

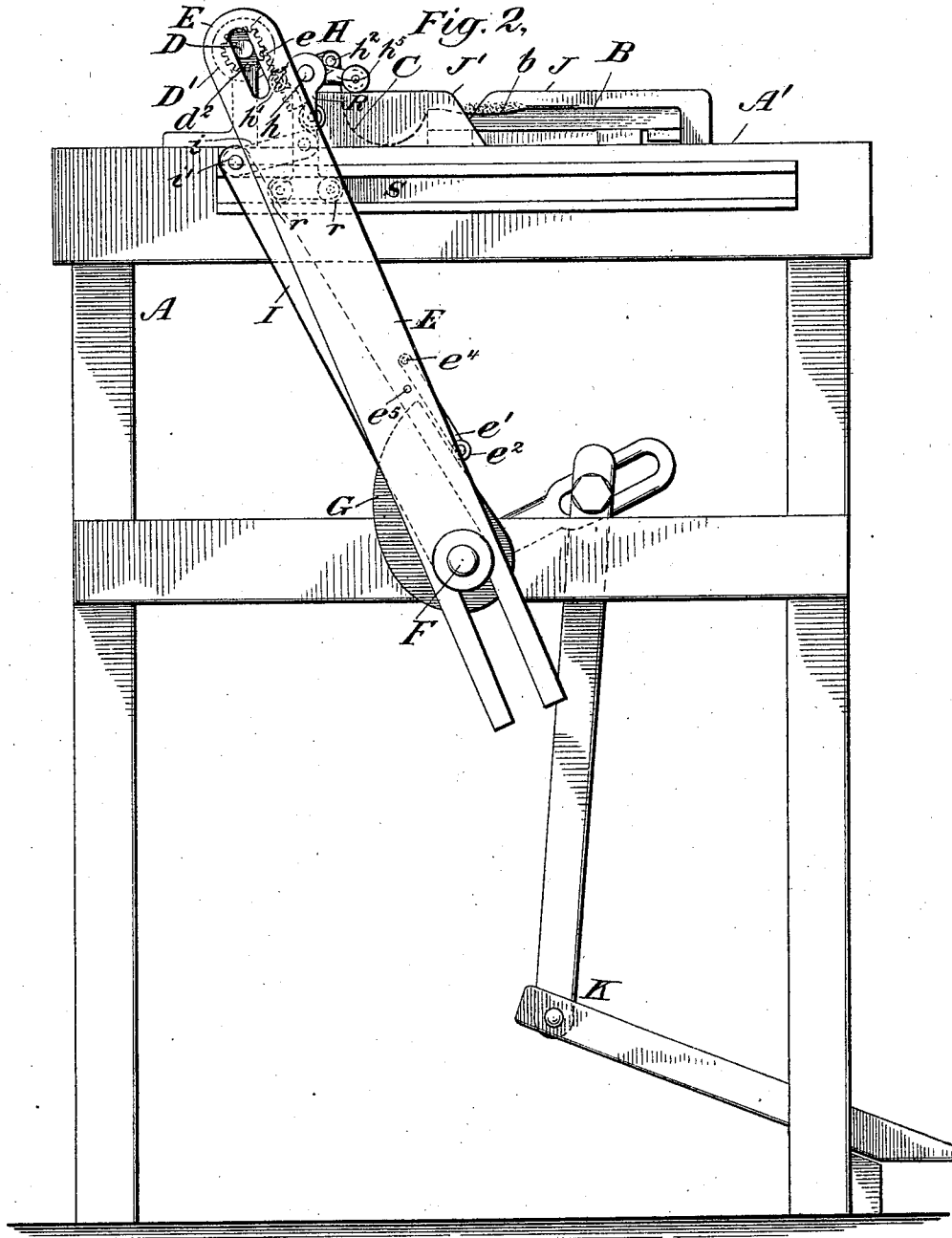
(No Model.)

4 Sheets—Sheet 2.

A. G. VALE.
CIGARETTE MACHINE.

No. 574,465.

Patented Jan. 5, 1897.



