119,843

UNITED STATES PATENT OFFICE.

BENJAMIN E. HALE, OF NEW YORK, N. Y.

IMPROVEMENT IN THE MANUFACTURE OF WRAPPING-PAPER.

Specification forming part of Letters Patent No. 119,843, dated October 10, 1871.

To all whom it may concern:

Be it known that I, BENJAMIN E. HALE, of New York, in the county and State of New York, have invented a new and useful Improvement in the Manufacture of Wrapping-Paper; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to manufacture and use the same.

The production of wrapping-paper has for several years been the source of less profit to the manufacturer than almost any other product of paper-mills. To such an extent, in fact, has the profit been reduced that many of the leading manufacturers of the country have ceased to produce it altogether, and have turned their attention to the manufacture of paper in its various forms for building purposes. The western mills in particular, from producing very large quantities of wrapping-paper, have gradually ceased to run it, so that very little is now supplied to the consumer from this source. The cause of this decline is due primarily to competition in the manufacture and to the fact that the most profitable products of paper-mills, such as building-paper and board, are monopolized by a few manufacturers under Letters Patent. While, therefore, the extremely low price of the raw material for paper stock in the west admirably adapts this portion of the country to the production of all kinds of cheap paper, the manufacture of that which is most profitable—to wit: building-paper—is protected by Letters Patent and open to little or no competition, while the manufacture of that which is least profitable—to wit: wrapping-paper—is free to all and subject to the greatest competition. For this reason many concerns operating upon small capital have been driven from the trade, frequently at great sacrifices.

Wrapping-paper, as usually manufactured, is produced in sheets, the maximum size of which is 30×40 inches. The sheets are run on the common paper-engines, as sheets, and not in rolls, and after passing the driers and calenders, if the latter are used, are ready for the market. In that condition, without change, they are furnished for use, and if the consumer desires to print his advertising-card upon them he carries them to the printer for this purpose. As the consumers represent an endless variety of trades the different sheets are separately printed, each with its peculiar trade-mark or advertisement. Very little wrapping-paper is now used without advertising the wares of the consumer, so that while the paper itself is a cheap product, its subsequent treatment by the printer adds materially to its cost for consumption. So long as each sheet of paper is printed separately, so long will this additional and unnecessary expense be incurred.

My invention has for its object to revive the manufacture of wrapping-paper, so that it can be run with profit to the manufacturer and supplied at less cost to the consumer.

The basis of my invention consists in the production of wrapping-paper, of unusual size, varying from 36×48 inches as the minimum to 48×72 inches as the maximum. Before my invention these sizes of wrapping-paper were never to my knowledge produced. While they may be run upon a common cylinder-machine they are preferably made upon that class of machines which are employed for the manufacture of building-paper and board in continuous lengths, because their capacity is greater.

The web of paper made from Manila, straw, or other stock, after leaving the felts, is carried through the drying-rolls, and from them is delivered to a platform or table at the end of the machine, where it is cut into lengths to form sheets of the predetermined size, which sheets, instead of being removed from the table separately, are piled one upon another, by hand or any suitable arrangement of mechanism, until a large pile has accumulated. There are now many reams of paper in one pile, the sheets of which, for example, are of the extreme size of 48×72 inches, or nearly three times the size of the largest wrapping-paper heretofore manufactured; or, if the size is 36×48 inches, more than one-third larger. Manufacturers have generally regarded the production of wrapping-paper of this size, if not impossible, at least very expensive, because of the waste usually attending their conversion into the smaller sizes of paper, and because of the extreme care required in running them upon the machine.

Having thus created the basis of my invention by stepping far outside the usual course to which this product is confined, I next proceed to reduce it to the proper condition for the consumer. It must be here noted that I propose to supply to the trade the most approved product—to wit: the printed wrapping-paper.

Instead of removing the pile of paper accumu-

lated upon the table, as above mentioned, directly to the wholesale warehouse and putting it into the market in that condition, I first set in type a series of advertisements, either different in their character or different in size, or differing in both these conditions, according to the size and style of the wrapping-sheets to be produced. This form of type is then placed in a press of the requisite dimensions, which may either be connected with the paper-machine or not, as desired, and each sheet passed successively through it. After this they are again piled up, as previously described, with this difference: that the advertisements of each kind upon one sheet are placed directly over those of the sheet next beneath it. A suitable mechanism is now brought into requisition, and at one or successive operations the pile of large sheets is cut down through so as to sever the large sheets into several columns or piles of smaller sheets, there being as many different piles as there are different kinds, styles, or sizes of advertisements. The principle of this method of producing the different grades or styles of wrapping-paper consists in this, that the large sheets are multiples of the smaller sheets; for example, a large sheet 48×72 inches will produce two sheets 24×36 inches, four sheets 12×18 inches, or eight sheets 6×9 inches; or it will produce one sheet 24×36 inches and two sheets 12×18 inches, or one sheet 24×36 inches and four sheets 6×9 inches. Thus it will be seen that upon this principle the sizes may be varied by subdivisions to any extent, the proportions of the smaller sheets generally remaining the same as the large sheets.

Although I have described the operation of printing the sheets as carried on in a press separate from the paper-machine, still I do not confine myself to this arrangement, as I prefer to attach a type or printing-cylinder directly to the paper-engine and print the sheets upon the principle above described, just as they leave the driers or calenders, and before they are cut to be piled upon the table. Instead of cutting the paper into sheets as it is delivered to the table, it may, if preferred, be first wound into rolls and then cut.

By the latter part of my process it will be seen that, instead of the slow and tedious operation of printing each large and small sheet separately with a single advertisement, I am enabled to produce at one operation many sizes of wrapping-paper with many different styles of advertisements, and that the whole process of manufacture, from the formation of the primary or multiple sheet to its subsequent reduction into the printed subdivision, is a combination of operations so distributed as to save much of the time, labor, and consequent expense attending the manufacture of printed wrapping-paper by the ordinary process. In fact, the reduction in cost is so great as to enable me to pay from twenty to twenty-five per cent. more for the same kind of stock than has heretofore been paid, and to supply the printed paper to the consumer at less cost per ream than the common plain or unprinted paper can be furnished. My invention, therefore, enables the manufacturer to realize a large profit, while the consumer is supplied at a cost less than that of the common article.

Having thus described my invention, what I claim is—

1. The process, substantially as described, for producing printed wrapping-paper.

2. As a new article of manufacture, printed wrapping-paper produced in subdivisions from sheets which are multiples of such subdivisions, substantially as described, for the purpose specified.

BENJ. E. HALE.

Witnesses:
E. A. ELLSWORTH,
A. C. RAWLINGS.

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