

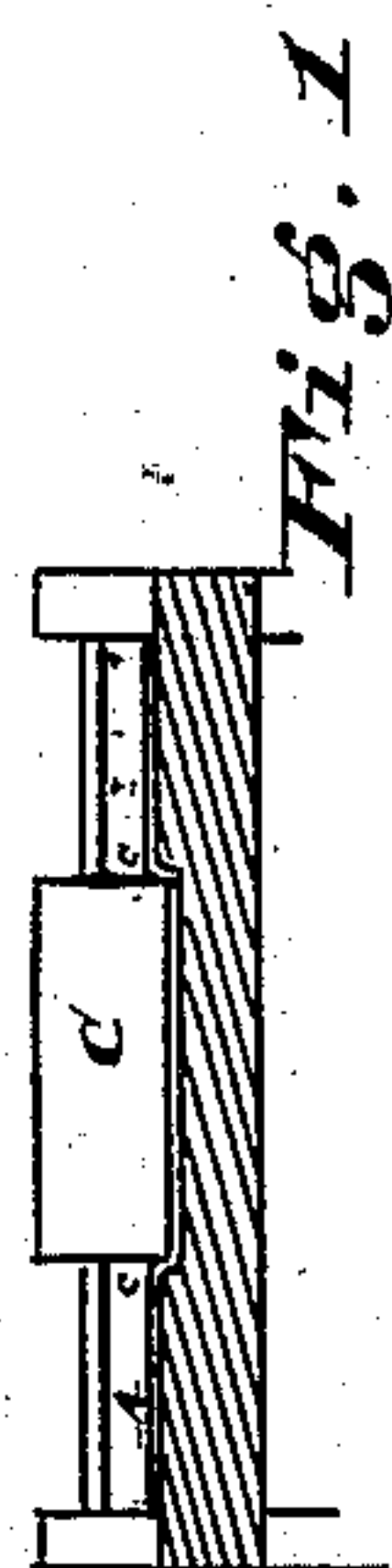
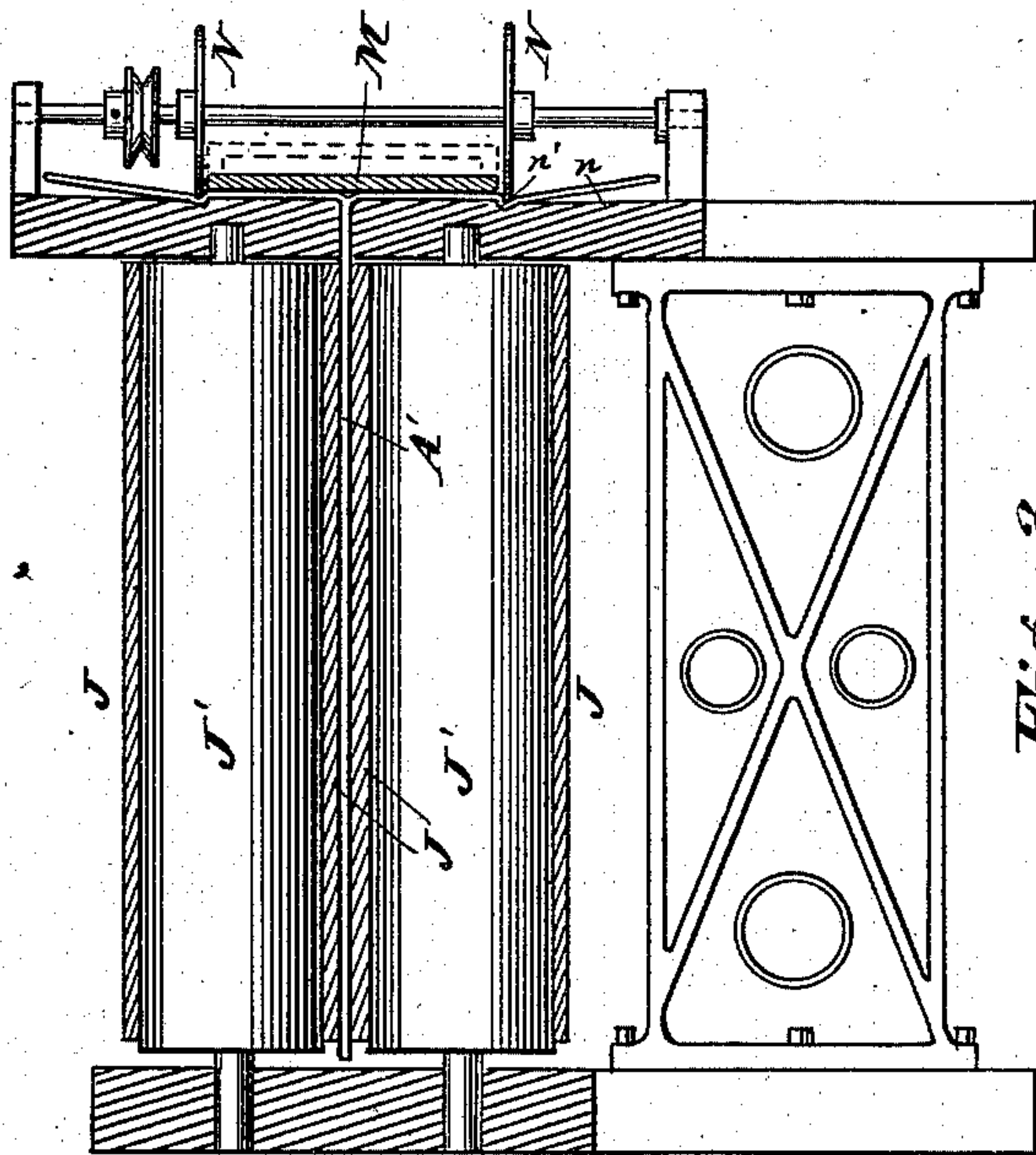
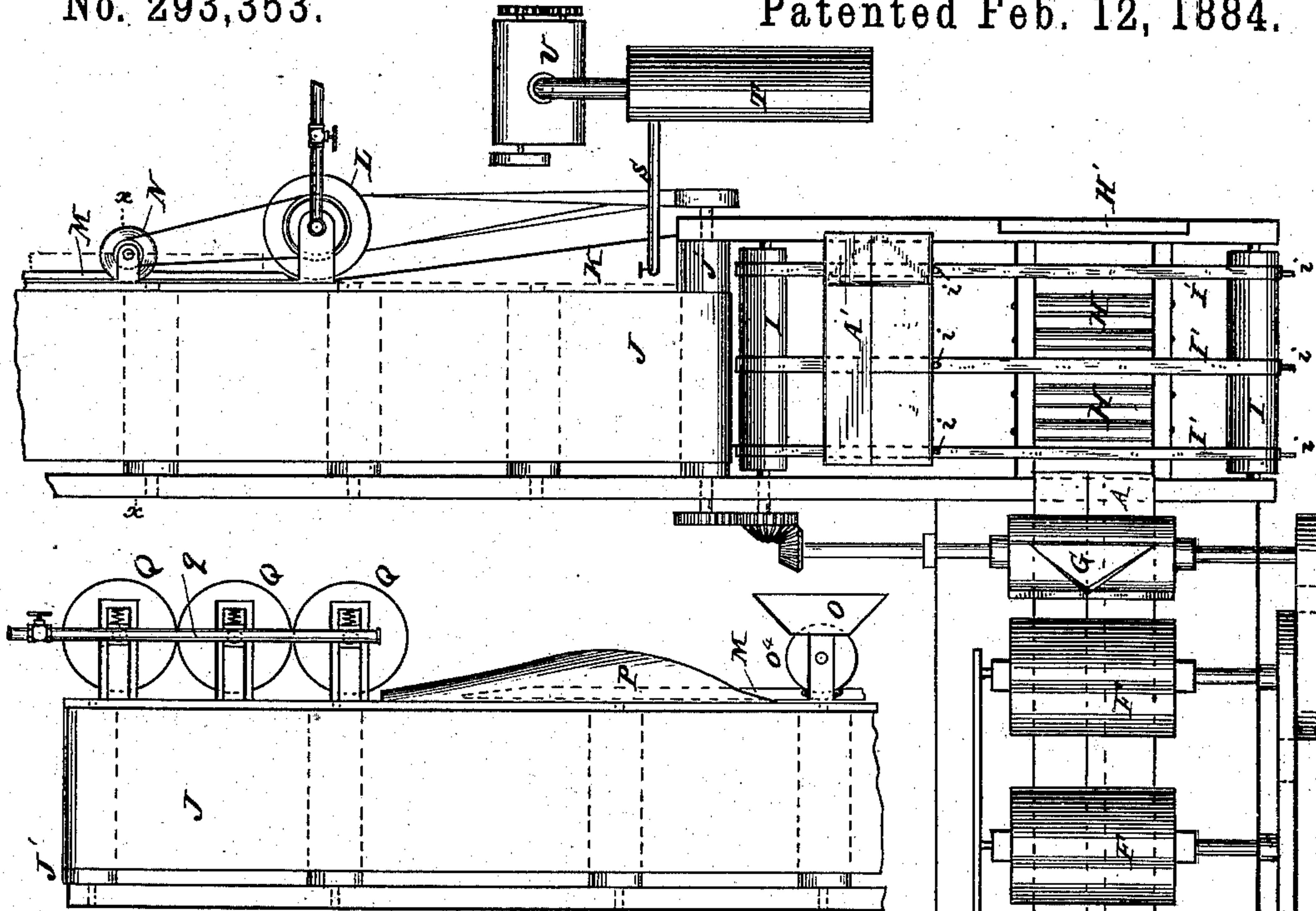
(No Model.)

