

Scientific American.

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

Vol. 4.

New York, May 19, 1849.

No. 35.

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.

BLACKSMITH'S NIGHT.

BY RALPH HOYT.

Primeval Night! Infinitude of gloom!
My prayer fulfilled, yet brings it no release!
O for the deeper shadow of the tomb,
Its dreamless peace,
Where the last throb of my sad heart may
cease!

Yet thrills that voice again the murky air,
Never a midnight but there came a morn!
Up from the dungeon now of thy despair,
For thou wert born
To conquer sorrow, and all fear to scorn!

To thee is granted to behold how Truth
Links the strong worker with the happy skies
In Care's deep furrows plants immortal youth,
And gives the prize
Of endless glory to the bravely wise!

Center thou art and soul of a domain
Vast as thy utmost wish could e'er desire;
Struggle! the Spirit never strives in vain;
Can ne'er expire;
Up for the scepter! take thy throne of fire!

For man is regal when his strength is sired;
When spirit wills all matter must obey;
Sweeps the resistless mandate like a tide
Away, away,
Till earth and heaven feel the potent sway!

Now as this rayless gloom aside I fling,
The realm of action spreading on the view
Calls to the sooty Blacksmith—be a king!
Thy reign renew;
Grasping thy mace again, arise and do!

And as the massive hammer thunders down,
Shaping the stubborn iron to the plain,
Know that each stroke adds luster to thy crown
And yon wide span
Of gazing planets shout—behold a MAN!

A glorious Man! and thy renown shall be
Borne by the winds and waters through all
time,
While there's a keel to carve it on the sea
From clime to clime,
For God ordains that Idleness is Crime!

Go ask my Mother.

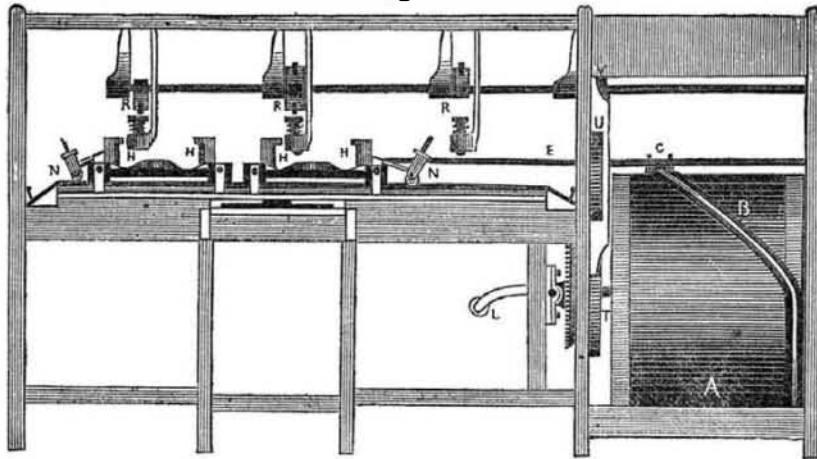
You've told me many a time and oft
That I was fair and comely;
My eyes were bright—my tresses soft,
While other girls were homely.
"She's quite too young to know her will,"
The folks say to each other;
But if you truly love me still—
Why—go ask my mother.

I'm told there's care in married life,
That all the joy's in courting;
When young men have secured a wife,
They say their vows are sporting.
I won't believe what old maids say,
If you won't choose another;
You've bothered me so much to-day—
Do—go and ask my mother.

Never begin a thing till you have well con-
sidered the end.

SHAW AND GOULD'S IMPROVED PRINTING MACHINE.

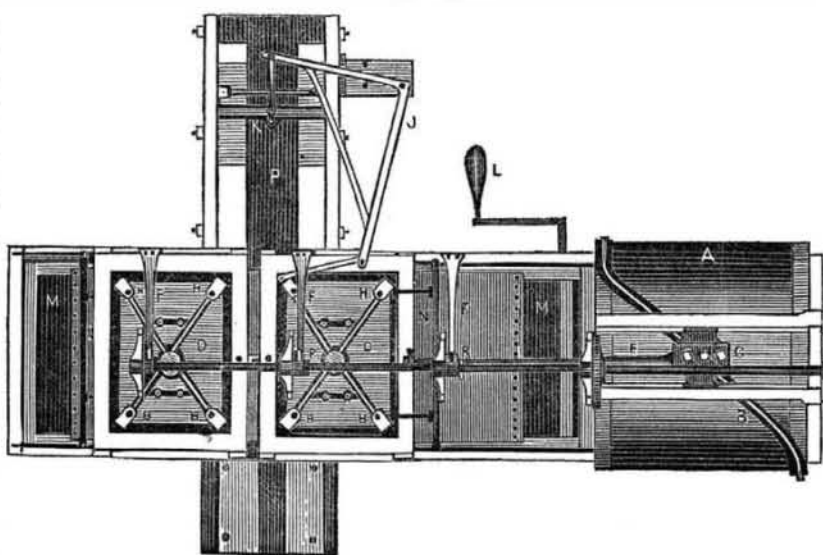
Figure 1.



