

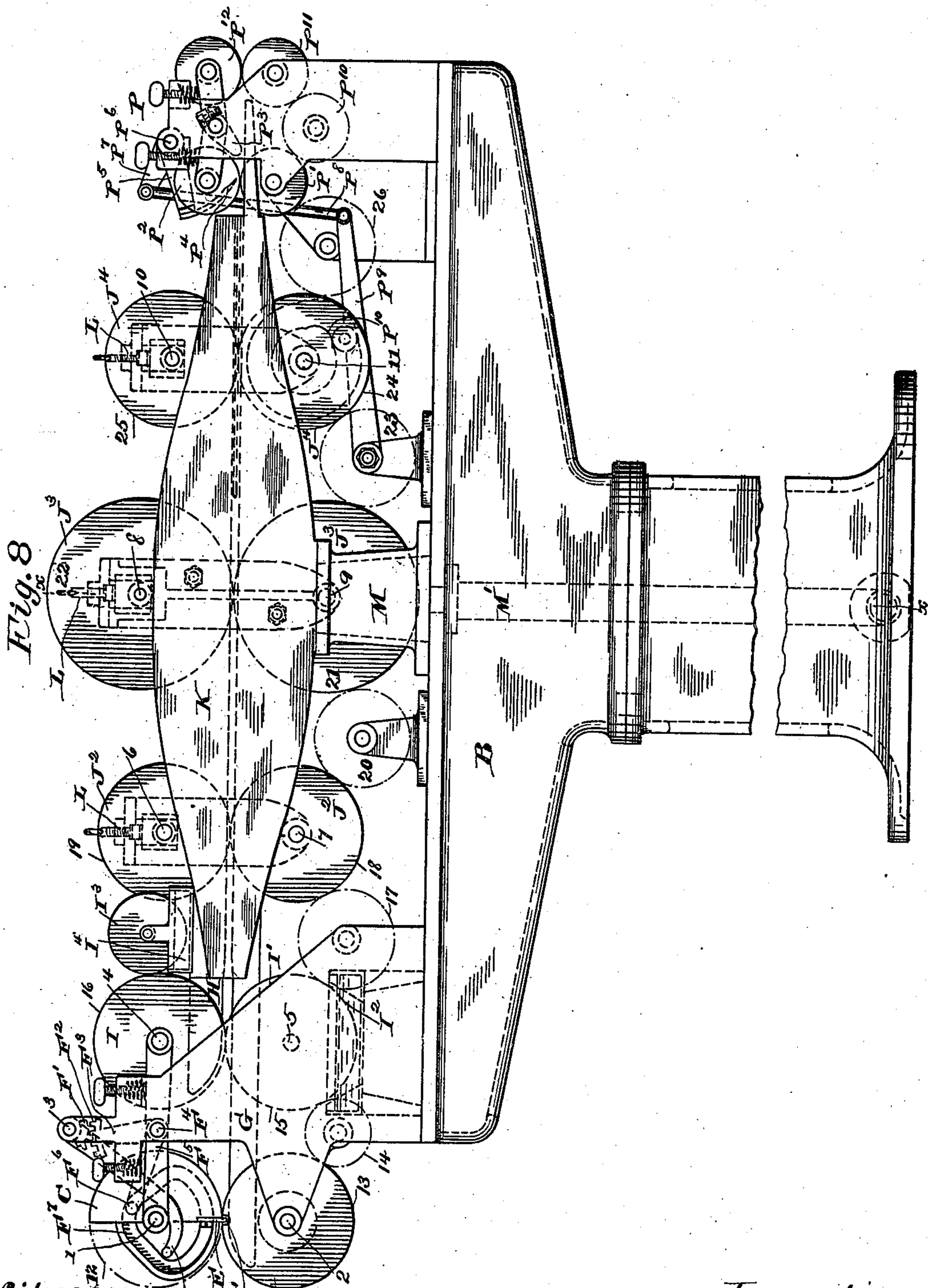
(No Model.)

E. E. CLAUSSEN.
PAPER BAG MACHINE.

4 Sheets—Sheet 2.

No. 502,847.

Patented Aug. 8, 1893.



Witnesses:
David H. Williams,
Joshua M. Black, Jr.

Inventor:
Edward E. Claussen
by his atty.
Frederic T. Chambers

(No Model.)

E. E. CLAUSSEN.
PAPER BAG MACHINE.

4 Sheets—Sheet 1.

No. 502,847.

Patented Aug. 8, 1893.

