

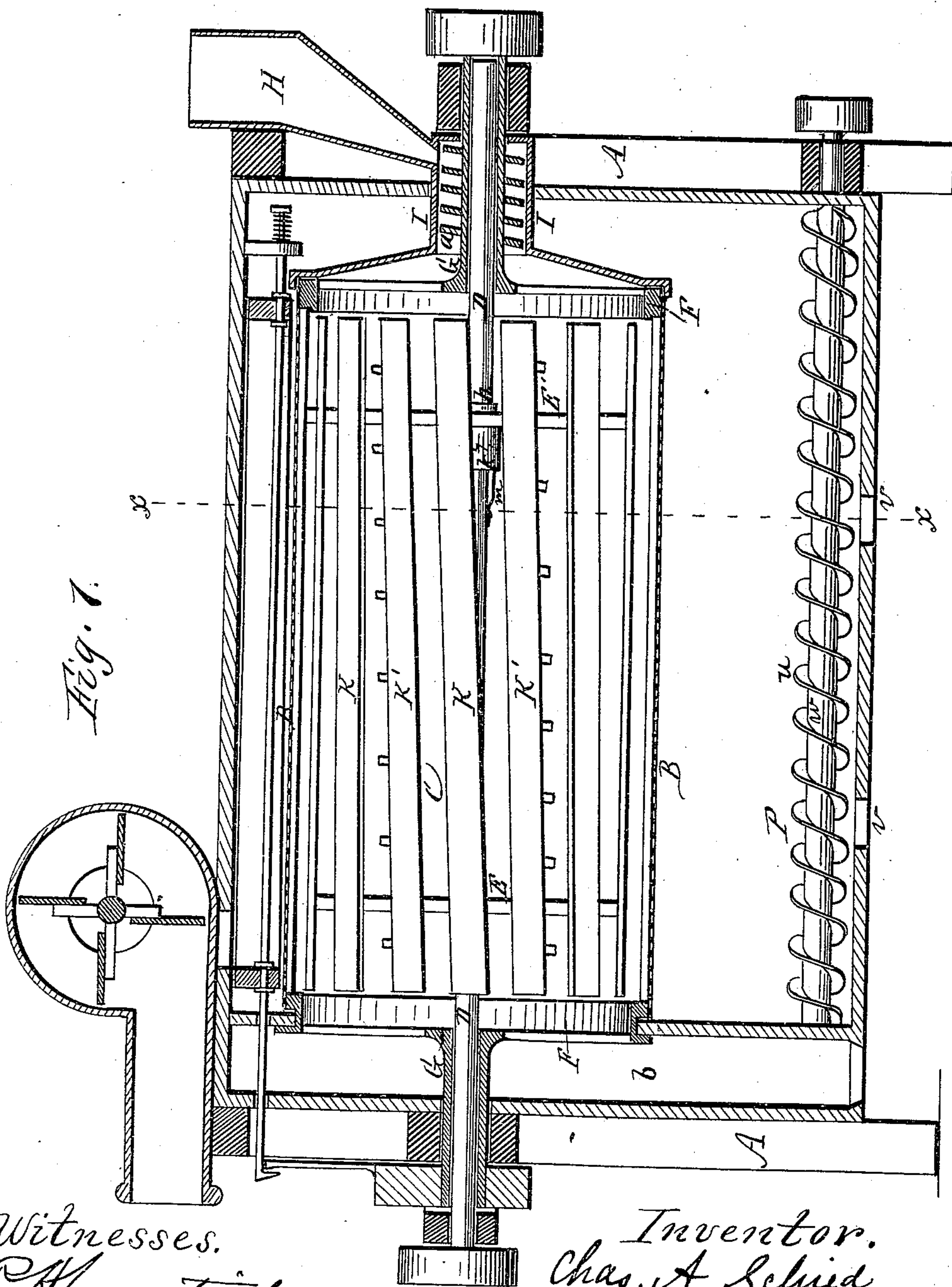
(No Model.)

2 Sheets—Sheet 1.

C. A. SCHIED.
FLOUR BOLT.

No. 446,155.

Patented Feb. 10, 1891.



