

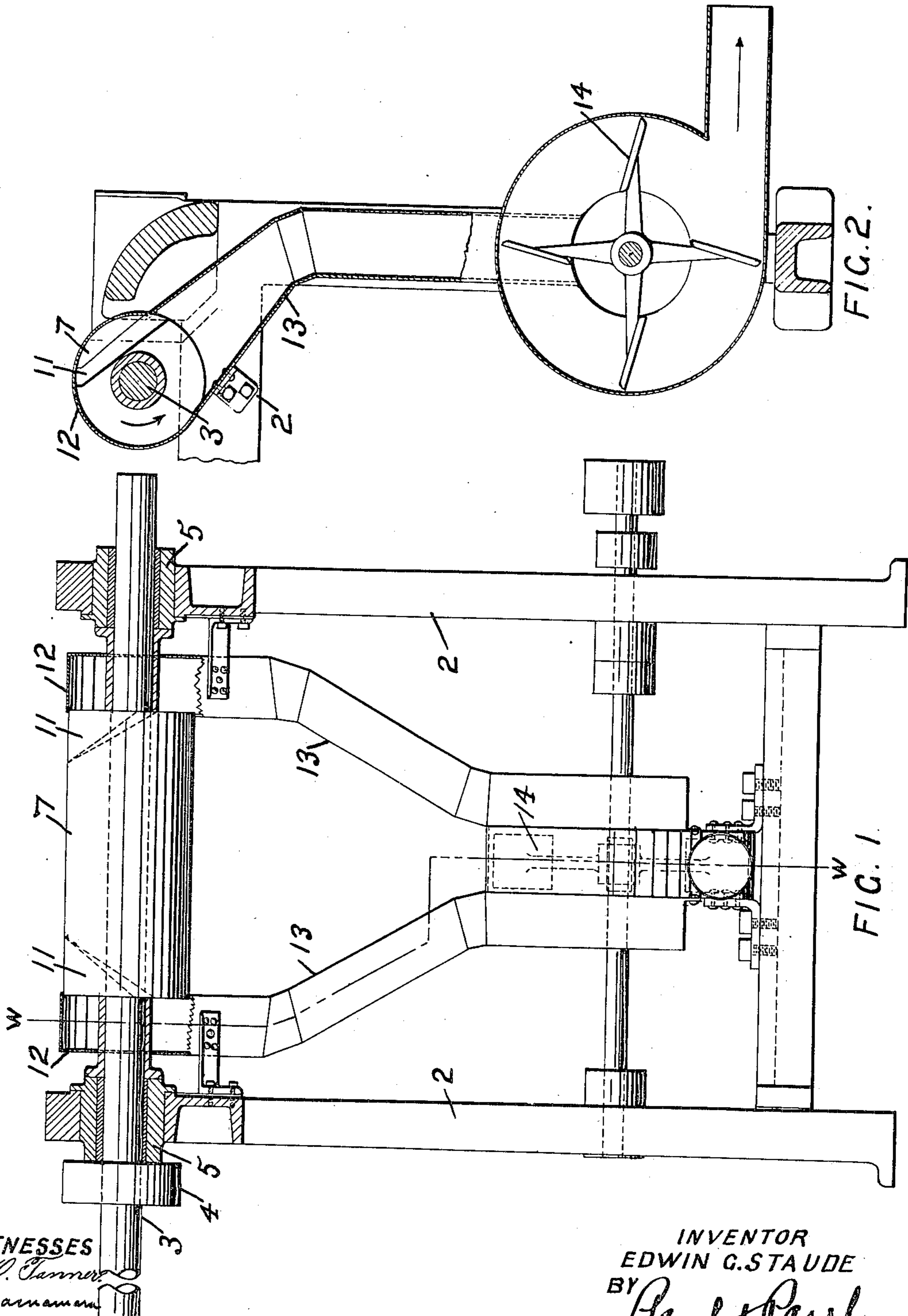
No. 837,354.

PATENTED DEC. 4, 1906.

E. G. STAUDE.
MACHINE FOR MAKING FLEXIBLE BOXES.

APPLICATION FILED MAR. 6, 1905.

