

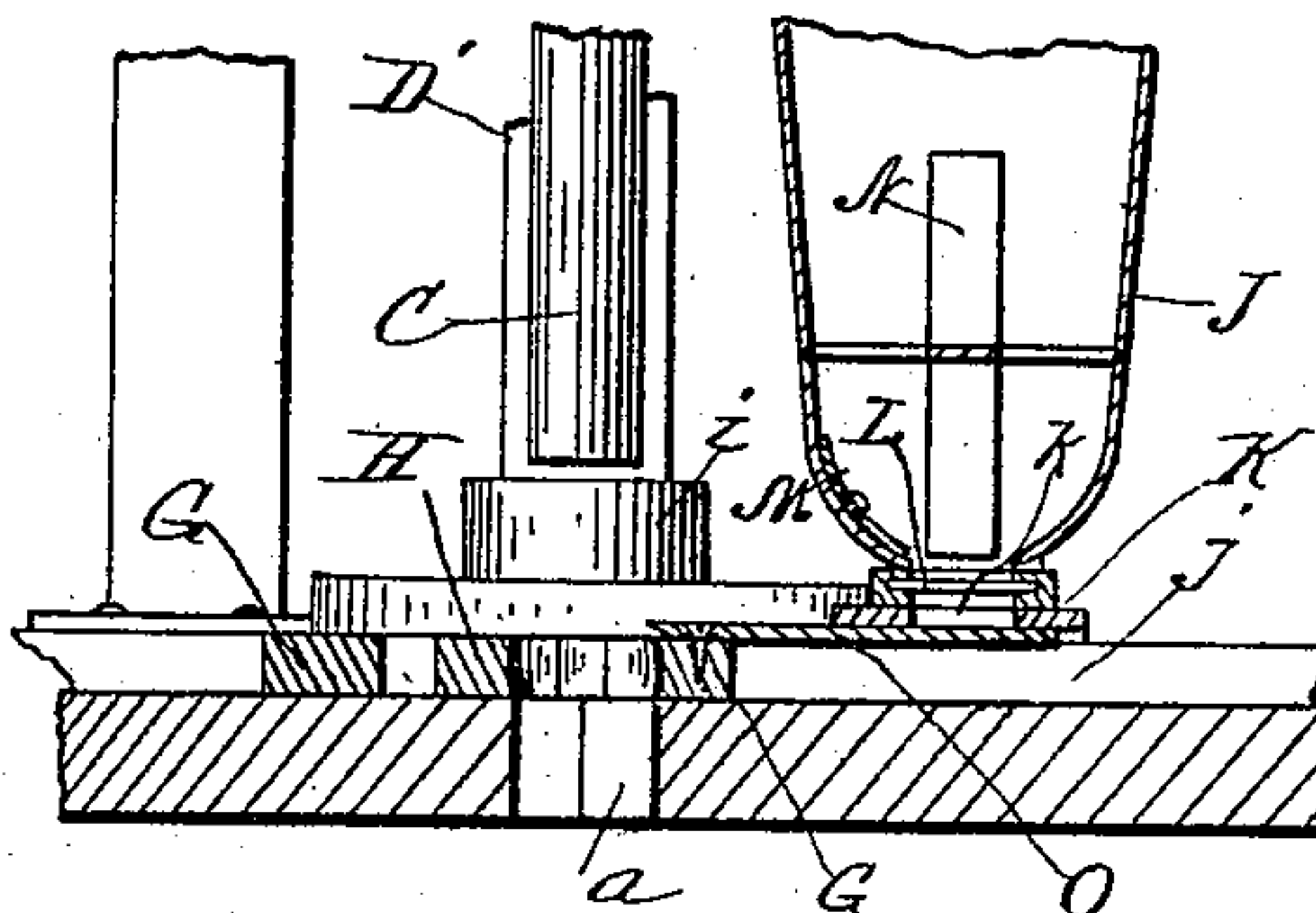