Witnesses.
P. A. Merriam
O. W. Adams

Inventor.
Chas. A. Schied.
By R. F. Osgood.
Atty

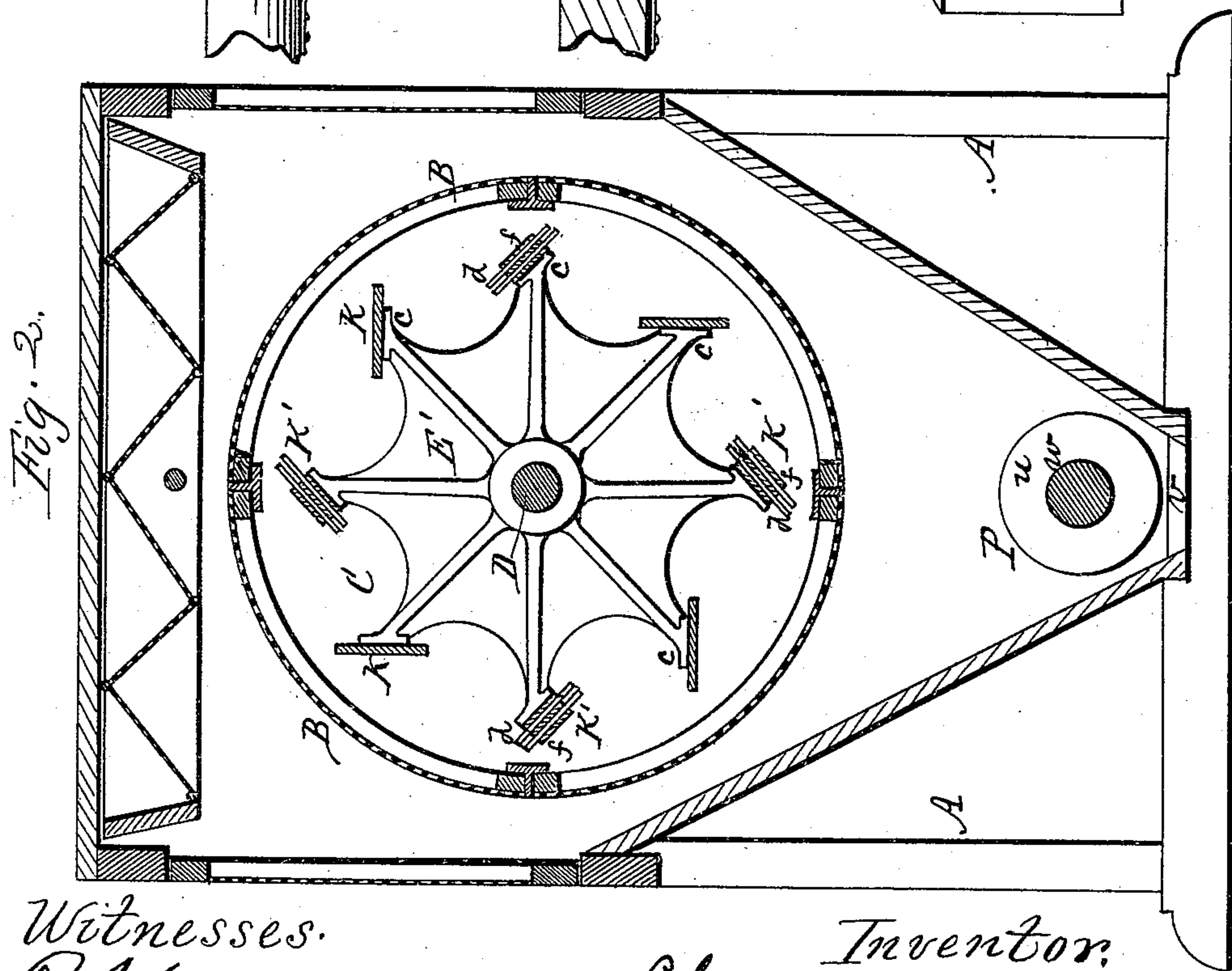
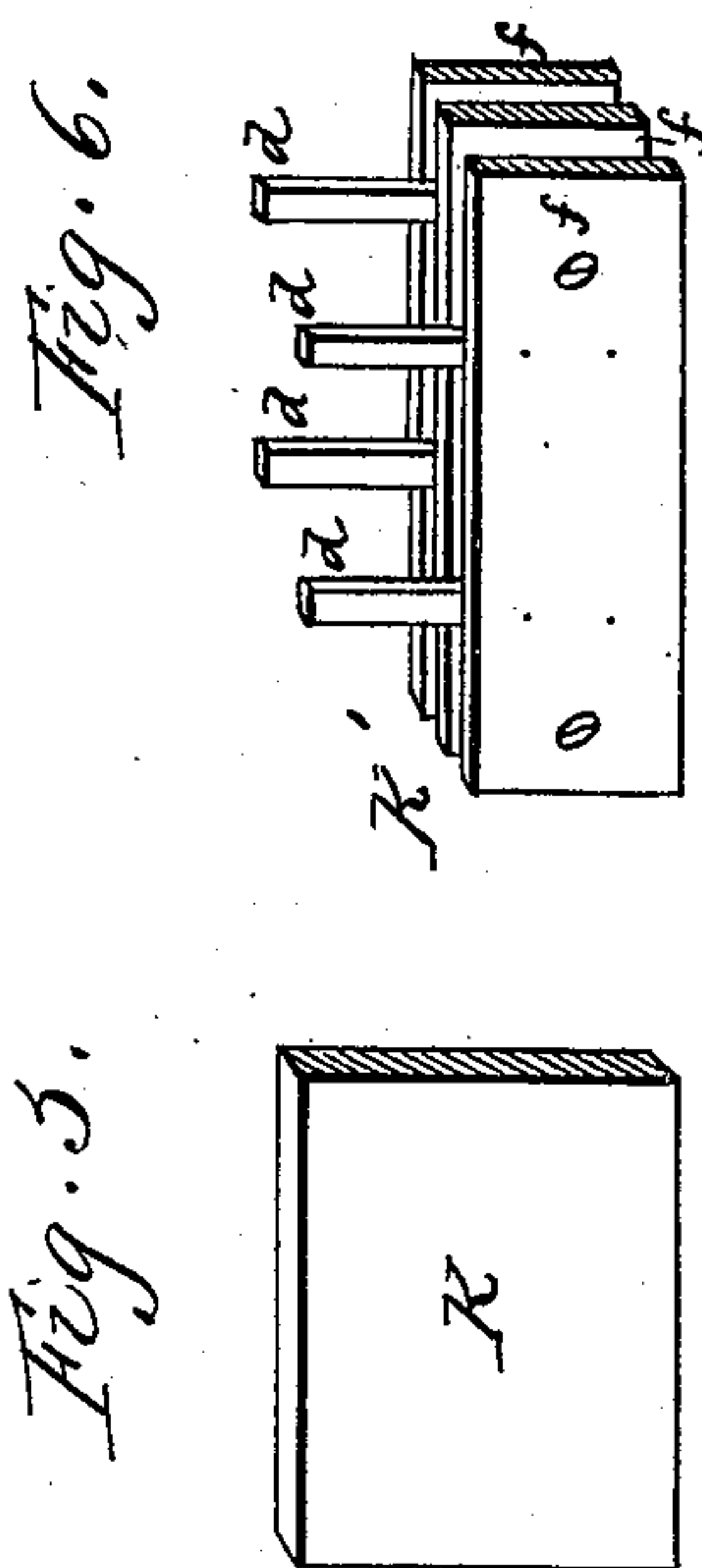
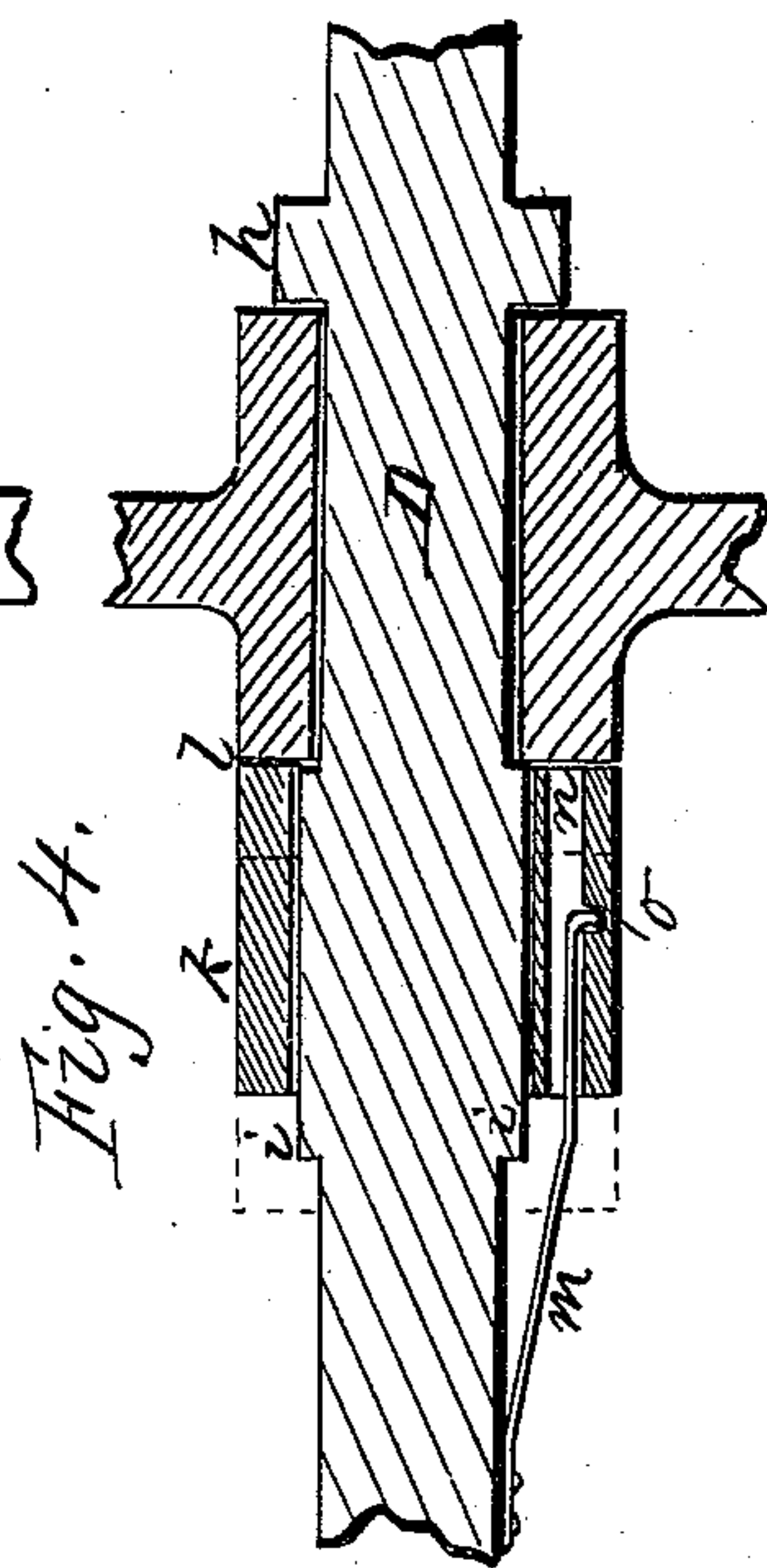
