

Scientific American.

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

Vol. 4.

New York, May 12, 1849.

No. 34.

THE
Scientific American.

THE
BEST MECHANICAL PAPER IN THE WORLD.
CIRCULATION 12,000.

PUBLISHED WEEKLY.
At 128 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.

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

Poetry.

OH, BE KINDLY.

BY JOHN ANDERSON.

Oh, be kindly! oh, be kindly!
When you labour 'mong the the vile,
Ne'er forget that vice has blindly
Darken'd all their minds with guile.
If your counsel should not light them
To the haven, as you seek
Oh, in mercy do not blight them
Farther with the words you speak!

Oh, be kindly to the erring!
Let your words be soft and true,
And, countenances cheering,
Try what kindness you can do.
If their gloom you wish to brighten,
Search for hope and nurse it strong;
Hate has been for ages fighting
On the side of fraud and wrong!

Oh, be kindly to the victim;
Do not magnify his crime;
Rather study to convince him—
He may yet redeem the time!
Anger is a bad consoler—
Prison records teaching this;
Kindness is a sweet condoler—
All its seeds bud into bliss!

Oh, be kindly, when you reason
With the sinner on his sin!
If your precepts are in season,
Active love will lead him in
Look at spring, how she envelopes
Stunted woods in garments rare;
So with gentleness develop
Moral flowers as bright and fair!

Oh, be kindly, ever smiling
When you show the slave his thrall;
Few men like to bear reviling
When their hearts are full of gall!
Harshness is a despot's treasure—
Let those copy who esteem;
Christ has left a golden measure—
Wise men love to follow him!

Zephyr winds are soft and loving,
Oh, their balmy breath is kind;
See the streamlets in their roving
Better every flower they find!
True it is that nature rages—
Speaks in accents fierce and strong—
But the wreck, like pictured pages,
Seem to say her rage is wrong!

Gentle Words.—Loving Smiles.

The sun may warm the grass to light.

The dew the drooping flower,

And eyes grow bright and watch the light

Of Autumn's opening hour—

But words that breathe of tenderness,

And smiles we know are true,

Are warmer than the summer time,

And brighter than the dew.

It is not much the world can give,

With all its subtle art,

And gold and gems are not the things

To satisfy the heart:

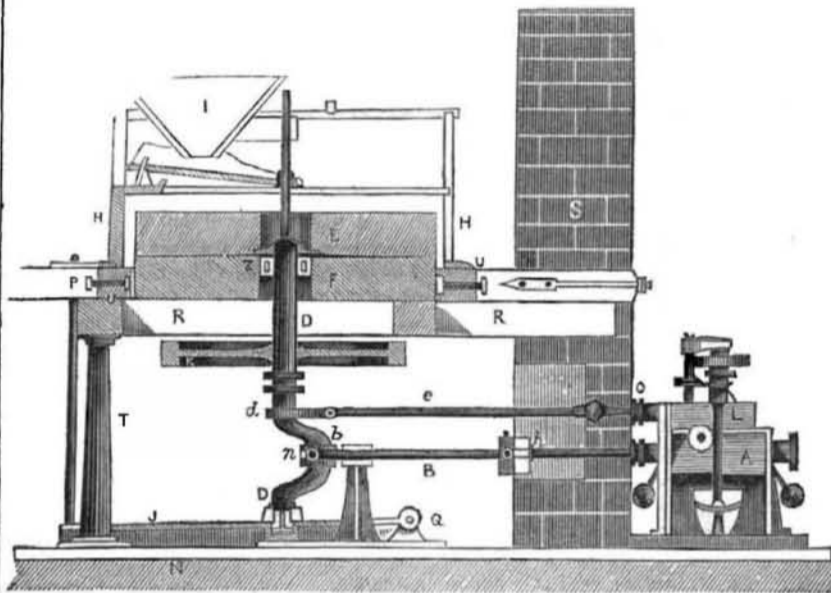
But O, if those who cluster round

The altar and the hearth,

Have gentle words and loving smiles,

How beautiful is earth!

IMPROVED METHOD TO PRODUCE CONTINUOUS ROTARY MOTION FOR MILLS FROM A STEAM ENGINE.

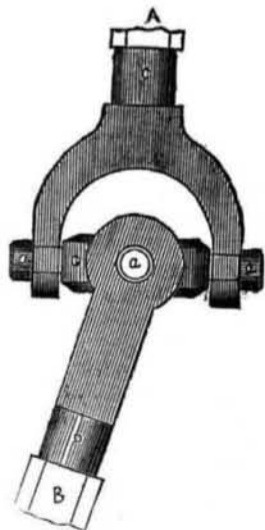


This engraving is a side elevation showing the application of steam power to one pair of mill stones. A is the horizontal steam cylinder, high pressure. B, is the connecting to the piston rod, jointed at A, to the piston rod, at one end and to the crank C, of the vertical shaft by D. The joints are universal, capable of motion in all directions, like the one below. E, is the upper running mill stone, and F, the lower stationary one. H, is a case enclosing the stones and the hopper I. K, is a small fly wheel on the shaft D. It is made broad and may be used as a band wheel to drive some light connected machinery. d, is an eccentric to which the valve rod e, is connected in the usual way to work the slide within the steam box L. The steam cylinder is supported upon two legs fastened to the bed plate N, which extends below the upright shaft D. The lower end of this shaft is secured in proper bearings, elevated a little above the bed plate to retain the shaft in its proper vertical position, and to turn freely round in its brasses. There is a small standard erected from the bed plate close to the crank of D, to sustain a guide for the end of the connecting rod to allow its oblique action, and the piston rod may be guided straight by a slide block