3 Sheets—Sheet 1.

W. B. PURVIS.  
PAPER BAG MACHINE.

No. 293,353.

Patented Feb. 12, 1884.



Attests  
 Maria  
 L. J. Matos

**Inventor**  
William B. Purvis  
By his atty-  
A. M. Housh



(No Model.)

3 Sheets—Sheet 2.

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Fig. 5

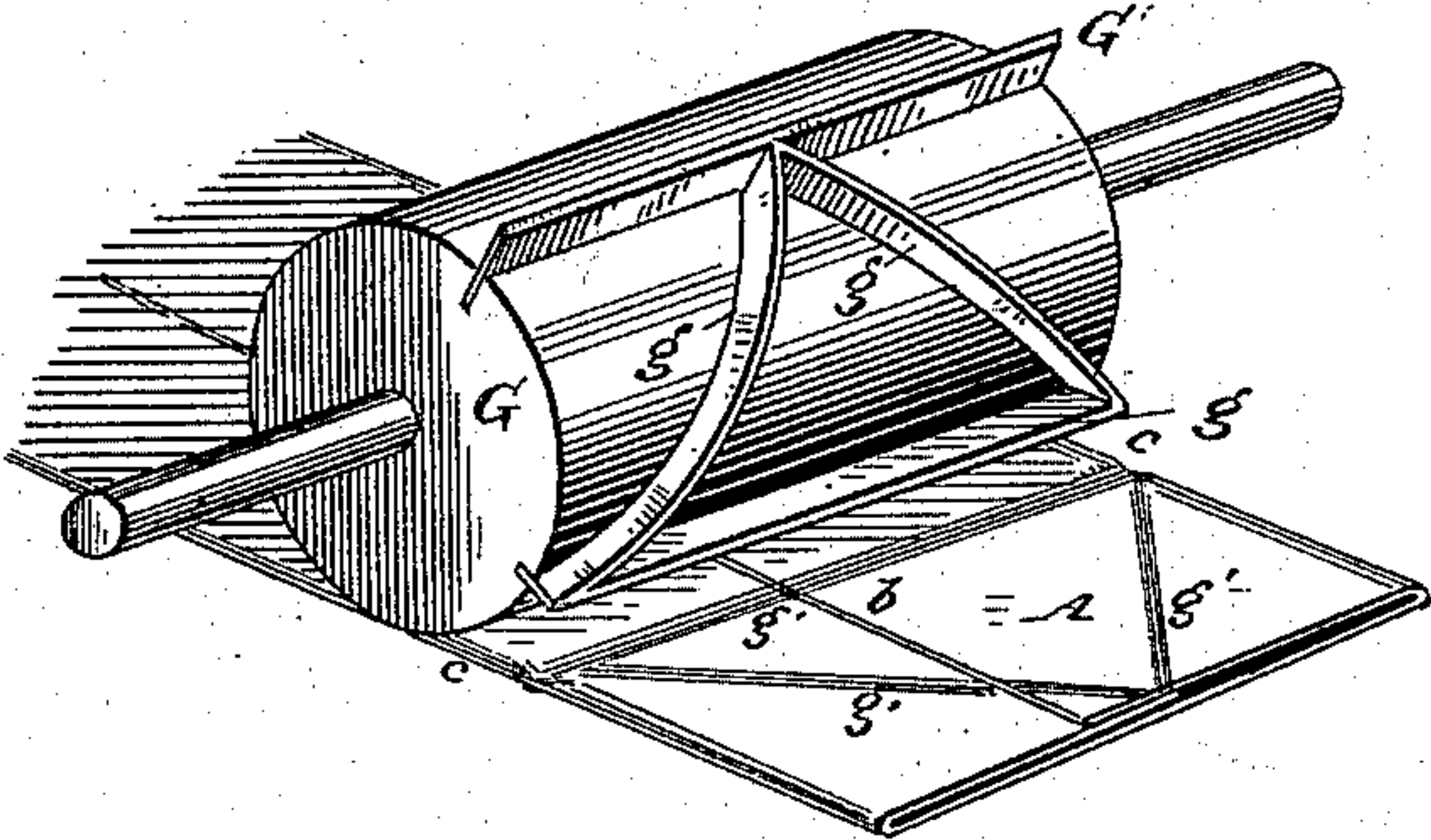


Fig. 6

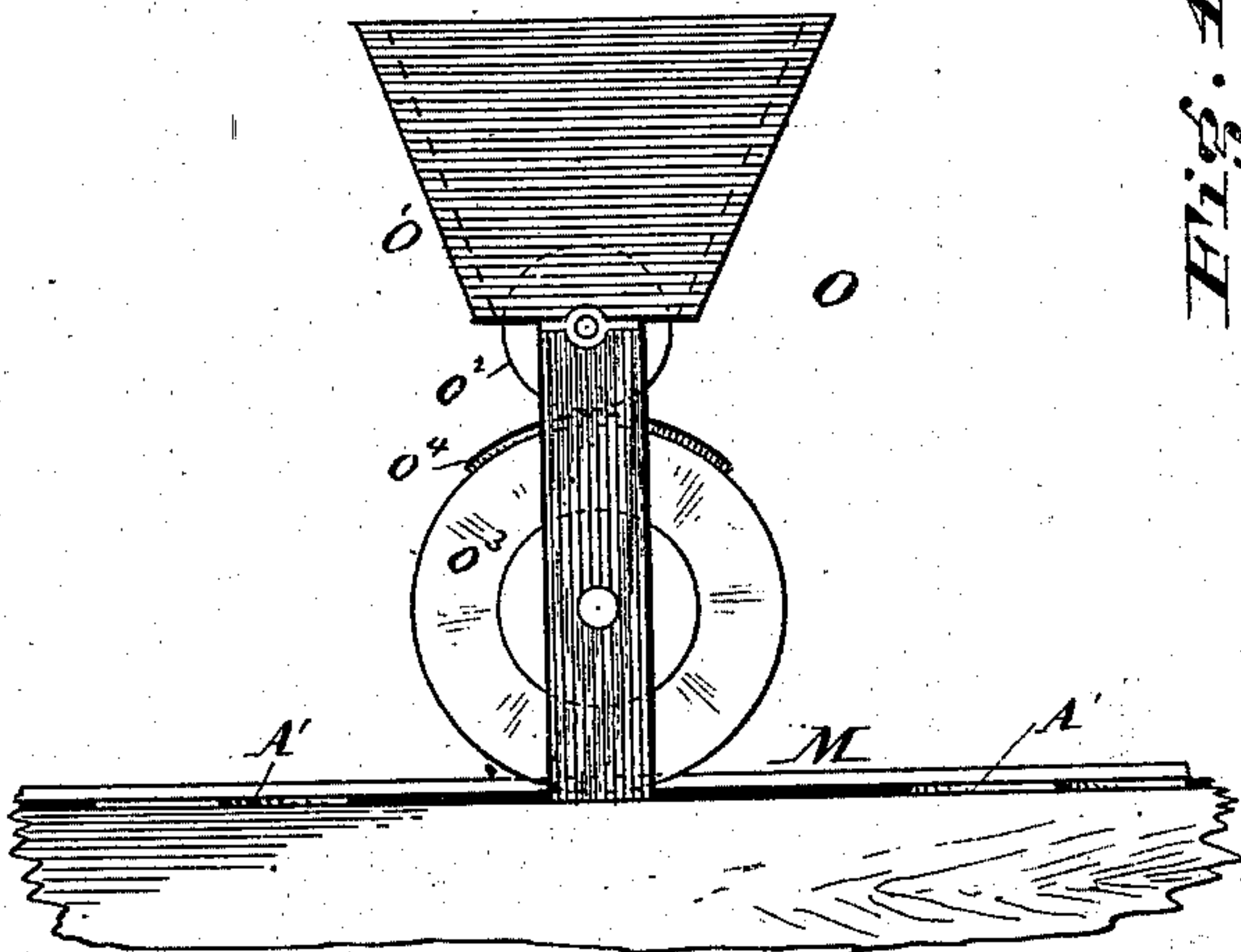
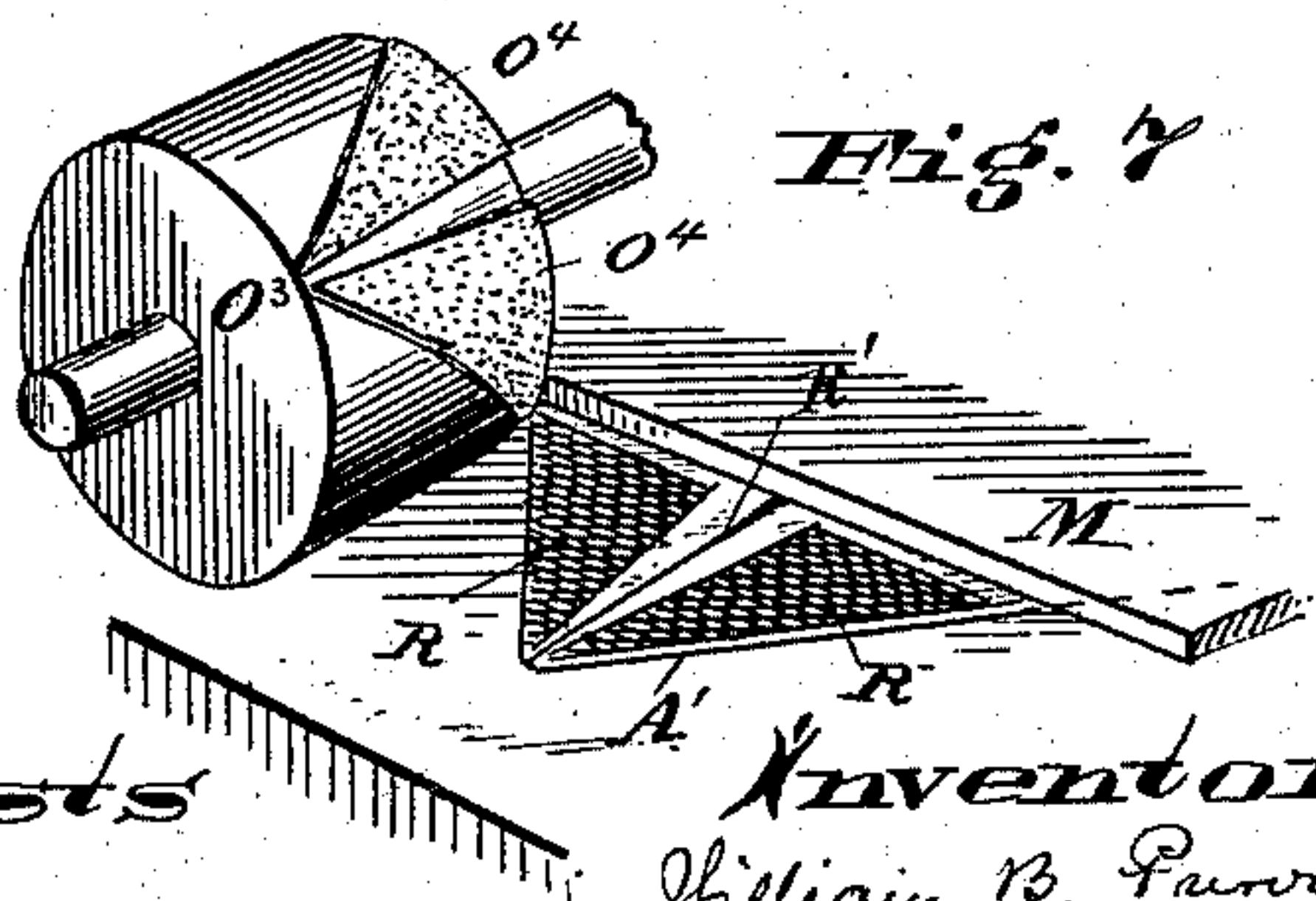


