

(No Model.)

5 Sheets—Sheet 1.

W. E. RICE.

FRUIT WRAPPING MACHINE.

No. 336,823.

Patented Feb. 23, 1886.

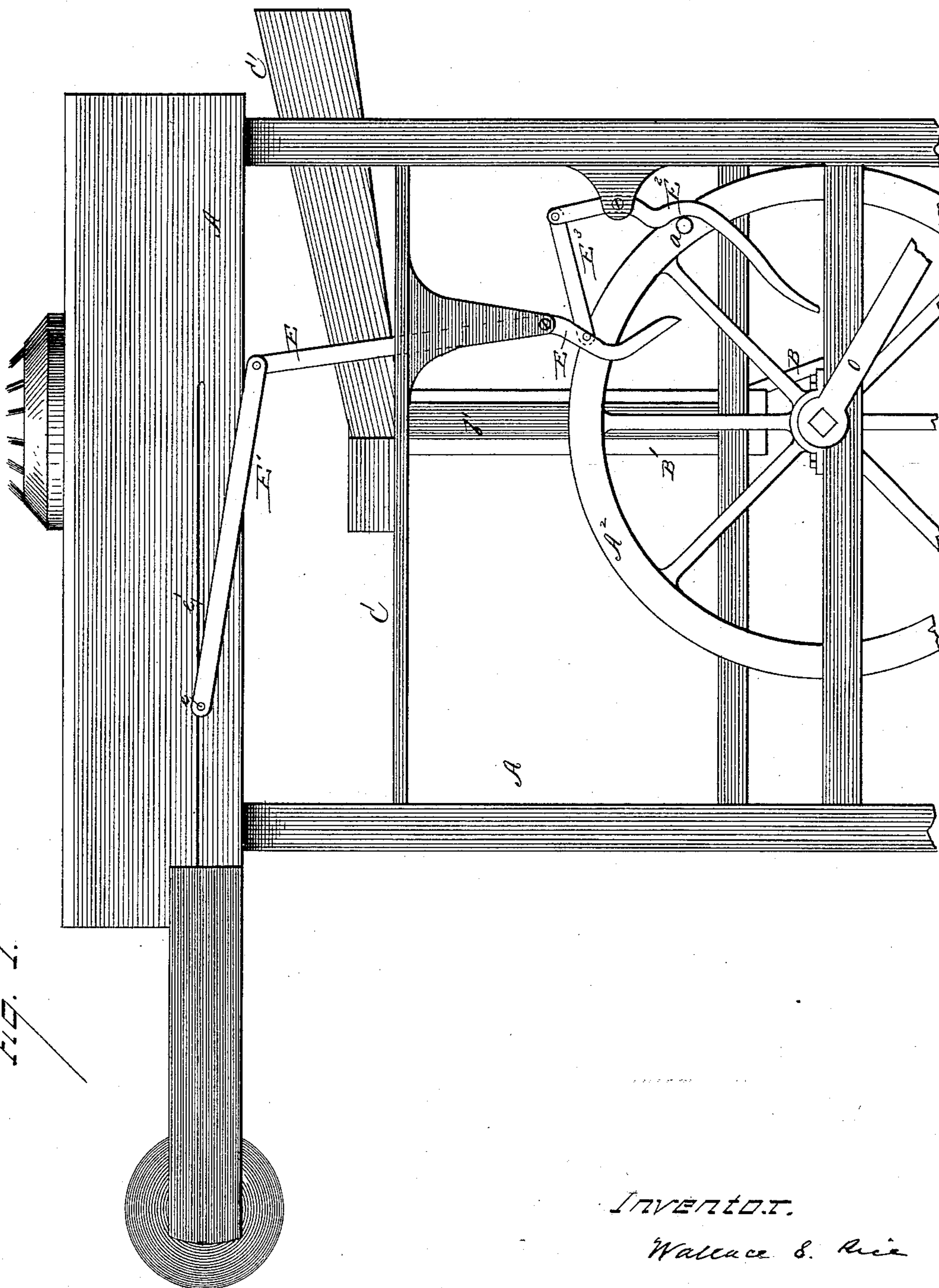


FIG. 1.

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Chas. Kressmann

INVENTOR.

Wallace S. Rice

per

H. Harrison  
Attorney.

(No Model.)