The patent for this machine was issued last week, and as it presents some novel features for printing paper, oil cloth, and is also adapted for other articles, we have no doubt but what it will be very interesting. The inventors are Messrs. W. Shaw and Ezra Gould, of Newark, New Jersey, and Mr. Shaw carries on an extensive business there. This Press is the best that we have seen, next to the hand block, for printing calico bandanas and shawls, the cylinder not being adapted to that kind of printing. The nature of this invention consists in giving two blocks, placed in two platens, an intermitting reciprocating motion, so that two impressions will be made during the forward and backward stroke of the piston that moves the blocks. It also supplies the blocks with color from two boxes, and feeds in the paper or oil cloth to the blocks and takes it away—the motion for doing this being dependant on the motion of the blocks.

Fig. 1 above is a longitudinal side elevation and fig. 2 a top view looking down upon the machine. The same letters indicate like parts on both the figures. Two long stout tables, the one traverse to the other, are herein represented. The cross one is the cloth feedtable and the other is the printing frame. A, is a large drum at the end of the printing table. B, is a projecting flange or rail fastened on the periphery of the drum. This flange is eccentric, as represented. C, is the head of the piston rod E, which moves the printing blocks. This piston head grasps the rail B, but is guided in a straight line in the guide rests seen in fig. 2. When the drum revolves, therefore, the piston rod will be guided backwards and forwards by the angular part of the rail B, but the piston rod is stationary while that part of the rail around the end of the drum is passing through the jaws of the piston head C. This gives the piston rod and the blocks attached to

Figure 2.



it an intermitting reciprocating motion by revolving the drum. D D, fig. 2, are the platens. The printing blocks are secured to them in the inner side. These platens with the blocks stand a little distance from the paper below being secured to coiled springs H H, at the four corners, which allow the platens with the blocks to be pressed down, but raise up the blocks when the pressure is removed. The platens therefore have square stationary frames around them all connected together and slide along on the table guided by an upraised rail on each side which fit into grooves in the edges of the platten frames. M M, are the two boxes filled with color, and N N, are two brushes secured by short arms to the ends of the block frames. The color boxes are a little below the color cushions—one of which is now seen at the right hand fig. 2, inside the color box M. The brushes

N, are secured at the side to small wheels fig. 1, which run down a rail into the color boxes and again carry up the brush to supply the cushion, for the block. R R R, are spring pistons, suspended from the framing above. These sprung pistons are forced down on the centre of the platens to make the impressions during the intermissions of the blocks. There are therefore four cams on the shaft above, which force down the pistons. The middle cams are double and the other two single—the side ones alternately press down one block on the color cushions to supply it with color and the middle cams the block which makes the impression. The motion of the cams on the shaft above, must therefore coincide with the motion of the piston rod. They are united in motion together by the gearing from the crank shaft L, represented by T U, and an intermediate wheel not seen. The way in

which the blocks are operated and supplied with color, will be understood by the foregoing. The rest of the invention relates to the feeding of the piece of paper and the taking of it away regularly when printed. This must also be an intermitting progressive work to coincide exactly with the action of the blocks. The paper is fed under the blocks on the cross table between the guide plates (for different widths,) seen at the right side fig. 2. The piece of paper passes through to a small catching bar K, which has a vibratory motion, and catches and lets go (it lets go for the inward motion and catches for the forward motion) to draw the printed paper from under the blocks and thus it feeds in unprinted paper for the next impression. The small catching bar is operated by crooked levers J, secured to one of the block frames, as will be easily noticed, and oscillating on a pivot fixed on a block of the feed table. By this connexion the motion of K, must coincide with, for it is dependant on the motion of the block frame to which the lever J is attached by the small flexible arm. All the motions therefore are in harmony with the motion of the drum A, which works the whole. P, is only a central top on the feed table. The catch bar K, can be set to take a greater or less catch, for different patterns. For certain kinds of work, the advantages of this machine over all others are apparent.

RAILROAD NEWS.

The Cayuga and Susquehanna Railroad.

The owners of the Cayuga and Susquehanna Railroad, a flat-bar road, about 30 miles long, running from Owego to the head of Cayuga Lake, have decided to relay the Road with heavy T rail and change the terminus at Owego, thus avoiding the inclined plane at that point, and taking passengers into the heart of the town. At Owego the Road will connect with the Erie Railroad, and finish, with the aid of Cayuga Lake, another line of communication with the West. This Road will increase materially the business of the Erie Railroad. The cost of this improvement will be about four hundred thousand dollars. It will add largely to the prosperity of that section of the country, with a more direct communication with the great metropolis. Formerly the Road has only been used with horse power; it will now be amply supplied with locomotives and first-class cars. It will probably be in running order by the 1st of August next.

Tennessee and Virginia Rail Road.

The Tennessee people are in ecstasies at the news from the Virginia Legislature, announcing the passage of the bill for the construction of a railroad from Lynchburg to the Tennessee line, in the direction of Knoxville. It is estimated that the road, including the tunnel through the Blue Ridge, will cost \$3,500,000. The State of Virginia takes three-fifths of the stock or \$2,100,000. Of the remaining \$1,400,000, eight hundred thousand have already been taken along the proposed line of the road. This leaves \$600,000 of the stock still to be taken.

The route will be one very difficult of construction, but when completed, it is destined to enjoy an immense amount of travel between the valley States and New York.

Rochester and Lockport Railroad.

The directors of this road have determined to push the road through with all possible despatch and they have recently taken their measures to secure the taking of \$200,000 more stock than was taken before. This will be the most level road for its length in the United States and also one of the most direct. The heaviest grade is less than 25 feet to the mile. It runs through Munroe and Orleans counties, the very garden of this State.