

Scientific American.

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

Vol. 4.

New York, July 7, 1849.

No. 42.

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.

To Mary.

BY JOHN H. WARLAND

Bounding, jumping, romping Mary !
Thy laugh so full of glee,
Why stoppest thou, my little fairy,
The gorgeous clouds to see ?
The gorgeous clouds to see ?
What vision bright, or sudden thought,
Hath hushed thy merry laugh and shout ?

Skipping, dancing, tripping Mary !
Fleet as the agile fawn,
Why leave the ring, where dance so merry
Thy playmates on the lawn ?
They call thee, but thou heed'st not—
The hoop and swing alike forgot.

Mirthful, playful, gleeful Mary !
Dost see the gates of heaven,
Where bathe the clouds, like phantoms airy,
The golden light of even ?
Charmeth some angel's form thine eye,
Who calls thee to thy native sky ?

Laughing, prattling, sporting Mary !
Now tell me what shall be
The tint of sky, sunlit or starry,
To which I'll liken thee !
The softest shades of heaven's own blue
Those lustre eyes seem melting through.

Blue-eyed, bright-eyed, blue-eyed Mary !
The rosy tints of even
Are woven in thy cheeks, my fairy,
Like the hues that melt in heaven !
The sweetest tints at day's decline
Have not so sweet a blush as thine.

Blushing, blooming, blushing Mary !
To what shall I compare
The ringlets flowing, soft and airy,
Upon thy neck so fair !
They're like the golden clouds that weave
Their tresses on the brow of eve.

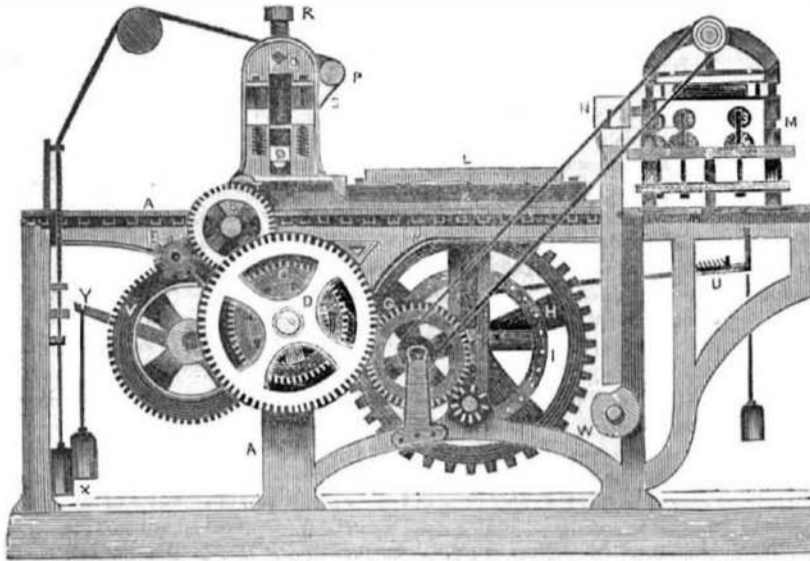
Golden, sunny, fair-haired Mary !
Where shall my pencil dip
In tints above, to paint the cherry
Vermillion of the lip ?
There are no hues, o'er clouds that play,
But fade beside those lips away.

Gleesome, winsome, gladsome Mary !
That merry heart of thine
Laughs through thy dimple cheek, my fairy,
In every tint and line.
No sullen cloud that floats on high
Is imaged in thy heart or eye.

Lovely cherub, dovelike Mary !
So frolicsome and gay ;
Far be the day, when angels carry
Thee to their home away !
Thy face so sweet, that radiant smile,
Bespeak thy spirit free from guile.

Dear, celestial, angel Mary !
Of love and beauty bright,
Heaven to thee hath not been chary,
Thou laughing little sprite !
For heaven's own smiles beam in thine own,
And all its hues are round thee thrown.

NEW LITHOGRAPHIC PRINTING PRESS.



This is a front elevation of a Lithographic Printing Press, invented by Mr. William Smart of London, and which first appeared in Barlow & Payne's Patent Journal. The principle of it consists in the whole of the press work, with the exception of the operation of laying on and taking off the paper, being performed by a series of movements resulting from the first motion given to the machine, and not requiring the aid of hand labor to perform the work as heretofore. A portion of the standard framing is removed at one end. A A, are the standard and body frames of the machine. B E, is the driving shaft and pinion, receiving motion from steam or any motive agent, and communicating the same to the wheel C, which takes into and gears with D, thereby giving motion to the wheel G, which drives the pinion F. Keyed on the main shaft with the pinion F, is a large toothed wheel H, moving loosely on its centre or shaft, the periphery of which is perforated with the stud holes at the side, of sufficient size to enable studs, when brought in contact with them, to enter into and take hold of the wheel H ; for this purpose a ring or disc of metal keyed to the main shaft with the projecting studs is employed, so that by any lateral action, caused by a shifting clutch box on the main shaft, the wheel H, may be coupled with the fixed disc, by the studs entering into and uniting the two together, and revolve with the main shaft ; mounted, also, upon this shaft there is a concentric double action motion rack I, in which a pinion takes into, first on the outside thereof, thereby causing the toothed wheel H, to be thrown in play, during the printing process, in one direction ; and secondly, on the inside, by passing through an opening in the periphery of the rack, and reversing the wheel. J, is a horizontal rack, moving longitudinally, in the direction of a machine, in a suitable iron bed, in gear with the large toothed wheel H. K, is a wooden bed or sleeper fixed to the traversing frame on which a rectangular slab of slate is fitted to receive the stone L, at the top. M, are surplus head standards carrying the wetting and inking apparatus ; this part of the improvement consists in giving motion by means of the endless strap from the driving rigger on the main shaft to the doctor ink roller, which revolves at right angles with the supply and distributing rollers situated underneath, in the manner represented by the figures 1, 2, 3, 4, 5, 6, 7, 8, 9 ; for example, by the revolutions of the rollers 2, 3, moving on the face of the doctor, they receive ink therefrom, and convey it through the intervention of the other rollers aforesaid, to the stone,