Fig. 7



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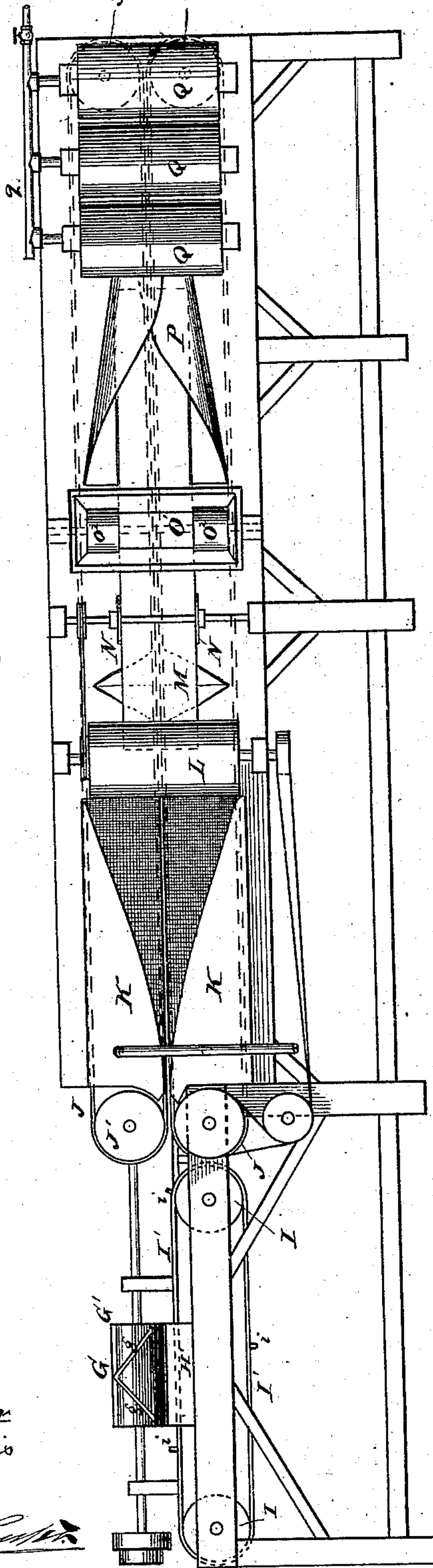
L. J. Matos.

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William B. Purvis

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*[Signature]*





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3 Sheets—Sheet 3.

