

Scientific American.

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

VOLUME 5.]

NEW YORK FEBRUARY 16, 1850.

[NUMBER 22.]

THE
Scientific American,
CIRCULATION 14,000.

PUBLISHED WEEKLY.
At 125 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—\$3 a year—\$1 in advance, and
the remainder in 6 months.

Rail Road News.

Baltimore and Ohio Railroad.

The Cumberland Civilian of Friday says:—
"The Baltimore and Ohio Railroad west of this
place is progressing as well as could be expect-
ed at this season of the year. Now and then
a snow storm comes and stops the work for a
day or so. But the snow stays not long, and
the never-failing effort that is always made in
such cases to regain lost time in a little time
brings all up square again. The work is push-
ed on with great energy."

Covington and Lexington Railroad.

The Cincinnati Gazette is urging the Cincin-
nations to subscribe to the stock in the proposed
railway from Covington to Lexington. The
Gazette states that stock to the amount of
three hundred thousand dollars has been taken
in Covington and the neighborhood. In addi-
tion to this sum, the friends of the project ex-
pect to procure subscriptions to the amount of
two hundred thousand dollars in the counties
through which the road, when completed, will
pass.

Railroad to Montreal.

We learn from Plattsburg Republican, that
a large meeting of the business men of that
place, was held last week, to take into con-
sideration the project of building a road from
Plattsburg to the Canadian line to connect
with a projected road to Montreal. This road
if built will give a direct railroad and steam
boat communication with Albany and Mon-
treal.

The Charleston and Memphis Railroad.

We learn from the Memphis Eagle of the
21st ult., that the most enthusiastic feeling
prevails in Northern Alabama with respect to
this road, and that there is a fair prospect of
its vigorous commencement and speedy com-
pletion.

Milwaukee Railroad.

The road from Milwaukee via Waukesha to
the Mississippi, is in course of rapid con-
struction. The Board of Directors have just pub-
lished a favorable and encouraging report.

A Railroad is proposed between Newport
and Fall River, to connect with the Boston
and Fall River Road.

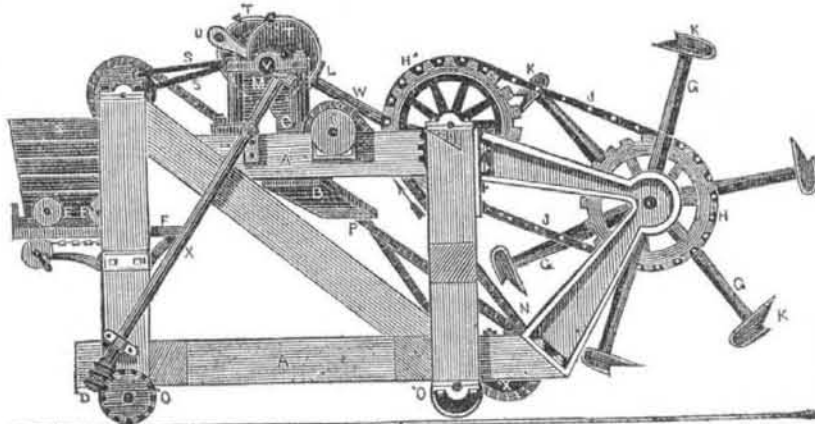
Dry Dock Sunk.

The largest of the Louisiana Dry Docks, at
Algiers, sunk in deep water. The dock had
been sunk for the reception of a ship, to the
usual depth and when the pumping machinery
was put in operation the whole dock was
found to be in a sinking condition. It is esti-
mated that the expense of raising it would be
at least \$10,000.

Warm Reception.

The whale which made a pleasure excursion
into Provincetown harbor last week, was very
inhospitably treated by the people of that place,
being harpooned and cut up within an hour
after his arrival. He made about fifty barrels
of oil.

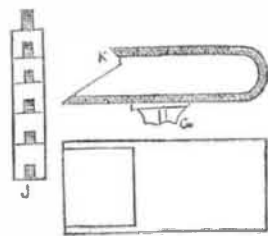
IMPROVED EXCAVATING MACHINERY.—Fig. 1.



This arrangement of machinery is to place
the cutting buckets on revolving arms, to
scoop up the soil in the embankment, and deli-
ver it in proper channels to conduct it away.

Fig. 1 is a side elevation, and figure 2 shows
the cutting scoop enlarged—a side and a plan
view, and the chain, J, on an enlarged scale
also. A represents the frame mounted on
flanged tyer wheels, O 1, for the purpose of
travelling on the rails of the road. There is
an angular frame in front, carrying the shaft
of the revolving cutters, K K, which are at-
tached to the arms, G G. W is a spindle
with a bevel wheel, L, on it to receive motion
from a bevel pinion, M. (dotted) on the main
shaft, V. The said spindle, by a screw on its
lower end, communicates motion to a bevel

FIG. 2.



The Arctic Regions.

