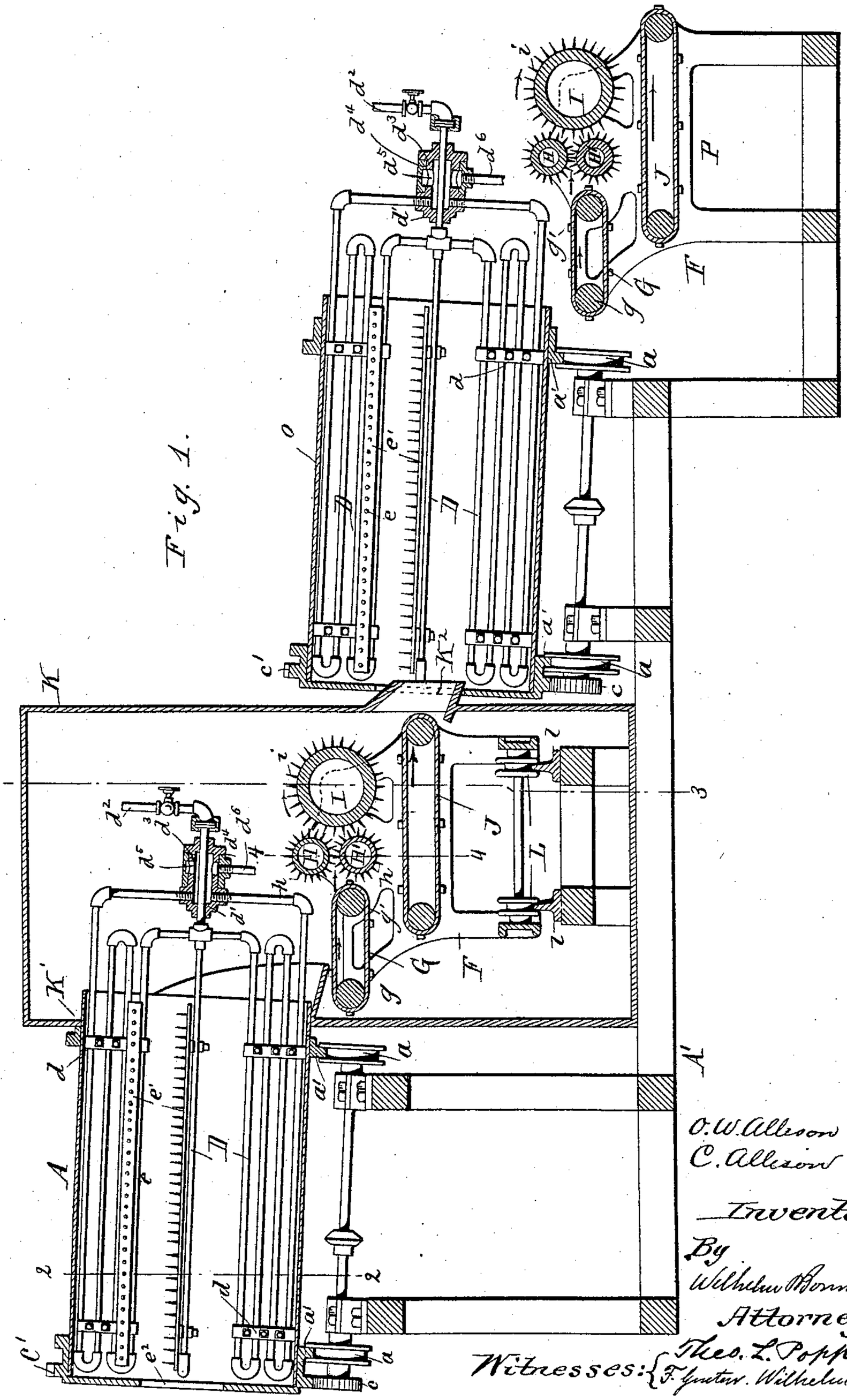
(No Model.) 2 Sheets—Sheet 1.

O. W. & C. ALLISON.

METHOD OF AND APPARATUS FOR DISENTANGLING CUT TOBACCO.

No. 575,774. Patented Jan. 26, 1897.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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METHOD OF AND APPARATUS FOR DISENTANGLING CUT TOBACCO.

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Fig. 3.

