

# Scientific American

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

VOL. II.—No. 24.

NEW YORK, JUNE 9, 1860.

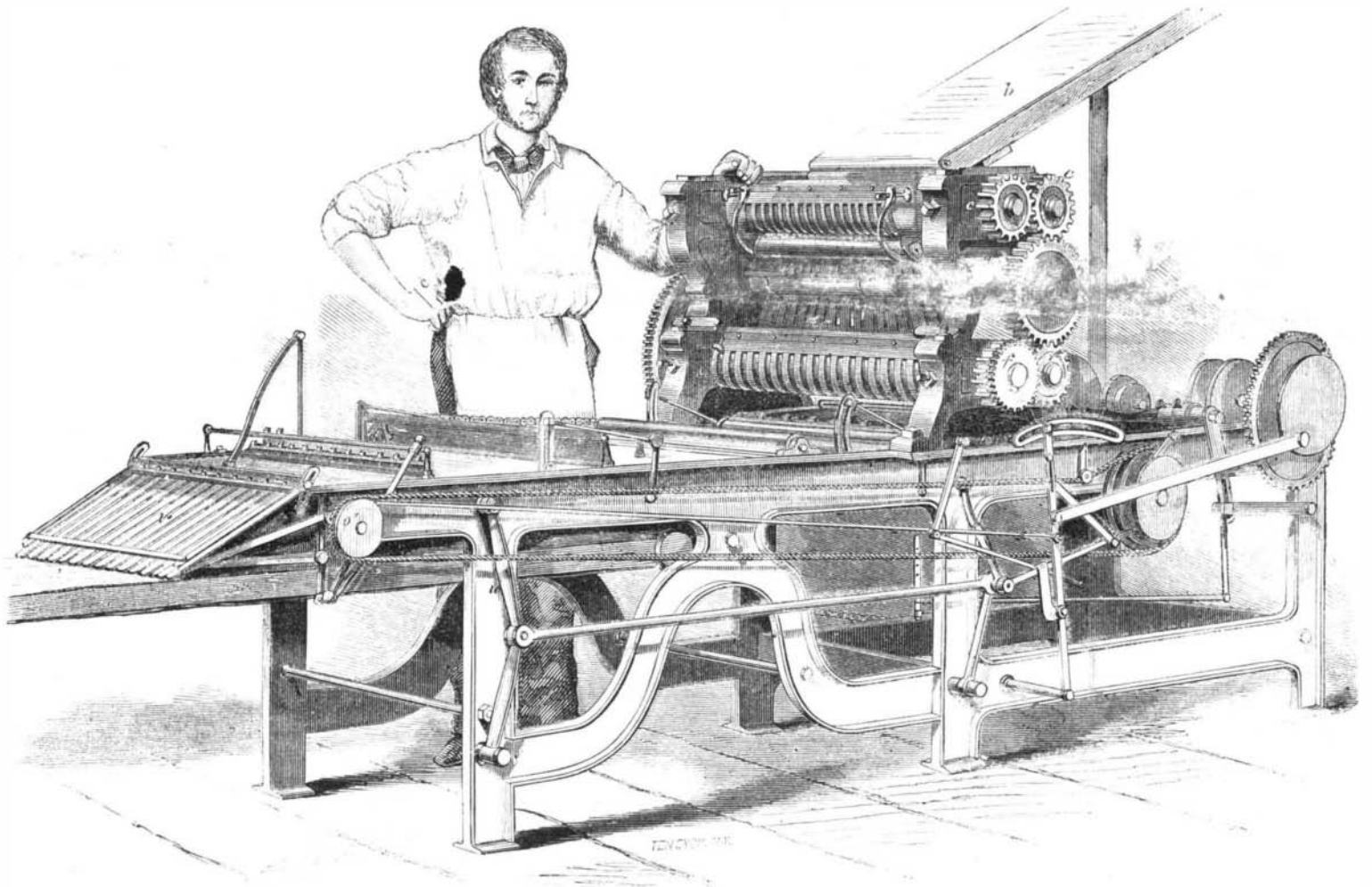
NEW SERIES.

