

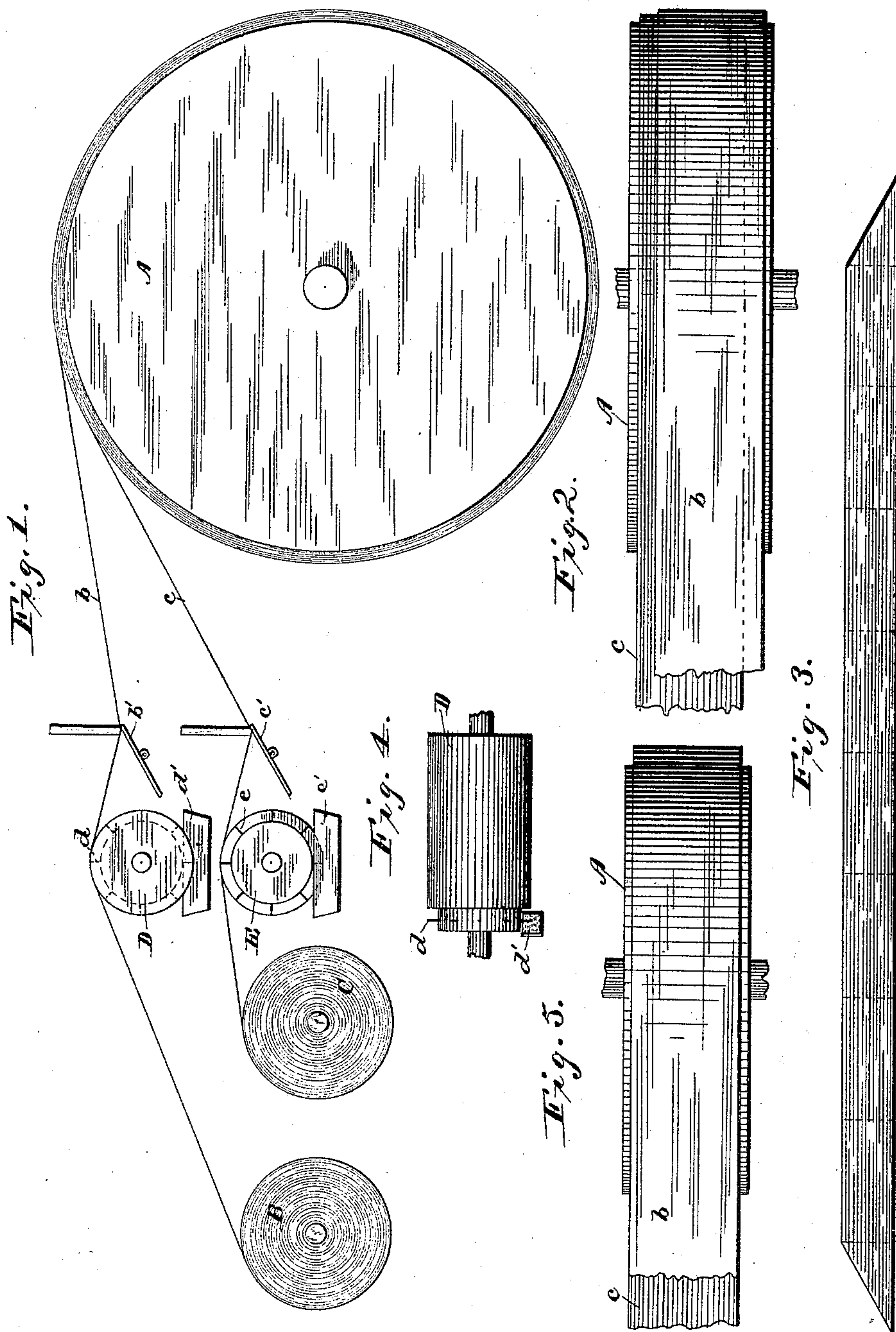
(No Model.)

O. H. HICKS.

METHOD OF MANUFACTURING BUNDLES OF TOILET PAPER.

No. 411,193.

Patented Sept. 17, 1889.



Witnesses.
Chas. R. Burr
A. J. Stewart.

Inventor.
Oliver Hewlett Hicks
By Church & Church
his Attorneys.

UNITED STATES PATENT OFFICE.

OLIVER H. HICKS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE MORGAN ENVELOPE COMPANY, OF SPRINGFIELD, MASSACHUSETTS.

METHOD OF MANUFACTURING BUNDLES OF TOILET-PAPER.

SPECIFICATION forming part of Letters Patent No. 411,193, dated September 17, 1889.

Application filed January 23, 1886. Renewed August 5, 1889. Serial No. 319,790. (No model.)