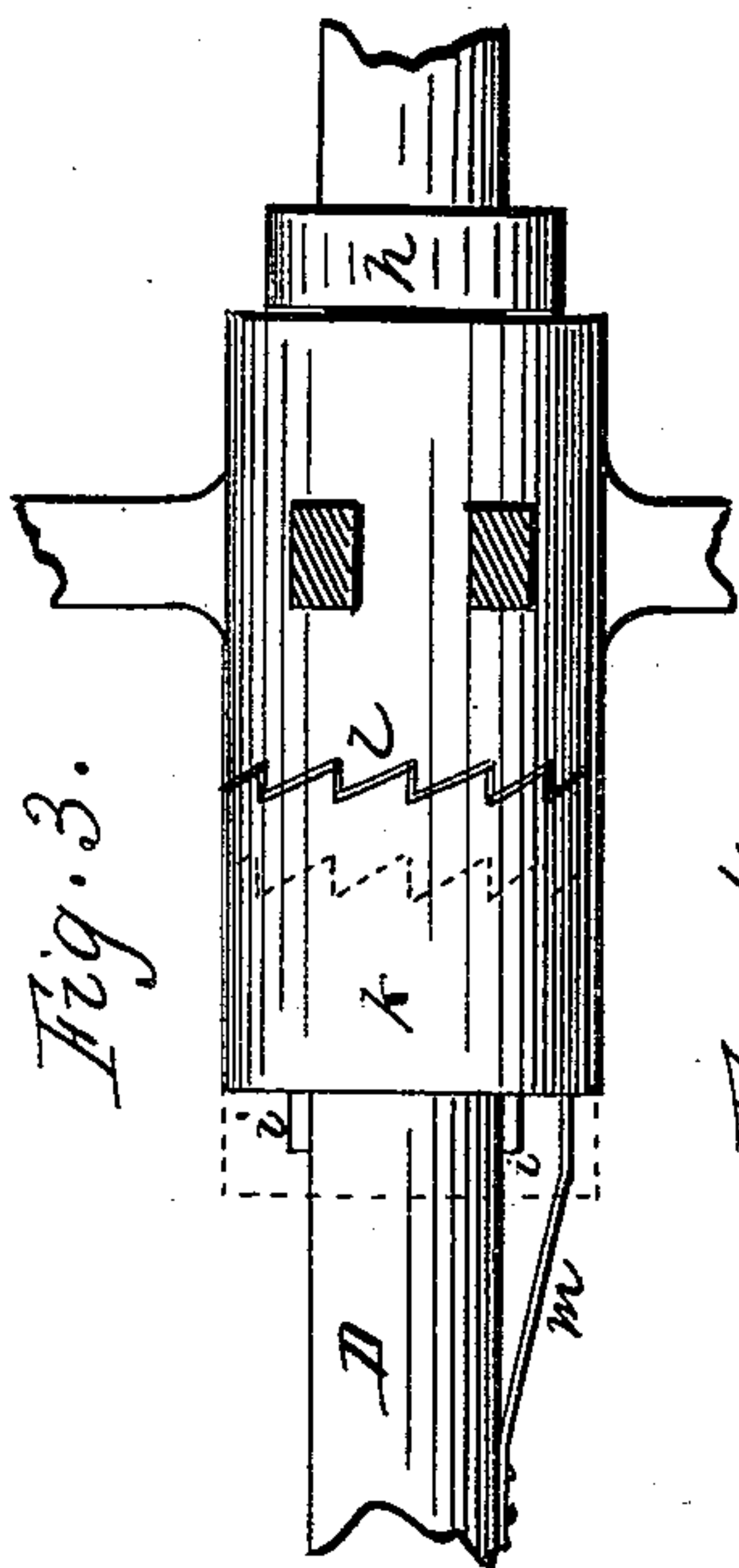
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2 Sheets—Sheet 2.

