

SCIENTIFIC AMERICAN

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

Vol. XXII.—No. 6.
[NEW SERIES.]

NEW YORK, FEBRUARY 5, 1870.

\$3 per Annum
[IN ADVANCE.]

Cigar Machine.

A very large item in the cost of manufacturing cigars is the labor. To make by hand a first-class cigar requires much skill, only to be acquired by long practice, and such skill always commands a high price. Eighteen dollars per thousand, is perhaps a fair average of the prices now paid in this country for the manufacture of prime Havana cigars. This, with the duty on imported tobacco and the large internal revenue tax, has raised the price of cigars to an unprecedented figure. Anything which could lessen the labor required to make cigars, would immediately increase the consumption in a much larger ratio than the labor would be diminished, so that a machine which, as is claimed for the one we herewith illustrate, would diminish the cost of labor to less than one fourth that required now to produce a given number of cigars, would probably increase the number of cigar makers required to meet the increased demand four fold.

This is the legitimate result of all labor saving machines. Labor-saving considered with reference to a single article produced, they, by the immense increase in the aggregate number of cheapened articles demanded, caused by their employment, are also, in the aggregate, labor-creating machines. The history of all labor-saving inventions which have superseded hand labor in their respective departments will bear us out in this assertion. When Arkwright invented cotton-spinning machines, the cotton spinners forcibly resisted their introduction; but the inventions of Arkwright, Whitney, and others, have increased the number, not only of cotton spinners, but all others engaged in the manufacture of cotton goods more than ten thousand fold.

The machine we are about to describe, though a radical innovation upon the present mode of making cigars, and therefore destined to revolutionize the business, will cause a great increase in the number of cigar makers, as by cheapening cigars it will inevitably increase their consumption.

A pair of rollers, A, are revolved through a system of gearing, either by hand, foot, or other power. The rollers are turned concave longitudinally, the curve of the concavity corresponding to the required outline of the form of cigar desired. Another pair of rollers, B, of precisely the same shape as A, are journaled in the upper part of the machine. This upper half of the case, C, is pivoted or hinged to the lower half of the case, D; both C and D being of sheet brass and of a graceful form. A handle, E, is used to close the upper half, C, upon the lower half of the case, when the machine is in use, and a latch, F, then holds it firmly closed until it is again released.

When the machine is closed as described, the ends of the upper pair of rollers, B, shut down upon the small friction roller, G, and are also run into gear with the pinions of the lower pair, which communicate the motion of the lower pair of rollers to the upper pair. Each of the lower pair of rollers is geared to revolve in an opposite direction to the other, and consequently, when the upper pair are set in motion, they revolve also in opposite directions. A roll of tobacco, therefore, placed between these rollers, would be equally compressed toward the center, while it would be rolled around at the same speed of the rollers, but without causing any strain upon the leaf, which is liable to tear it. A "header," H, shapes the head or mouth end of the cigar, and the roll of tobacco is made to enter this "header," by the action of a small coiled spring behind the friction roller, G, which thrusts

the roll of tobacco toward and into the "header." These are the essential parts of this simple machine.

The operation of making a cigar is as follows: The filling is portioned out in the hand as in making cigars by hand, and being lightly rolled together, and inclosed in a portion of a leaf or "binder" in the ordinary manner, is placed in the machine, which, being closed, immediately rolls it down to the proper shape. The wrapper, previously cut to the required form, and having a little gum tragacanth put on to the mouth end, as in ordinary cigar making, is then fed in obliquely under the front edge of C, and is beautifully and even-

kind of stock is economized. We do not entertain the least doubt of the great merit of this invention. We have seen a large number of the machines running, and rapidly turning out well-made cigars where none but girls, having only a few weeks' practice, were employed, and therefore are enabled to speak from actual observation. This machine is the subject of seven separate patents issued at different times within a short period.

