

Scientific American.

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

Vol. 4.

New York, December 2, 1848.

No. 11.

THE
SCIENTIFIC AMERICAN :

CIRCULATION 11,500.

PUBLISHED WEEKLY.

At 120 Fulton Street, New York (Sun Building,) and
13 Court Street, Boston, Mass.

By Munn & Company.

The Principal Office being at New York.

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

See advertisement on last page.

Poetry.

LABOR.

BY OWEN G. WARREN.

It was no curse that said to Man,
"Labor thy lot shall be ;
And with the sweat upon thy brow
Thy hand shall nourish thee."
All who obey this high benest
Blessings in it have found ;
And health and wealth are gathered best
By those who till the ground.

The human frame is scarcely made
Till toil develop form ;
And health which is not won by work
Will hardly bide the storm.
Or hand or brain, with plough or pen,
May do God's will below ;
But sloth will wither hand and brain,
And quench the spirit's glow.

Say not, thou lordly son of gold,
No need for thee to toil ;
Say not there's nought to do, except
By serfs wed to the soil.

Are there not widowed hearts to cheer,
That pine in cold neglect ;
And innocence to guide and guard,
And orphans to protect ?

Are there not godlike intellects
Now crushed in slavish fear,
Thy hand, thy voice, thy pen could raise
To state of angels here ?

Are there not shackled limbs to free—
Wild passions to reclaim—
Wild deserts and their wilder men
Than wildest beasts to tame ?

A jarring and discordant world
To harmonize and bind
Together firm with iron bands,
'Till all be of one mind ?
Are there not fiends in human shape,
That, from the throne of Power,
Watch, aye, lest widowed Liberty
Reclaim her long lost dower ?

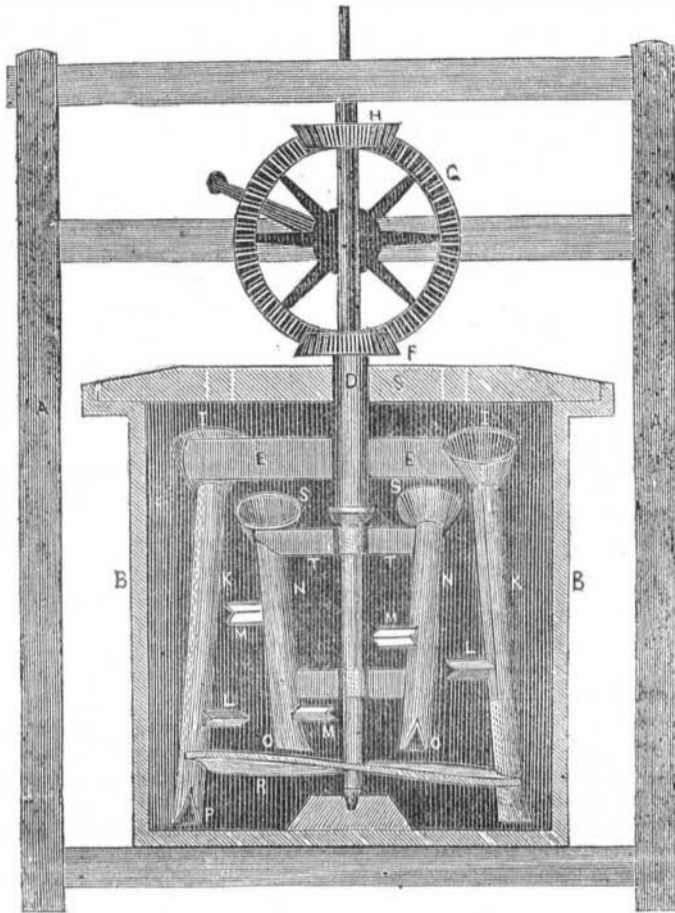
Is not the task yet to be done
To banish Crime from earth,
By guiding and directing right,
Man from his very birth—
To scatter Art and Science wide,
And thus prepare the way
For that Millennium to come,
When Love and Truth shall away ?

Is there not haggard, starving Want,
That feeds itself with Crime ;
And dread Miasm in foul abodes
That kills men ere their time ?
Are there not wrongs that every day
The rich heap on the poor ;
Who toil and starve that heartless men
May swell their golden store ?

Then say not, there is nought to do—
Labor—'tis Heaven's command,
Each in his sphere, and soon there were
Nosorrow in the laud.
Without that toil none can be great—
Without it none is good,
Or ever blameless and forgiven
Before their Maker stood.

COMPOUND ATMOSPHERIC CHURN.

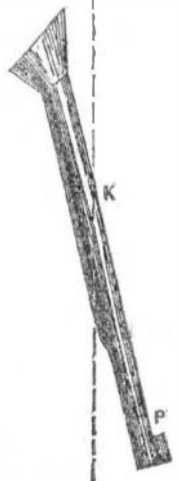
Figure 1.



This is a very simple and good invention of a Churn, invented by Alvah Graves and L. M. Whitman, and is now the property of Mr. S. G. Wise, of Weedsport, Cayuga Co. N. Y. and if butter is wanted to be made in a hurry, this is just the Churn that can do it.