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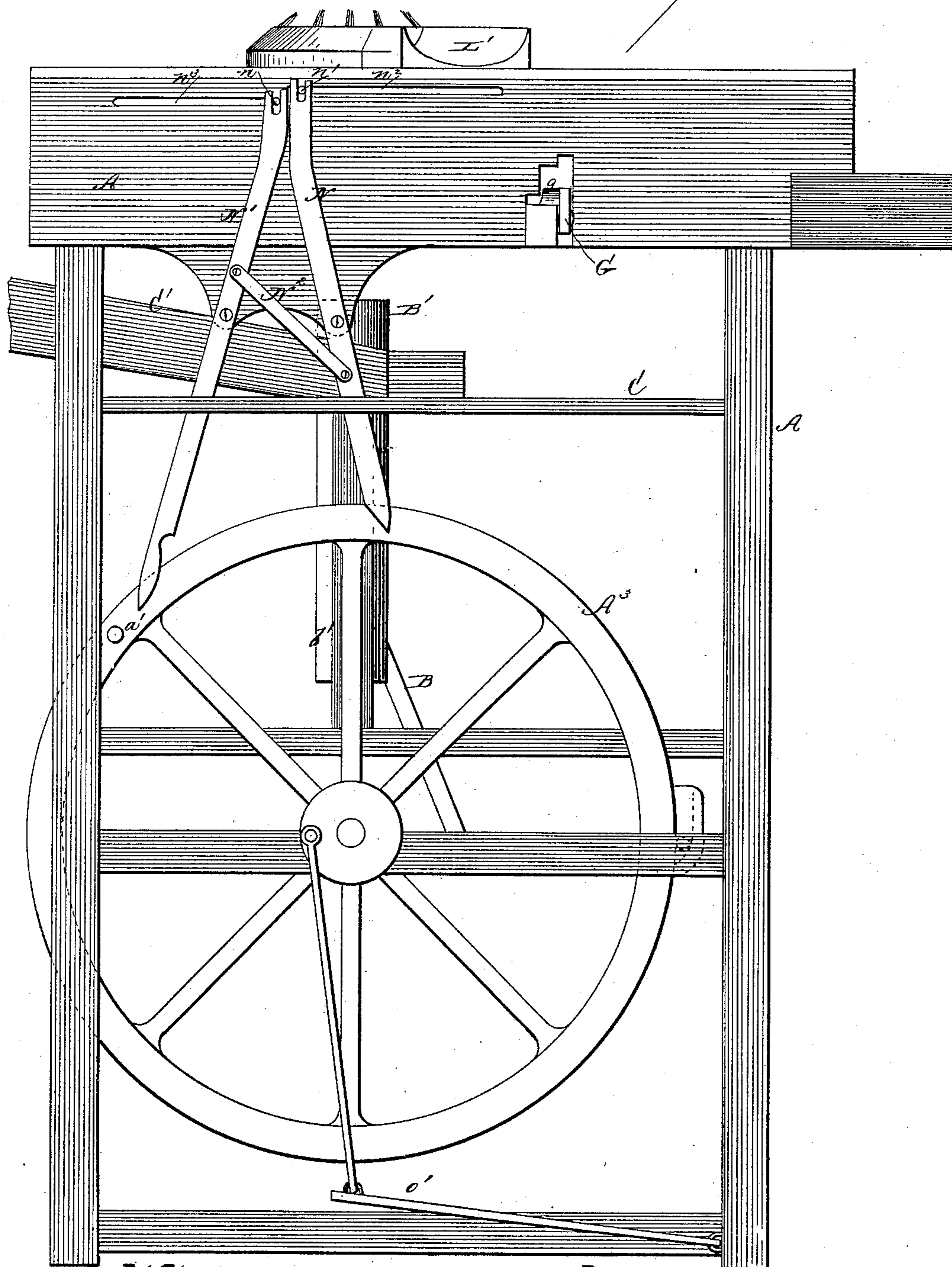
W. E. RICE.

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Fig. 2.



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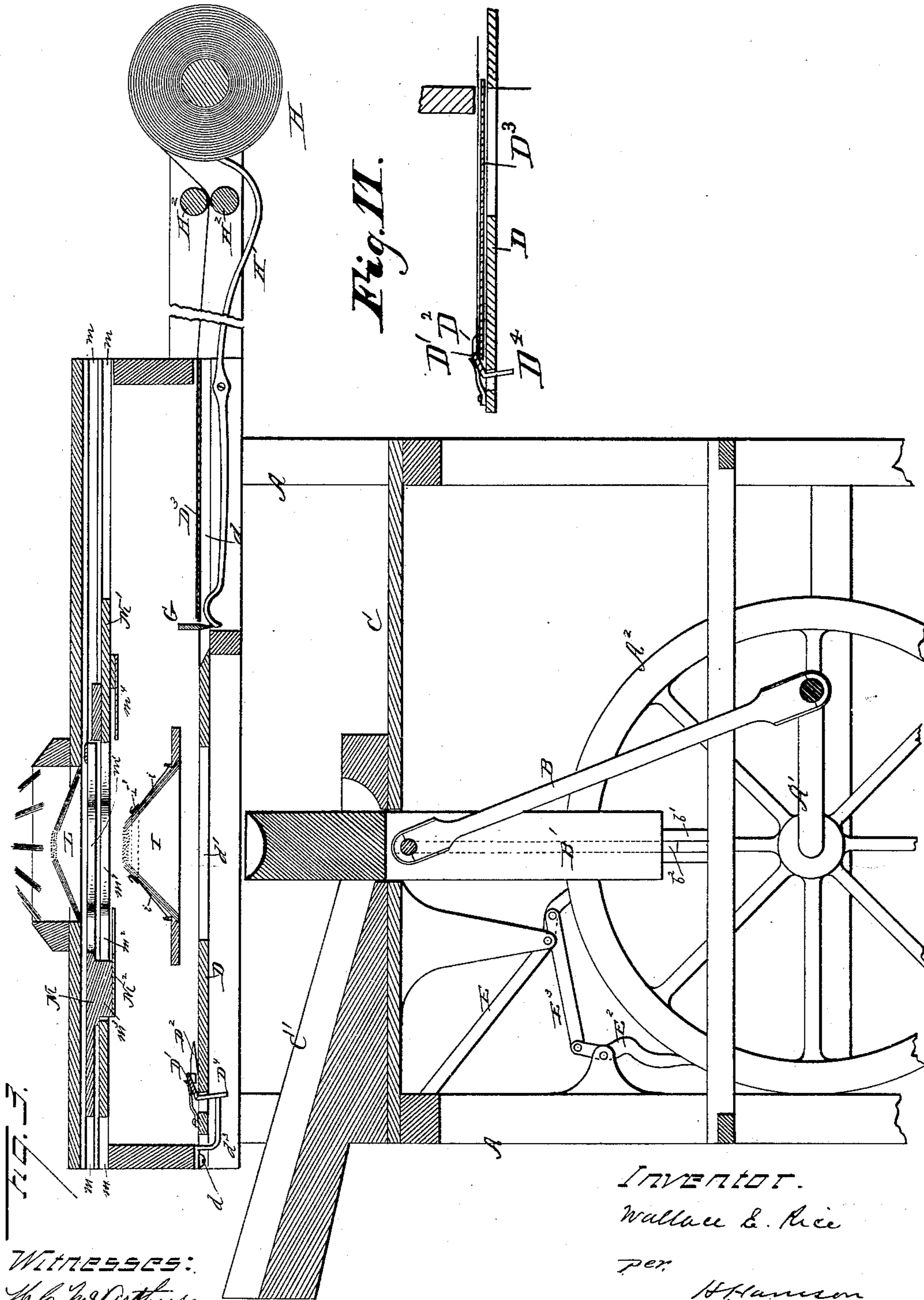
5 Sheets—Sheet 3.