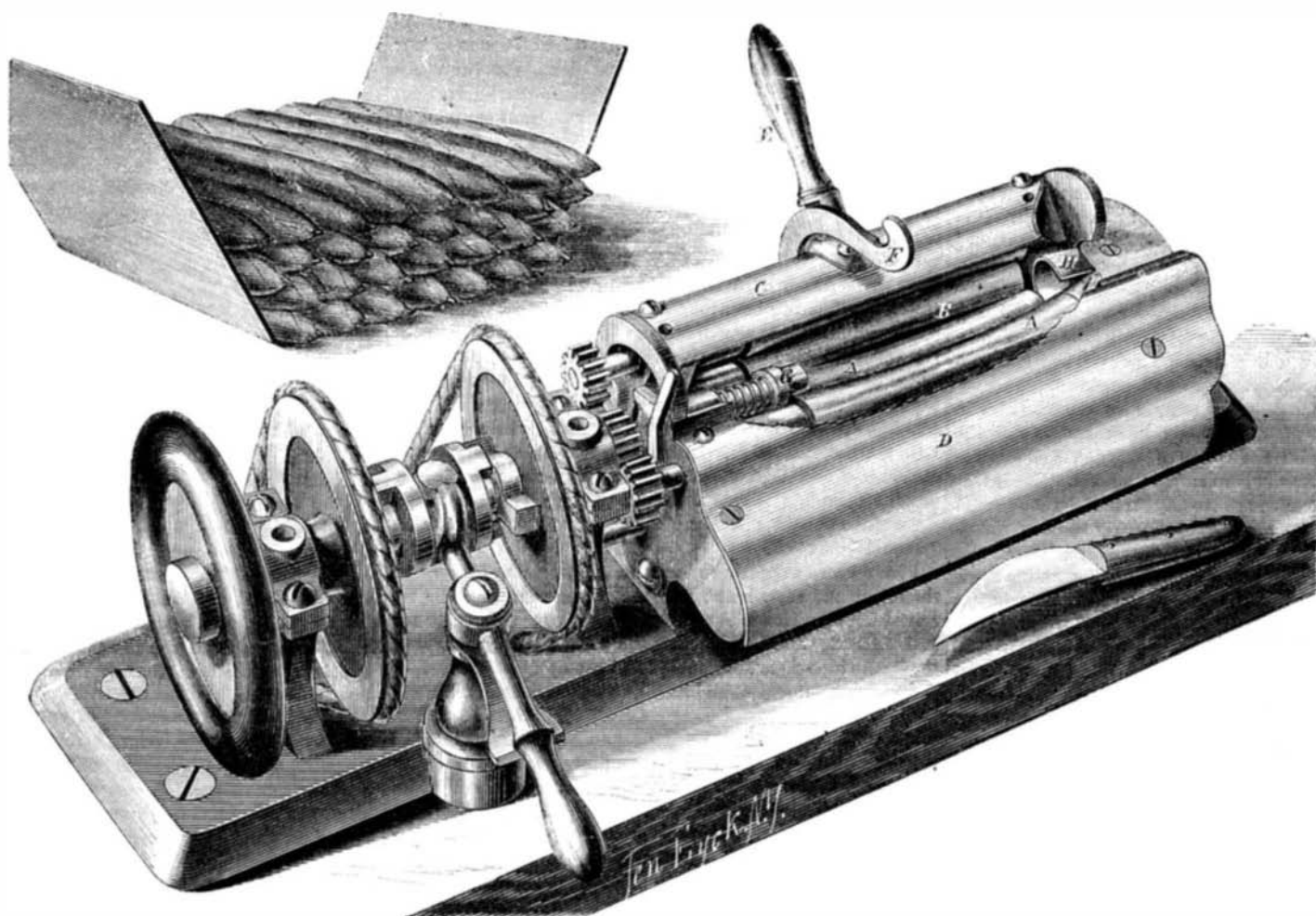
For further particulars all parties interested are invited to address the American Cigar Machine Co., at 113 and 115 Liberty street, New York, or to call and examine for themselves

a large number of machines there kept constantly running in the manufacture of cigars.

Scientific Nonsense.

