the succeeding swath is being formed.
Printing Press.-This is an improvement on that class of printing presses, in which a continuous rotating cylinder that receives the sheet to be printed is used in connection with a reciprocating bed on which the form is placed. The object of the invention is to simplify in a great degree the construction of such presses, and also to obtain a positive or vibratory movement of the cylinder and bed relatively with each other at the time the impression is given to the sheet, thereby ensuring a perfect register and a clear impression. G. P. Gordon und F. O. Degener, of New York, are the inventors.
Burner for Vapor Lamps.-Thos. Varney, of San Francisco, Cal., has invented an improved construction of burners for burning the vapor of Benzole, or of other hydro-carbon that can be burned in vapor lamps. They are made in such a manner that the admixture with the vapor of the necessary quantity of air supplied by a blowing apparatus to make it burn with a brilliant light shall be effected within the burner instead of within the reservoir, as is now usual.

Brushes.-J. H. Tatem, of New York, has invented an improvement in the manufacture of brushes, which consists in having the back of the brush in which the bristles are secured formed of a thin metal plate, the bristles being secured in this plate detached from each other and at equal distances apart. The object of this invention is to obtain a brush that can be readily cleaned, which will not absorb grease, and will not in any way be affected by moisture, and hence be exceedingly durable, and at the same time not more expensive than those at present in use.

Hay Fork.-This invention relates to an improvement in that class of hay forks in which a tackle is used for elevating the loaded fork. The invention consists in attaching to its handle by means of a joint and securing the rake when loaded in a proper relative position with the handle by means of a catch or fastening connected with a rope, which is also attached to the handle. The parts are arranged so that the fork may be readily elevated and loaded and unloaded, the manipuChas. E. and Joseph N. Gladding, of Troy, Pa., are the inventors.