Witnesses:-

C. H. Maybrook

W. A. Pauling

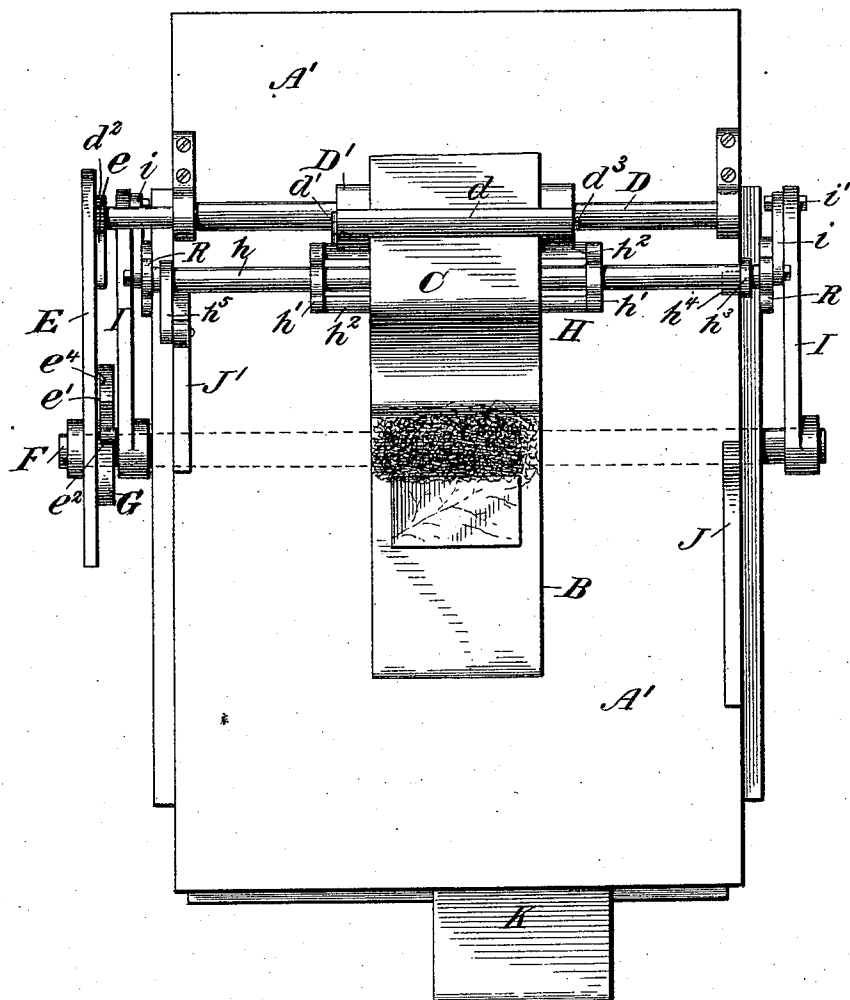
Inventor:-
Alfred G. Vale,
by his attorney,
Edwin H. Brown

A. G. VALE.
CIGARETTE MACHINE.

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Fig. 3,



Witnesses:-

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(No Model.)

4 Sheets—Sheet 4.

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Fig. 4.

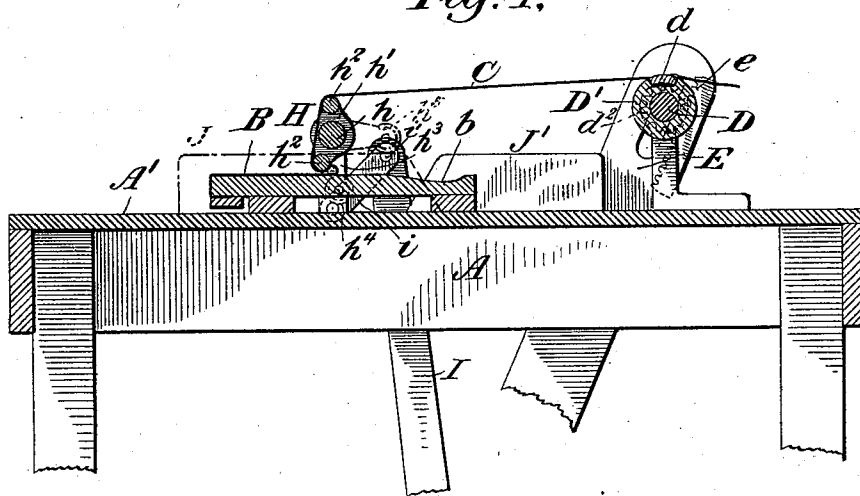
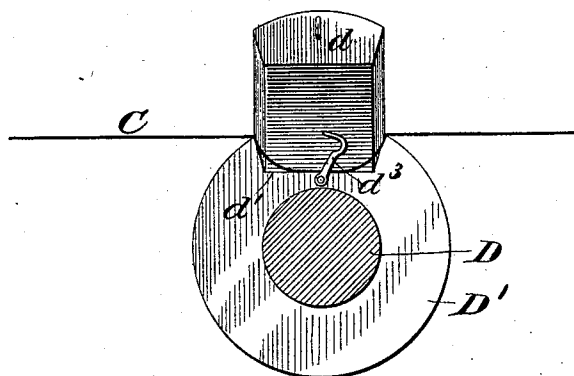


Fig. 5.



