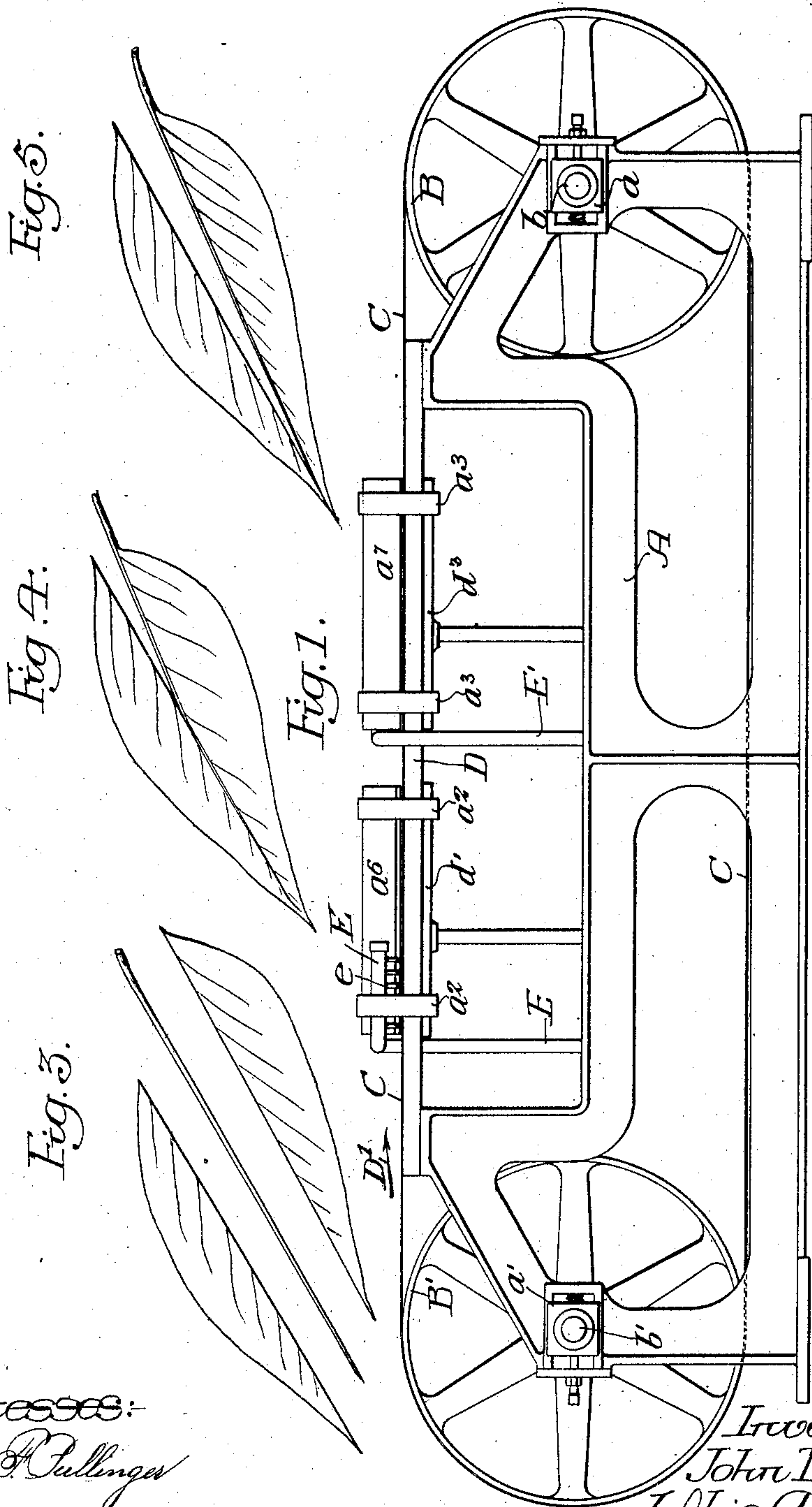


No. 883,622.