Fig. 1

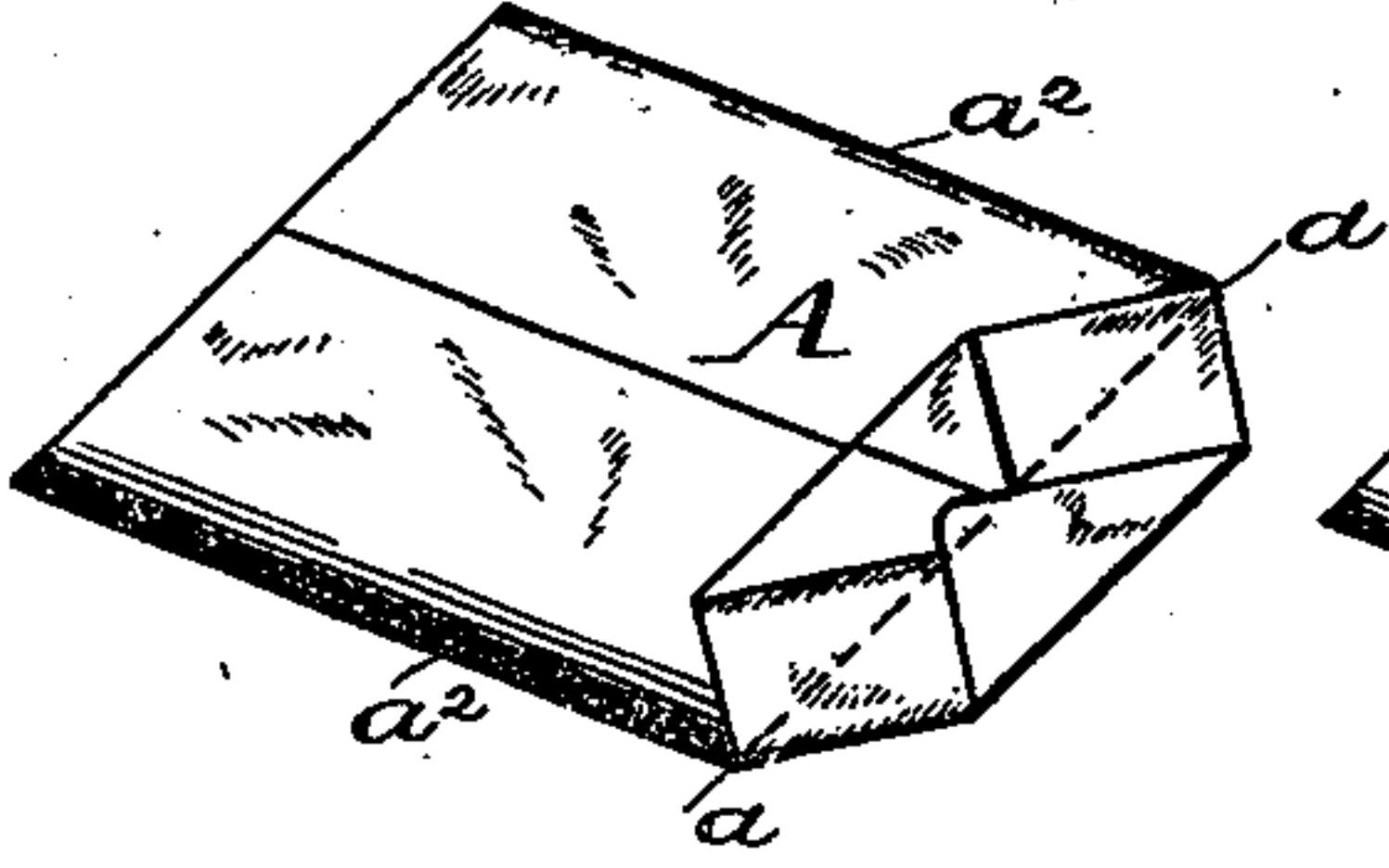


Fig. 2

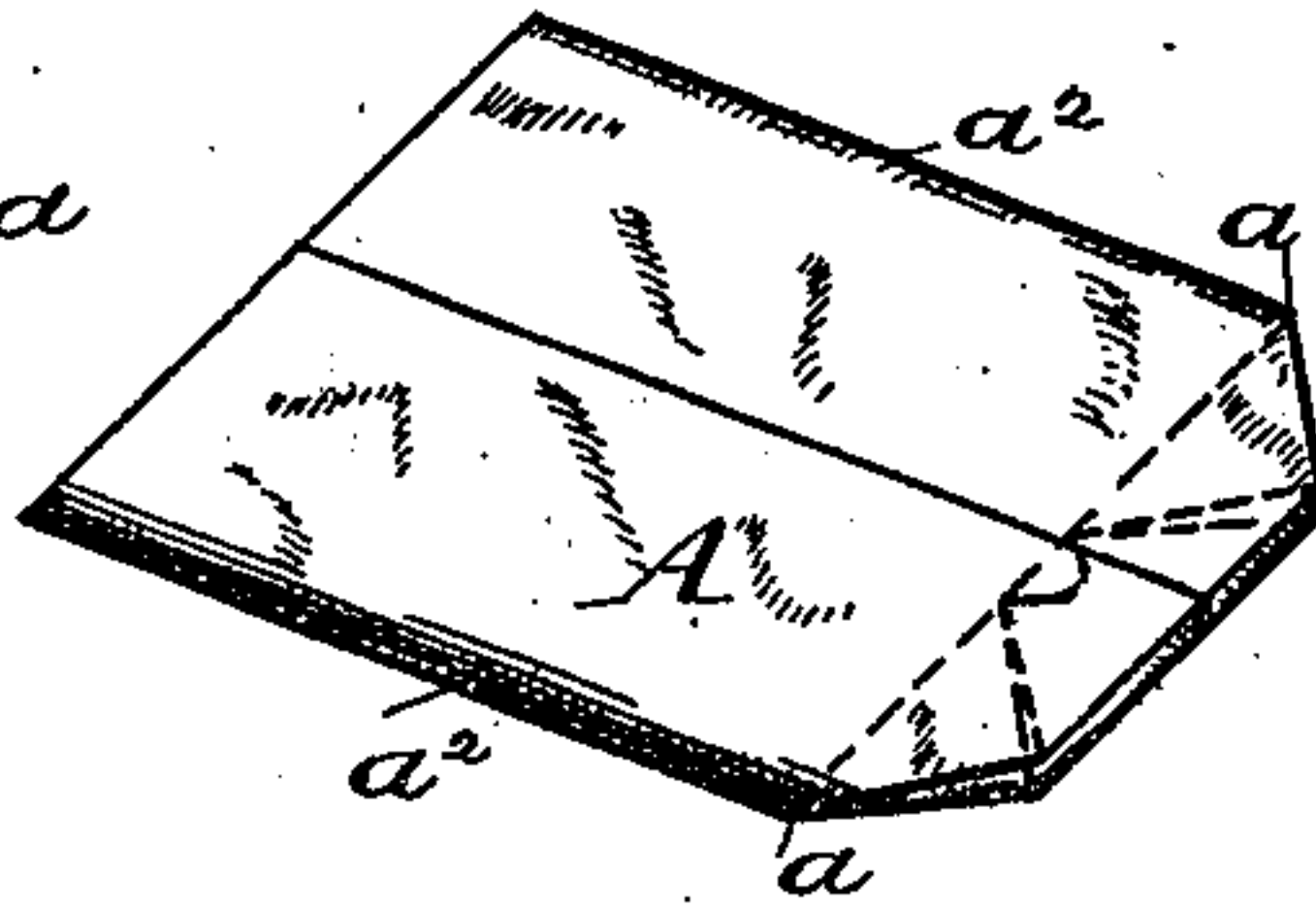


Fig. 3

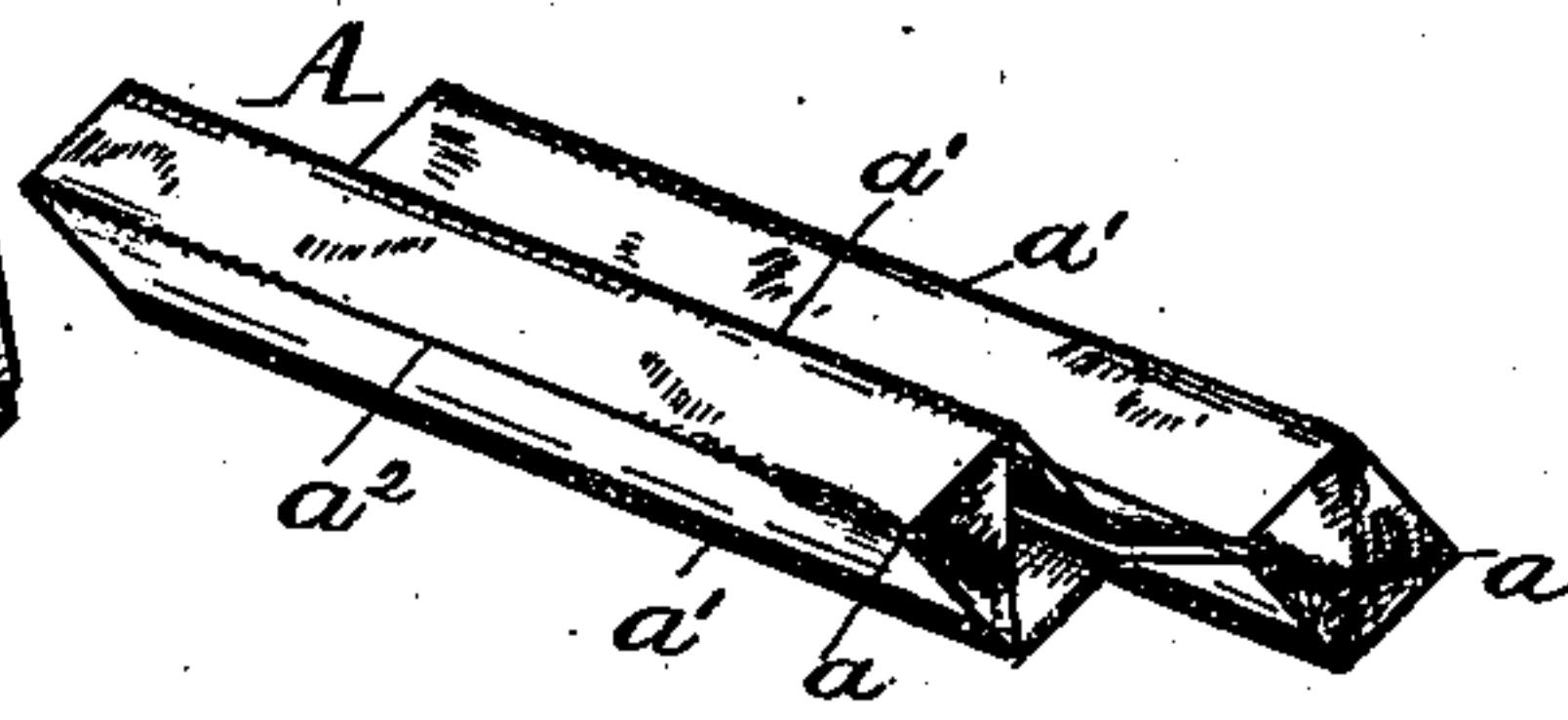


