

# Scientific American.

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

VOLUME 5.]

NEW YORK FEBRUARY 23, 1850.

[NUMBER 23.]

THE  
Scientific American,  
CIRCULATION 14,000.

PUBLISHED WEEKLY.  
At 129 Fulton Street, New York, (Sun Building,) and  
13 Court Street, Boston, Mass.

BY MUNN & COMPANY.

The Principal Office being at New York.

Barlow & Payne, Agents, 89 Chancery Lane, London  
Geo. Dexter & Bro., New York City  
Stokes & Bro., Philadelphia.  
R. Morris & Co., Southern.

Responsible Agents may also be found in all the  
principal cities and towns in the United States.

TERMS—\$2 a year—\$1 in advance, and  
the remainder in 6 months.

## Rail Road News.

### Alabama and Tennessee Railroad.

The Selma Reporter speaks very confidently  
of the prospects of this road. The Reporter  
says:

Last Tuesday the Engineers of the Alaba-  
ma and Tennessee River Railroad returned to  
this place from a reconnoissance of the road.  
They went as far as Gunter's Landing, and  
report very favorably as to the excellence of  
the route.

Mr. Troost is now on a hasty visit to Mobile  
and after his return two corps of Engineers  
will immediately enter on a survey of the route,  
one to start from Selma, the other somewhere  
about Talladega. The work may now be con-  
sidered fairly under headway, and under the  
able management of its President, Mr. Laps-  
ley, it will be pushed on to a speedy comple-  
tion.

We are gratified to hear of the favorable  
prospects of this great and important work.—  
The Legislature has been, we are glad to per-  
ceive, quite just and liberal towards the road.  
The unappropriated half of the two per cent  
fund has been granted to the company, and in  
addition \$100,000 of the three per cent fund.

This places a handsome sum at the disposal  
of the company, and if the Directors put the  
"right foot" forward the work will go ahead.

### Railroad Movement in St. Louis.

A "Pacific Railroad Company" has been  
organized in St. Louis, authorized to construct  
a railroad from St. Louis to Jefferson City and  
thence to some point on the western line of  
the State, "with a view that the same may be  
continued, hereafter westwardly to the Pacific  
Ocean." Subscriptions to the amount of \$154,-  
000 were made towards the road.

Mr. Neville, the English engineer, has sub-  
mitted a design for a railway bridge over the  
Rhine at Cologne, which has met with great  
favor. It comprises a double line of rails, a  
road traffic way, and way for foot passengers  
on twelve piers, leaving thirteen openings of  
one hundred feet each.

### Vermont Valley Railroad.

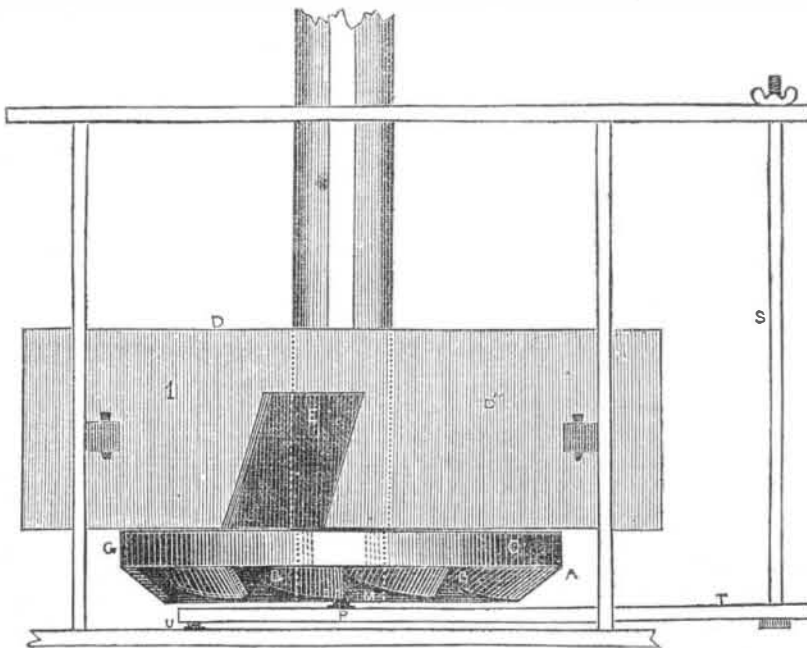
The Messrs Schuyler, of New York, have  
taken the contract for building the Valley Rail-  
road between Bellows Falls and Battleboro', at  
\$800,000 for the whole route, land damages  
excepted.