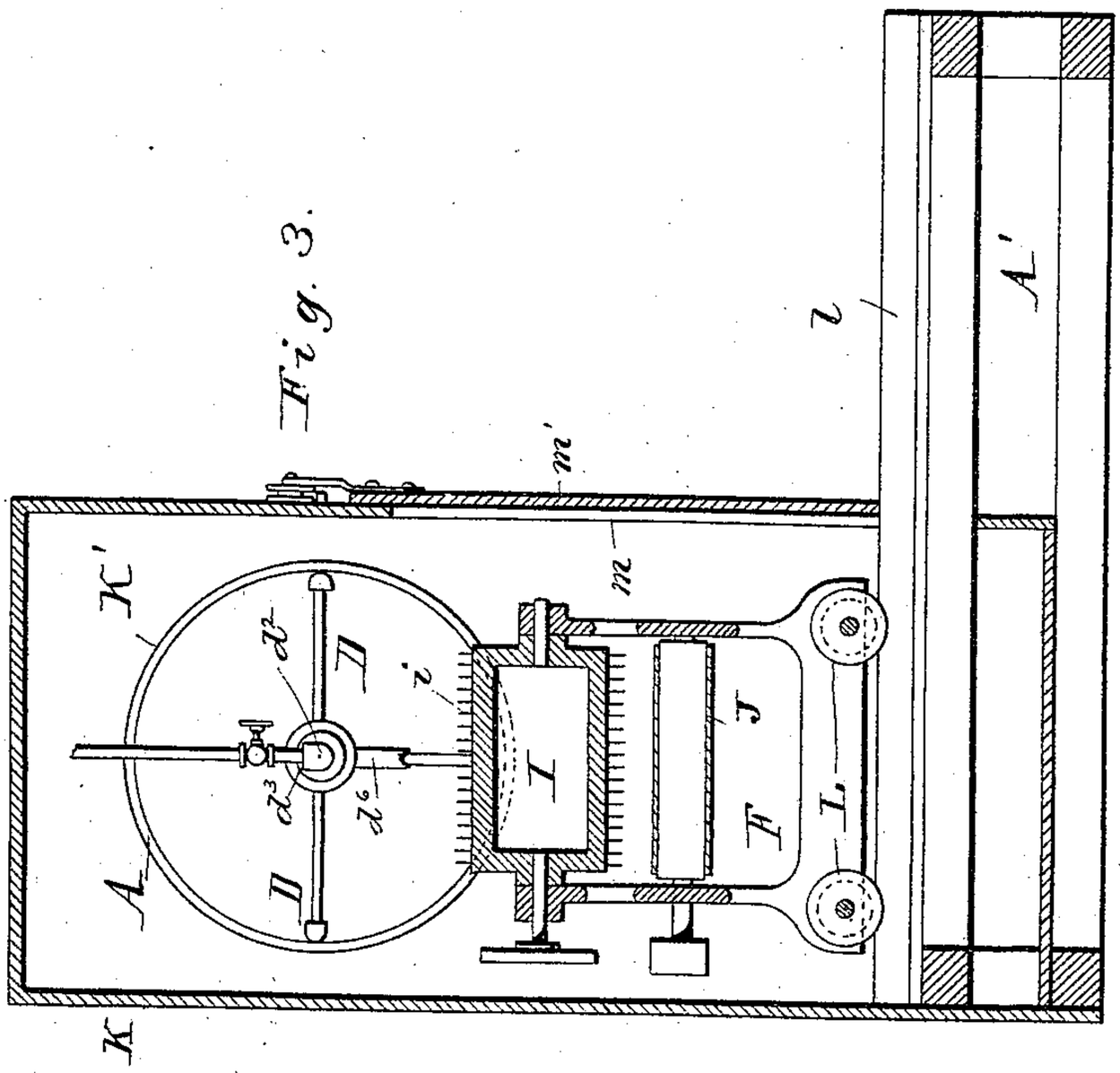


Fig. 2.