W. B. PURVIS.  
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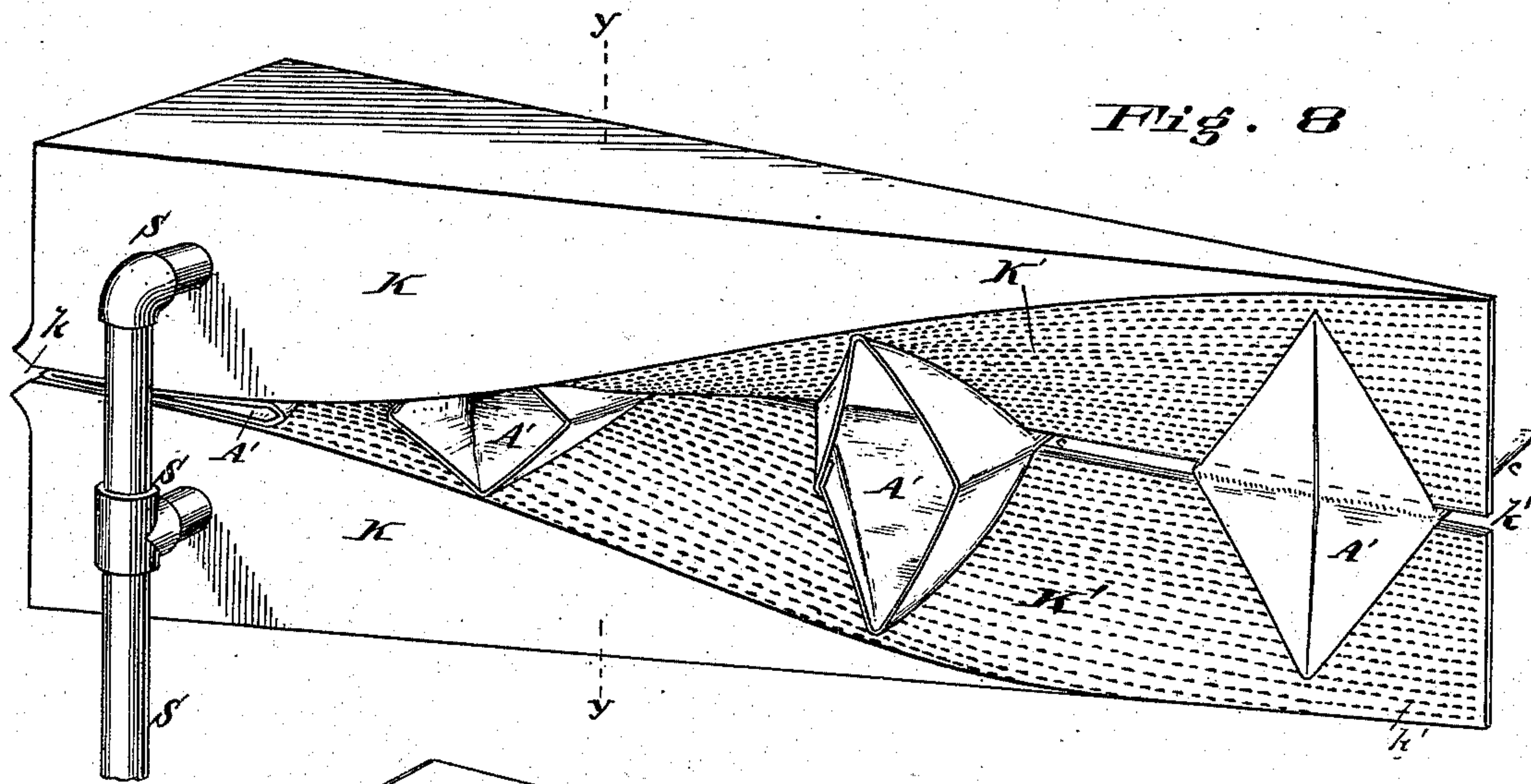


Fig. 8