### Relief to Travellers.

A correspondent says "The greatest trouble  
of the traveller coming from Philadelphia to  
New York is the hackmen on the North River  
This will soon cease. Responsible men, with  
sanction of the company, now enter the cars at  
Newark. They have a box, take the "bag-  
gage tins" of the traveller and his address, and  
safely deliver the trunks, bags, &c., leaving  
the passenger to walk home quietly. This is  
a great improvement.

A farmer at Bowes, Yorkshire, Eng., whose  
farm is on the site of an ancient Roman en-  
campment, has recently found six large gold  
oval rings, weighing nineteen oz. of pure gold.

## EMANUEL PARKER'S IMPROVEMENT ON WATER WHEELS.—Fig 1.

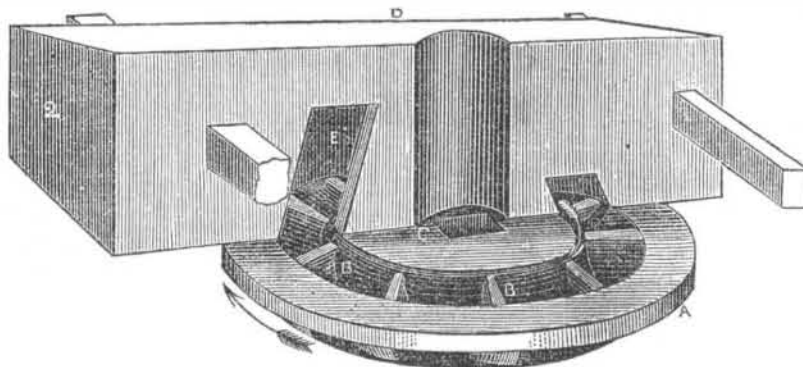


We hereby present two engravings of the  
improved Water Wheel, invented and patented  
by Mr. Emanuel Parker, of Camden, in South  
Carolina. This wheel has been much spoken  
about, and many enquiries have been made  
respecting its nature, qualities and mode of  
construction. Figure 1 is a side elevation of  
the wheel, showing the shaft, bridge, tree, and  
and part of the frame-work of the mill. Fig-  
ure 2 is a perspective view, showing a section  
of the block and wheel combined—the larger  
section of the block being removed for clear  
demonstration. The same letters refer to like  
parts on both figures.

The wheel, A, is constructed in a peculiar  
manner, with buckets, B, and rims, C, formed  
of a curvature, to produce the greatest effect  
with the least quantity of water. With this  
wheel is combined a cap, D, in which is a cir-  
cular tapered water-way, E, which is formed

for introducing the required quantity of water  
to the buckets, and at the same time prevent  
the main body of the water in the cylinder  
from pressing upon the wheel. This cap is  
composed of two blocks of wood, D, D,  
which are dowelled and keyed together, and  
arranged above the wheel in such a manner  
that the wheel will revolve without touching  
it, and a section of it can be easily removed,  
to remove any obstruction that may get into  
it. This wheel may be made out of one cir-  
cular piece of wood, or of several pieces se-  
cured well together, and well banded round the  
shaft, a small band (not seen) being well se-  
cured and also a larger one, G, as repre-  
sented. M is a boot in the centre of the bot-  
tom of the shaft, and on the bridge tree, T,  
there is a pivot, P. The boot is sometimes  
called the ink. U is an axle on the bridge-  
tree; S is a rod to raise or lower the bridge-tree.

Figure 2.



D is the cap; 1 and 2 are breasts through  
which the water enters. The cap does not  
touch the wheel, but makes a close joint to it.  
E is the water flue.