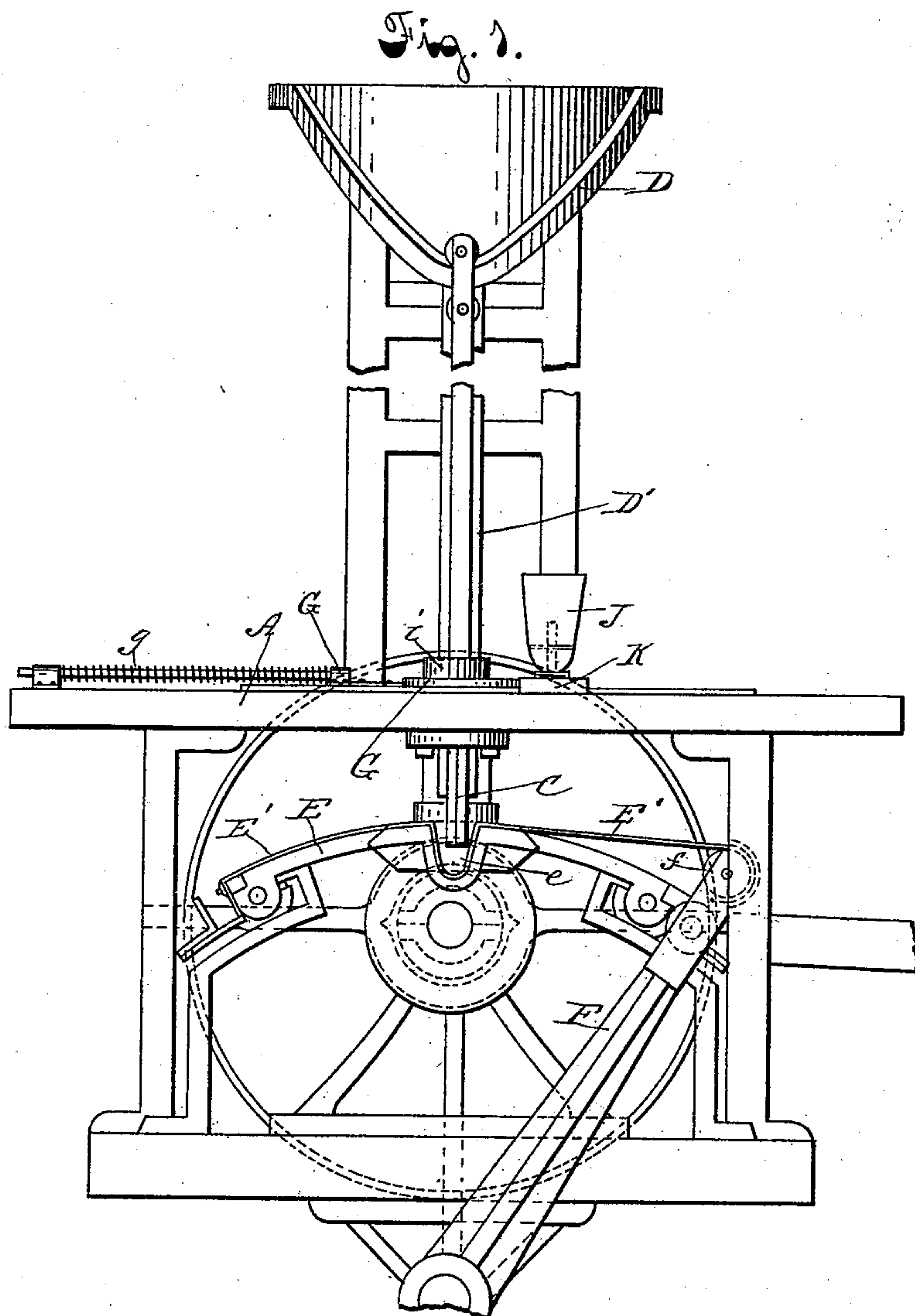
(No Model.)