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# FRUIT WRAPPING MACHINE.

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5 Sheets—Sheet 4.

W. E. RICE.  
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FIG. 4.

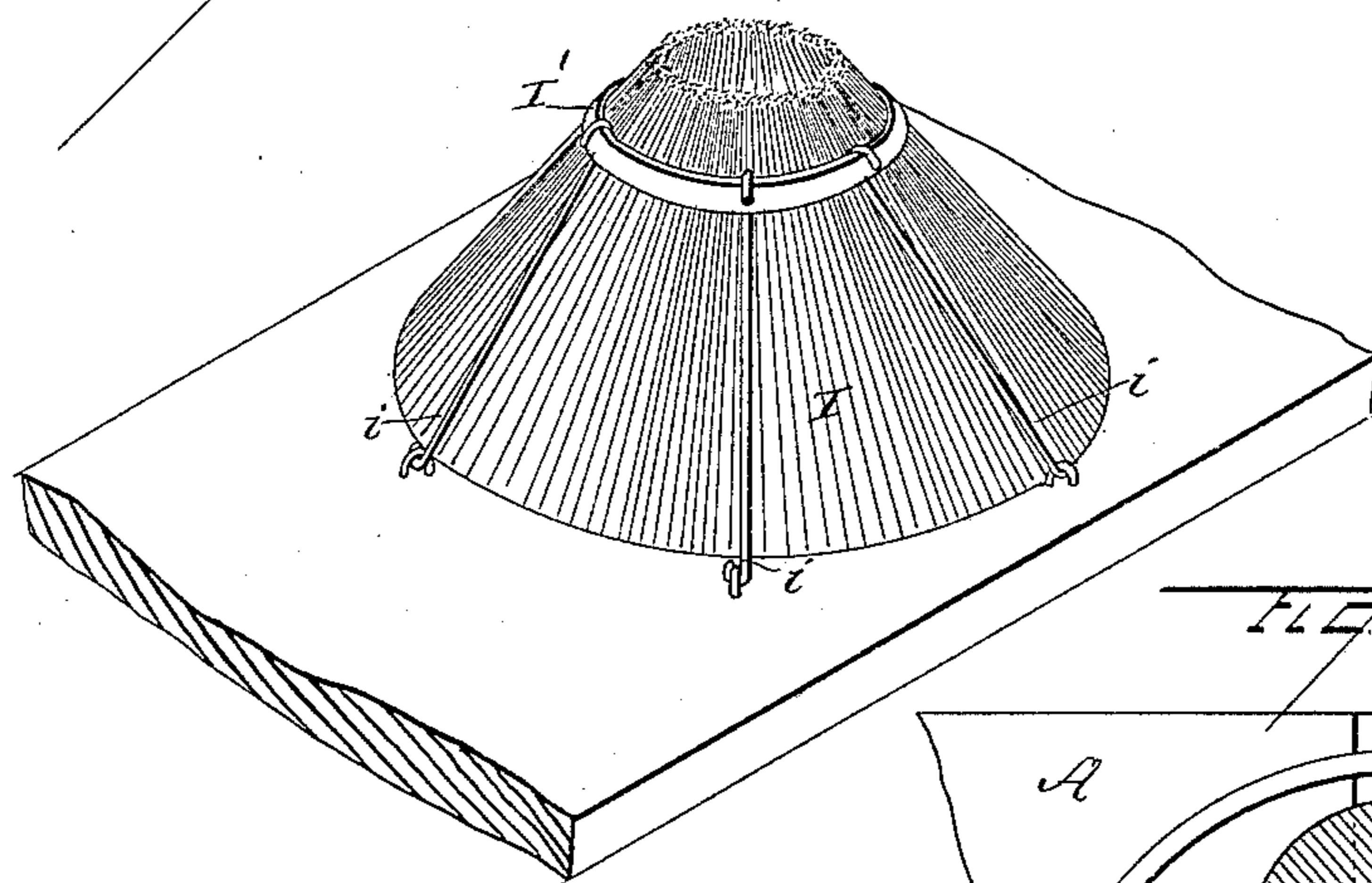


FIG. 6.