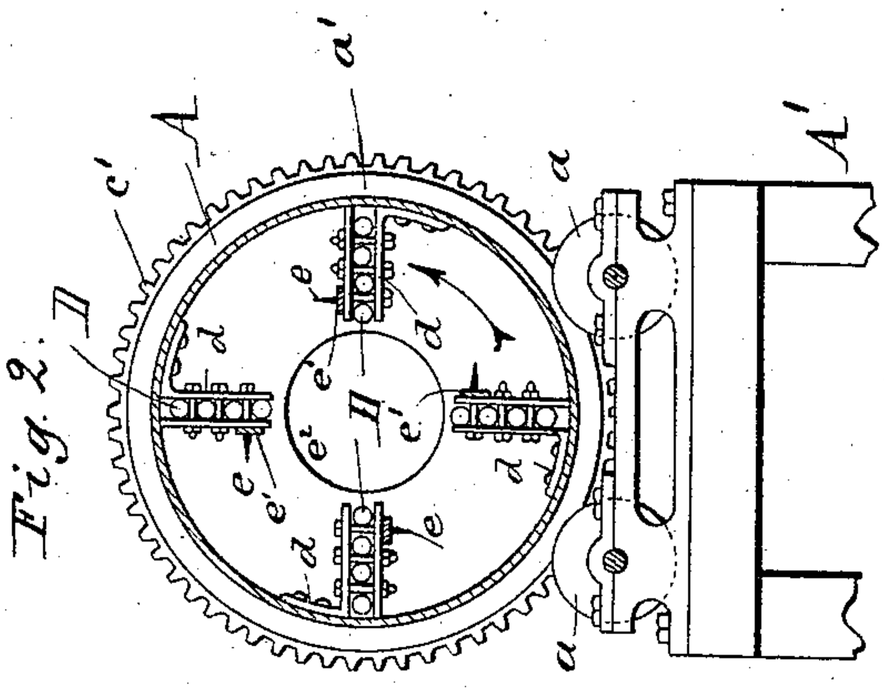
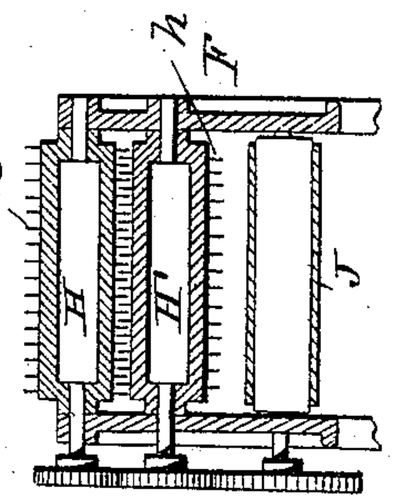


Fig. 4.



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UNITED STATES PATENT OFFICE.

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METHOD OF AND APPARATUS FOR DISENTANGLING CUT TOBACCO.

SPECIFICATION forming part of Letters Patent No. 575,774, dated January 26, 1897.

Application filed May 11, 1896. Serial No. 591,198. (No model.)

To all whom it may concern:

Be it known that we, OSCAR W. ALLISON and CAROLINE ALLISON, citizens of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented new and useful Improvements in Methods of and Apparatus for Disentangling Cut Tobacco, of which the following is a specification.

This invention relates to a method of and apparatus for heating, drying, and disentangling cut tobacco.

In preparing cut smoking-tobacco the tobacco-leaves are moistened and then cut up and dried. When such cut tobacco is cold and dry, it is brittle, and in this condition the operation of opening or disentangling the aggregations or bunches of fibers results in breaking up or comminuting a considerable portion of the fibers, which is objectionable because it produces short fragments of tobacco.

The object of our invention is to effect a separation of the aggregations of fibers and to loosen the fibers uniformly without danger of shortening the same by breaking or cutting. We attain this object by subjecting the cut tobacco to the disentangling or combing operation while hot, in which condition the fibers are tough and pliable and can be handled much more freely and without danger of breakage than when they are cold and dry.

In the accompanying drawings, consisting of two sheets, an apparatus is shown for practicing our invention.

Figure 1 is a longitudinal sectional elevation of such apparatus. Figs. 2, 3, and 4 are transverse sections thereof in lines 2 2, 3 3, and 4 4, Fig. 1, respectively.

Like letters of reference refer to like parts in the several figures.

A is the heating-drum or drier, in which the first operation of heating and disentangling the fibers is performed. As shown in the drawings, this drier is slightly inclined rearwardly and rotatably supported by rollers *a* *a*, mounted on the main frame A′ and engaging with annular flanges *a′* on the drum. The drum may be rotated in the direction of the arrow, Fig. 2, by any suitable means, preferably by a gear-wheel *c*, secured to one of the roller-shafts and meshing with a gear-rim *c′* on the drum.

D represents several sets of steam-coils arranged lengthwise and radially in the heating-drum and secured thereto by brackets *d*, so as to turn therewith. Steam may be admitted into these coils and the water of condensation may be withdrawn therefrom in any suitable way—for instance, by the devices shown, which consist of an axial pipe *d′*, rigidly connected at one end with the inlet ends of the steam-coils and movably connected at its other end with a stationary steam-supply pipe d^2.

d^3 is a rotary outlet chamber or sleeve connected with the outlet ends of the several coils and journaled in a hollow bearing d^4. The sleeve is provided with outlet-openings d^5 within the hollow bearing, and the latter is provided with a drain-pipe d^6 for the escape of the water of condensation.

Upon turning the drum the tobacco is picked up by the steam-coils as the latter pass upwardly on one side of the drum and drops from the coils as they reach the upper portion of the drum, thereby exposing all portions of the tobacco to the heat of the coils and heating and drying the same.