Along the whole of the limestone strata of
these regions are innumerable lochs, or fresh-
water lakes, presenting a singular spectacle.
Although they have been waded in for miles,
the depth is never more than from one to three
feet. All these lochs and pools swarm with
myriads of minnows, or the very small fish
known by the name of barnsticles in the north,
and in the winter the water around those fish
becomes a solid mass to the bottom and the fish
are often found in clusters, and so brittle that
their bodies may be broken like a piece of glass,
and yet on the ice thawing, animation is again
established, and they become as lively as ever.
Assistant surgeon Henry Mathias, of the En-
terprise, belonging to the recent Arctic expedi-
tion, had some of the ice, with a cluster of min-
nows, placed in a tumbler, and when gradual-
ly dissolved, it appeared very pleasing to wit-
ness the re-animation of these fishes under a
milder temperature. The late gallant officer
attributed the phenomenon to the heart of the
little fish being surrounded with a fat oily li-
quid, which is never liable to be frozen; and
was further confirmed in his impression, by as-
certaining that while every other substance on
board the vessel, unless carefully kept, was
frozen, and had to be cut and heated before use,
a cask of Stockholm tar of fat, standing on the
deck at the time of the very lowest temperature,
was not in the least frozen, and when required
could be poured out to the very bottom, like
treacle. The Enterprise and Investigator are
now on their voyage again in search of Sir
John Franklin. The only shadow of a hope
for him is the fact that nothing whatever has

been heard of him or his crew, which consisted
of more than 100 hardy and able men.

Insects.
In a recent lecture delivered before the
American Institute, by the celebrated Profes-
sor Agassiz, he stated some curious facts re-
specting insects. He said more than a life-
time would be necessary to enumerate the va-
rious species and describe their appearances.—
There are numerous species collected in the mu-
seums of Europe, but they form only a small
part of the whole number; and even of these,
the habits and metamorphoses are almost en-
tirely unknown. Meiger, a German, who de-
voted his whole life to the study, had collected
and described six thousand species of flies,
which he collected in a district ten miles in
circumference, but of their habits he knew
scarcely any thing. They have been collected
in Europe twenty-seven thousand species of in-
sects preying on wheat. In Berlin two profes-
sors are engaged in collecting, observing and
describing insects and their habits, already they
have published five large volumes upon the in-
sects which attack forest trees.

A Long Fast.

A Letter in the Boston Post from South Wey-
mouth, relates that a resident of that place,
happening to take a ramble through a piece of
woods, on Sunday, found inextricable entan-
gled amid some trees, a vehicle called a buggy
—the horse alive but emaciated, and almost
frantic with hunger. The horse and buggy
had been missing four weeks, the animal hav-
ing strayed away, as is supposed, from Abing-
ton.

For the Scientific American.

Palmer's Patent Leg.

HALL OF THE FRANKLIN INSTITUTE, }
Philadelphia, Jan. 11, 1850. }

The Committee on Science and the Arts,
constituted by the Franklin Institute of the
State of Pennsylvania, for the promotion of
the Mechanic Arts to whom was referred for
examination an Artificial Leg, invented by
Benjamin Franklin Palmer, report—

That the peculiarities of this invention con-
sist in part, first,

An ingenious arrangement of springs and
cords in the inside of the limb, by which,
when the wearer is in the erect position, the
limb is extended and the foot thrown forward,
whilst, when he is seated the limb remains
flexed so as to present a natural appearance.

Second—By a second arrangement of cords
and springs in the inside of the limb, the foot
and toes are gradually and easily extended,
when the heel is placed in contact with the
ground.

In consequence of this arrangement, the limp-
ing gait and the unpleasant noise made by the
sudden stroke of the ball of the foot upon the
ground in walking which is so obvious in the
ordinary Leg, is avoided.

Third, By a peculiar arrangement of the
knee-joint it is rendered little liable to wear,
and all lateral or rotary motion is prevented.

It is hardly necessary to remark that any
such motion is undesirable in an artificial leg,
as it renders its support, unstable, &c.

The pressure of the artificial leg is made
uniformly upon the surface of the sides of the
stump, and not upon the end, by which ar-
rangement the danger of ulceration and in-
flammation of the flaps covering the end of
the bone, is, in a great measure avoided.

The committee have seen the artificial leg
worn by the Inventor himself. It is light,
well shaped, easily adjusted, and of a sur-
face readily kept clean. The shape of the leg
is such as to represent exactly, when clothed
its natural fellow.

He is enabled, by means of his invention, to
walk without a cane, in such a manner as re-
adily to deceive one not acquainted with the
facts of the case. All the natural movements
of the limb, except motion laterally, (which is
undesirable) are beautifully executed. He can
throw either leg over the other, and can mount
a height of five inches, with either leg indif-
ferently, without assistance.

In conclusion the committee would remark,
that the artificial leg of Mr. Palmer is superi-
or to any that has yet come under their notice.
It is light, strong, beautifully shaped,
apparently very durable, self-acting in a great-
er degree than any they have ever met with,
easy and natural in its motion, and possessing,
apparently, all the qualities desirable or at-
tainable in such an invention.

The Committee would recommend the award
to the inventor of the "Scott's Legacy Medal
and Premium."—[a medal bearing the inscrip-
tion "To the most deserving," accompanied
with \$20. Awarded,]—and also to the Com-
mittee on Exhibitions to award him the first
premium for his model exhibited in the late
Exhibition. By order of the Committee,

WM. HAMILTON, Actuary.

[It gives us much pleasure to publish the
above document from this eminently scientific
body, concerning the superior mechanism of
which we have frequently spoken, and to which
we would call the attention of all who need
such an assistance, and desire to obtain the
most perfect article. B. F. Palmer & Co. are
now located in Springfield, Mass., and are the
only manufacturers.]

There is a vast fund of original and inter-
esting matter in our columns this week.