PATENTED MAR. 31, 1908.

J. T. CARTER.
TOBACCO STEMMING MACHINE.
APPLICATION FILED JULY 22, 1907.

2 SHEETS—SHEET 1.



Witnesses:
Walter A. Pullinger
Wills A. Burrows.

Inventor
John T. Carter
by His Attorneys,
Houson & Houson

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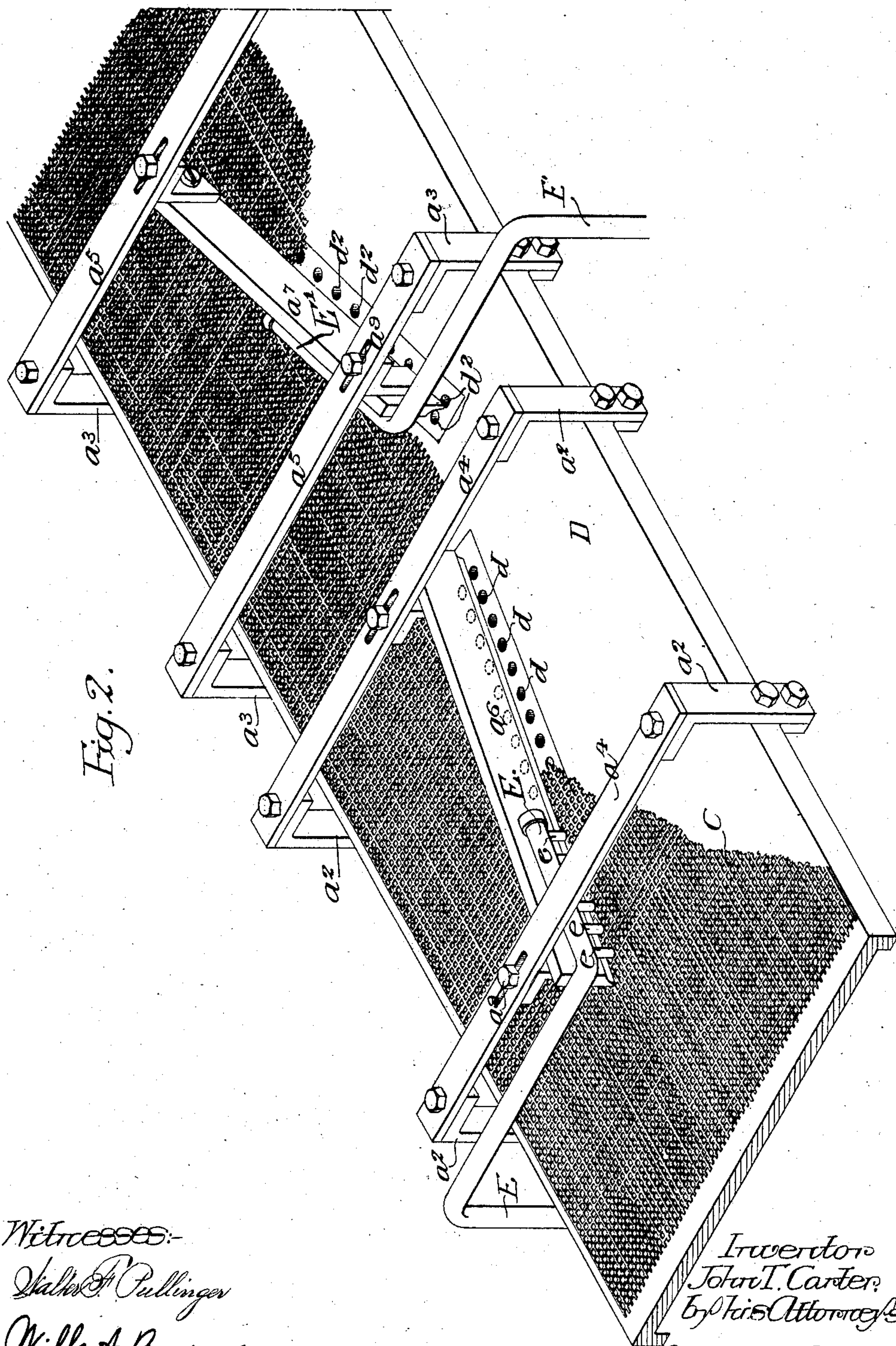


Fig. 2.