2 SHEETS—SHEET 1.



WITNESSES
F. Q. Tanner
C. H. Harnam

INVENTOR
EDWIN G. STAUDE
BY *Paul & Paul*
HIS ATTORNEYS

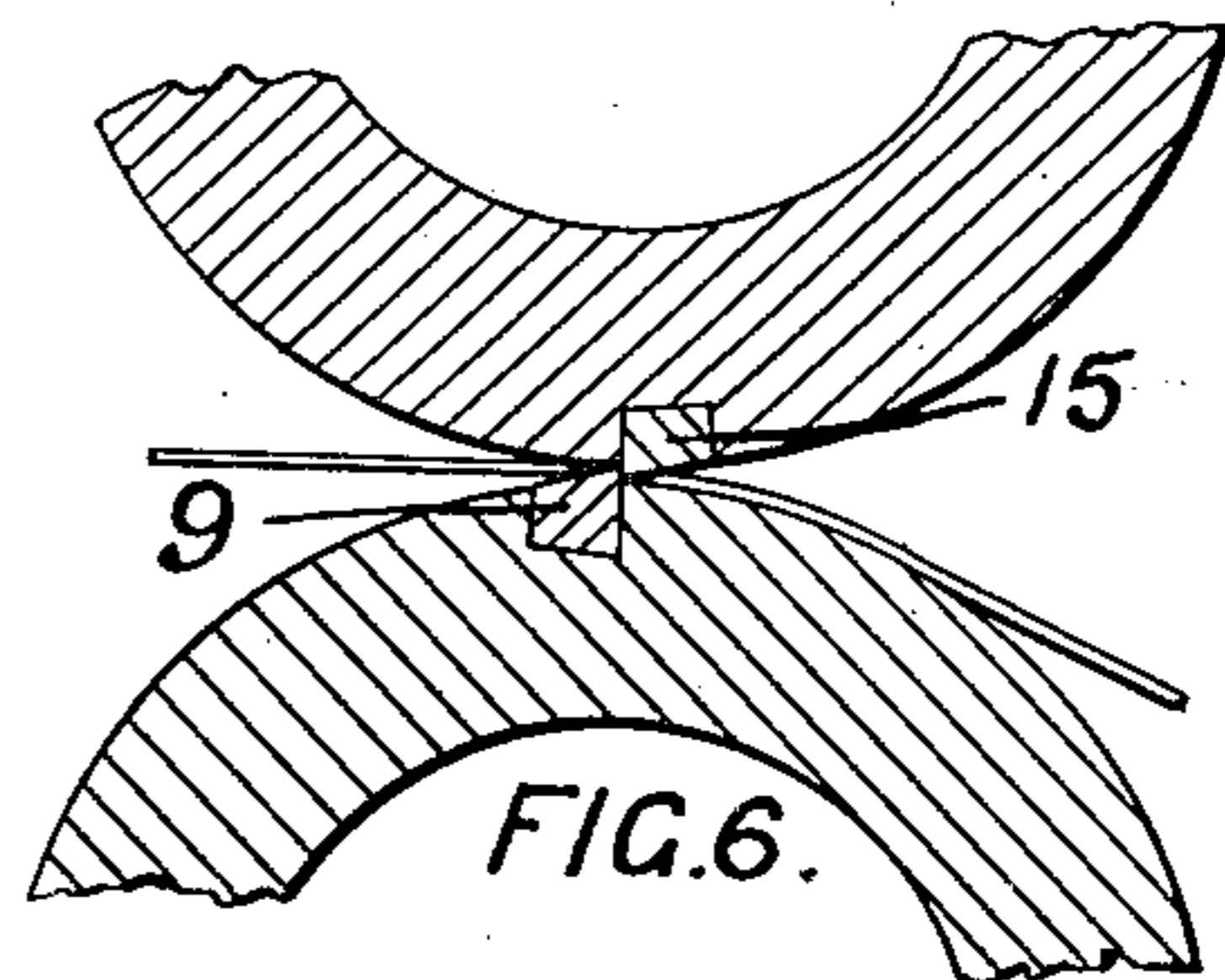