Witnesses:-

B. H. Raymond.

W. A. Pauling

Inventor:
Alfred G. Vale,
by his attorney,
Edwin H. Brown

UNITED STATES PATENT OFFICE

ALFRED G. VALE, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE VALE MACHINE COMPANY, OF NEW YORK.

CIGARETTE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 574,465, dated January 5, 1897.

Application filed July 20, 1895. Serial No. 556,659. (No model.)

To all whom it may concern:

Be it known that I, ALFRED G. VALE, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Cigarette-Machines, of which the following is a specification.

My improvement is especially intended for machines employed to make cigarettes one at a time as distinguished from making a continuous-cigarette rod and cutting it into pieces.

I will describe a machine embodying my improvement and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is an elevation of one side of a machine embodying my improvement. Fig. 2 is an elevation of the other side of the machine. Fig. 3 is a top view. Fig. 4 is a vertical section of certain parts, showing them in the position they occupy during the rolling of a cigarette. Fig. 5 is a transverse section of other parts.

Similar letters of reference designate corresponding parts in all the figures.

A designates the framework of the machine. It may be of any suitable form and constructed of any desired materials.

B designates a rolling platform or table, which may be made of any suitable material and form. As here shown, it is made rectangular in form. Near one end it preferably has in its upper surface a slight concavity *b*. This rolling-table may be supported in any suitable way. As here shown, it is mounted upon a support *A'*, comprised in the framework of the machine.

C designates a rolling-cloth which rests upon the rolling-table B and extends beyond the same. By the term "cloth" I mean to include not only what is technically cloth, but any analogous flexible material. I prefer to use for this part of the machine what is commonly known as "rubber-cloth," and which is made of a woven fabric, coated on one side with rubber. This cloth is shown as attached to the rolling-table at the forward end, or, in other words, at that end which is the nearer to the operator. The other end of the rolling-cloth is attached to a rock-shaft D, that is journaled in the framework A of the machine.

As shown, a cylinder *D'* is affixed to this shaft, and the end of the cloth is attached to such cylinder.

Any suitable means for fastening the cloth to the cylinder may be employed. As here shown, the roller is provided with a longitudinal groove, and in this is arranged a clamp *d*, the latter being connected at one end with the roller by means of a hinge *d'* and fastened at the other end by means of a hook *d''*, pivoted to one end of the roller and engaging with an eye affixed to the corresponding end of the clamp. The cloth C will of course be interposed between the groove of the roller and the clamp.

For imparting oscillating motion to the rock-shaft D, I have shown a rod E combined with it. This rod E is slotted at the upper end to embrace the shaft D and is provided with a rack *e*, that engages with a pinion *d''*, which is affixed to the said shaft.

The lower portion of the rod E is shown as slotted or bifurcated to embrace a shaft F, which, in the present example of my invention, constitutes the driving or main shaft of the machine. Affixed to this shaft F is a cam G, which coacts with an arm *e'*, with which the rod E is provided. This arm *e'* is preferably provided with an antifriction-roller *e''*, and said arm is pivotally connected to the rod E by means of a pin or screw *e'''*. The arm is precluded from moving in one direction beyond a certain point by means of a stop-pin *e''''*, secured to said rod E.

When the shaft F is turned in one direction, the back of the cam G will come in contact with the antifriction-roller *e''* and turn the arm *e'* in such a direction as not to impart any motion to the rod E, but when the shaft F is turned in the reverse direction the face of the cam G, operating against the antifriction-roller *e''*, will, because the rod *e'* will be precluded from moving by contact with the stop *e''''*, operate to raise the rod E, so that the rack of the latter, acting through the pinion of the shaft D, will turn this shaft in a direction to slacken the rolling-cloth. As soon as the face of the cam shall have passed beyond the antifriction-roller *e''* the rod E will

be allowed to drop, and in dropping it will turn the shaft D in a reverse direction, so as to tighten the rolling-cloth.

H designates a rolling device consisting, as here shown, of a sliding and rocking shaft h , arms h' , affixed thereto, and rollers h^2 , journaled in said arms. The ends of the sliding and rocking shaft h extend beyond the sides of the framework A and into brackets R, each of which has three arms. The ends of the shaft h extend into the upper arms of these brackets. The two lower arms of the brackets are provided with rollers r , which work in slots S, formed in the sides of the framework of the machine. The brackets R, supporting the shaft h , are connected with arms I, affixed to the driving or main shaft F. As this shaft oscillates, these arms I impart to the shaft h the sliding motion which gives to the rolling device its reciprocatory movement. I prefer to connect the arms I with the brackets R by fitting loosely to the latter links i , which are pivotally connected by pins i' to the upper ends of the arms I.