thereby completing the process of inking in the manner described. N, is the water trough and sponge box. It consists of a vessel of water having a series of tubes passing through the bottom of the box with their upper ends above the surface of the water, whilst their lower ones communicate with the sponge. A warp of cotton is placed in the upper ends of the tubes and allowed to descend into the trough below the water, which causes, by capillary attraction, the water contained in the trough to pass down through the tubes in connection with the sponge, and supply it with water without over charging it. This box is brought down on the surface of the stone when passing under for the purpose of wetting and remains until the subsequent process of inking is performed ; when upon the stone returning to the centre of the machine from which it started, to receive the paper, the action of a cam, so operating upon a vertical rod in connection with it, causes the box to be raised and the stone to pass out in readiness for the next operation. O, is a small framing mounted on the body standards A, for carrying the scraper and tympan roller P. Q, is the scraper, fixed, to a strong cross-head, which is regulated to any height by the screw R, in the centre. S, is the tympan cloth which is fixed at one end to a bar T, the other end is coiled round a roller P, on the shaft of which a pulley wheel is fixed, having a cord or rope bearing on it in such a manner that by the effect of this rope passing over another pulley, suspended at a distance apart, as shown, it shall cause, by the action of a weight at one end, the tympan cloth to be kept stretched, so that when the traversing frame, with the stone, is passing under the scraper, it may catch hold of the bar T, and by the onward motion of the traversing frame, unwind the tympan cloth, and lay it over the stone until it shall have passed under the scraper and completed the printing operation. When, by the pressure being withdrawn from underneath the stone, the weight suspended from the end of the cord in connection with the pulley, P is then the medium through which the bed and stone is driven back into the centre of the machine ready for the next operation, by reason of the weight acting in such a manner, that when the tympan cloth has been unwound and placed on the surface of the stone, the mode of again winding it up is only effected by the proximity of the bar T, to the roller P, producing the diminution in the space from the contraction of the tympan cloth. To apply the power to the scraper and the traversing frame, a pressure roller is employed, actuated by a cam producing pres-

sure at given times, such as when the stone is passing under the scraper ; but as soon as it has performed such operation the pressure will be withdrawn, and the means employed to assist its return rendered free to act. There is an arrangement consisting of a long bar or bearer U, with a counterbalance weight affixed ; this bar passes along the sides of the frame work and touches the boss of the cam wheel V, to which is attached a concentric arm, revolving with it ; the movement produced by such means on the long lever is for throwing a stop behind the traversing frame and checking its farther progress when not required ; at the same time giving to it an elasticity by the application of a spiral spring, so as to prevent concussion. On the means employed for throwing the driving wheel H, in and out of gear, depends the proper working of the machine. The means of employing studs as described consist in fixing two peripheries together by pressing the projecting pins on one periphery into the opposite holes in the other ; for this object a side-lever with a forked end is placed in connection with the clutch-box on the main shaft, which it shifts laterally within the limits of its fulcrum by the rotation of a cam placed on the sides of the toothed wheel V ; this lever so acted upon by the cam, requires a corresponding pressure to keep it up to its work. To do this the weight is applied and attached to it by a cord passing over the wheel Y, and attached to the lever, so that when the cam moves the end of the lever outwards, the weight X, will be raised, but when it falls, it will tend to move inward and throw out of gear the coupling disc aforesaid. When motion is given to the driving shaft B, by E, and communicated through the train of toothed gearing wheels, to the main shaft F ; such motion in consideration of the parts arranged for such purposes is caused to move the traversing frame by reason of the teeth of the wheel H, taking into the teeth of the horizontal rack and propelling it in either direction, by the reversing rack. The rollers may be made of india rubber and kept cool in a trough of cold water.

RAILROAD NEWS.

Illinois Railroad Convention.

A Convention composed of 1015 delegates representing 22 counties of the State of Illinois, assembled at Salem, Marion county, Illinois on the 4th ult. Governor French, General Shields, and a number of distinguished public men, were present. Hon. Zadock Casey presided. The object was to oppose the action of the Illinois Legislature in refusing to grant the right of way through the state to the Mississippi and Ohio Railroad, which is a link in one of the chains between Philadelphia and St. Louis. A strongly written address to the people of the State, arguing the injustice, narrow-mindedness and absurdity of the Legislative action, was reported and adopted with immense applause. Pending its consideration, some gentleman moved to strike out all that part of the address relating to St. Louis. This is the sore point of the Illinois opposition ; but it was voted down. A series of resolutions was adopted, in which, among other things, the Governor was asked to convene a special session of the Legislature to consider the matter, and the legislative representatives from the counties composing the Convention, were instructed to use every effort to get the various railroad bills passed.

Galena and Chicago Railroad.

The Galena and Chicago Railroad will be commenced to Cottage Hill, 18 miles, by the 4th of July. The daily receipts now amount to between \$50 and 60. This would amount to \$15,000 per annum, supposing 300 working days in the year. It is expected the Road will be completed to Elgin some time this fall.