The following choice piece of scientific nonsense has just been sent to the *Scientific Opinion* by its author, Mr. J. Hampden, of Swindon, England:

"What is to be said of the pretended philosophy of the nineteenth century, when not one educated man in ten thousand knows the shape of the earth on which he dwells? Why, that it must be a huge sham! The undersigned is willing to deposit from £50 to £500 on reciprocal terms, and defies all the philosophers, divines, and scientific professors in the United Kingdom to prove the rotundity and revolution of the world from Scripture, from reason, or from fact. He will



CIGAR-MAKING MACHINE.

ly wound about the filling; and the mouth end which enters the header is shaped with the utmost nicety and dispatch. All that remains to complete the cigar when taken from the machine is to cut it to the required length. From five to six sets of rollers are furnished with each machine, for different sizes and shapes of cigars, and the taking out of one set and the insertion of another occupies only about five minutes.

The machine is small and portable, and may be placed on any table, a favorite way being to use a table and treadle like a sewing machine when steam power is not employed, as is sometimes the case in large establishments. The power required is very slight indeed, and the labor of propelling by the foot is scarcely worth mentioning.

A girl, after a few weeks' practice, can make fifteen hundred cigars per day; or, with an assistant to bunch fillings, can make two thousand. These cigars are every way as perfectly made as can be done by hand, and are very pleasant to smoke, as we can personally vouch.

The machine will work tobacco so tender that it cannot be worked by hand at all; and the tobacco being prepared and moistened in bulk, the filthy practice, common among cigar makers, of taking water into the mouth and squirting it upon the tobacco to moisten it, is entirely abolished, as well as the kindred practice of biting off the points of the mouth end of cigars in the teeth.

The machine does not smoke, and consequently the manufacturer is not taxed to furnish eight or ten of his best cigars to each cigar maker per day, which amounts in the aggregate to thirty or forty cigars per each thousand produced. It is estimated that this saving alone will more than pay for the cost of license to use these machines. Cigars now costing eighteen dollars per thousand to make, can be made on this machine equally well, if not better, at a cost for labor of only four dollars. Anybody can run it successfully with a week or ten days' practice, and girls or children can be taught to use it with very little trouble. A saving is claimed on the wrappers, as they can be cut to greater advantage, and are not liable to break during the process; and thus the most expensive

acknowledge that he has forfeited his deposit if his opponent can exhibit, to the satisfaction of any intelligent referee, a convex railway, river, canal, or lake. Failing to do this by or before the 25th of February, the advertiser to claim the amount deposited, which shall be spent in exposing the falsehood and fraud of the Newtonian philosophers."

Manufacture of Glass.

A novelty in glass making has been brought out by Albert Putsch, Herman Putsch, and George Leuffgen, of Berlin. It consists in using glass pots made of iron instead of fire clay. The inside of the iron vessel is to be lined with fire-proof material, but it may in some cases, be left partly or entirely without such lining. In some cases, the bottom or lower part only is made of iron, while the sides are of fire-proof material; but in all cases, no matter the shape of the vessel, it is necessary to keep the sides and bottom cool, either by atmospheric air or by artificial streams of air or water. The top of this vessel or tank is arched over, leaving the necessary openings for working, and for the entrance and exit of the flame, which passes over the surface of the materials contained in the tank, and melts them. The fireplace may be of any suitable form and construction, and the tank supported in the ordinary manner.

Abolition of the Franking Privilege.

We have repeatedly called attention to the abuse of the franking privilege, and urged upon Congress to remedy these abuses by abolishing the privilege altogether. Our disinterestedness in this course is attested by the fact that, should this privilege be abolished it would cost us thousands of dollars on the matter which now passes free to and fro between us and the Patent Office. Notwithstanding this, we here avow, as we have heretofore avowed, that we prefer to sustain this extra expense rather than that the Government should be cheated, as it has been, in the abuse of the present law.

A bill abolishing the privilege has passed the House; let the Senate now show equal alacrity in completing this much needed reform.