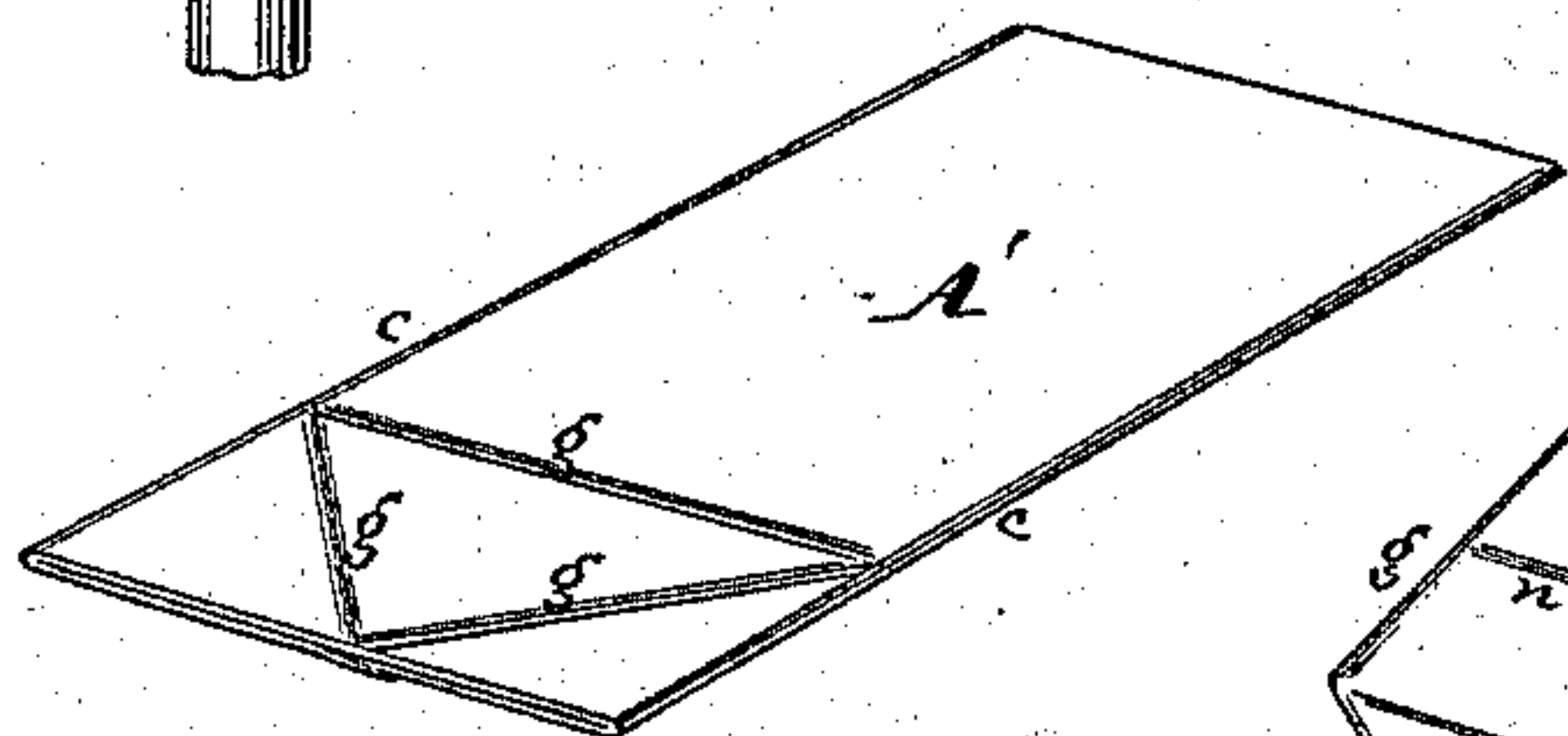


Fig. 10

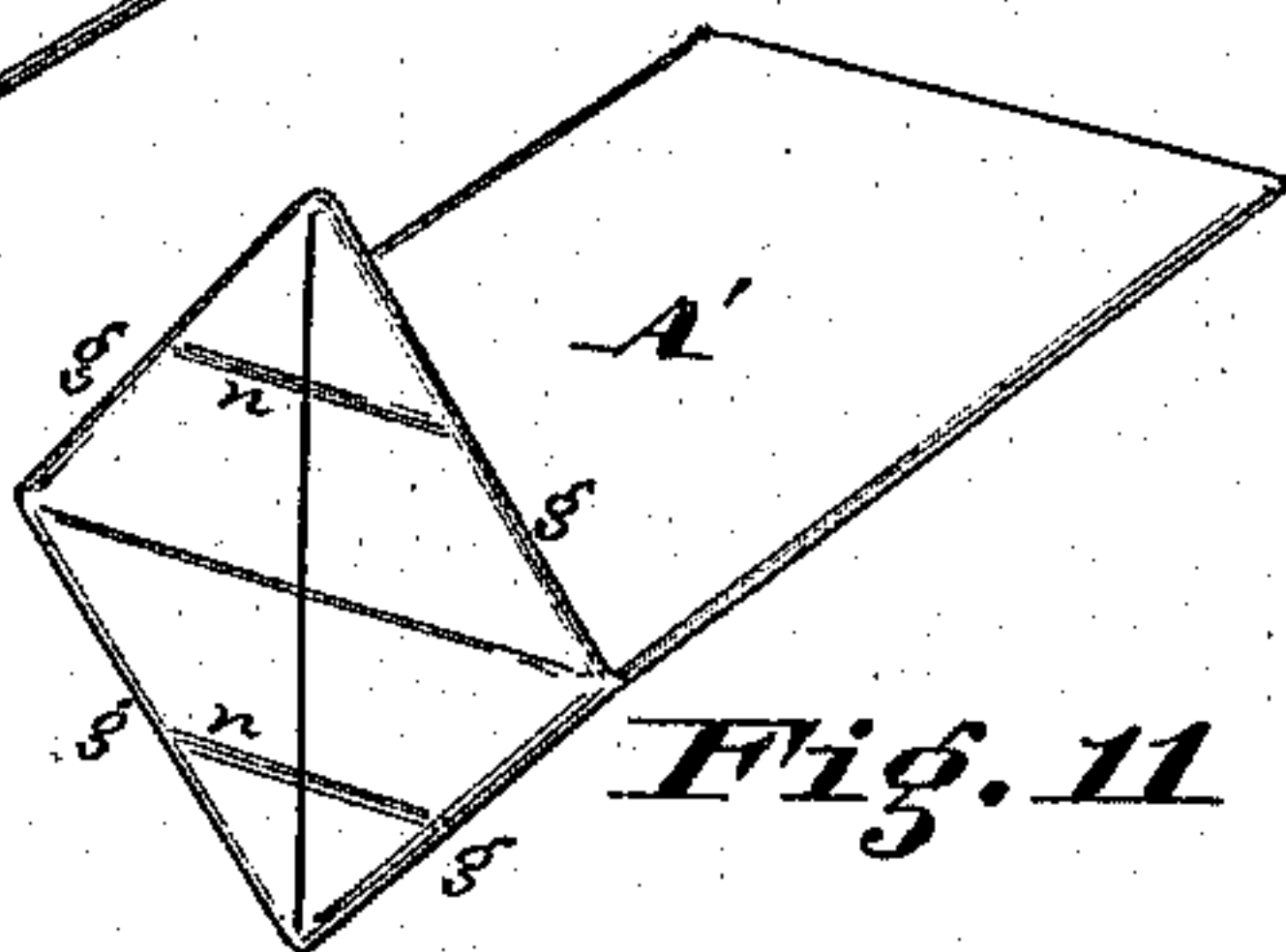


Fig. 11

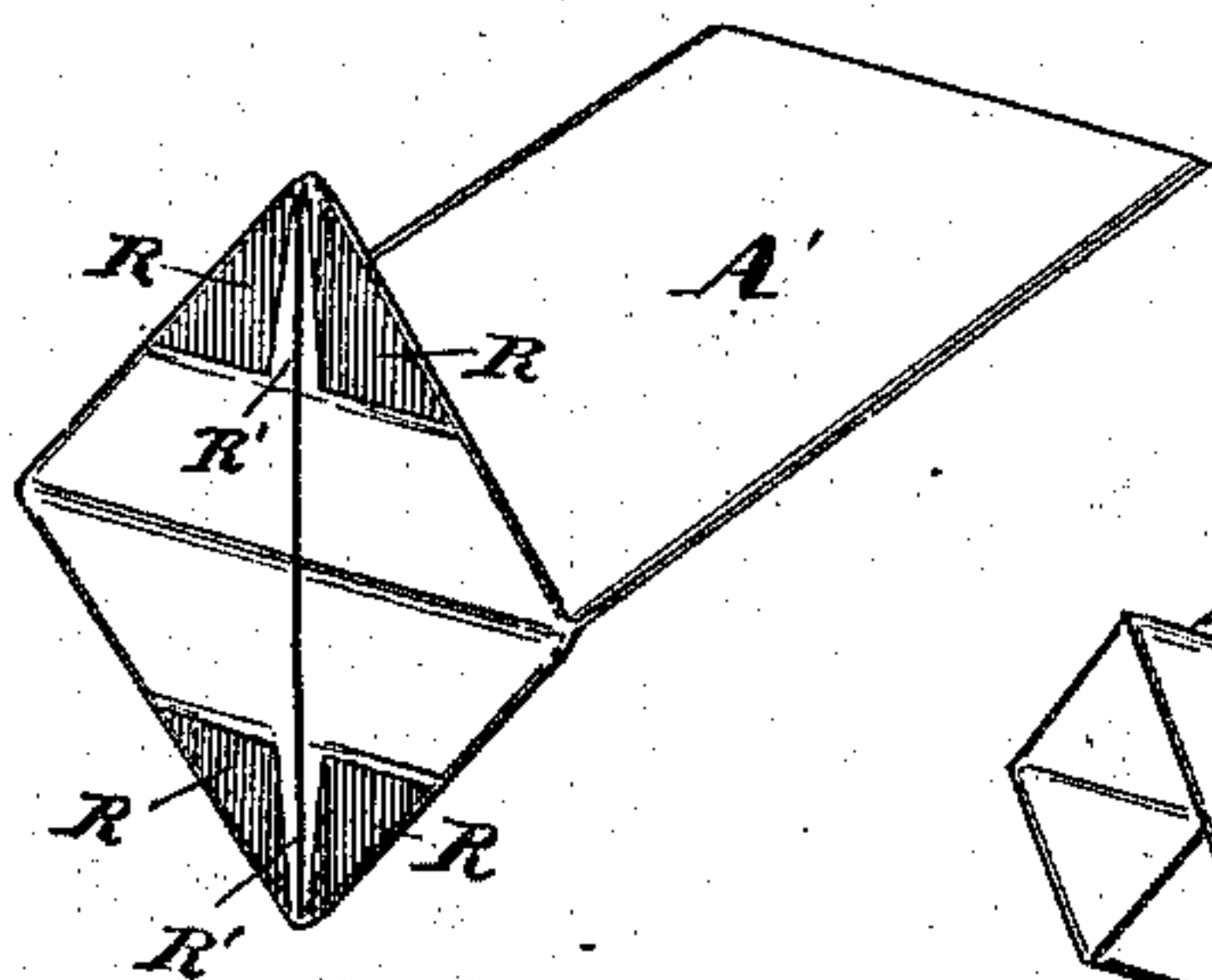