2 Sheets—Sheet 1.

J. E. SMITH.
CIGAR MAKING MACHINE.

No. 401,077.

Patented Apr. 9, 1889.



WITNESSES,

H. D. Nealy.

E. Pierce.

INVENTOR.

James Ed. Smith.

By *H. Bernhart*
Attorney,

(No Model.)

2 Sheets—Sheet 2.

J. E. SMITH.
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Fig. 3.

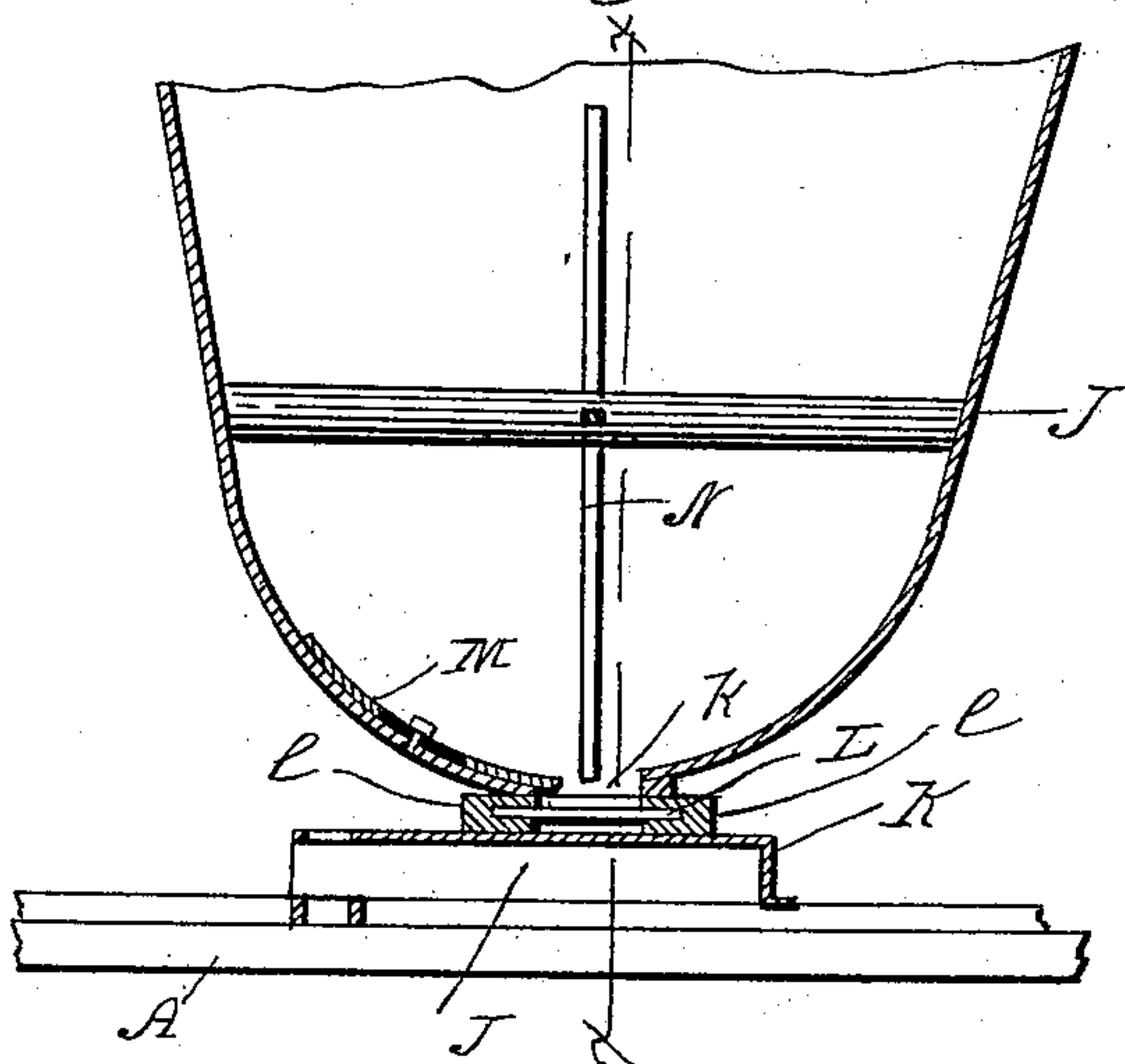
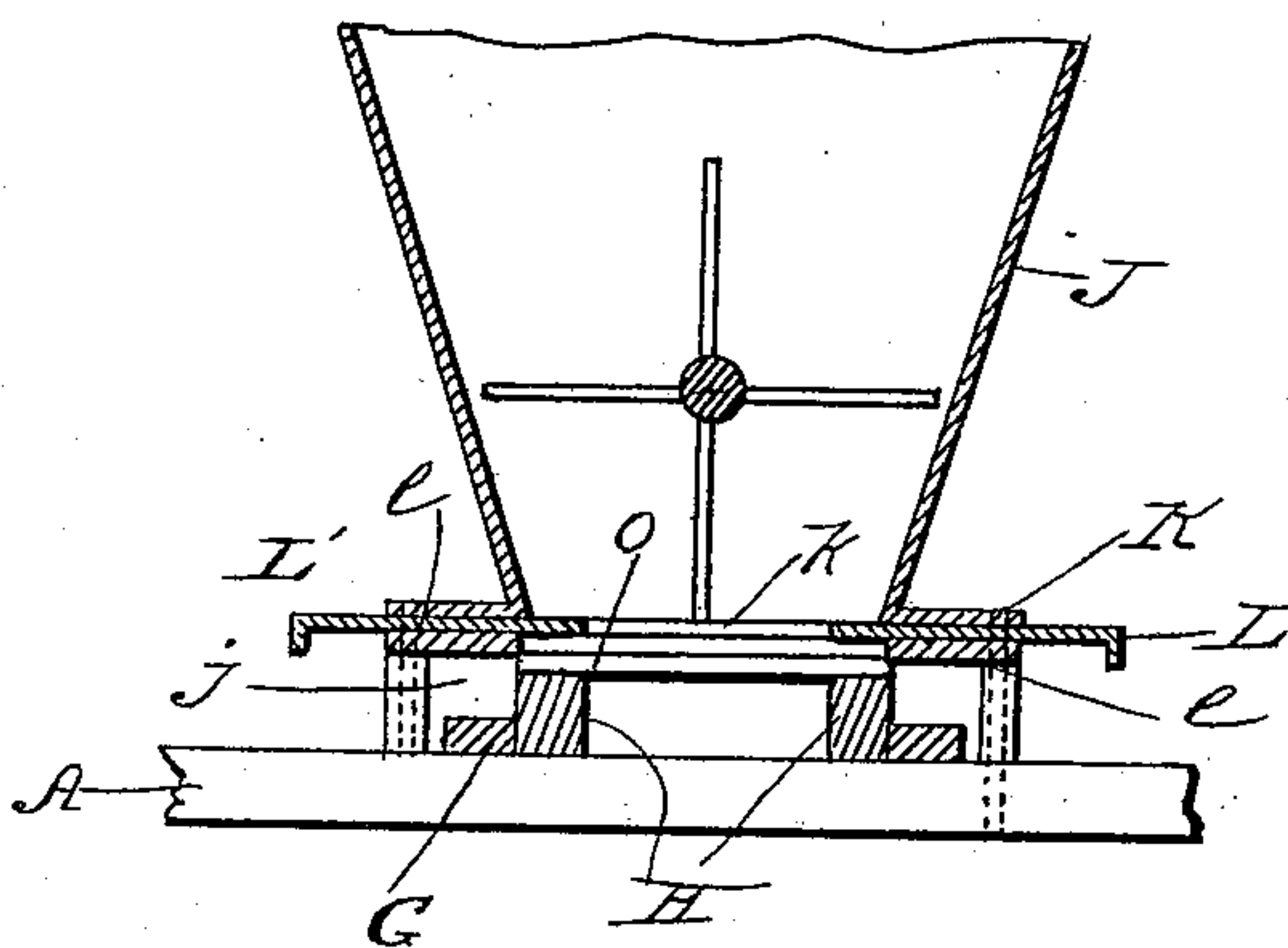


Fig. 4.