To all whom it may concern:

Be it known that I, OLIVER H. HICKS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in the Method of Manufacturing Bundles of Toilet-Paper; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

My invention consists of an improved method of manufacturing toilet-paper in bundles, and particularly that for which Letters Patent No. 309,717 were granted me December 23, 1884, all as I will now proceed to describe.

In the drawings, Figure 1 is a side elevation of one form of apparatus for carrying my improved method into operation. Fig. 2 is a top plan view of the winding-drum with the paper thereon. Fig. 3 is a side view of the paper when removed from the winding-drum and before being severed into bundles. Fig. 4 is a view of one of the gumming-rolls; Fig. 5, a top plan view of the winding-drum, showing the manner of forming a modified form of bundle.

Similar letters of reference in the several figures indicate the same parts.

As described in my former patent referred to, the proximate sheets of paper may or may not be secured to each other at one or more points by a line or lines of gum.

When the form of bundle in which the sheets are not secured together is to be made, I provide a suitable drum A, on which the paper is to be wound into a band before being separated into bundles.

B and C represent the two rolls of tissue-paper, the webs extending from said rolls to the winding-drum one above the other, and having their ends secured thereto in any suitable manner. The edge of the web *b* slightly overlaps the corresponding edge of the web *c*, so that as the drum A rotates and draws the paper from the rolls onto it it will form a band of paper consisting of successive layers, one edge of each layer overlapping that of the

next preceding. Suitable tension devices *b'* *c'* may be employed to insure an even winding of the paper upon the roll A. When a sufficient quantity of paper has been wound upon the winding-drum, it is cut and removed from the drum, forming a bundle of paper, as shown in Fig. 3, which is cut through transversely, as indicated by dotted lines, thus forming bundles consisting of sheets having alternate overlapping ends, as described in my former patent.

Sometimes it is desirable to form the bundles of paper with the overlapping ends of the sheets secured to the proximate sheet, so that when one sheet is removed the next one will be pulled down positively, and when this form of bundle is desired I preferably, in addition to the instrumentalities employed, use two gumming-rolls D and E between the rolls B and C and the winding-roll, each consisting, preferably, of a cylindrical roll having at one end a series of pins or projections *d* and *e*, which, when the rolls revolve, dip into receptacles *d'* and *e'*, containing weak solutions of gum arabic or analogous substance. The projections *d* are placed at the left-hand end of the roll D, as shown by dotted lines, while those on the roll E are on the right-hand end, so that as the webs of paper pass over them the gum will be applied to the inside edges of the two sheets, and when they are wound upon the drum the inner edge of each layer will be secured to the preceding layer a short distance from its corresponding edge, so as to form a bundle having one edge of each layer overlapping the next preceding alternately. The paper is separated from the winding-roll by being cut through as before, and this bundle is then cut transversely into suitable smaller bundles, as shown, consisting of a number of sheets of paper, one end of each sheet overlapping that of the next succeeding sheet alternately, and the inner end of each sheet being secured removably to the next, as also described in my patent.

If it is desired to form bundles of paper in which the ends of the sheets do not overlap alternately, but in which they are secured to each other a short distance from the end, I move the two rolls D and E, so that the webs

will run to the winding-drum with their edges parallel and move the gumming-rolls, so that as the webs run over them the line of gum will be placed a short distance back from the edges. When a sufficient quantity of paper from these rolls D and E has been wound upon the drum, the layers being stuck together, the band thus formed is separated from the drum and cut into bundles, as previously described with relation to the other forms of bundles.

It will be understood that I do not desire to be confined to the form of apparatus shown herein, as it is simply one means of practicing the real invention, the method.

In an application filed March 26, 1888, Serial No. 268,585, I have claimed the described apparatus for carrying my invention into operation.

I claim as my invention—

1. The improved method herein described of making bundles of toilet-paper, consisting in winding two independent webs of paper upon each other on a winding-drum with one edge of each convolution overlapping the next preceding one, removing the band thus formed, and cutting it transversely into bundles, substantially as described.

2. The improved method herein described

of making bundles of toilet-paper, consisting in winding two independent webs of paper upon each other on a winding-drum with one edge of each convolution overlapping the next preceding one, a line of gum being applied to the inner or overlapping edge of each web, removing the band thus formed from the winding-drum, and cutting it transversely into bundles, substantially as described.

3. The improved method of making bundles of toilet-paper, consisting in winding two independent webs of paper upon each other on a winding-drum with a line of gum between them near their edges, removing the band thus formed from the drum, and cutting it transversely into bundles, substantially as described.

4. The method of making bundles of toilet-paper, consisting in winding two independent webs of paper upon each other on a drum or cylinder and applying a line of gum to the side of each convolution adapted to come nearest the drum, removing the band thus formed, and cutting it transversely into bundles.

OLIVER H. HICKS.

Witnesses:

MELVILLE CHURCH,
THOMAS DURANT.