## THE "EXCELSIOR" CRACKER MACHINE.

One of the best known articles in market is the "Fox Cracker" manufactured on a very large scale at Lansingburgh, N. Y. The business has been established nearly half a century, and is now in the hands of Jos. Fox, the son of the late founder. Fox's crackers have proved so popular, and have met with such extensive demand in the community, that it has been found very desirable to introduce machinery in their manufacture; but this has not proved an easy task, on account of a difficulty which was not at first anticipated. When crackers are made by hand, they are smoothed and polished on the outside, giving them that glazed crust

*ff*, which are longer and have their grooves smaller and farther apart than the first pair. The pressure of this second pair of rollers reduces the size of the strings of dough and polishes their surfaces. As they leave the second pair of rollers they enter a series of tunnel-shaped holes in a plate below, and pass through this plate a sufficient distance to furnish the proper quantity of dough on the end of each, below the plate, when their descent is stopped; the motion of the rollers, *c c*, and *ff*, being intermittent for this purpose. As soon as the descent of the cylinders of dough is stopped, they are seized by a pair of jaws having grooves in their edges which hold the dough while it is being cut. A very thin-bladed knife

times re-pressed before it is placed in the oven; for this purpose it is carried under the three rollers, *g g g*, by the onward motion of the belt. Extending across the apron in front of the first of these rollers is a straight bar or plate, which rests an instant as the rows of unbaked crackers are brought against it to push them into a straight line, and then rises to let them pass under the roller. Another similar guide again straightens the rows of crackers after they have passed the last of the rollers, *g g g*. After passing under the rollers, the crackers are stamped in the usual manner by a press which forces them up against the dies, and which is operated by the jointed lever, *u*. Arriving at the end



FOX'S "EXCELSIOR" CRACKER MACHINE.

which confines the gases when they are baked, and makes the interior uniformly light and porous. It is the production of this polished surface which has proved the great obstacle to the success of the inventors of cracker machines, an obstacle which is completely overcome in the great machine here illustrated.

Though the engraving may give the impression that this machine is quite complicated, its principal parts and its operation are perfectly simple, and will be readily understood by the following lucid description:—

The dough, previously rolled into a sheet, is placed upon an inclined table, *b*, the bed of which is formed of rollers. As the dough slides down the table, it enters between a pair of fluted rollers, *c c*, which divide it and press it into a series of cylindrical ropes. These cylinders of dough are conducted by a series of diverging guides, *e*, to the grooves of a second pair of fluted rollers,

is now darted forward by a spring which cuts the dough off smooth at the lower surface of the tunneled plate. Below the jaws which now hold the short cylinders of dough in their grooves, is an endless apron or wide belt which stretches across the machine and is carried over the roller, *O*, at its end. Beneath the belt is a flat plate or bar which rises while the knife is still advanced, and presses the pieces of dough between the apron and the knife, molding them in the grooves of the jaws. As the knife retires, a thin plate with a square edge which fits snugly against the lower side of the knife, advances and scrapes the dough from adhering to the knife. At the same time the press descends, the jaws open, and the bits of dough, now fashioned into the form of crackers, are carried away by the resumed motion of the endless apron. The dough, being elastic, slowly swells up after it has been pressed, and requires to be several

roll of the endless apron, the crackers are received upon the inclined plane, *v*, and a scraper draws them down in even and compact rows into the baking pans which are placed upon the endless apron, *A*.

The various operations of this massive machine are said to be admirably performed, and we hear from many sources that Mr. Fox's bakery is a model of order, neatness and perfection in its operation.

Patents for this invention have been taken out in England, France, and Belgium, as well as in this country; and for information in relation to the purchase of rights or machines, inquiries may be addressed to the agent, Ira Jagger, at Albany, N. Y.

The reader is also referred to our advertising columns for further information.

About 2½ cubic feet of coal gas are consumed per hour in a common burner.