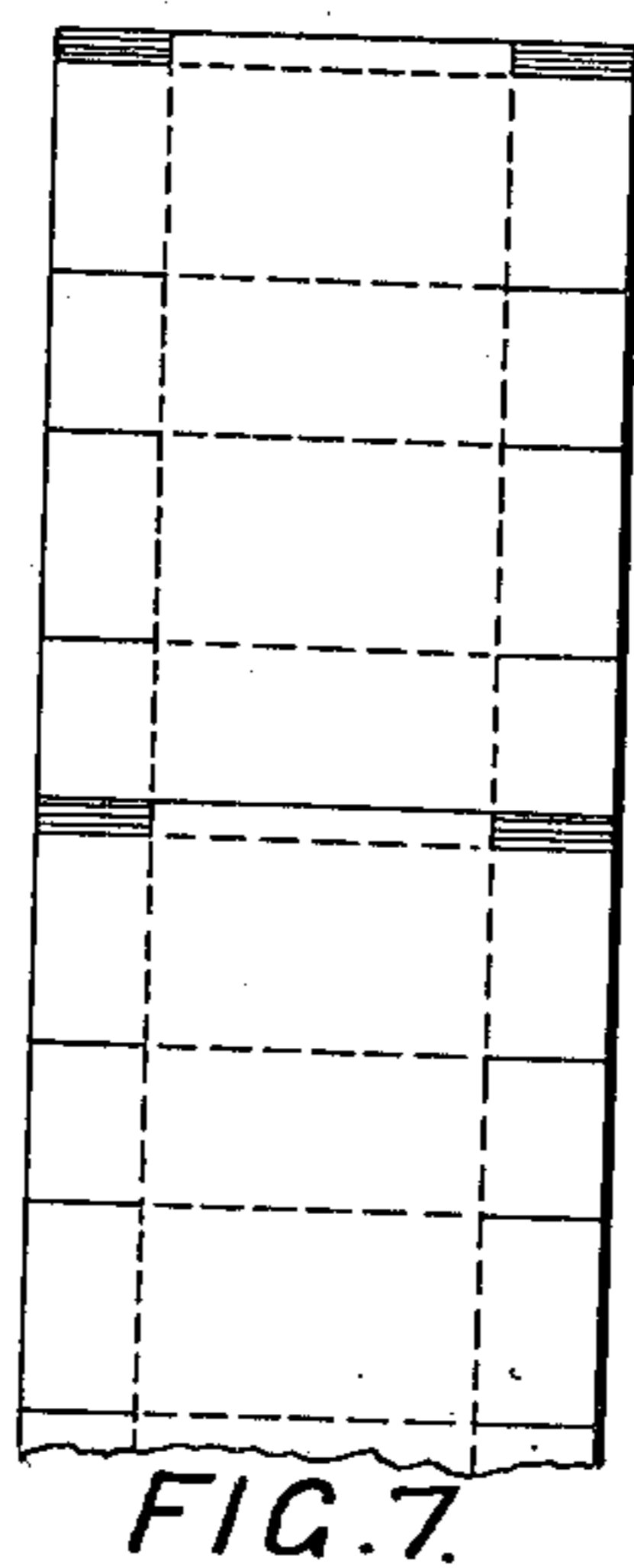
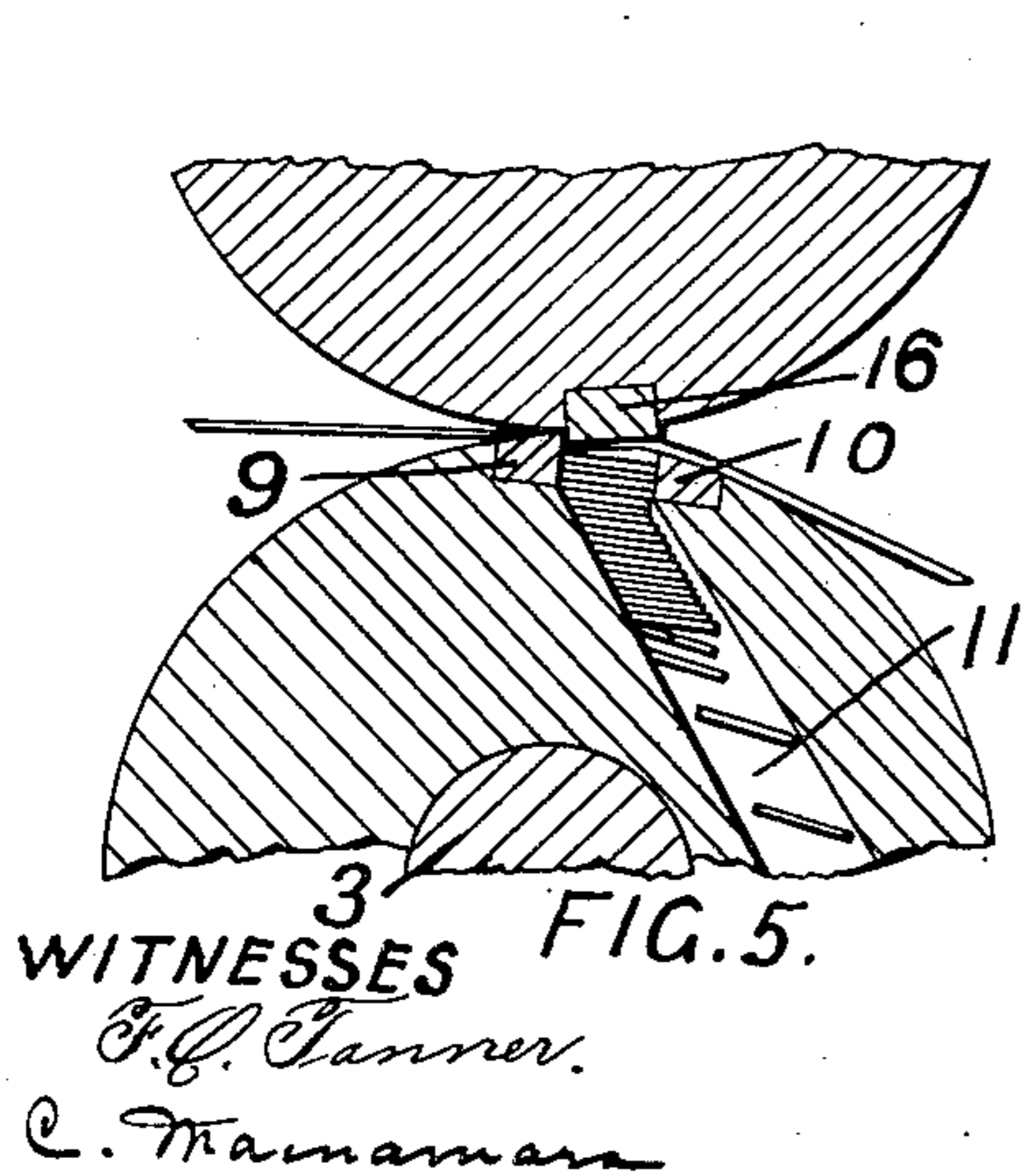