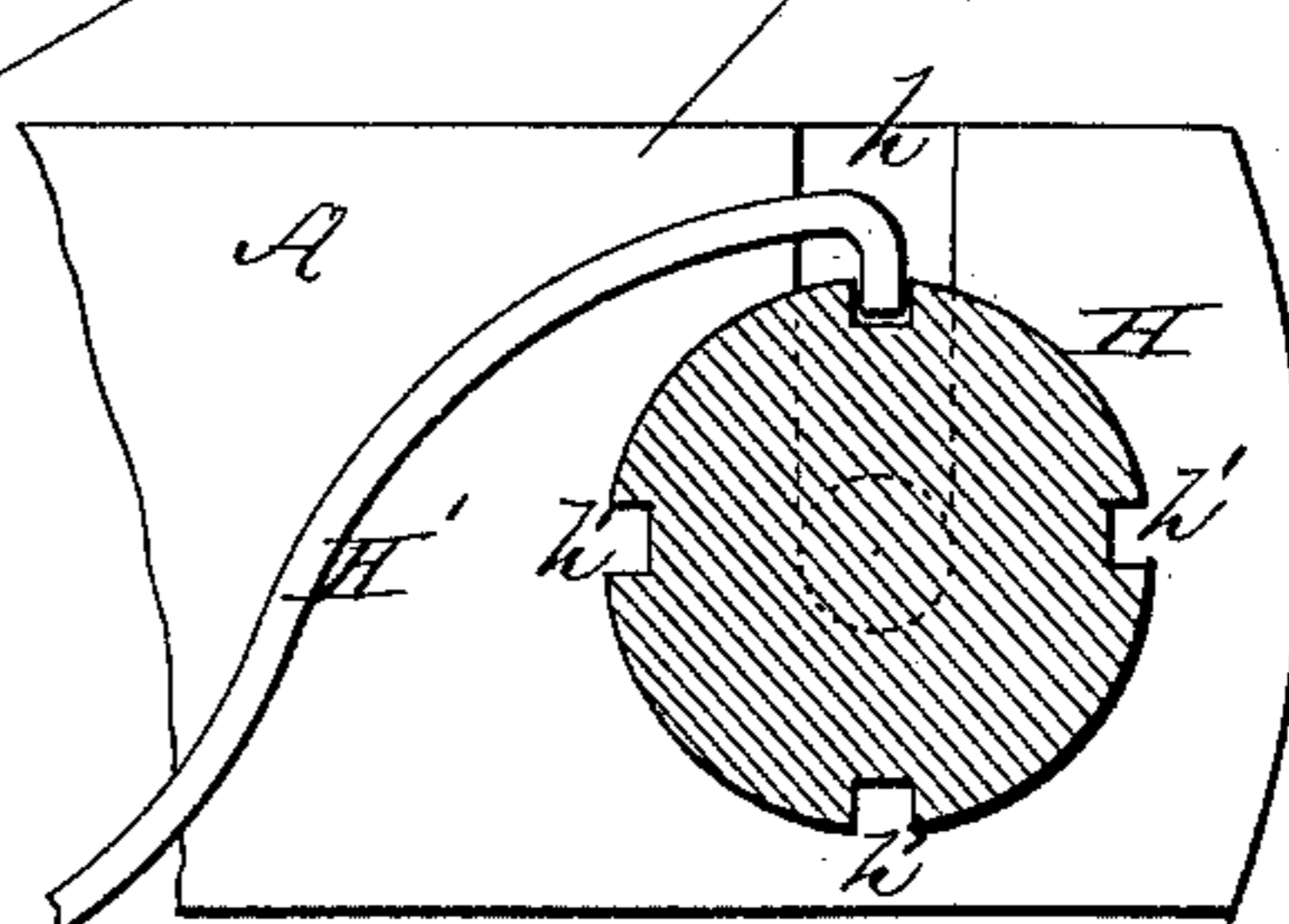


FIG. 5.