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UNITED STATES PATENT OFFICE.

JOHN T. CARTER, OF DANVILLE, VIRGINIA.

TOBACCO-STEMMING MACHINE.

No. 883,622.

Specification of Letters Patent.

Patented March 31, 1908.

Application filed July 22, 1907. Serial No. 384,981.

To all whom it may concern:

Be it known that I, JOHN T. CARTER, a citizen of the United States, residing in Danville, Virginia, have invented certain Improvements in Tobacco-Stemming Machines, of which the following is a specification.

One object of my invention is to provide a device for automatically removing the stems from a succession of leaves of tobacco; it being particularly desired that the machine shall be of such a nature as to firmly hold the leaf while the stem is being removed therefrom.

It is further desired to provide a stemming device having its parts so arranged that the successive leaves of tobacco operated on are so treated that half of the leaf is first separated from the stem and the remaining half of the leaf, after which said stem is removed from the said latter half.

These and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawings, in which

Figure 1, is a side elevation illustrating one form of my improved stemming machine; Fig. 2, is a perspective view showing part of the perforated apron broken away and further illustrating the construction, and, Figs. 3, 4 and 5, are perspective views of leaves illustrating them in the various stages occupied during the operation of my improved machine.

In the above drawings, A represents the framework of a machine which is provided at each end with yieldingly supported bearings a and a' in which are respectively carried transverse shafts b and b' . These shafts have mounted upon them relatively wide pulleys B and B' around which extends an endless belt C made of any suitable screen or net work or perforated fabric or perforated sheet material, as may be found most convenient. One of these pulleys is driven from any desired source of power and I preferably also provide a supporting table D under the upper run of the apron C; this table being rigidly supported from the frame A.

Supported in any desired manner from the frame are two series of upright standards a^2 and a^3 , of which the first are connected in pairs by transverse bars a^4 extending over the table D, while the second set of standards are similarly connected in pairs by bars a^5 likewise extending over the table. The bars a^4 serve as a support for a depending stemming bar a^6 which consists of a metallic piece

having its lower edge preferably made narrow and as a whole supported so as to lie in a plane at a relatively acute angle to the general line of the table D. I also provide in the table a series of holes or conduits d leading into a suction box d' connected to any exhausting device such as a fan or pump and it is to be noted that these holes are arranged in two lines extending respectively on two sides of the general line of the stemming bar a^6 . Along the front portion thereof is a pipe E connected to a source of compressed air and provided with a series of outlets or nozzles e , so arranged as to deliver jets of air downwardly upon the perforated apron C immediately above certain of the holes d .

A second stemming bar a^7 is likewise supported from the transverse members a^5 though in such manner that it extends in a line inclined at an angle to the general line of the table D but opposite that of the stemming bar a^6 . Moreover, its end adjacent to said bar a^6 is nearer the edge of the table than is the adjacent end of said bar. In this connection also the table is provided with a series of holes or conduits d^2 connected to a suction box d^3 and arranged in two lines on opposite sides of the general line of the stemming bar a^7 . There is also a pipe E' connected to a source of compressed air and provided with a series of nozzles directed toward certain of the holes or conduits d^2 in one line thereof and on that side of the stemming bar a^7 nearest the end of the stemming bar a^6 .