Fig. 1 is an elevated section, exhibiting the interior arrangement and the other figure is a section part, to render the description more plain, the same letters of reference indicating the parts that are alike. A, is the frame in which the churn is placed, being simply any kind of bed plate, with two uprights and a cross beam for the driving shaft to revolve in a proper journal box. B B, is the churn—or rather the case or vessel for holding the milk or cream to be churned. It is of a circular form and may be made of wood or tin. It will

FIG. 2.



be proper to explain the nature of this invention—so that the parts of the interior will be easier understood when we refer to them by letters. The nature of it consists in having two revolving sets of hollow arms on one shaft in the inside of the churn, revolving contrary to one another, and conveying air from

the upper part of the churn to the bottom and middle of the cream to be churned, through the arms as they revolve. The vertical shaft passes down through the middle of the churn and revolves in bearings, one in the bottom and the other in the cross beam at the top. On this shaft are permanently fixed the small inside revolving set of arms N N. These arms are hollow tubes having cowl or funnel shaped tops S S. O O, are the bottom openings with angular vertical slits. M M, are bevelled paddles on the arms, and T T, is a cross piece (one at top and one at bottom) which unites the two arms together. When the main shaft revolves these arms revolve along with it. K K, are another set of hollow arms formed exactly like the small inside set. I I, are the cowls or funnel mouths. P P, the angular bottom openings, and L L, the bevelled paddles. These large hollow arms are formed as represented in the section view.—They are not attached to the vertical shaft but to a collar D, through which the vertical shaft passes. E E, is the top piece which unites I I to the collar, and R is the bottom strap for the same purpose, only the bottom piece is formed like the flukes of a propeller. G is a large bevel wheel to be driven by a crank by hand, or by band and pulley for a large dairy. H, is a bevel pinion on the vertical shaft, and F a bevel pinion fixed on or forming part of the collar D. The collar, it will be observed, rests and revolves on the top of a friction block which is fixed on the vertical shaft, and R has an opening in the middle so as to allow it to revolve loose around the shaft.

OPERATION.—When the wheel G is set in motion, it will be observed that H and F, will revolve horizontally in a contrary direction, therefore the arms will revolve in a contrary direction to one another, and certainly there could be no better mechanical arrangement to agitate the cream, while in connexion with the mechanical agitation, the air is, as it were gathered into the funnels and by its elastic nature, whirled round in the form of a screw continually downwards while the arms are revolving, and forced out at the lower open-

ings among the cream, thus combining a thorough mechanical and atmospheric agitation of the milk or cream to separate the butter from the other ingredients of which the milk is composed.

RAIL ROAD NEWS.

A Good Arrangement.

The Utica and Schenectady and the Mohawk and Hudson Railroad Companies have made arrangements whereby one set of officers and engineers, &c. with the locomotives and cars shall run the whole route. This will effect a saving and is a good arrangement. Other continuous lines throughout the country would do well to take the hint.

It is reported that a new company has been organized under the General Railroad Act, for the purpose of building a direct road from Syracuse to Rochester. Two routes have been surveyed, one known as the Canal route, and the other as the Bridge route. Both are favorable, and that line will be adopted, upon which the company is treated with the most liberality.

To Railroad Proprietors.

The Philadelphia Ledger publishes the following notice :—

As the use of wood on Railroads is very expensive, and subject to great disadvantages in regard to its conveyance from place to place, and the frequent attention which it requires, the use of coal would be a great advantage, and an immense saving. Therefore, I have found that by suspending the furnace on single or double suspenders, the jarring or shaking of the locomotive would be effectually precluded. And thus coal might be used with as much facility as it is now used in common house stoves. H. E. MAHON.

Rome and Oswego Plank Road.

We learn from the Rome Sentinel, that the Directors of the Rome and Oswego Plank Road have declared a semi-annual dividend of 6 per cent. for the last six months. About one third of the tolls have been invested as a sinking fund, thus making the earnings of the road during the half year, about 9 per cent on its capital. The cost of the road was about \$35,000.

A Misdirected Tunnel.

The London Builder states that in a railway tunnel in the course of construction near Huddersfield, which had been bored at each end, thinking that the excavators would meet in the centre, it has been discovered that through defective engineering the two sets of workmen were passing each other, having got six yards asunder, instead of meeting face to face. The tunnel will be about seven-eighths of a mile in length, and while it should have consisted of a gentle curve, it now takes the shape of a dog's hind leg !

They were probably led astray by deflection of the magnet.

Spontaneous Combustion.

At the City Gas Works at Philadelphia, vaults had been constructed for the bituminous coal used in making the gas and into which the coal was packed very close for the saving of room. A few weeks since spontaneous combustion was observed in these vaults but it was put out (supposed) with but little trouble. Last Saturday week, however, the fire burst out again and was not subdued without a great loss of coal, after several hours of unremitting toil by the City Fire Department.

If equal quantities of laudanum, tincture of rhubarb and tincture of camphor are mixed together, and eighteen drops mixed with water be taken every two hours, it is said to be the best antidote to cholera ever discovered.