

SCIENTIFIC AMERICAN

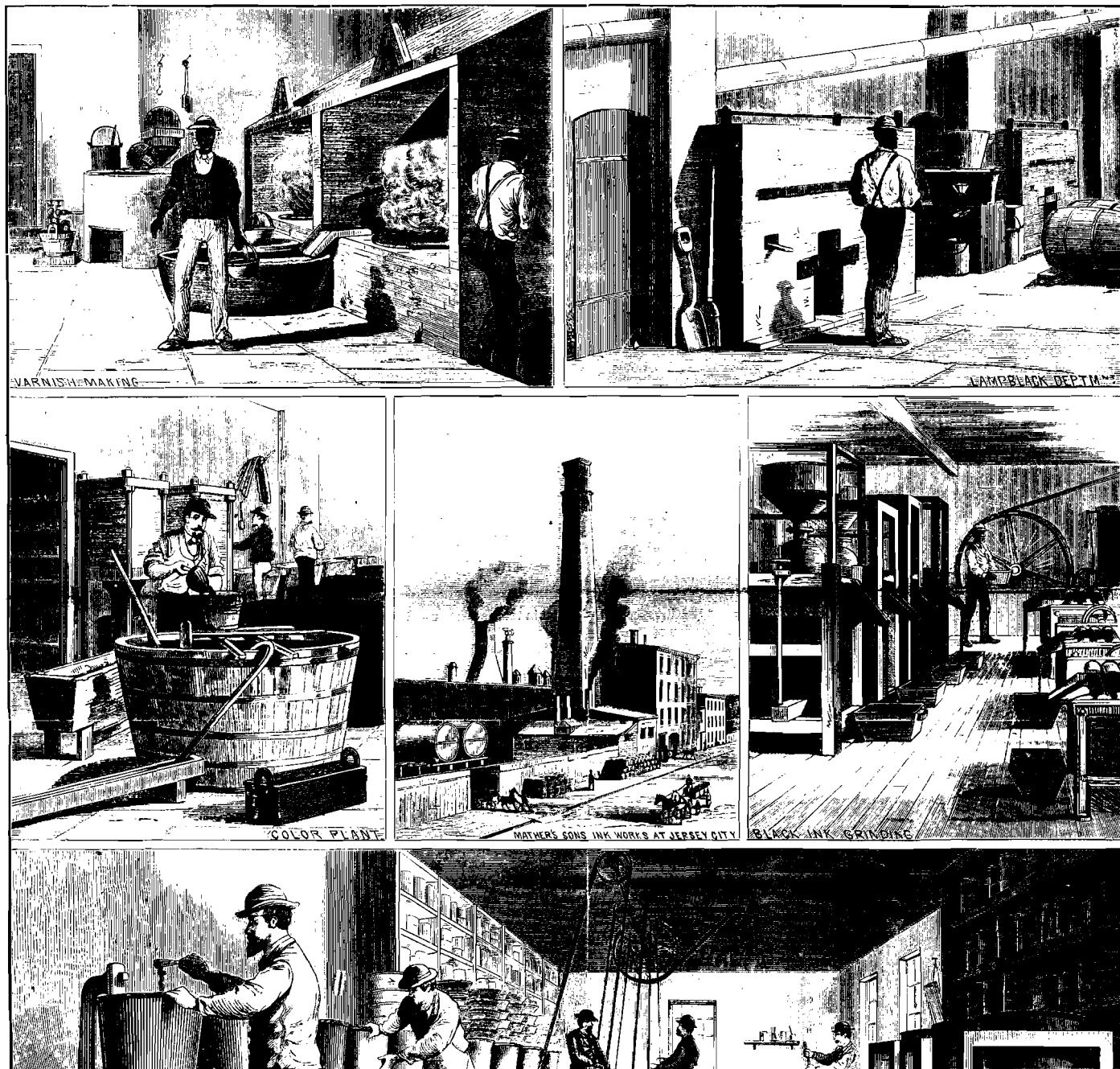
[Entered at the Post Office of New York, N. Y., as Second Class Matter.]

A WEEKLY JOURNAL OF PRACTICAL INFORMATION, ART, SCIENCE, MECHANICS, CHEMISTRY AND MANUFACTURES.

Vol. XLII.—No. 15.
[NEW SERIES.]