Fig. 12

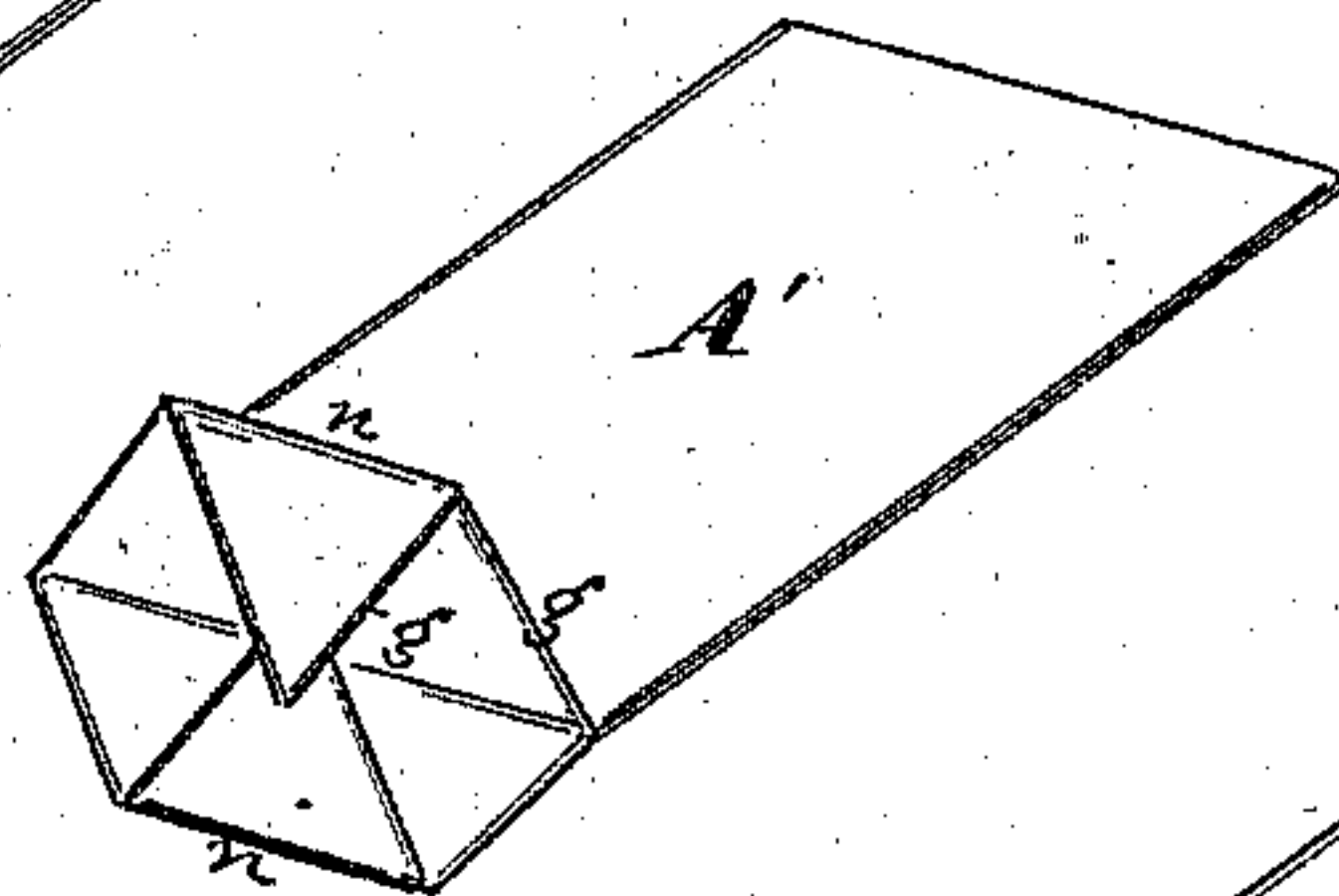


Fig. 13

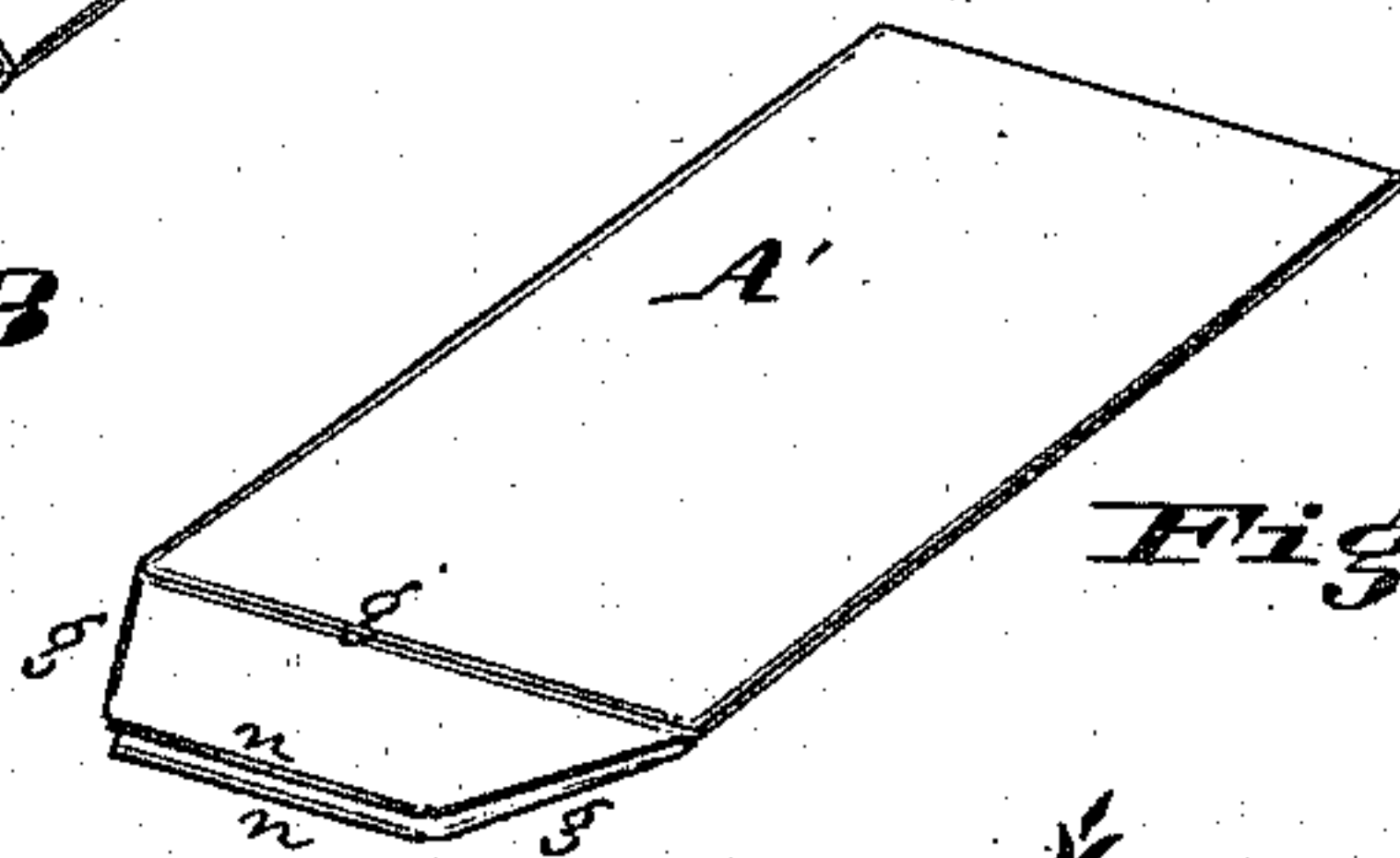


Fig. 14