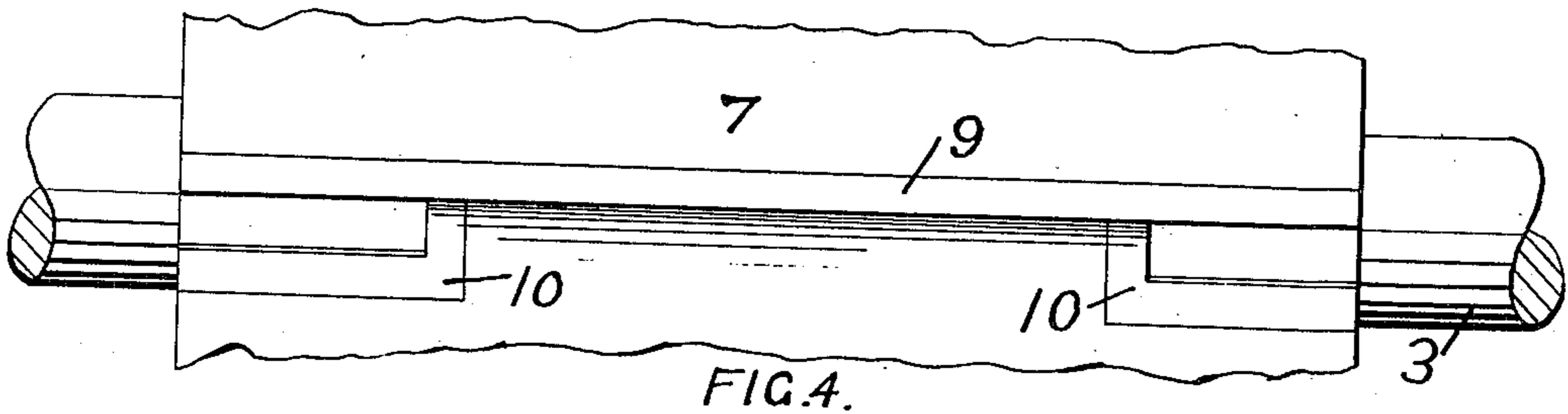
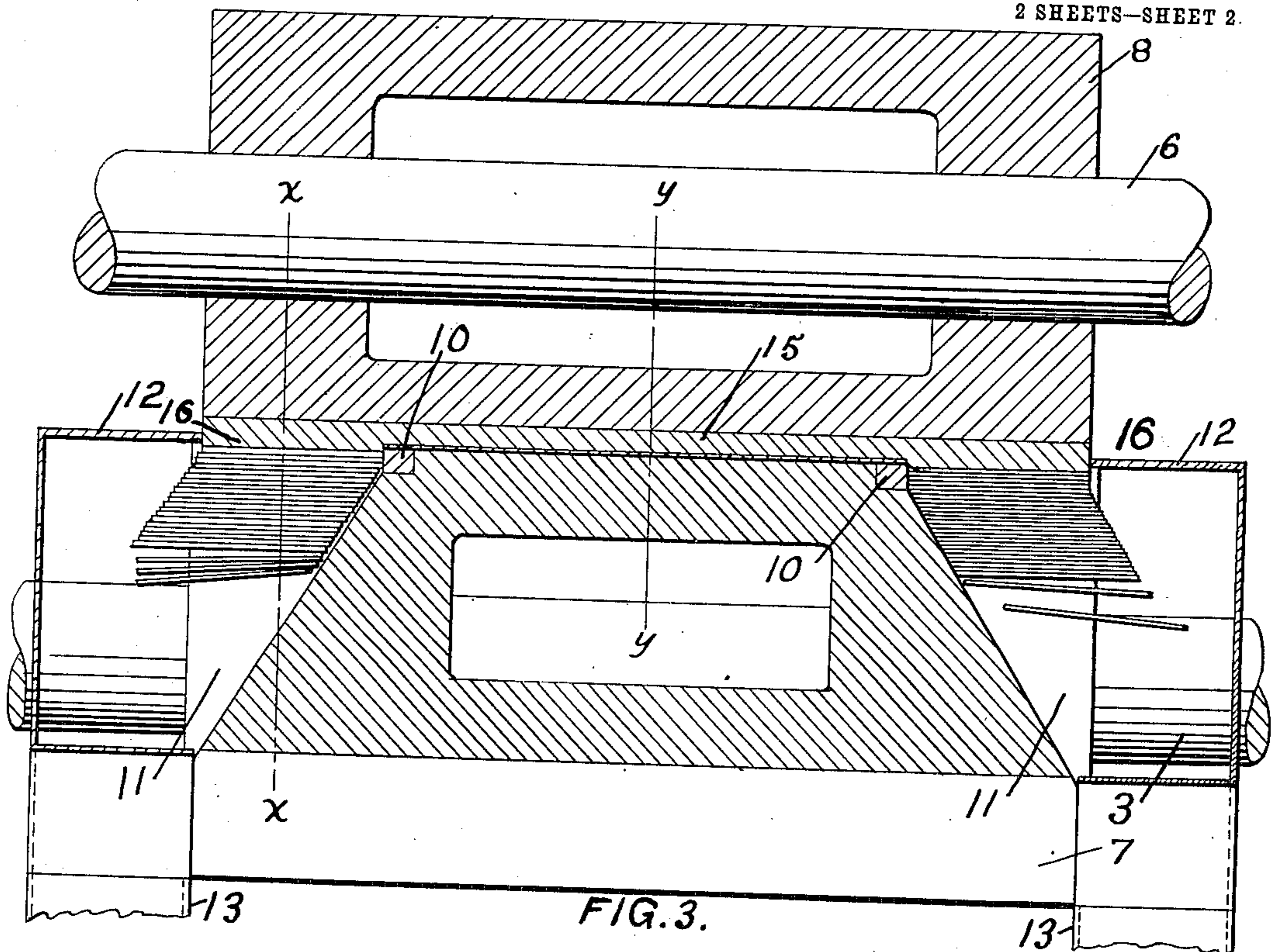
No. 837,354.