To make the buckets, two concentric circles,  
8 inches apart, are described on the top of the  
wheel, leaving a margin of 4 inches next the  
periphery from the outer circle. A bevel is  
made up from the inner circle of 45 degrees,  
and from the outer one of 10 degrees, to make  
the face of the buckets about 7 inches, thus  
bringing the bevels towards one another. The  
buckets are then laid off (8 or 10) allowing  
two inches for the lap of the buckets, and a  
bevel gauge is used to indicate their slope,  
commencing at 4 inches from the edge, bevel-  
ling to the bottom, until a face of 7 inches is  
obtained, which will be the case when finished  
at an angle of 45 degrees. The wheel is then  
turned over, and a bevel is made at the bot-

tom with the edge next the centre square.—  
The buckets are formed or excavated, begin-  
ning in the angle of 10 degrees, working out  
at the edge and bottom at an angle of 45°,  
having an equal and regular twist in the buck-  
ets, all the way round to the ends thereof,  
leaving a space between the buckets of two or  
three inches, as may be wished, having in  
view the quantity of water to be used. The  
capacity of the buckets must be calculated to  
receive and let off the water, allowing one-  
fourth more water to be applied to the cap  
than the buckets can readily carry off.

The cap D is made with the timber about  
6 feet long. No. 1 must be about 2 feet wide  
20 inches thick at the edge next the breast,  
and 16 inches at the other end. No. 2 is 16  
inches at the breast next No. 1, and 12 at the  
other, with a mortise near each end for the  
keys, and after they are keyed together the

water flue, E, is laid off by the circle of buck-  
ets in the wheel. It is 18 inches deep when  
it enters No. 1, and is made at an angle of  
about 20°, pitching down and outwards, main-  
taining the same angle all round, and when it  
enters No. 2 it will be 13½ inches deep, and  
when it enters No. 1 again it is 4½ inches deep,  
and it goes out at a point as near where it  
started as possible, so as not to cut into it.  
The cap may be confined down near the face of  
the wheel in various ways—that piece next  
where the water enters at No. 1, is made fast  
to the rests on which it lies. The other piece,  
No. 2, after being keyed, is held down by a  
small brace, so that it may be removed with-  
out much trouble, and any repairs required  
may also be easily made by the removal of  
said piece.

The claim of this patent is having buckets  
made in the manner described, with a circular  
tapered water-way or flue inclining towards  
the periphery of the wheel for the purpose of  
introducing the water to the buckets at the re-  
quired angle and in quantity, and preventing  
the main body of the water resting upon the  
wheel, the core being formed like the frustrum  
of a cone, and the inner side of the rim sloped  
or inclined outwardly at the same angle as the  
sloped side of the cone, the periphery of the  
rim being vertical and the top horizontal, and  
the buckets between them being the sections of  
a screw, whose upper ends are made to incline  
inward on radial lines towards the core at  
an angle of about 10 degrees. The water-  
way or flue forms a segment of a circle gra-  
dually lessening in depth, from the place of  
entrance to where the end of the circle nearly  
intersects the place of beginning, the said flue  
inclining from a perpendicular line about 20  
degrees, so as to pitch the water against the  
buckets at that angle, causing every bucket of  
the circle to be acted on simultaneously, the  
water escaping therefrom in a contrary direc-  
tion to that at which the water enters, and  
the pressure of the ink (boot) upon its pivot,  
P, is removed.

This patent was issued three years ago, and  
from the many enquiries made respecting its  
merits, has resulted the publishing of the above  
from the specification, varying from it some-  
what in language, but not in nature.

Any communication addressed (p. p.) to Mr.  
Parker, at Camden, S. C., will meet with  
prompt attention.

### Phenomenon in Oregon.

In the Cascade mountains, in the month of  
last November there were heard loud reports,  
like distant thunder, and immediately after  
Silver Creek dried up for 24 hours. When the  
water did resume its course, it was so through-  
ly impregnated with alkaline substances as to  
have the appearance of strong lye, and as also  
to cause the death of the fish in the stream.—  
About the time of the occurrence strong winds  
prevailed from the south, a heavy fall of ashes  
was noticed in most parts of this valley, and a  
dense cloud of smoke settled in the atmosphere,  
shutting out the light of the sun for nearly a  
week.

### The Real and Ideal.

The mind of a man is like a moving picture,  
supplied with objects not only from contem-  
plation on things present, but from the fruitful  
sources of recollection and anticipation. Mem-  
ory retraces past events, and restores an ideal  
reality to scenes which are gone by forever.—  
They live again in revived imagery and we  
seem to hear and see with renewed emotions  
what we heard and saw at a former period.—  
Successions of such recollected circumstances  
often form a series of welcome memorials.

The debt of Allegheny City, Pa., is \$343,-  
627. It shows assets, to balance this, amount-  
ing to \$338,642.