Witnesses:

M. W. Mortimer

Fred. Krefer

James E. Smith,
Inventor:
by *Wm. Moore,*
Attorney.

UNITED STATES PATENT OFFICE.

JAMES EDWARD SMITH, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF TWO-THIRDS TO ADOLPH MOONELIS, AND BENJAMIN LICHTENSTEIN, OF SAME PLACE.

CIGAR-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 401,077, dated April 9, 1889.

Application filed December 27, 1887. Serial No. 259,048. (No model.)

To all whom it may concern:

Be it known that I, JAMES EDWARD SMITH, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Cigar-Making Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to cigar-bunching machines; and it consists of the novel combination of devices and peculiar construction and arrangement of parts, as will be hereinafter fully described and claimed.

In a prior application, filed by me November 9, 1887, Serial No. 254,666, I have shown and described a machine for making long-filler cigars, in which the tobacco is first placed by hand in a series of molds, which are fed successively to the machine and carried from the feeding-table to an opening in the main table, of the machine. When the filled mold takes position over this opening in the main table, a plunger descends and passes through the mold, and the tobacco is carried by the plunger through the opening in the table and deposited on an apron below the table, where the bunch is rolled and the binder wrapped thereon by suitable mechanism. As soon as the plunger is elevated the mold in the carriage is discharged at the opposite end of the machine, the carriage returned to take another filled mold and convey it to the opening in the main table for the plunger to pass through the new mold, and so on.

My present invention contemplates the provision of means for feeding scrap-tobacco automatically to a single mold on the reciprocating carriage, which conveys the tobacco or embryonic bunch to the opening in the table for the plunger to pass through the mold and carry such scrap-tobacco to the rolling and pressing devices.

It will be understood that in lieu of pro-

viding a series of molds which are previously filled by hand and successively fed to the carriage of the machine, I use only a single mold of the desired contour, which is fixed to and reciprocates with the carriage to convey the tobacco from a stationary hopper on the main table of the machine, and in which the tobacco is placed.

My invention further contemplates the provision of regulating contrivances for determining the length of the tobacco that passes from the hopper directly into the mold on the reciprocating carriage, and also to regulate the width of the tobacco, so that the length and width of the bunch can be regulated by simply adjusting the contrivances provided in the hopper for this purpose.

My invention also contemplates the use of an agitator arranged to properly and continuously feed the tobacco to the discharge-orifice in the hopper and the automatic cutting off of the tobacco when the carriage and mold thereon slide away from the hopper to assume position over the opening in the main table A of the machine for the plunger to pass therethrough, all as will be hereinafter fully described.

In the accompanying drawings, which illustrate a cigar-bunching machine constructed in accordance with my present invention, Figure 1 is a side elevation. Fig. 2 is an enlarged detail longitudinal sectional view through the hopper of the machine, to more clearly show the parts thereof, and Fig. 3 is another sectional view of the hopper. Fig. 4 is a sectional view on the line *x x* of Fig. 3, showing the mold and carriage in position beneath the hopper to adapt the tobacco to pass from the hopper directly into the mold.

Like letters of reference denote corresponding parts in all the figures of the drawings.

I will first proceed to describe the primary leading features of the machine shown in my prior application, hereinbefore referred to, and which is shown more especially in Fig. 1 of the drawings.