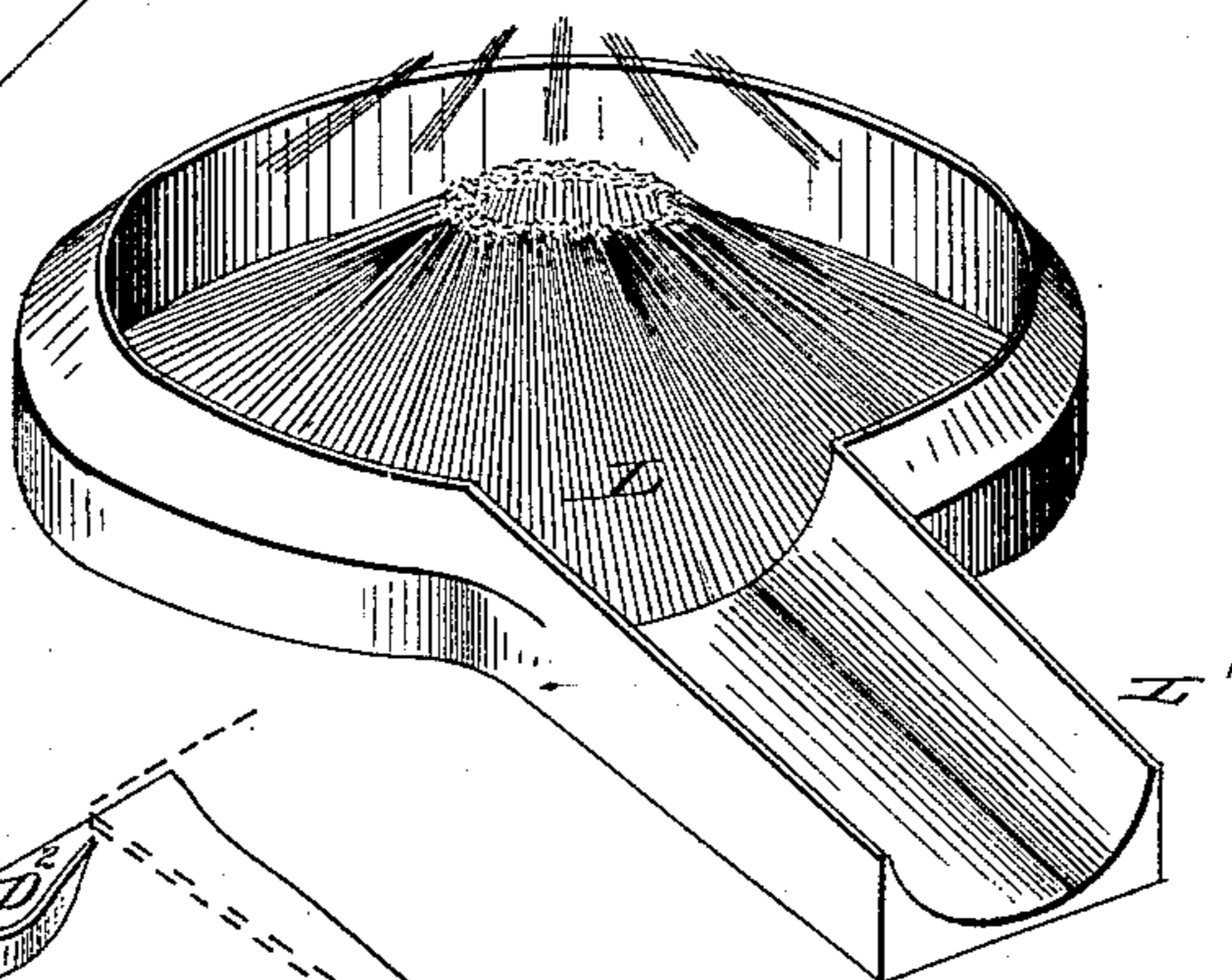
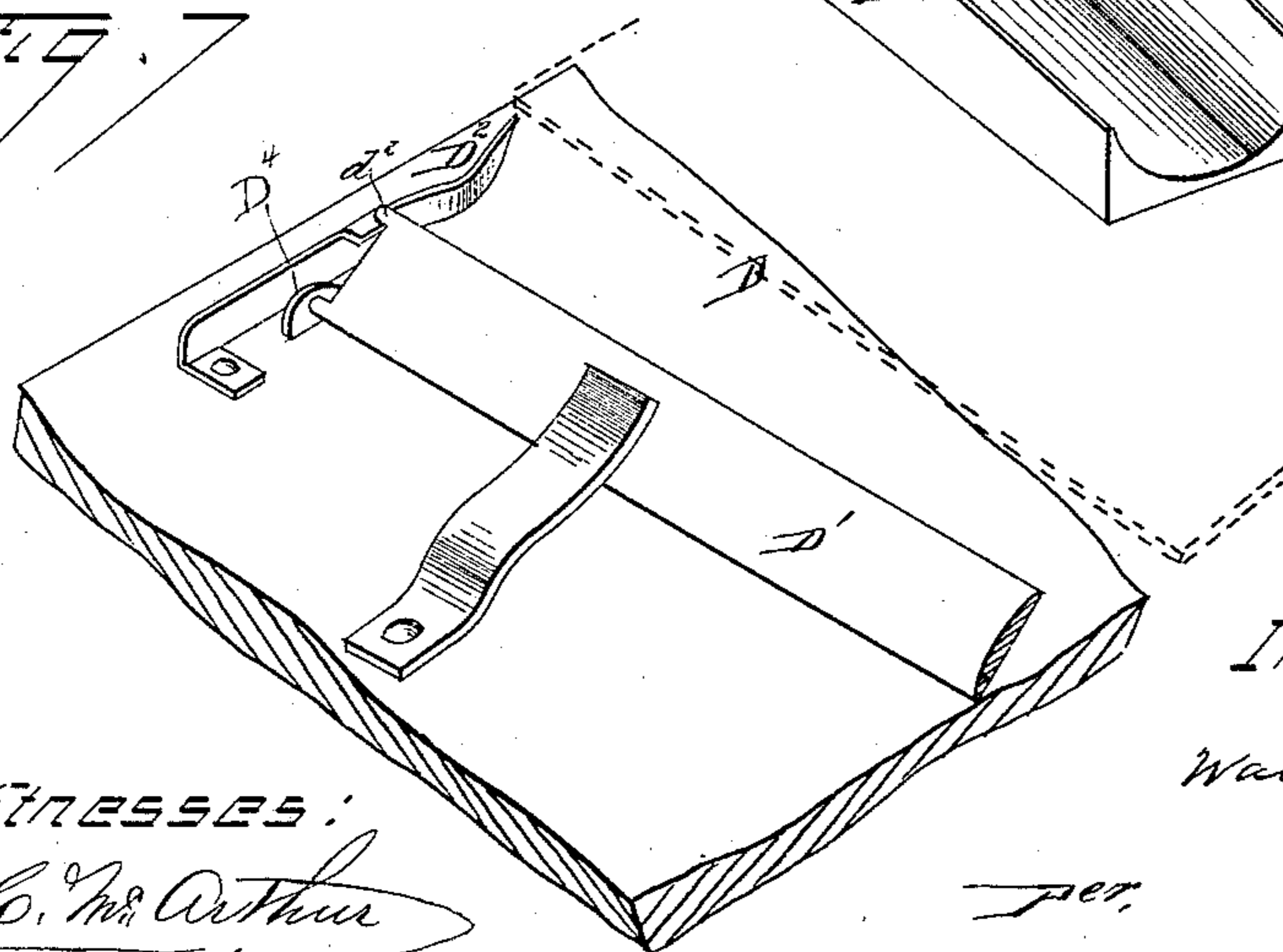


FIG. 7.