Fig. 4

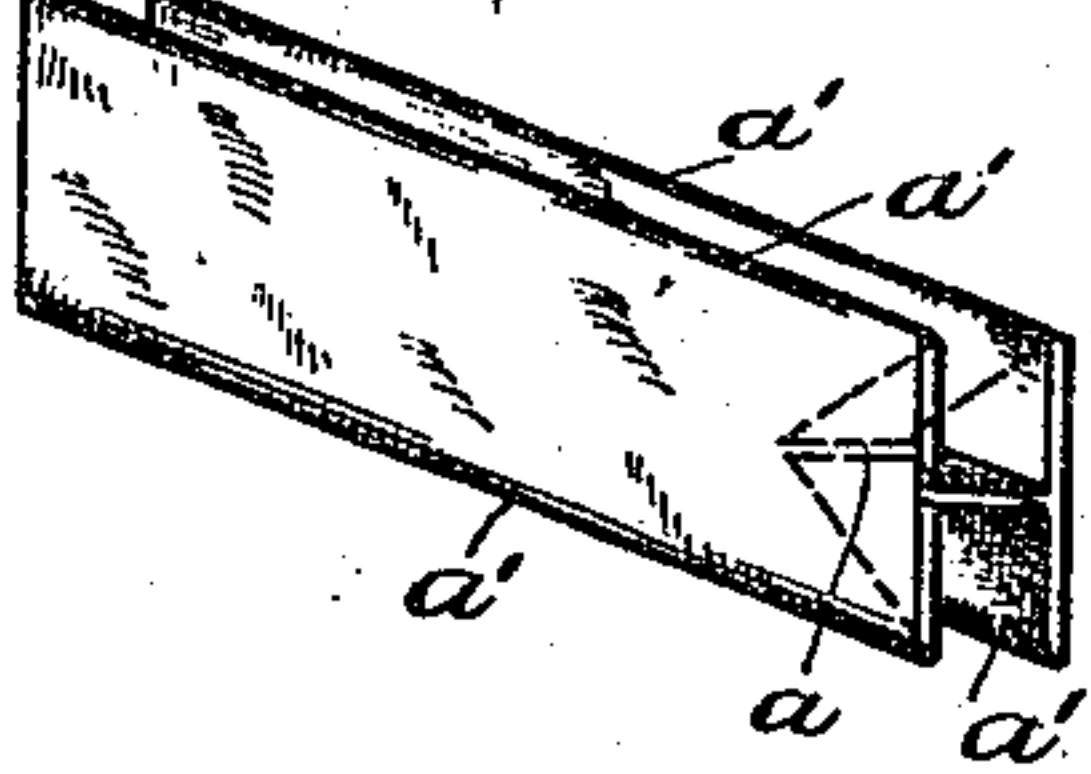


Fig. 5

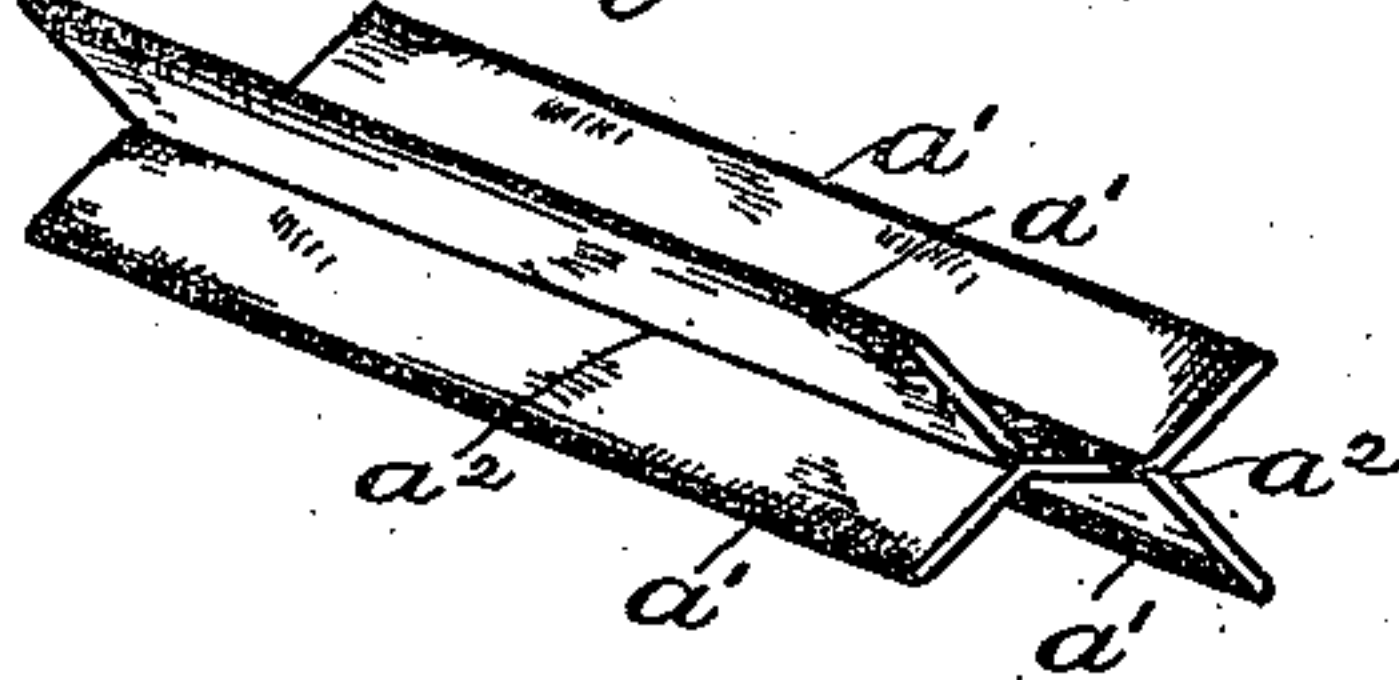


Fig. 6