In order to disentangle the tobacco at the same time that it is being heated and dried, the inner side of the drum is preferably provided in any suitable manner with combing or separating teeth *e*, which are adapted to engage with the tobacco as it is tumbled around in the drum and separate or disentangle the bunches of fibers, shreds, or strands. A row of these teeth is preferably arranged in connection with each set of steam-coils near the inner edge of each coil, so that the tobacco, after having been lifted, falls upon and between these teeth and is operated upon by the same. Each row of teeth is preferably secured to a bar *e′*, which is secured to the brackets *d* on the advancing side of the coil. The cut and moistened tobacco is introduced into this drum through an opening e^2 in the front head of the drum and is heated and disentangled while being tumbled about in the drum and is finally discharged from the open rear end of the drum and delivered to a disentangling or combing machine, which operates on the tobacco while the same is still heated. This machine is preferably constructed as follows:

F represents the frame of the machine, which is arranged in rear of the heating-drum, and G is a feed-apron arranged underneath the tail end of the drum and passing around rollers g g', journaled in the frame F.

H H' represent two picker or retarding rollers which are journaled transversely in the frame F and between which the tobacco is delivered by the feed-apron G. The picker-rollers are separated a suitable distance, and each roller is provided on its periphery with pins or teeth h, which pass freely between the teeth of the opposing picker-roller. The picker-rollers are preferably so geared that their opposing sides move forwardly and at the same speed.

I represents a combing-roller which is journaled transversely in the frame F in rear of the picker-rollers and which is provided on its periphery with teeth i, which pass freely between the teeth of both picker-rollers. The combing-roller rotates faster than the picker-rollers, whereby the more rapidly-moving teeth of the combing-roller comb out, separate, and loosen the aggregations of fibers or strands of tobacco.

J represents a delivery-apron which is arranged underneath the feed-apron, the picker-rollers, and the combing-rollers and which receives the tobacco from the latter, together with any tobacco which may fall from the feed-apron and the picker-rollers and between the latter and the combing-rollers.

In order to prevent cooling of the tobacco as it passes from the drier through this combing-machine, the latter is inclosed by a housing K, which is provided on its front side with an opening K', through which the delivery end of the drier projects, and on its rear side with an opening K^2, through which the delivery-apron of the combing-machine delivers the tobacco. By inclosing the combing-machine and the rear end of the drier the space around the same is kept hot by the drier, and the tobacco is maintained in the proper pliable condition while being operated upon by the combing-machine.

For the purpose of permitting free access to all parts of the combing-machine for cleaning the same the machine is preferably supported by wheels L, attached to the frame of this machine and mounted on rails l, which extend outside of the housing. The side wall of the housing is provided above the rails with an opening m, through which the machine is moved and which is closed by a sliding door m'.

O represents a secondary heating-drum or drier, which is constructed like the primary heating-drum and into which the tobacco is delivered from the combing-machine. This drum dries any portion of the tobacco which is still moist after having passed through the primary heating-drum and the combing-machine, and its combing-teeth serve to further loosen or disentangle the fibers of tobacco as the latter passes through the same. The tobacco, after passing through the secondary heating-drum, may be delivered to a secondary combing-machine P. The latter is constructed like the primary combing-machine and completes the loosening of the fibers while the tobacco is still in a heated state as it escapes from the secondary drier.

Cut tobacco prepared in this manner is composed of long fibers which are uniformly loosened and free from knots, lumps, or aggregations of fibers.

We claim as our invention—

1. The herein-described method of loosening the fibers of cut tobacco which consists in heating the fibers and carding, combing or disentangling the fibers while in a heated condition, substantially as set forth.

2. The combination with a heating-drum having an inlet and a discharge for the cut tobacco, of a combing-machine which receives the heated tobacco from said drum, substantially as set forth.

3. The combination with a heating-drum having an inlet and a discharge for the cut tobacco, of a combing-machine which receives the heated tobacco from said drum, and a housing which incloses the delivery end of said heating-drum and said combing-machine, substantially as set forth.

4. The combination with a heating-drum having an inlet and a discharge for the cut tobacco, of a combing-machine which receives the heated tobacco from said drum and a secondary heating-drum which receives the tobacco from said combing-machine, substantially as set forth.

5. The combination with a heating-drum having an inlet and a discharge for the cut tobacco, of a combing-machine which receives the heated tobacco from said drum, a secondary heating-drum which receives the tobacco from said combing-machine and a housing connecting said drums and inclosing said combing-machine, substantially as set forth.

Witness our hands this 8th day of May, 1896.

OSCAR W. ALLISON.
CAROLINE ALLISON.

Witnesses:
JNO. J. BONNER,
ELLA R. DEAN.