Under operating conditions the previously smoothed and straightened tobacco leaves are successively fed on to the perforated apron C, which is driven by one of its pulley wheels in the direction of the arrow D'. The pipes E and E' are arranged to deliver jets of compressed air from their nozzles, while the suction boxes d' and d^3 are connected to the exhaust fan or the like. Under these conditions a leaf to be treated is shortly brought under the action of the currents of air sucked through the perforated apron C into the holes d' , whereby it is drawn down and held closely upon the said apron. This action is insured by the jets of air from the nozzles e which drive or force the leaves into direct contact with the apron so as to certainly bring them under the action of the suction produced into the holes d .

Inasmuch as the apron travels in a straight line while the holes d and the stemming bar

a^6 are inclined to the line of such travel, the leaf will gradually pass under said stemming bar, and inasmuch as this is set at such a height from the apron as will permit of the passage of the body or main portions of the leaf but will catch the thicker stem thereof, one side or half of the leaf is separated or torn from the stem. Thereafter this half passes from under the influence of the suction into the holes d , and is carried by the apron to the other end of the machine, where it is delivered to any proper receiving device.

The remaining half of the leaf, with the stem still connected thereto, is now carried by the moving apron C until it comes within the influence of the currents of air through the apron into the holes d^2 , and as before, it is forced down into contact with the apron so as to be tightly held thereto by the jets of compressed air issuing from the nozzles of the pipe E'. As before, the second half of of the leaf moves in a straight line with the apron, while the stem is engaged by the second stemming bar a^7 and is forcibly torn from said half leaf, which finally passes out of the range of action of the suction into the holes d^2 and is delivered from the machine.

If desired I may provide slotted holes in the transverse bars a^4 and a^5 for the reception of the bolts a^9 whereby the stemming bars a^6 and a^7 are held in position, thereby rendering possible the adjustment of these bars so as to vary their angles relatively to the line of movement of the perforated apron.

In arranging the stemming bars a^6 and a^7 relatively to their adjacent sets of suction holes d and d^2 , I find that in most cases it is advisable that the two lines of each set of holes should be nearer together and to their stemmer bar at the rear end thereof in the case of the bar a^6 and at the front end in the case of the bar a^7 ; this arrangement insuring the most satisfactory holding of the leaf operated on.

Fig. 3, represents a leaf after its engagement with the stemmer bars a^6 and a^7 while Figs. 4 and 5 illustrate the same leaf after it has passed half way and almost wholly under the bar a^6 .

I claim:

1. A stemming machine consisting of a foraminous conveying device, a stemming bar mounted adjacent to said device so as to permit the passage of the body of a leaf while engaging the stem thereof, and means for holding the leaf to the conveying device while it is being acted upon by the stemming bar, substantially as described.

2. The combination in a stemming machine, of a foraminous conveying structure, a stemming bar mounted adjacent thereto so as to permit the passage of the body of a leaf while intercepting the stem thereof, and means for causing the leaf to be held by air pressure to the conveying structure while it

is being operated on by said stemming bar, substantially as described.

3. A leaf stemming machine consisting of a foraminous apron, means for moving said apron through the machine, a stemmer bar mounted adjacent to the apron so that its length is inclined to the general line thereof and its edge is at such a distance from the apron as to permit the passage of the body of a leaf while intercepting the stem thereof, and means for causing the leaf to be held to the apron by air pressure while it is being acted upon by the stemming bar, substantially as described.

4. The combination in a stemming machine of a foraminous conveying device, a pair of stemming bars mounted adjacent thereto and inclined at opposite angles to the general line of movement of said device, with means whereby said leaf is caused to be held by air pressure to the conveying device while being acted on by the stemming bars, substantially as described.

5. The combination in a machine for stemming tobacco, of a table having a series of openings connected to an air exhausting device, an apron having driving means and movable over said table, and a stemming bar mounted adjacent to the apron so as to intercept the stem of a leaf while permitting the body of the leaf to pass under it, the exhaust openings being so placed as to cause the leaf to be held to the apron while it is being acted on by the stemming bar, substantially as described.