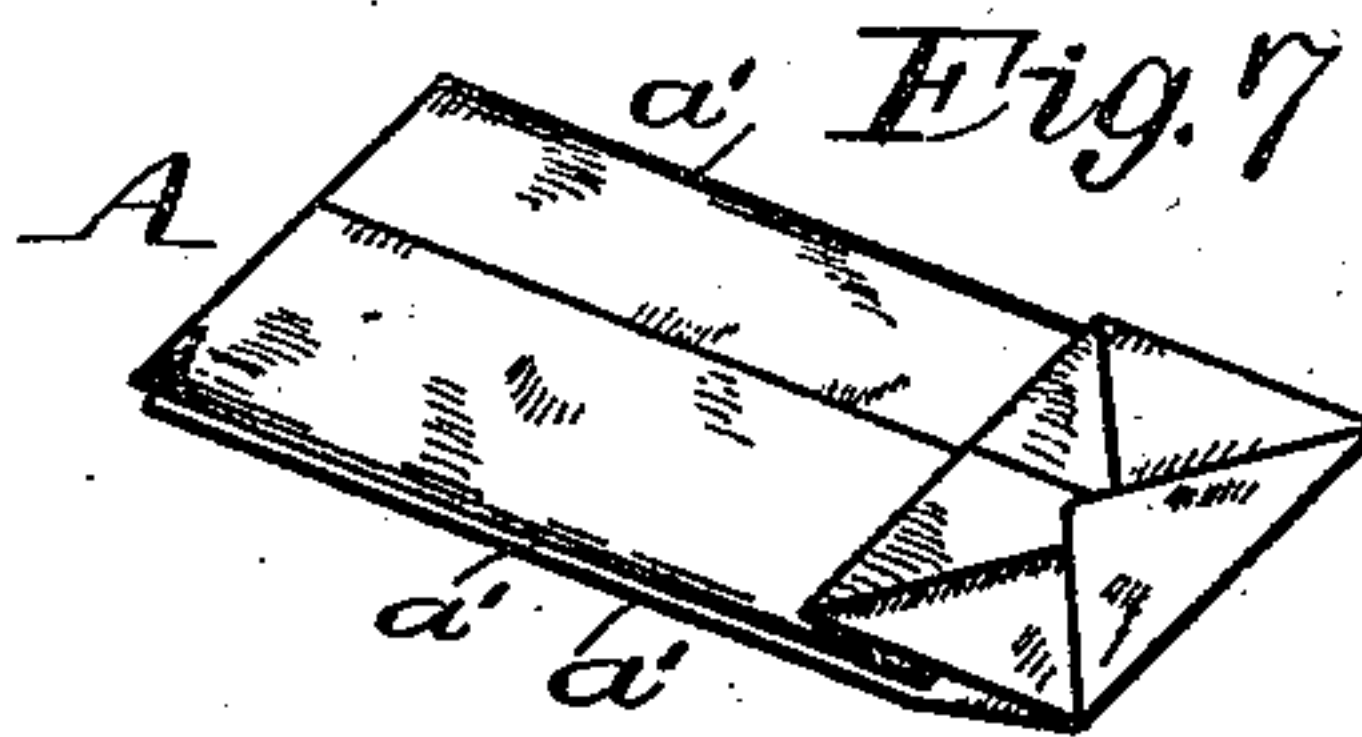
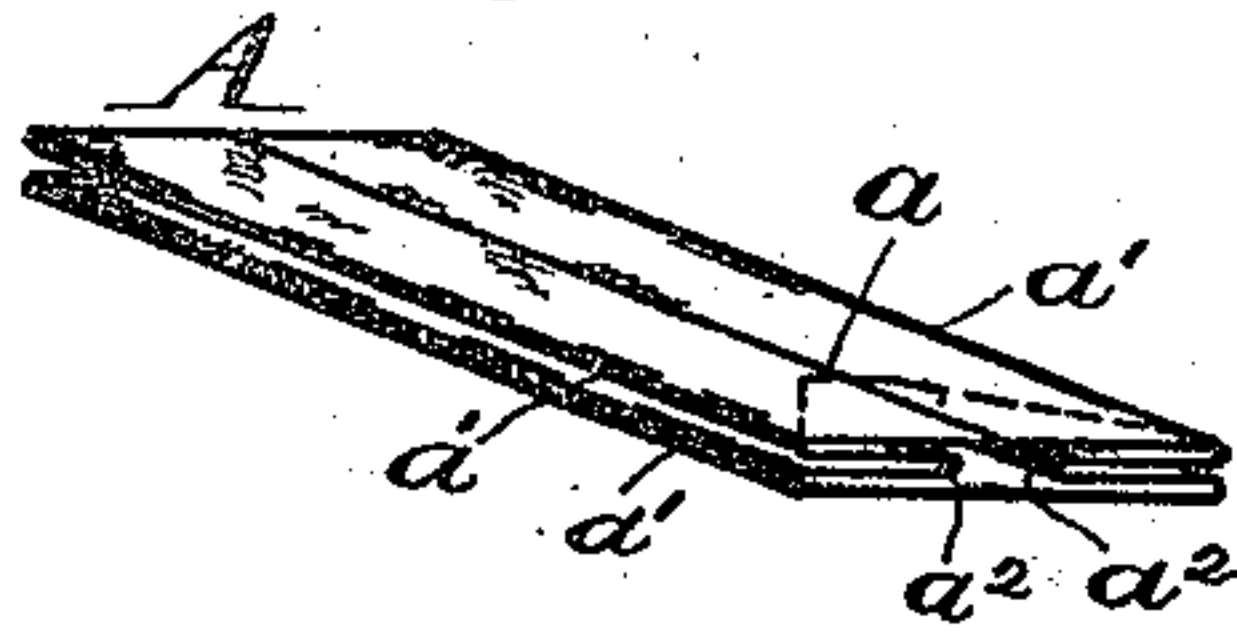


Fig. 12.

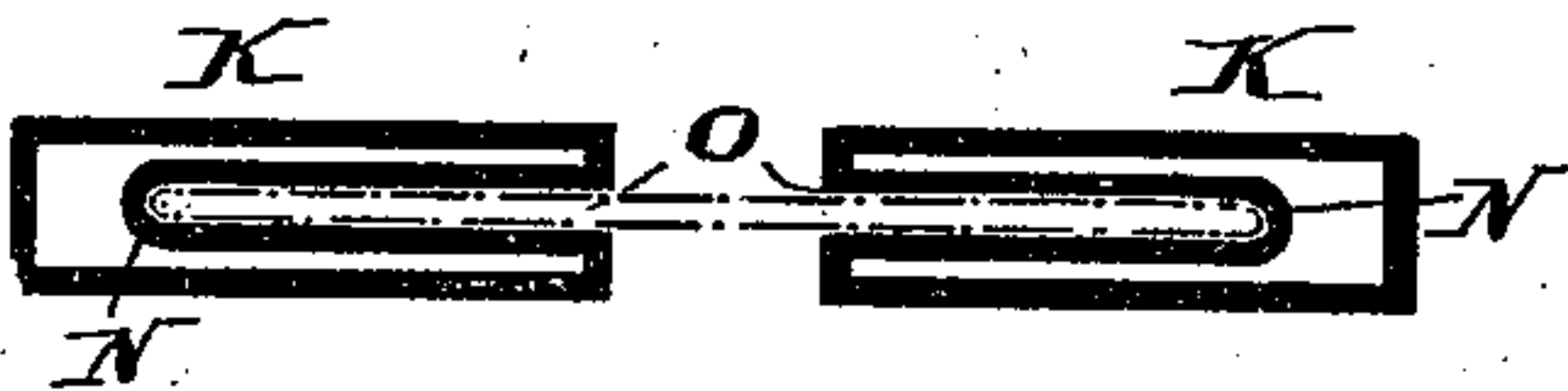


Fig. 13.