A is the main table of the machine, having at a suitable point therein a vertical opening, *a*. Beneath this opening is a series of fingers

or gates (not shown) for forcing the tobacco into the hollow plunger C when the latter passes through the mold and the opening and between the gates to carry the tobacco from the mold to the rolling and pressing devices arranged below the main table A. This plunger is alternately depressed and elevated by a cam, D, on the upper end of a vertical shaft, D', which is driven by belting from a suitable line of shafting or other power. Below the table A is another table, E, which I term the "rolling-table," and to the ends of this table E is connected an apron, E', which receives the bunch from the plunger. This rolling-table has a transverse depression or recess, e, formed therein at a point in line with the vertical opening a in the main table, and when the plunger strikes the apron in its downward course it forces the apron into the recess or depression, and thus forms a bight or loop therein, into which the tobacco is deposited to be pressed and rolled by the friction-roller f, carried by a rocking arm, F, pivoted at a suitable point and adapted to have its upper end traverse the rolling-table, as in the manner more fully pointed out in my prior application.

To the reciprocating carriage G of the machine I permanently secure a mold, H, which is fixed in place by any suitable fastenings at a point on the carriage to align with the opening a when the carriage is forced toward the rear of the machine by a cam, i, on the power-shaft D', striking against an arm on the carriage, (not shown,) said mold being also adapted to align with a hopper, J, when the retracting-spring g of the carriage forces the latter and mold toward the front of the machine, and thus causes the mold to receive tobacco directly from the hopper. This hopper J is fixed directly to the upper side of the main table A of the machine, at a suitable distance one side of the opening a therein, and it is elevated above the table A to leave an intermediate space, j, beneath the same for the carriage and mold to slide in when moving forward on the table.

In the detail views, Figs. 2, 3, and 4 of the drawings, I have shown the hopper-body mounted upon a rectangular base, K, which receives the carriage and mold and guides the said parts into proper position beneath the discharge-orifice k in the bottom of the body of the hopper to permit the tobacco to pass from the hopper directly into the mold.

To regulate the amount of the tobacco that shall escape from the hopper, I provide adjustable valves L L', which are arranged in suitable guides, l, and are adapted to slide across the discharge-orifice k, to either partially or wholly close said orifice, as may be necessary. These regulating-valves are preferably made of flat rectangular plates, and are adapted to approach one another to vary the size of the opening or space between their approximate ends; but it is obvious that the form and proportions of these valves can be

changed at pleasure without departing from the spirit of my invention.

For varying or changing the width or thickness of the tobacco that issues from the hopper, and thus regulating the thickness of the bunch, I have provided another valve or slide, M, for regulating the width of the discharge-orifice k in the hopper. This valve M is arranged within the hopper, preferably above the endwise-movable valves L L', and it is adapted to be adjustable laterally across the opening k. The valve M is shaped to conform to the bottom of the hopper and has a transverse slot therein, through which passes a set-screw for holding it in position and permitting it to be adjusted when desired.

To properly feed the tobacco from the hopper and prevent it clogging therein, I have provided an agitator, N, which is arranged in the hopper and has its radial arms or blades located to sweep the tobacco into the opening k, as the agitator is positively rotated by suitable connections to a source of power.

The carriage is provided with a flat valve-plate, O, which is fixed thereto at one side of the mold for the purpose of cutting off the supply of tobacco when the carriage and mold emerge from beneath the hopper. This cut-off plate moves back and forth with the carriage and mold as they reciprocate on the table A, and it closes the discharge-orifice k in the hopper when the mold is in line with the opening a; but when the carriage slides forward this valve-plate recedes and opens the orifice k when the mold arrives beneath the hopper in line with its orifice to receive the tobacco directly from the hopper.