on it moving in a horizontal guide frame in the usual way. Q, is a low standard from whence a lever J, is suspended by a strong screw bolt, above, which being turned will raise or lower the end to set the stone to any degree of accuracy, as the upright of J, passes through a beam connected with R R, on which the lower stone F, rests. These beams are supported at one end on an iron column T, and at the other end are built into the wall S. The stone F, is also regulated in its horizontal position to suit the vertical axis of D, by four large set screws P passing through U, an outside wooden frame to the lower stone. Z, is a collar fixed in the central hole of the lower stone, by wedging. The engine may be of the oscillating kind placed on trunnions and sustained by the fixtures herein represented or otherwise. The connecting rod B, in this engraving, is formed of two bars secured at the respective joints on each side.

This arrangement of machinery was invented by Mr. John Hastie, of Greenock, Scotland, and as such things are of interest to many of our readers, we select this as forming part of his patent which relates simply to the combination of the piston rod in the way set forth, with the shaft D.

Hook's Universal Joint.



This Joint was invented by Dr. Hook, and exhibits a decided improvement over the old Universal Joint for coupling shafts that are inclined to each other. This will form a useful accompaniment to the above engraving as exhibiting on an enlarged scale, the manner in which the piston rod and the connecting rod b, are united together. A and B are two shafts

the ends of which within the bearings C and D, are of a forked form. G, is a circular iron ring with four pins or pivots a a a a, (three only of which are seen,) on its circumference, which fit into holes in the ends of the forks, by that means uniting them together, and at the same time allowing freedom of motion. In this way rotary motion may be conveyed from one shaft to another when they have considerable inclination, but this is not advisable if the angle of the shafts be more than 15 degrees, but for a coupling joint in some cases, such as a skilful millwright or engineer will always judge best, this joint will answer an excellent purpose.

Squirrels Reared by a Cat.

The Indiana Whig gives a curious instance of the transfer of maternal affection and solicitude. A young man in Boone county, Kentucky, found a nest of three young squirrels, and on carrying them into the house, he placed them with a bevy of young kittens and, strange to tell, the mother cat, adopted the little foundlings into her family, bestowing as much care and kindness upon them as upon her own offspring. The squirrels are now about a month old, and have become entirely domesticated, living upon the same pap, and adopting the habits of the feline brothers and sisters.

RAILROAD NEWS.

New Haven and New York Railroad.

The New Haven and New York Railroad Co. and the Hartford and New Haven Railroad Co. have come to an arrangement and formed a settlement. The result to the travelling community is, that the Hartford Co. agree to run all the trains in connection with the New York trains. The portion of the New York track which extends from the depot in New Haven to the junction of the Hartford track, is to be used by the Hartford trains as well as the New York depot. The Hartford track from the junction to the wharves is to be disused, excepting for freight trains. The day-boats of the Hartford Company are to be taken off, and all the business of the line thrown on to the New York road, excepting the freighting, which is to be done as heretofore by the night-boats of the Hartford Company. This junction will accommodate the public materially, as the whole line of roads from New York to Boston will now run by a common schedule. The effect of the arrangement of this affair upon the New-Haven Road, it is supposed, will be an increase in the receipts of \$50,000 or \$60,000 per annum.

Plank Roads.

The first plank road in this state was built sixteen years ago in Cayuga Co. It was three miles in length, and was constructed under the supervision of Mr. C. Edwards Lester. It was made across a swamp, caused by an inlet or bay, at the end of Cayuga Lake. All the tolls received, were by voluntary contribution. A box was placed at each end of the road, and those who passed, put in as much as they pleased,—some a penny, some a sixpence, and some a dollar. The amount received in this manner the first year, was equal to the cost of the road.

[The above paragraph, we see, is going the rounds of the newspapers, and it certainly places the author of "The Glory and Shame of England," at a very early age among our Civil Engineers. Dr. Cox could probably tell whether he was so early distinguished for engineering abilities, as at that time we suppose he was under his birch at Auburn.

A Road Made of Charcoal.

There is a Road leading from Washington County to Dodge County in Wisconsin, about 17 miles long made of charcoal, and it has been in successful operation for two years.—The cost of this road was from five hundred to five hundred and twenty dollars per mile, and the repairs to the road have not exceeded five dollars per mile each year. The repairs were necessary on account of some soft spongy places in the earth, where the coal was not put on with sufficient thickness to prevent the ground from giving way under the immense loads that pass over it during the wet season. The number of wagons that passed over this road in the year 1847 was over 18,000, many of them carrying 3500 or 4,000 pounds at a load, and drawn by three horses with perfect ease.

The mode of construction is, to cut down the trees, place them on the road, and cover up as in making charcoal at a pit, and then fired. When burnt, the coal is raked down into shape, and with a little earth thrown on it to fill the interstices, the road is complete.

[It is quite common to construct roads in Britain with the ashes of the bituminous coal burned under boilers. Such roads however are not to be compared to those made of broken stones.

Among the eminent travellers who are proceeding to California, in James Arago, a brother of the astronomer. He has a large fortune in France, but goes out to ascertain the physical character of the country.