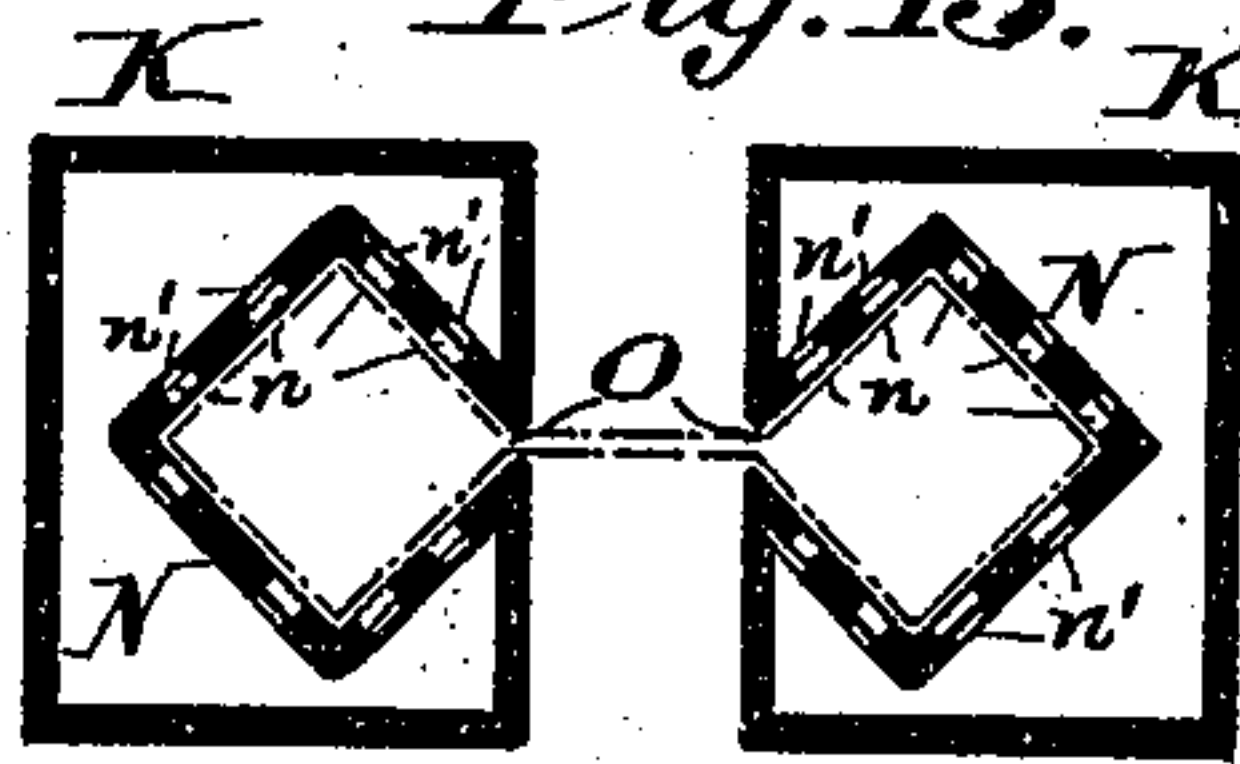


Fig. 14.

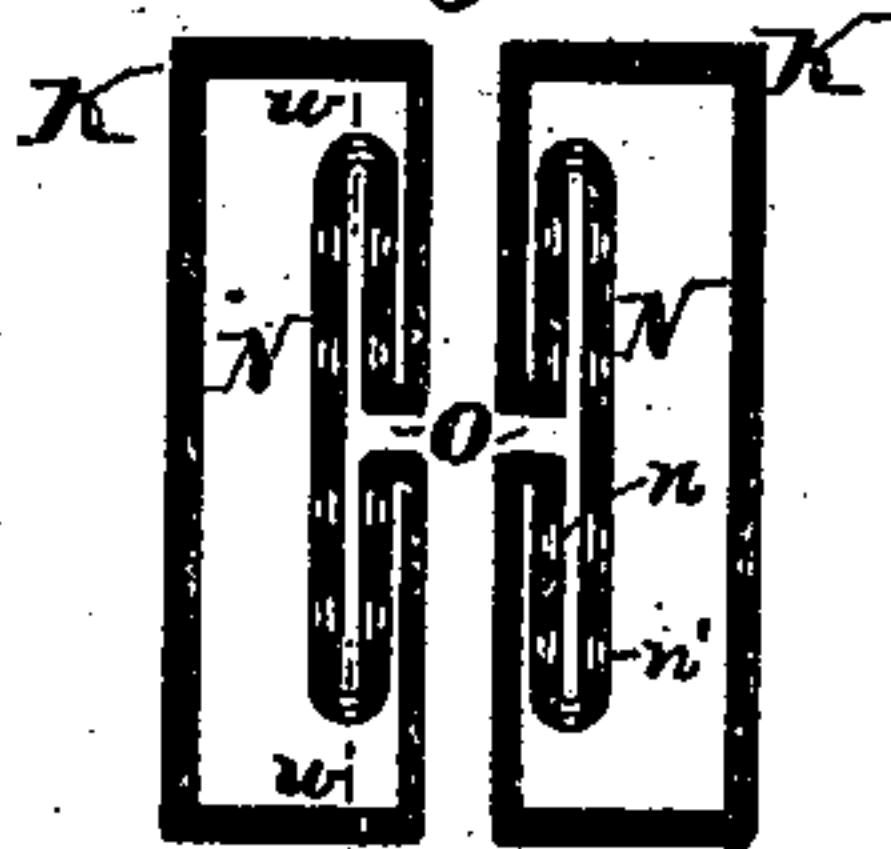


Fig. 17.

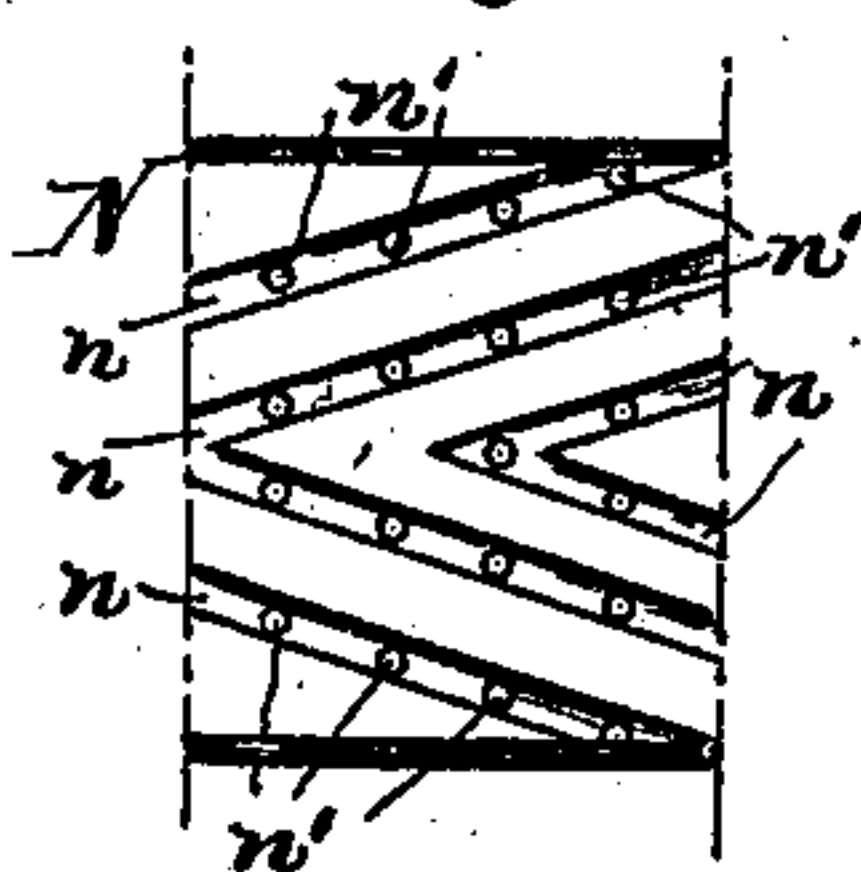


Fig. 15.