6. The combination in a stemming machine of a foraminous conveying apron having operating means for moving it, a stemming bar mounted so as to extend at an angle to the general line of movement of the apron, with means for exhausting the air at that portion of the apron immediately adjacent to the stemming bar, substantially as described.

7. The combination in a stemming machine of a foraminous conveying apron having operating means for moving it, a stemming bar mounted so as to extend at an angle to the general line of movement of the apron, with means for exhausting the air at that portion of the apron immediately adjacent to the stemming bar, and means for directing jets of air upon the leaf to force the same toward the apron, substantially as described.

8. The combination in a stemming machine of a table having an apron and two lines of holes connected to an air exhausting device, with a stemming bar over said holes and arranged at an angle to the general line of travel of the apron, substantially as described.

9. The combination in a stemming machine of a table having an apron and two lines of holes connected to an air exhausting device, a stemming bar over said holes and arranged at an angle to the general line of

travel of the apron, with a pipe mounted adjacent to the stemming bar for delivering jets of compressed air upon the apron adjacent to the bar, substantially as described.

5 10. The combination in a stemming machine of a table having two series of openings connected to an exhaust device, a stemming bar arranged over each set of openings, said bars being mounted so as to be inclined at
10 opposite angles to the general line of the table, with a perforated apron extending between the surface of the table and the stemming bars, and means for driving said apron, substantially as described.

15 11. The combination in a stemming machine of a frame, two pulleys supported thereon, an apron passing around said pulleys, a table mounted under a portion of said apron, two stemming bars mounted above the apron
20 so as to permit the passage of the body of a leaf while intercepting the stem thereof, the first of said bars being inclined to the line of movement of the apron and the second bar being also inclined to such a line but in an
25 opposite direction, the front end of said second bar being to one side of the rear end of the first bar, and means for holding the leaf to the apron by air pressure while it is being acted upon by said stemming bars, substan-
30 tially as described.

12. The combination in a stemming machine of a frame, two pulleys supported thereon, an apron passing around said pulleys, a table mounted under a portion of said apron,
35 two stemming bars mounted above the apron so as to permit the passage of the body of a leaf while intercepting the stem thereof, the first of said bars being inclined to the line of movement of the apron and the second bar
40 being also inclined to such a line but in an opposite direction, the front end of said second bar being to one side of the rear end of the first bar, and means for holding the leaf to the apron by air pressure while it is being
45 acted upon by said stemming bars, said means consisting of conduits in the table connected to an exhaust device, substantially as described.

50 13. The combination in a stemming machine of a frame, two pulleys supported there-

on, an apron passing around said pulleys, a table mounted under a portion of said apron, two stemming bars mounted above the apron so as to permit the passage of the body of a leaf while intercepting the stem thereof, the
55 first of said bars being inclined to the line of movement of the apron and the second bar being also inclined to such a line but in an opposite direction, the front end of said second bar being to one side of the rear end of
60 the first bar, means for holding the leaf to the apron by air pressure while it is being acted upon by said stemming bars, said means consisting of conduits in the table connected to an exhaust device, and a de-
65 vice for delivering compressed air on to the apron adjacent to said conduits, substantially as described.

14. The combination in a stemming machine of means for first separating one half of
70 the body of a leaf from the stem thereof, and other means for separating the stem from the remaining part of the leaf, substantially as described.

15. The combination in a stemming machine of a device for holding a portion of a
75 leaf, means for separating the stem therefrom while said portion is being held with subsequently acting means for holding the remaining portion of the leaf, and means for
80 separating the stem from the said second portion while it is held, substantially as described.

16. The combination in a stemming machine of a traveling apron, a stemming bar
85 mounted adjacent thereto so as to engage the stem of a leaf while permitting the passage of the body thereof, a suction device for one side of the apron for drawing the leaf thereto, and a device for delivering com-
90 pressed air to the other side of the apron so as to force the leaf into contact therewith, substantially as described.

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

JOHN T. CARTER.

Witnesses:

C. B. GUERRANT,

R. N. WHITE.