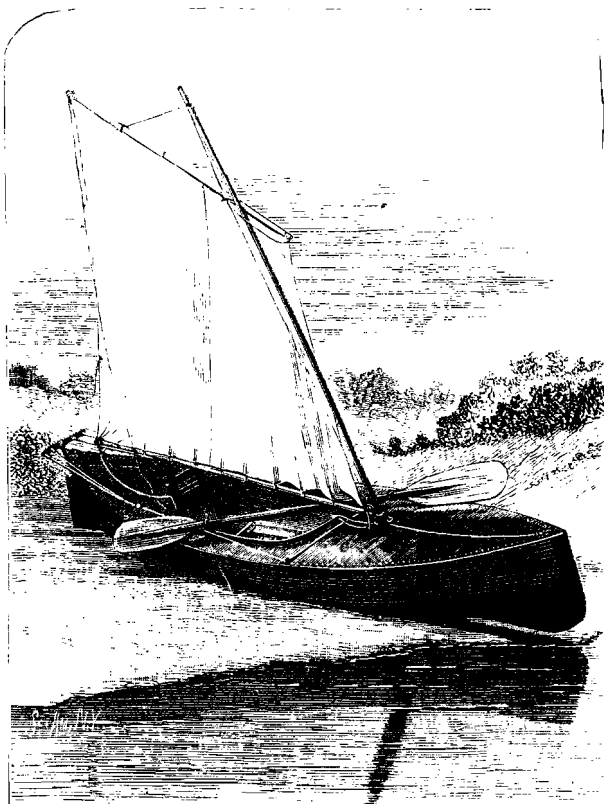
NEW YORK, APRIL 10, 1880.

[\$3.20 per Annum.
[POSTAGE PREPAID.]]



THE RACINE CANOE.

The pretty little canoe shown in the annexed engraving is the outgrowth of the experience of the Racine Boat Com-



THE RACINE CANOE.

pany during the year 1879. It is made of birch, cherry, or cedar, according to the taste of the purchaser. Three sheets of the wood are cemented together with the grain of the inner sheet crossing the grain of the outer sheets, and the whole, while green, is pressed into the desired form under heavy pressure, making a body with but a single seam under the keel. The decks are made in the same way. The ends are nicely sheathed with brass, and the boat is finished with coach varnish, bringing out the beauty of the wood.

The boat thus made is very strong and not liable to injury with ordinary usage. It never leaks, and it is in every respect complete and well finished, and is of the most approved model.

The dimensions of the boat are as follows: Length, $13\frac{1}{2}$ feet; beam 28 inches.

The boat shown in the engraving, when full rigged, weighs but 80 lb.

The parties building this, make open canoes, row boats, and shell boats on the same plan. They are finished with water-proof fillings and varnishes, and are very handsome and desirable. In a canoe similar to the one shown in the engraving, a trip was made late last season from Racine, Wis., to New Orleans, La., a distance of about twelve hundred miles, *via* lake, canal, and river.

Further information may be obtained by addressing the Racine Boat Company, Racine, Wis.

load.

Should the pressure of steam in the boiler be reduced and resume its normal condition, the lever will fall to its original position, the weight will remain suspended clear of the lever, and the damper will be entirely open. If, on the other hand, there should be such an excess of pressure of steam as to raise the lever loaded by the first weight, it will, after rising a short distance, be further loaded with a second weight, and there will be a further contraction of the flue by the damper, until further rise of the lever, resulting in the arresting of the latter by a third load and a further contraction of the flue.

The manufacturers claim every advantage that is gained by the use of other damper regulators without their disadvantages. In all other machines that have been applied to operate the damper by the action of the steam there are but two possible positions of the damper—it is either wide open or entirely closed; there must be no draught at all, or the full force. This has been the one defect that has prevented them from being thoroughly successful.

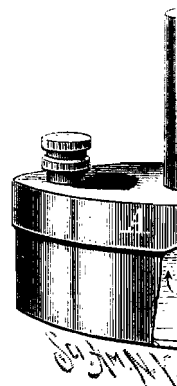
By this machine we are now able to absolutely control the working of boilers by keeping the damper always in that position which produces the normal pressure of steam, and by compensating for any rise or fall of pressure due to an irregularity in the use of steam by closing or opening the damper only as may be necessary.

Except in extreme cases, the damper is neither entirely open nor closed, but is maintained accurately in the position necessary to produce a draught corresponding to the normal working pressure.

This regulator is applicable to cases where an artificial draught is used by arranging it to regulate the motor. It must be admitted that economy of fuel is effected by having a constant uniform of draught proportioned nicely by the amount of steam it is desired to carry, which reduces the consumption of fuel to a minimum.

It is impossible for the pressure to run up rapidly, as the increasing pressures are met by a corresponding closing of the damper. In addition to these advantages a great saving of labor is effected, especially where the fireman's duty is not confined to the care of his boilers alone—the steam pressure remains practically always at a constant point, and

the vessel, A, at the F, leading from the float there is a small perforations



STR

the float. From upward into the gl movements of the filling tube, through bon are introduced falls freely as the but the weight of t