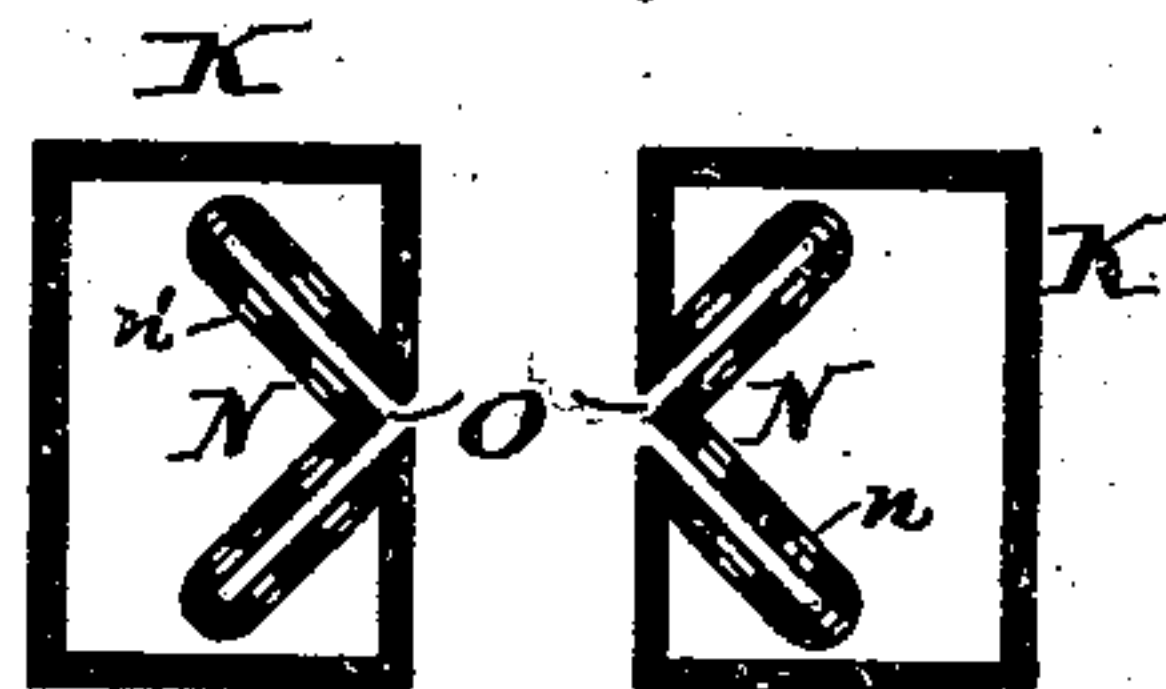


Fig. 16.



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(No Model.)

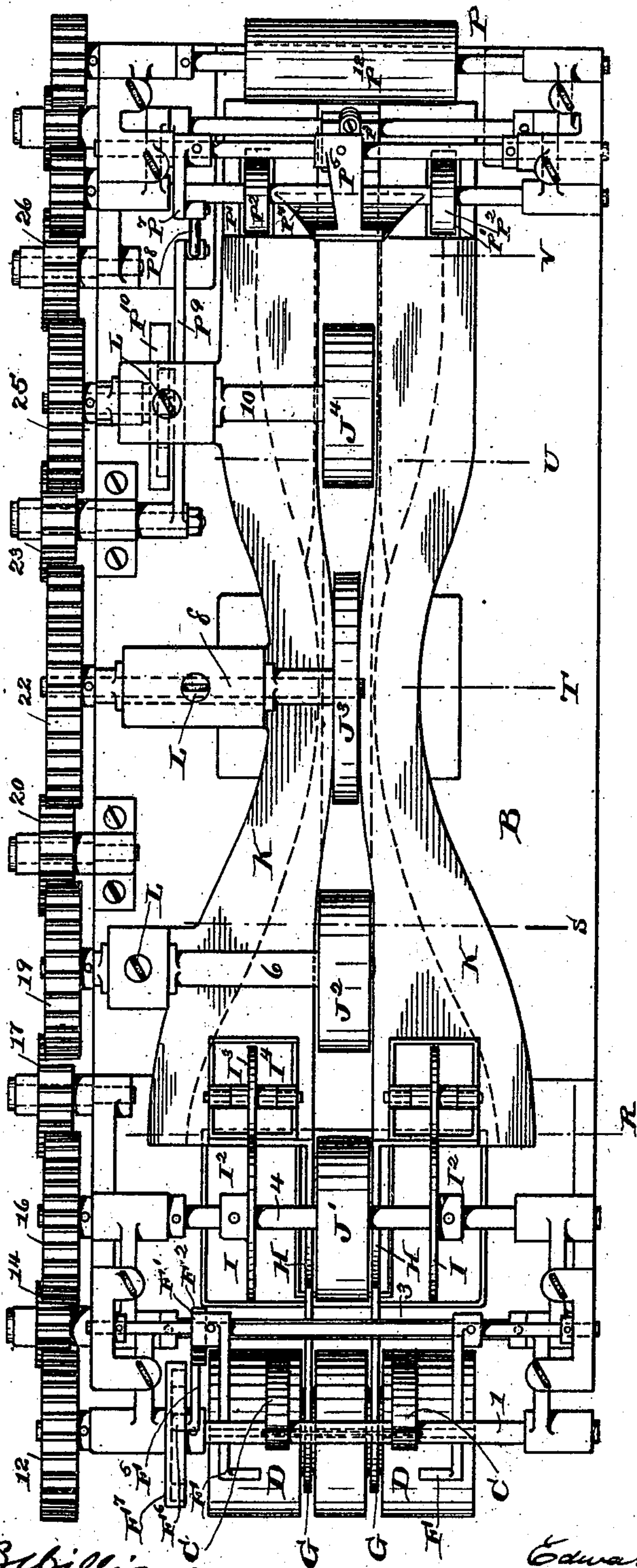
4 Sheets—Sheet 3

E. E. CLAUSSEN.
PAPER BAG MACHINE.

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Patented Aug. 8, 1893.