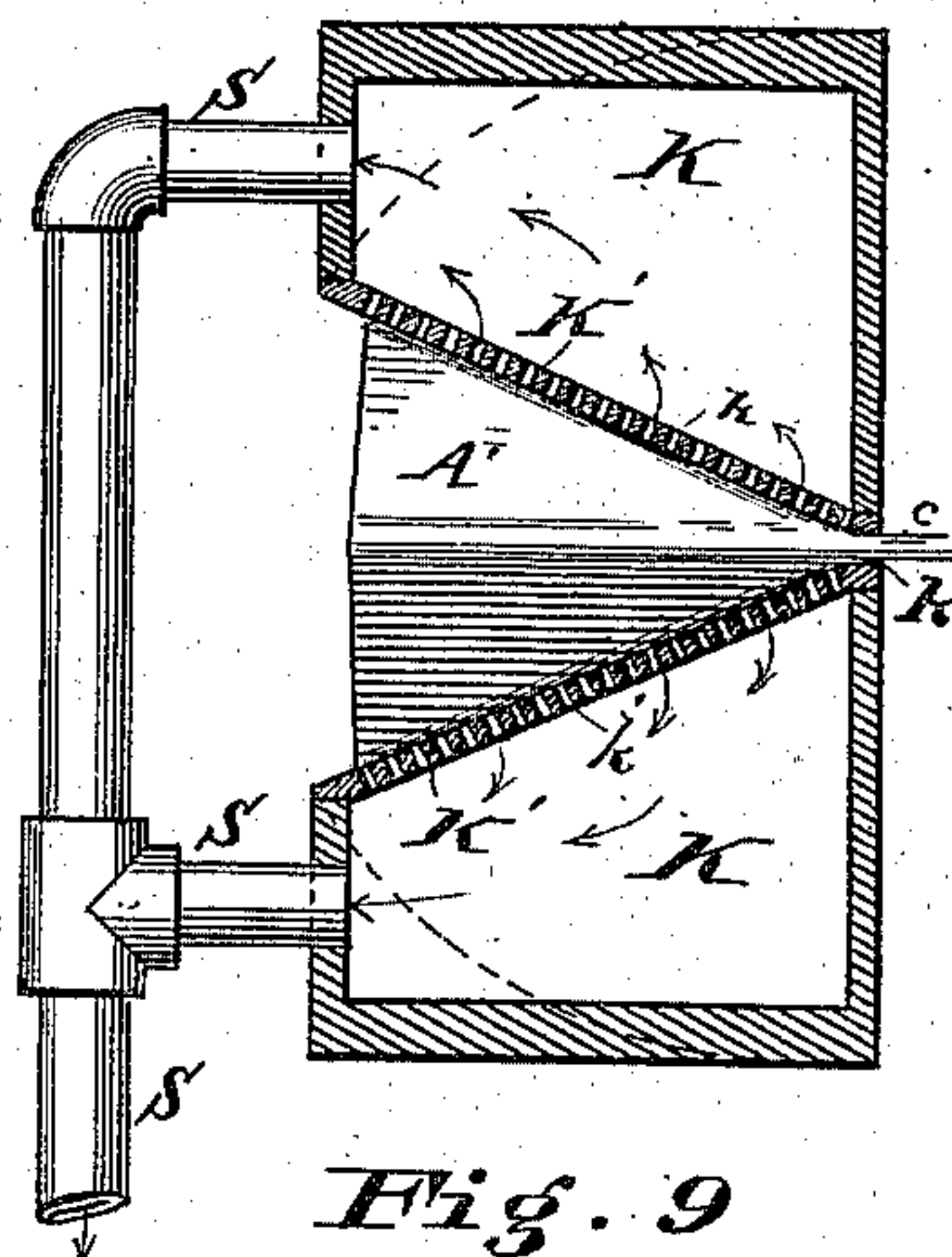


Fig. 9

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# UNITED STATES PATENT OFFICE.