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(No Model.)

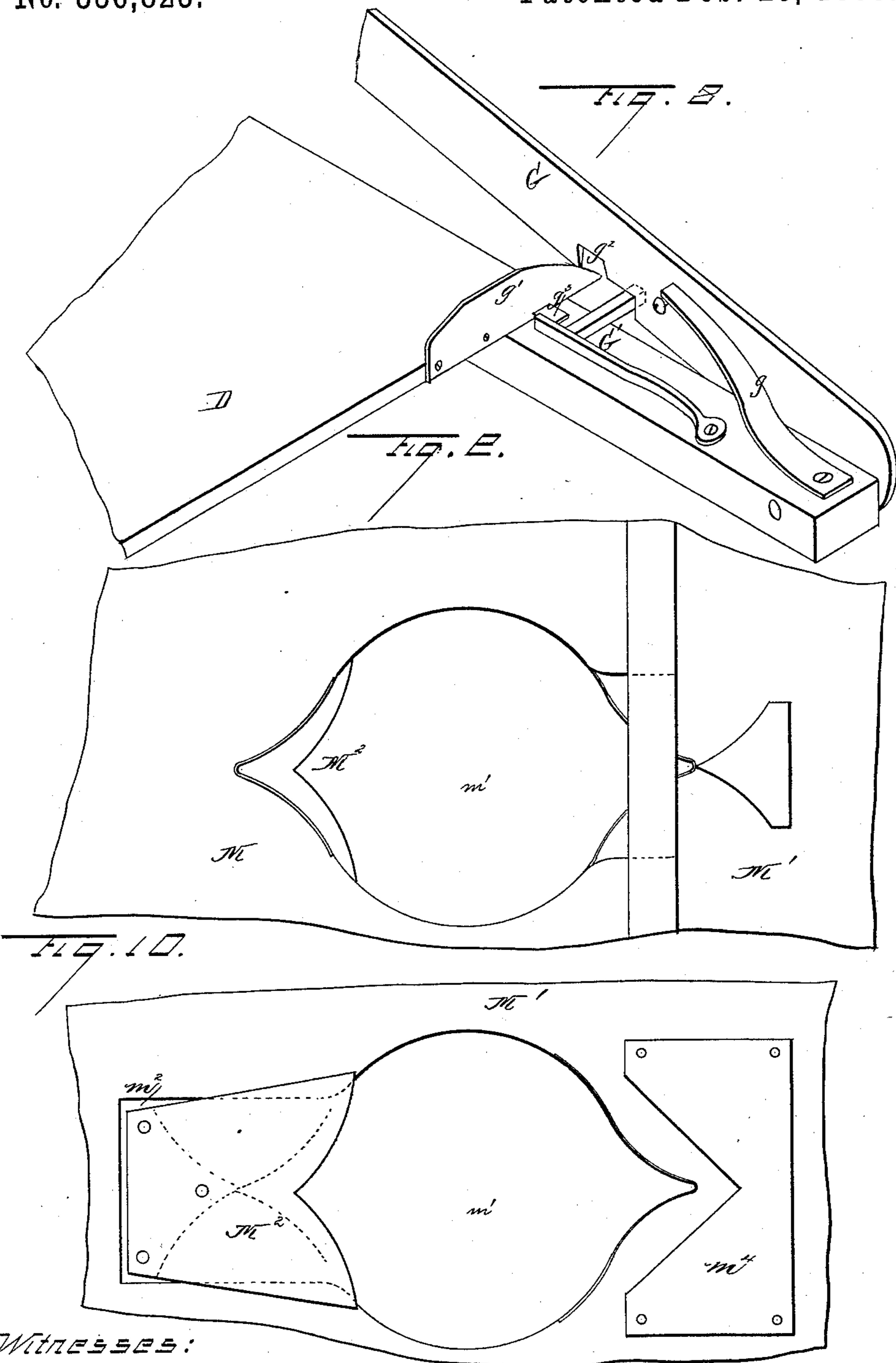
5 Sheets—Sheet 5.

W. E. RICE.

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No. 336,823.

Patented Feb. 23, 1886.



Witnesses:

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# UNITED STATES PATENT OFFICE.

WALLACE E. RICE, OF CHICAGO, ILLINOIS; MARY E. RICE, ADMINISTRATRIX  
OF SAID WALLACE E. RICE, DECEASED, ASSIGNOR TO D. BURT RICE, OF  
SAME PLACE.

## FRUIT-WRAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 336,823, dated February 23, 1886.

Application filed August 6, 1883. Serial No. 102,980. (No model.)