Fig. 9



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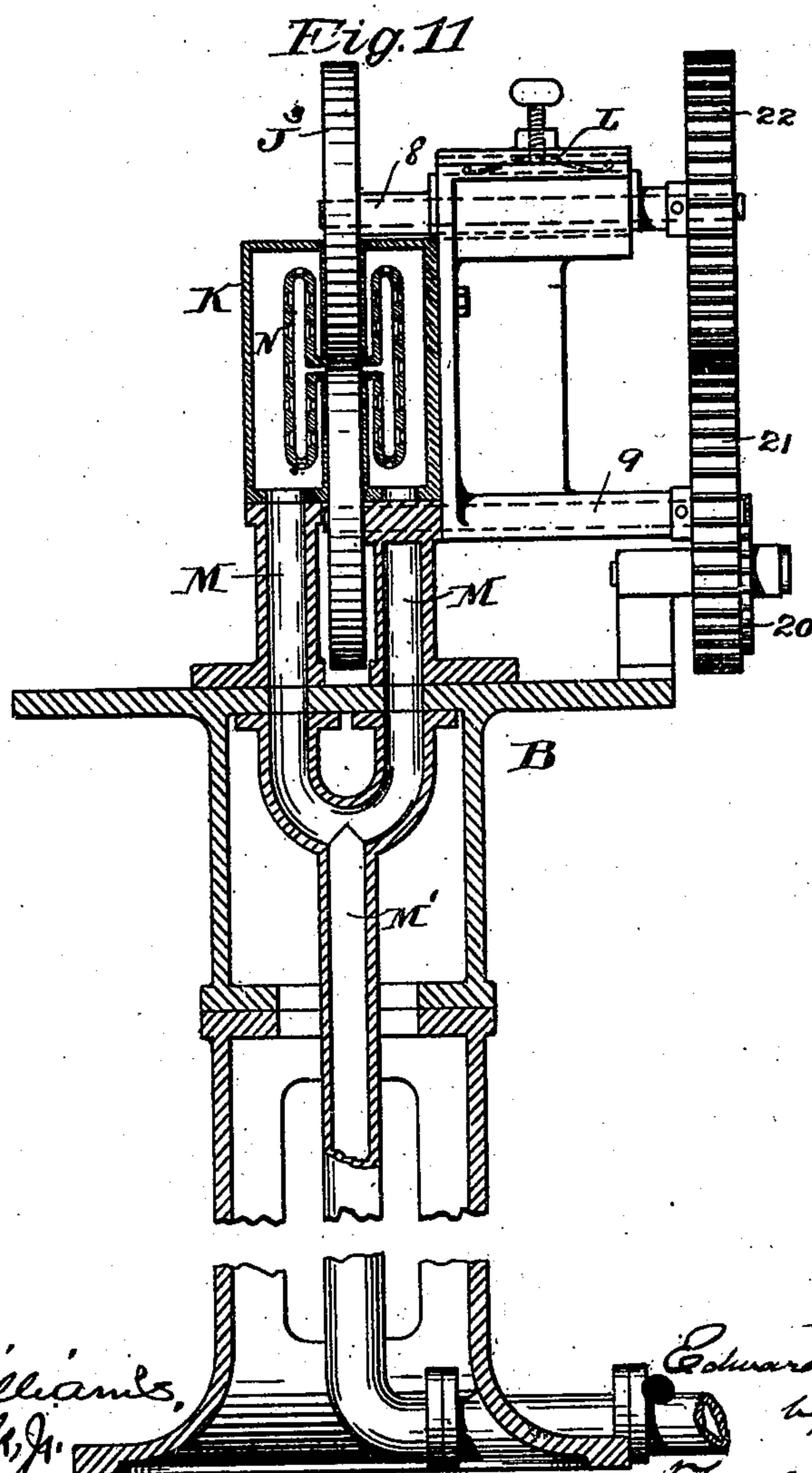
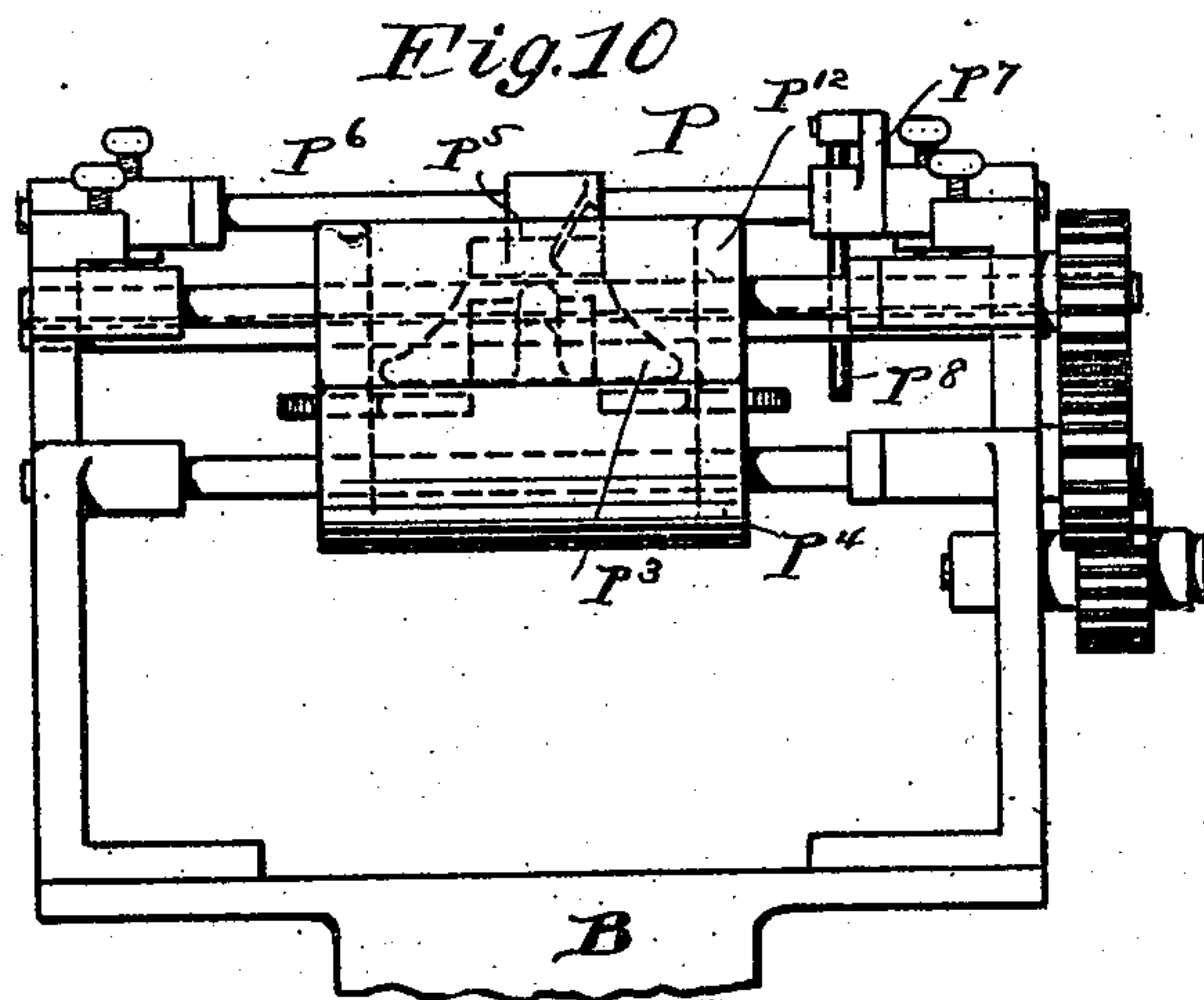
(No Model.)

4 Sheets—Sheet 4

E. E. CLAUSSEN.
PAPER BAG MACHINE.

No. 502,847.

Patented Aug. 8, 1893.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWARD E. CLAUSSEN, OF HARTFORD, CONNECTICUT, ASSIGNOR TO
THE UNION PAPER BAG MACHINE COMPANY, OF PHILADELPHIA,
PENNSYLVANIA.

PAPER-BAG MACHINE.

SPECIFICATION forming part of Letters Patent No. 502,847, dated August 8, 1893.