PATENTED DEC. 4, 1906.

E. G. STAUDE.
MACHINE FOR MAKING FLEXIBLE BOXES.

APPLICATION FILED MAR. 6, 1905.

2 SHEETS—SHEET 2.



INVENTOR
EDWIN G. STAUDE
BY *Paul Paul*
HIS ATTORNEYS.

UNITED STATES PATENT OFFICE.

EDWIN G. STAUDE, OF MINNEAPOLIS, MINNESOTA.

MACHINE FOR MAKING FLEXIBLE BOXES.

No. 837,354.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed March 6, 1905. Serial No. 248,497.

To all whom it may concern:

Be it known that I, EDWIN G. STAUDE, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Machines for Making Flexible Boxes, of which the following is a specification.

My invention relates to box-making machines, and particularly to the cutting-rolls therefor; and the object of the invention is to provide means for cutting out the waste pieces at the ends or the corners of the blank and simultaneously separating them from the blank.

The invention consists generally in providing a male and a female die in the peripheries of two cooperating rolls, the female die having an open bottom leading to a passage through which the waste pieces are discharged.

Further, the invention consists in providing a fan in connection with the discharge-passage to facilitate the removal of the waste pieces.

Further, the invention consists in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is an end view, partially in section, of a machine embodying my invention. Fig. 2 is a sectional view on the line *ww* of Fig. 1. Fig. 3 is a longitudinal sectional view through the cutting-rolls, showing the position of the male and female dies therein. Fig. 4 is a plan view of one of the rolls, showing the severing-knife and the female dies. Fig. 5 is a sectional view on the line *xx* of Fig. 3. Fig. 6 is a sectional view on the line *yy* of Fig. 3. Fig. 7 is a plan view of two blanks, showing the point where the waste pieces are removed.

In the drawings, 2 represents a suitable frame, wherein a shaft 3, having a drive-pulley 4, is mounted in bearings 5. A second shaft 6 is arranged parallel with said shaft 3, and upon said shafts rolls 7 and 8 are mounted. The roll 7 is provided with a severing-knife 9, set into its periphery and extending lengthwise thereof and provided at each end with female dies 10. There is preferably one severing-knife on the roll 7. Recesses 11 are provided at each end of the roll to coincide with the bottom of the female dies and receive the waste pieces that are cut out of the blanks. Housings 12 are provided to receive the blanks

from said recesses, and pipes 13 communicate with said housings and also with a fan 14, that is arranged to discharge the said waste pieces out of the machine and at any suitable distance therefrom. The roll 8 is provided in its periphery with a severing-die 15, having a cutting edge that cooperates with the die 9 to sever one blank from another and provided at each end with male dies 16, that coincide with the female dies and enter the same, cutting out the waste pieces at the ends of the blank, completely severing them from the rest of the stock and pressing them down into the female dies until they drop by gravity into the recesses 11 and pass down to the spouts 13. This operation will be repeated with each revolution of the rolls.

I have shown in the drawings the male and female dies made regular in form and substantially rectangular; but it will be understood that I do not confine myself in any way to this shape, as it may be modified in many ways, according to the style of the box-blank that is being formed and the manner of fastening its ends together. The operation of these dies and the manner of discharging the waste pieces is substantially the same as heretofore described, except that I have shown a pipe 23 connected with one end of the hollow roll, the other end being joined to a fan, as shown in Figs. 1 and 2, the suction being sufficient to rapidly draw the waste pieces away from the dies and out of the roll. The severing-knives will have cooperating edges that separate one blank from another simultaneously with the cutting out of the waste pieces, so that the entire operation is performed at once, and the use of knockers or jarring devices for separating the waste pieces from the stock is entirely eliminated.

I claim as my invention—

1. The combination, with the revolving rolls, of male and female dies mounted thereon respectively at the ends of the rolls, said male and female dies coinciding as the rolls revolve to cut out and completely sever the waste pieces at the ends of the blank, and the roll carrying said female dies being recessed at the ends to form discharge-passages that communicate with said female dies, for the purpose specified.

2. The combination, with the revolving rolls, of male and female dies mounted thereon respectively at the ends of the rolls and having cooperating severing-knives between

them, said male and female dies coinciding as
the rolls revolve to cut out and completely
sever the waste pieces at the ends of the
blank, and the roll carrying said female dies
5 being recessed at the ends to form discharge-
passages that communicate with said female
dies, for the purpose specified.

In witness whereof I have hereunto set my
hand this 28th day of February, 1905.

EDWIN G. STAUDE.

Witnesses:

RICHARD PAUL,
C. MACNAMARA.