*To all whom it may concern:*

Be it known that I, WALLACE E. RICE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fruit-Wrapping Machines, of which the following is a specification, to wit:

This invention relates to machines for wrapping fruit; and it consists in means for passing the fruit through the machine, a series of brushes for wrapping the paper around it, means for feeding the paper automatically from a roll and cutting it into suitable size, and slides and knives for gathering the ends and cutting off all surplus, substantially as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the accompanying drawings, in which—

Figures 1 and 2 are reverse side views of my invention; Fig. 3, a vertical longitudinal section; Figs. 4 and 5, perspective views of the wrapping-brushes; Fig. 6, the means for holding the paper-roller stationary; Fig. 7, the paper slide and clamp; Fig. 8, the paper-cutter, and Figs. 9 and 10 are respectively upper and under views of the gathering-slides and their trimming-knife. Fig. 11 represents the slide at the forward end of its stroke, the paper-clamp fallen and the spring-trigger pushed aside.

A represents the main frame of the machine, in which is journaled a shaft, A', upon each end of which, inside the frame, is secured a wheel, A<sup>2</sup> A<sup>3</sup>, which are provided with pins a a', for operating the slides, as will be presently explained. The shaft A' is cranked in its center, and connected by a pitman, B, with a vertically-sliding plunger, B', having its upper end concaved or cup-shaped, as seen at b, and moving in vertical guides b', secured upon cross-bars of the main frame, being provided with a tongue, b<sup>2</sup>, upon each side, which moves in corresponding grooves in the guides, to prevent its twisting during the operation.

At a point upon the main frame, about level with the top of the plunger at its lowest point, is secured a platform, C, upon which rests a spout or hopper, C', in which the fruit is placed, and being inclined feeds it auto-

matically to the plunger, which is located in its lower end, as shown in Fig. 3. Above this platform C, in suitable guides or grooves, d d, in the frame, is located the paper-slide D, formed with an opening, d', through which the plunger with its fruit rises, and having upon its rear end a hinged spring-actuated clamp-bar, D', one end of which is formed with a small projection, d<sup>2</sup>, which, when the clamp bar is raised, rests upon a spring-trigger, D<sup>2</sup>, as seen by Fig. 7. This trigger holds the clamp raised till the slide reaches the forward end of its stroke, and is then pushed aside by contact with a board, D<sup>3</sup>, upon which the end of the paper rests, and the clamp falls and clutches the paper to draw it into the machine. This clamp-bar is thrown up again at the rear end of its stroke by an arm, D<sup>4</sup>, secured to the bar and contacting with a stop, d<sup>3</sup>, upon the main frame, when the trigger springs beneath it and holds it raised till another movement is made. This slide is operated as follows: Upon the side of the frame A is pivoted a lever, E, which contacts at its lower end with the pin a upon the wheel A<sup>2</sup>, and its upper end is connected by a link, E', with a pin, e, in the edge of the paper-slide D, working in a slot, e', in the frame. This throws the slide forward, and it is thrown back by the pin a contacting with the lower end of a second lever, E<sup>2</sup>, the upper end of which is connected by a link, E<sup>3</sup>, with the first lever, E, below its pivotal point, as clearly represented in Fig. 1.

Across the frame A, at the forward end of the slide D, is a knife or cutter, G, hinged at one end, and provided with a spring, g, to throw it down. This knife, as seen in Fig. 8, is raised by a wedge-shaped piece of metal, g', upon one of the forward corners of the paper-slide, operating in a notch, g<sup>2</sup>, of the knife, and is held in a raised position by a spring arm or trigger, G', which is secured upon the frame and slips beneath the knife as soon as it is raised. The knife remains in an elevated position till the slide passes under it the full limit of its stroke, and upon its return a projection, g<sup>3</sup>, upon the wedge g', engages and withdraws the trigger G', allowing the knife to fall and cut the paper.

It will be seen by reference to Fig. 8 that the trigger G' remains beneath the knife and holds it up till the slide has passed entirely

from beneath it, and at the extremity of the motion of this slide the projection  $g^3$  engages and draws back the trigger, but does not pass it, so that on the next forward movement of the slide the incline  $g'$  lifts the knife, while the trigger being released from the pressure of the projection springs beneath it, as represented. The projection, therefore, does not actually pass the trigger, but simply engages and draws it back.

In an extension of the main frame at one end is placed the roll of paper H, journaled in slots  $h$ , to be readily removed, and having one end of its roller formed with a series of notches,  $h'$ , which engage with an arm,  $H'$ , pivoted on the frame and having its inner end bent, as shown in the drawings, Fig. 3. This arm holds the roll stationary till the slide D moves forward, when its inner end is depressed, disengaging the outer end from the roll H and allowing the paper to be pulled into the machine and stopping the roll again as soon as the stroke of the slide is finished, in order that its momentum may not carry it around needlessly. From the roll H the paper is passed between the guide-rollers  $H^2$ , and, passing into the machine, lies normally upon the board or rest  $D^3$ , when it is grasped by the clamp, as already explained.

Above the opening  $d'$  in the paper-slide D is fixed a hollow conical brush, I, as shown in Figs. 3 and 4. The fruit is forced up through this brush, and it is drawn together again after the passage of the fruit by an elastic band,  $I'$ , placed around the brush near its apex, and held in position by a number of wire links,  $i$ ,  $i$ , hinged at the base of the brush, as represented. I prefer to use a rubber band for this purpose; but it is evident that a series of short spiralsprings or other elastic material would serve the same purpose.