Application filed April 11, 1891. Serial No. 388,443. (No model.)

To all whom it may concern:

Be it known that I, EDWARD E. CLAUSSEN, of the city and county of Hartford, State of Connecticut, have invented a certain new and
5 useful Improvement in Paper-Bag Machines, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of this specification.

10 My invention relates to paper bag machinery of a generally similar character to that described in a patent granted to me May 9, 1893, and numbered 496,860, upon which invention the subject matter of my present application
15 may be considered an improvement.

I may further state that my improved machine as a whole is especially organized for converting satchel-bottom paper bags into
20 what are known as the square satchel-bottom bags.

The nature of my improvements will be best understood as described in connection with the drawings in which they are illustrated and in which—

25 Figure 1 is a perspective view of the ordinary satchel-bottom bag; and Figs. 2 to 7 illustrate the various operations performed upon the bag in converting it into a square satchel-bottom bag of the kind illustrated in Fig. 7.
30 Fig. 8 is an elevation of the improved machine; Fig. 9 a plan view thereof; Fig. 10 an elevation of the rear end of the machine; Fig. 11 a cross-sectional view through the machine taken on the line T of Fig. 9; Fig. 12 a section
35 through the former on the line R; Fig. 13 a section on the line S; Fig. 14 a section on the line T; Fig. 15 a section the line U; Fig. 16 a section on the line V; and Fig. 17 a sectional view of the inside of the former-
40 plate taken on the line *w w* of Fig. 14.

Referring first to Figs. 1 to 7 inclusive, A indicates the tube of the satchel-bottom bag; *a a* the central line of the bag bottom; *a² a²*
45 the lines of fold in the tube A. The first operation performed upon the satchel-bottom bag consists in folding the bottom together about the lines *a* as indicated in Fig. 2; the next operation, illustrated in Figs. 3 to 6, consists in forming inward tucks at the side of

the blank the paper being finally folded on 50 the lines *a' a'*, &c., and the folding on the lines *a²* being reversed—that is to say, constituting the inward instead of an outward fold; the last operation performed upon the blank consists in spreading open the bottom 55 as shown in Fig. 7.

Referring now to the mechanism, B indicates the framing of the machine, at the front end of which machine a segmental roll or rather a pair of rolls C C are connected to the
60 revolving shaft 1; a folding blade E is connected with the edge of the rolls. Below the segmental roll C is the co-acting roller D having a groove D' formed across its face to correspond and register with the folding blade E. 65

F F are fingers secured to the shaft 3 which shaft is given an oscillatory movement by means of the segmental gear F' engaging with the segmental-gear F² which last-mentioned gearing is sustained on the arm F³ of a bell-
70 crank lever pivoted at F⁴ and the other arm F⁵ of which has a pin or roller F⁶ at its end which engages with a cam F⁷ on the shaft 1. The rolls C and D attached respectively to the shafts 1 and 2 are geared together by cog-
75 wheels 12 and 13 and the cylinder portion of the rolls of the same diameter so that they revolve with the same speed, the blade E always engaging the groove D'.

The satchel-bottom bag indicated in Fig. 1 80 is fed between the rolls C and D in such a way that the blade E will engage the blank along the line *a a* forcing the blank along that line into the groove D' the effect of which is to cause the rear portion of the bottom of the 85 bag to be folded up against the flat side of the segmental rolls C. The fingers F then come into operation moving with greater speed than the rolls. They come down against the elevated portion of the bottom and wipe 90 or push it forward folding it down upon the front half of the bottom as shown in Fig. 2. This motion of the fingers F and their return to their original position as shown in Fig. 8 take place beginning when the rolls are in 95 the position shown in Fig. 8 and continuing while the segmental rolls have their cut-away portion opposite to the roll D the fingers F

thus moving in the recessed portion of the rollers C.

The feeding of the bags to the segmental rolls C and after the action of said rolls upon them, to the bite of the rolls J' may be effected by hand or by any convenient feed mechanism, aided if desired by the forward sweep of the fingers F.

The rest of the mechanism shown in the drawings is, in all of its vital parts, substantially identical with that described in my before-mentioned application. The blank folded as shown in Fig. 2 is delivered to feed-rolls J' and between disks I I' which apply lines of water along the bag blank on the lines upon which the folds α' are to be formed. The disks I' run in water-boxes I² and the disks I have water applied to them by means of the disk I³ which runs in water-boxes I⁴. From the rolls J' the blank is fed into the suction-former boxes K K which communicate through pipes M M with the pipe M' which in turn is connected with the suction blower. Within the suction boxes K are the forming faces N the conformation of which can be readily followed from Figs. 12 to 16 which show sections through the suction-boxes at the points before indicated. Through the faces N are formed perforations n' . In all these particulars the former is substantially identical with that described in my former application. A new and important improvement however consists in providing the inner or operative faces of the forming faces N with obliquely-set grooves diverging in the direction of the motion of the bag from the center of the forming plate outwardly; this construction being best shown at n Fig. 17. The perforations n' are formed through the plates N at the bottom of the grooves n and the result of the oblique arrangement of the grooves is the drawing out of the paper from the central line on both sides thus insuring the even and smooth spreading out of the sides which are to be folded in. The obliquely-set grooves may extend over the whole of the formers or only over a portion of them.

Another novel feature of my machine consists of the series of feed rolls J', J², J³ and J⁴ when constructed as shown so that the upper roll of each bar is held down by an elastic pressure; this is accomplished in the construction shown by making the upper bearings of the shafts supporting the said rolls and numbered in the drawings 4, 6, 8 and 10 elastic--that is to say, by giving the said shafts a

spring support instead of a rigid positive support as shown at L and best shown in Fig. 11. After passing through the former the bag is delivered in the condition in Fig. 6 and the bottom is then spread out by the mechanism shown at P and which mechanism is identical with that shown in my former patent previously referred to and forms no part of my present invention. I will mention however that the bag in the condition shown in Fig. 6 passes first between the rolls P' and P², then, as it is fed forward by said rolls, the finger P³ passes under the upper ply of the folded bottom at the same time the tucker P⁵ comes down along the line α and pushes the bag beneath the finger P³ delivering it to the rolls P¹¹ and P¹² in the condition shown in Fig. 7. The tucker P' is held on a lever P⁵ journaled on a shaft P and actuated from a cam P¹⁰ (see Fig. 9) by a lever P⁹ and a connecting-rod P⁸ and a crank-arm P⁷.

The gearing of the machine is indicated by numerals and as it is of a simple and well-understood character it is unnecessary to describe it in detail.

The method of converting satchel-bottom bags into square satchel-bottom or bellows-folded bags which my present machine is adapted to carry out forms the subject-matter of another application for Letters Patent filed by me on the 14th of October, 1890, and bearing the Serial No. 368,152.

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

1. The combination with a grooved roll D and a segmental roll C having a folder plate E connected therewith, of the fingers F and finger actuating mechanism as described and whereby the fingers are moved inward between the rolls aforesaid after the paper is creased thereby.

2. The combination with the suction formers F F of a series of feed rolls J' J' J² J², &c., extended between the formers and the upper roll of each pair held against the lower one by a yielding pressure substantially as and for the purpose specified.

3. In a suction former the forming faces N having diverging grooves on their operative faces and perforations formed in said grooves, substantially as and for the purpose specified.

EDWARD E. CLAUSSEN.

Witnesses:

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JAMES COLEMAN.