This being the construction of my improved cigar-bunching machine, the operation thereof is as follows: The scrap-tobacco is placed in the hopper J on the main table A of the machine and the parts are started to cause the cam to release the carriage and permit the retracting-springs to exert their power and force the carriage and mold forward beneath the hopper, so that the mold aligns with the discharge-orifice thereof, the valve-plate sliding forward with the carriage and uncovering said orifice. The regulating-valves having been previously adjusted to determine the length and width of the stream of scrap-tobacco that is to escape from the hopper, the agitator therein causes the tobacco to flow freely and readily from the hopper through the orifice k into the mold to fill the latter to the proper depth. By the time the mold is properly filled the cam strikes the arm of the carriage to move it and the mold rearwardly, the valve-plate cutting off the further escape of the tobacco from the hopper, when the mold and carriage slide toward the opening a. When the mold is in line with the opening a in the main table, the plunger passes through the mold and opening a and between the gates or fingers to carry the tobacco to the rolling and pressing devices, the plunger striking the apron and forcing it into the depression in the rolling-

table to form a bight or loop therein and deposit the tobacco in such bight. The plunger is now elevated, the carriage is forced forward for the mold to take a new supply of scrap-tobacco from the hopper, the cam moves the carriage rearwardly, and the operations are repeated. When the plunger is elevated, the rocking arm swings forward, so that the roller lifts the bight of the apron out of the depression in the rolling-table and receives the bight and bunch to properly roll and press the bunch and work the binder around the same while carrying the bunch toward the discharge end of the rolling-table.

Changes in the form and proportion of parts and details of construction can be made without departing from the spirit or sacrificing the advantages of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cigar-bunching machine, the combination of a main table having a vertical opening therein, a rolling-table located below the main table and provided with a cavity in line with said vertical opening, a hopper fixed to the main table at one side of the opening therein and elevated a short distance above the same, a reciprocating carriage provided with a cut-off operating on the main table and having an open mold adapted to slide beneath said hopper, and a vertically-reciprocating plunger adapted to pass through said open mold and the opening in the main table to carry the contents of the mold to the cavity in the rolling-table, substantially as and for the purpose described.

2. In a cigar-bunching machine, the combination of a main table having an opening therein, a cigar-rolling table located below said main table and having a cavity in the same vertical line with the opening in said main table, an apron connected to the rolling-table, a hopper fixed to the main table at one side of the opening therein, a reciprocating carriage on the main table provided with a cut-off, and an open mold fixed to said carriage and adapted to alternately align with the discharge-orifice of the hopper and the opening in the main table, adjustable valves located in the bottom of said hopper for varying the area of the discharge-orifice thereof, a vertically-reciprocating plunger adapted to pass through said vertical opening and the open mold, and a rocking arm carrying the bunching-roller, substantially as described.

3. In a cigar-bunching machine, the combination of a main table having an opening therein, a cigar-rolling table having a cavity therein, an apron connected to said rolling-table, a rocking arm carrying the bunching-roller and adapted to take the filler and bight in the apron out of the cavity in said rolling-table, a hopper fixed to the main table at one side of the vertical opening therein, a reciprocating carriage operating on the main table having a cut-off and an open mold secured thereto, regulating-valves located in the bottom of the hopper for varying the area of the discharge-orifice thereof, an agitator operating in the hopper above its discharge-orifice, and a reciprocating plunger adapted to pass through the opening in the table and the open mold, substantially as and for the purpose described.

4. In a cigar-bunching machine, the combination of a main table having an opening therein, a cigar-rolling table located below the same and having a cavity therein, a hopper fixed to the main table at one side of the vertical opening in said table, the endwise-adjustable valves located in the bottom of the hopper across the discharge-orifice therein and adapted to vary the area of the same, a reciprocating carriage having a cut-off and operating on the main table, an open mold fixed to the carriage, and a reciprocating plunger operating through the opening and the mold, substantially as and for the purpose described.

5. In a cigar-bunching machine, the combination of the main table having an opening therein, a cigar-rolling table having a cavity therein, a hopper fixed to the main table at one side of the vertical opening therein, endwise-adjustable valves located in the bottom of the hopper, a laterally-adjustable valve located above the endwise-movable valve and adapted to be moved transversely across the discharge-orifice in the hopper to vary the width thereof, a reciprocating carriage having a cut-off, an open mold fixed to said carriage, and a vertically-reciprocating plunger operating in the mold and vertical opening, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES EDWARD SMITH.

Witnesses:

R. W. BISHOP,
WM. N. MOORE.