The frame A, above the brush I, is provided with two parallel sets of grooves or guides,  $m$ ,  $m$ , in which are placed two slides, M M', both formed with openings  $m'$   $m'$ , having their opposite sides narrowed down to a point, as seen in Figs. 9 and 10. The lower slide, M', is formed with a slot,  $m^2$ , opening into the rear of its central opening, and in which moves a block,  $m^3$ , upon the upper slide, carrying a notched knife,  $M^2$ , which moves just below the lower slide and cuts off all surplus of paper, after the fruit is wrapped, against the opposite edge of the lower slide. The lower slide is also furnished with a sheath,  $m^4$ , into which the knife is projected, and which aids in preventing it from being twisted aside. This fruit being pushed through the slides, they are moved together in reverse directions, and the ends of the wrapper are brought to a point by the pointed ends of the openings  $m'$   $m'$ , and the surplus paper cut off at the same time.

In an opening in the cover of the machine, above the slides M M', is a second conical brush, L, which prevents the fruit from falling back into the machine, and from which a

trough, L', extends to within convenient reach of an attendant, who removes and packs the finished fruit. The movements of the slides M M' are caused at the proper time by two levers, N N'. (Shown in Fig. 2.) These levers are pivoted upon the main frame, and are connected at their upper ends with the slides by means of small pins  $n$   $n'$ , working in slots  $n^2$   $n^3$  in the frame, and their lower ends are engaged and operated by the pin  $a'$  upon the wheel  $A^3$ . These levers are connected by a link,  $N^2$ , secured to one above and the other below their pivotal point, so that one of the levers will throw the slides forward and the other backward, as clearly seen in the drawings.

The machine may be operated by a crank,  $o$ , or treadle  $o'$ , or it may for some purposes be run by steam-power. The fruit passing through the hopper falls upon the plunger, while at the same time the paper-slide draws the paper into the machine across the opening  $d'$  in said slide and it is cut off the roll. The plunger now lifts the fruit, passing it through the slide D and brush I, carrying with it the wrapper, which is brought down around the fruit, and as it reaches the highest point it is caught and held by the brush L while the plunger returns. The slides M M' are now operated to draw together the edges of the paper and clip them, and then return to their normal position. As all contact of the fruit is by brushes, it is evident that it cannot be bruised or injured, and to prevent rubbing the articles in the hopper the side of the plunger may be covered by a soft brush, velvet, or similar device. The hopper may also be furnished with a guard at the lower end, to prevent the fruit from getting out at that point.

It is evident that this machine may be used to wrap for market oranges, lemons, and other fruit, as well as caramels, baseballs, and all similar articles which are packed in this way. The levers N N' may, if desired, be provided with a spring-stop or other means for holding them stationary until the wheel  $A^3$  starts them.

It is evident that instead of a brush I may use a series of wires arranged in conical form, and connected at their upper ends by a spring; but I regard this as an equivalent of the brush described, and prefer to use the latter as less liable to injure the fruit.

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

1. In a machine for wrapping fruit and similar articles for market, a reciprocating fruit carrier or plunger, and a reciprocating paper-carrier for feeding the paper into the machine, in combination with one or more brushes adapted to press the paper around the fruit, and means, substantially as described, for gathering together the edges of the paper, substantially as shown and described.

2. In a fruit-wrapping machine, a main frame carrying a reciprocating plunger, a

sliding clamp adapted at proper intervals to draw the paper into the machine, and a knife adapted to cut the paper into suitable size, in combination with a hollow conical brush 5 through which the fruit and its wrapper are passed, two oppositely-moving reciprocating slides formed with pointed openings by which the ends of the wrapper are closed, and a knife secured to one of said slides to sever the surplus wrapper, substantially as shown and described. 10

3. In a fruit-wrapping machine, the slide D, having the spring-clamp D', with its arm D', and the trigger D<sup>2</sup>, in combination with the 15 main frame A, provided with the grooves *d d* and stops *d*<sup>3</sup>, and plate D<sup>3</sup>, substantially as and for the purpose set forth.

4. In a fruit-wrapping machine, a roller for carrying the paper, having notches in one end, 20 and an arm adapted to engage with these notches, in combination with a reciprocating slide adapted at proper intervals to operate the arm to disengage it from the roller, substantially as and for the purpose set forth.

5. In a fruit-wrapping machine, the slides 25 M M', constructed as herein described, and one of them provided with a knife, M<sup>2</sup>, in combination with the levers N N', connected upon opposite sides of their pivotal points by a link, N<sup>2</sup>, and the wheel A<sup>3</sup>, having pin *a*', substantially as and for the purpose set forth. 30

6. In a fruit-wrapping machine, the frame A, supporting an endless roll of paper, H, and a reciprocating paper-slide, D, having the metal wedge *g*' and projection *g*<sup>3</sup>, in combination with the knife G, spring *g*, and spring-trigger G', substantially as and for the purpose set forth. 35

7. In a fruit-wrapping machine, the paper-slide D, constructed as herein described, in combination with the levers E E<sup>2</sup>, links E' E<sup>3</sup>, 40 and wheel A<sup>2</sup>, with pin *a*, substantially as and for the purpose set forth.

8. In a fruit-wrapping machine, the main frame A, having cranked shaft A', carrying 45 wheels A<sup>2</sup> A<sup>3</sup>, provided with the pins *a a*', and plunger B', with its pitman B, in combination with the paper-slide D, having clamp D', operated by stops upon the frame, the operating-levers E E<sup>2</sup> and their connections, the paper-roll H and its dog or lever H', the conical 50 brush I, gathering-slides M M', with their operating-levers N N', and the brush L, all constructed and arranged to operate substantially as and for the purpose set forth. 55

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

WALLACE E. RICE.

Witnesses:

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W. C. McARTHUR.