Near one end of the shaft h of the rolling device H is a downwardly-extending arm h^3 , which preferably will be provided with an antifriction-roller h^4 . This arm or its roller coacts at the proper time with a track or cam J, comprised in or affixed to the framework of the machine. In the forward movement of the rolling device the arm h^3 or its roller will contact with the track or cam J, and will thus be detained so as to rock the rolling device into such position that its rollers h^2 , which before were substantially in a horizontal plane, will assume a substantially vertical plane. By this movement from a horizontal to a vertical position the slack provided in the rolling-cloth is taken up, so that the tobacco filler and wrapper previously laid upon the cloth may be rolled compactly to produce a cigarette.

When the rolling device moves backwardly, the arm h^3 is carried beyond the track J to permit the turning of the rolling device, so that its rollers will be turned from an approximately vertical plane to an approximately horizontal plane, and at or about the time that the arm h^3 is thus moved beyond the track or cam J another arm h^5 , with which the shaft h is provided, or an antifriction-roller arranged upon this arm h^5 will contact with another track or cam J', and after this happens the continuing rearward movement of the rolling device will cause it to be turned in the manner last described.

Any desirable means may be employed for operating the driving or main shaft F. In the present instance I have shown a treadle K and appurtenances for this purpose.

It will be seen by reference to Fig. 2 that when the machine is at rest the rolling-cloth is sagged so as to form a pocket between the rear end of the rolling-table and the rolling device. The tobacco which is to form the

filler is laid upon the rolling-cloth above the rolling-table and near the rear end of the latter. It is laid upon the rolling-cloth just above the cavity b of the rolling-table. The wrapper is laid upon the rolling-cloth above the rolling-table forward of the tobacco which is to constitute the filler. One edge portion of this wrapper is intended to be pasted before the wrapper shall be laid upon the rolling-cloth. When the rolling device is moved forwardly, it forms a loop or bight in the rolling-cloth over the rear end of the rolling-table, and just about this time it is turned so that its rollers will be changed from an approximately horizontal to an approximately vertical plane, this change occurring somewhat gradually. Thus the slack of the rolling-cloth will be taken up, and the further forward movement of the rolling device will cause the compact rolling of the wrapper and tobacco filler to form a cigarette. This operation is specially advantageous for cigarettes having wrappers made of tobacco.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a cigarette-machine, the combination with a rolling-table, and a rolling-cloth, of a reciprocating rolling device comprising two rollers secured in a rocking frame over which the apron passes, and means for causing the rollers to assume a position, during the rolling of the cigarette, in which the line joining the axes of the rollers is changed from a substantially horizontal to a substantially vertical position relatively to the table during their movement across the table, substantially as specified.

2. In a cigarette-machine, the combination with a rolling-table, and a rolling-cloth, of a reciprocating rolling device comprising two rollers secured in a rocking frame over which the apron passes, and means for causing the rollers to automatically assume a position during the rolling of the cigarette in which the line joining the axes of the rollers is changed from a substantially horizontal to a substantially vertical position relatively to the table during the movement of the rollers across the table, substantially as specified.

3. In a cigarette-machine, the combination with a rolling-table, and a rolling-cloth, of a reciprocating rolling device comprising a rock-shaft, arms affixed thereto and rollers mounted in the arms over which rollers the apron passes, substantially as specified.

4. In a cigarette-machine, the combination with a rolling-table and a rolling-cloth, of a reciprocating rolling device comprising a rock-shaft, arms secured thereto and a roller mounted in the arms, tracks provided with cam-surfaces, and arms secured to said rock-shaft and provided with parts adapted to coact with said cam-surfaces, substantially as specified.

5. In a cigarette-machine, the combination with a rolling-table, and a rolling-cloth, of

brackets and ways in which said brackets move lengthwise of the machine, a rock-shaft journaled in said brackets and provided with arms cam-surfaces arranged adjacent to the
5 arms with which said arms are adapted to coact, rollers journaled in fixtures carried by the rock-shaft over which rollers the apron passes, and means for taking up the slack in the cloth, substantially as specified.

10 6. In a cigarette-machine, the combination with a rolling-table and a rolling-cloth, of a reciprocating rolling device comprising a rock-shaft, and rollers mounted in fixtures carried by the rock-shaft, means for auto-
15 matically rocking said shaft during the roll-

ing of a cigarette, and a take-up roller for the cloth, substantially as specified.

7. The combination of a rolling-table, a rolling-cloth, a reciprocating rolling device comprising a rock-shaft, arms secured there- 20 to, and supported rollers, and means for automatically rocking said shaft, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of 25 two subscribing witnesses.

ALFRED G. VALE.

Witnesses:

ABRAHAM HIRSCH,
PHILIP DAVIDSON.