WILLIAM B. PURVIS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR, BY  
DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO LOUIS E. PFEIF-  
FER, OF SAME PLACE.

## PAPER-BAG MACHINE.

SPECIFICATION forming part of Letters Patent No. 293,353, dated February 12, 1884.

Application filed October 11, 1881. Renewed May 26, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM B. PURVIS, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improve-  
5 ment in Paper-Bag Machines, of which the following is a specification.

My invention has reference to paper-bag machines in general, but more particularly to that class of those machines which are adapted to  
10 make what are known as "satchel-bottom bags;" and it consists in means for using suction to form the bottoms of the bags, and in means to form the paper tube, shape, and paste the side and bottom seams, when combined with  
15 an air-suction former for the satchel-bottoms, all of which is more fully set forth in the following specification, and shown in the accompanying drawings, which form part thereof.

The object of this invention is to provide a  
20 machine capable of manufacturing a large quantity of bags in a limited space of time, and dispense in said machine with the greater part of the mechanism necessary to make the satchel-bottoms on the old machines.

25 In the drawings, Figure 1 is a plan view of my improved paper-bag machine with a portion broken away. Fig. 2 is a plan view of a portion of said machine. Fig. 3 is a cross-section of said machine on line *x x* of Fig. 1.  
30 Fig. 4 is an elevation of means to form the bottom. Fig. 5 is a perspective view of the cutting and creasing roller. Fig. 6 is a side elevation of the bottom-pasting device. Fig. 7 is a perspective view of the bottom-pasting  
35 roller. Fig. 8 is a perspective view of the air-suction former for making the satchel-bottoms to the bags. Fig. 9 is a cross-section of same on line *y y* of Fig. 8. Figs. 10 to 14 show various stages in the formation of the bag.  
40 Fig. 15 is a cross-section of creasing-roller C and table of machine on line *z z* of Fig. 1.

A is the roll of paper, which is fed to the machine under the straightening or leveling roller B, and then under the creasing-roller C,  
45 which forms creases *c c* by pressing the paper A down into a flat groove in the table, constituting the sides of the bags. After being creased, the edge of the paper is fed under a

pasting-roller, D, and then the paper is passed through the folder E, of the usual construction, by which it is formed into a tube, and the seam *b* is pressed down and dried while passing under the steam-rollers F, which are supplied with steam by pipe *f*. After leaving the rollers F, it is fed under the creasing and  
50 cutting roller G. (Shown in Fig. 5, in which G' is the cutter or knife, and *g* are the creasing edges or blades.) In passing under this cutter, the tube is severed into bags, so far as the length of the tubes is concerned. These short  
55 sections of tubing are then fed upon idler-rollers H, and rest upon belts I', and are prevented from sliding off by piece H', secured to the frame of the machine. The tube-sections are then caught by the projections or  
60 pins *i* in the belts or bands I', and are carried along toward the suction-former for making the bottoms. These bands I' run on rollers I. The tube-sections then pass between the bands J, preferably of thick rubber, and pressed  
65 together by rollers J' or pressure-surfaces supported in suitable framing, the said bands passing between the two sections of the suction-former K, each of which is adapted to operate upon one side of the tube. The faces K' of  
70 the suction-former each make a quarter of a turn or twist in opposite directions, as shown in Fig. 8, said surfaces being provided with numerous small holes, *k*, communicating with the interior of the formers K, and through  
75 which air is constantly sucked by suction or exhaust fan U, through pipes S, and the pressure is prevented from sudden variations by the reservoir T. Between the sections of the former is a slot or passage-way, *k'*, through  
80 which the flat part of the tube-section travels, leaving the end projecting into the former, with its sides exposed to the perforated faces K'. As the tube-section is being passed through  
85 the former K by bands J, the sides of said tube which are designed to form the bottom are sucked apart and kept against the former-faces K', thereby gradually opening the tube and forming the bottom ready for pasting, as shown in Figs. 8, 9, and 11. The tube, with  
90 its bottom formed at right angles, is then



passed under roller L, to press and thoroughly crease the bottom, which then passes under the plate M, leaving the points projecting, as shown in Fig. 7. As the formed tube passes  
 5 along under the plate, it is creased at  $n$  by creasing disks or rollers N, which press the paper into the grooves  $n'$  upon the supporting table or frame  $n$ . It then passes under the pasting-rollers  $O^3$ , having pasting-strips  
 10  $O^4$ , adapted to put no paste over the seam  $R'$ , said roller receiving its paste from a second roller,  $O^2$ , which works in the paste-vat  $O'$ , as shown in Fig. 6. The bag is then in the condition shown in Fig. 12, in which R are the  
 15 pasted portions of the bottom, and  $R'$  the open seam, which is clear of paste to prevent the possibility of any paste getting on the inside of the tube when the bottom is folded over to finish the bag. The bag with its pasted bot-  
 20 tom then passes under or through the folder P, similar in construction to folder E, previously referred to, by which the points of the bag are doubled over and pasted down, as shown in Fig. 13, and it then passes under the  
 25 steaming-rollers Q, supplied with steam by pipe  $q$ , to dry the paste. The bag is then in a finished condition, and the bottom is folded, as shown in Fig. 14, for commerce; but this last fold is not done by the machine. When the  
 30 tube-section was cut off by knife  $G'$ , the creasing ribs or blades creased the tube-section at  $g$ , as shown in Figs. 5 and 10, and where it would have to be doubled in after manipulations.

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

1. In a machine for making paper bags, a former provided with means to create a suc-  
 40 tion and a longitudinal aperture through which the tubes are fed in close succession, side by side, for the purpose of forming the bottom of the bag, substantially as and for the purpose specified.

45 2. In a machine for making paper bags, a stationary former made hollow, with its oper-

ating-surfaces provided with numerous small apertures, in combination with an exhaust-fan, and pipes connecting said fan with the interior of the former, substantially as and for  
 50 the purpose specified.

3. In a machine for making paper bags, a former having two suction-faces curved in opposite directions arranged to allow the tube-sections to pass between said faces, and side  
 55 by side, as described and shown, and adapted to suck and draw the sides of said tube apart to form the bottom of the bag, substantially as and for the purpose specified.

4. In a paper-bag machine, the combination  
 60 of the feeding-bands  $I'$ , suction-former K, roller L, creasing-rollers N, support  $n$ , plate M, pasting-roller  $O^3$ , folder P, and drying-rolls Q, substantially as and for the purpose specified.  
 65

5. In a paper-bag machine, the combination of leveling roller B, creasing-roller C, pasting device D, folder E, drying-rolls F, and creasing and cutting roller G, with suction-former  
 70 K, means, substantially as described, to feed the tube-section to said former, pipe S, exhaust-fan U, feeding-bands J, a pasting-roller, and a folder, P, for folding over the bottom to complete the bottom as formed in former K,  
 75 substantially as and for the purpose specified.

6. In a machine for making paper bags, a former provided with means to create a suction and a longitudinal aperture through said  
 80 former, through which the tubes are fed in close succession for the purpose of forming the bottoms of the bags, in combination with two endless bands having their line of contact in line with the aperture in the former, and means, substantially as described, to press  
 85 said bands together to feed the tubes through said former, substantially as set forth.

In testimony of which invention I hereunto set my hand.

WILLIAM B. PURVIS.

Witnesses:

R. M. HUNTER,  
 SAMUEL E. CAVIN.