C. A. SCHIED.
FLOUR BOLT.

No. 446,155.

Patented Feb. 10, 1891.



Witnesses.

P. A. Kostel
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Inventor:
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UNITED STATES PATENT OFFICE.

CHARLES A. SCHIED, OF ROCHESTER, NEW YORK.

FLOUR-BOLT.

SPECIFICATION forming part of Letters Patent No. 446,155, dated February 10, 1891.

Application filed November 26, 1890. Serial No. 372,722. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. SCHIED, of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Flour-Bolts; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

My improvement relates to that class of flour-bolts in which a rotary beater is used inside the screen for the purpose of driving the flour through the screen while the tailings are carried off at the end. In the present instance the beater consists of thin slats attached to spiders or heads at opposite ends, and one of these heads rests loosely on the shaft and can be turned axially in order to twist the slats more or less, thereby varying the intensity of the blast that forces the flour through the meshes of the screen.

The invention consists in the combination, with the thin slats and the loose head, of certain devices for allowing the turning the loose head and securing it fast in place at any adjustment, as hereinafter described.

In the drawings, Figure 1 is a central longitudinal vertical section of the machine. Fig. 2 is a vertical cross-section of the same in line *x x* of Fig. 1. Fig. 3 is a diagram showing an enlarged plan view of a part of the shaft and the devices for locking the turning head. Fig. 4 is a central vertical section of Fig. 3. Figs. 5 and 6 are perspective views of a portion of the two sets of wings used on the beater.

A indicates the frame of the machine, in which is horizontally mounted a screen B, which may be either revolving or non-revolving.

C is the beater located inside the screen. This beater is attached to a shaft D by means of spiders or heads *EE'* and revolves with the shaft. In case the screen is made revoluble it is connected by heads *FF* with a hollow shaft G, which rests and turns on the shaft D. The material is placed in a hopper H and fed down into a cylinder I, where it is forced forward into one end of the screen by a screw conveyer *a*, attached to the hollow shaft G inside the cylinder. From this end of the screen the material is gradually worked forward to

the opposite end, the fine flour being forced through the screen by the action of the beater, and the tailings being discharged at the end of the screen into a passage *b*, where they fall below.

The beater consists of the two heads *E E'* and a set of slats *K K* and *K' K'*, extending from head to head and attached to lugs *c c* at the ends of the arms. Each alternate wing *K* consists of a single slat, while each intermediate wing *K'* consists of three thin slats *f f f*, of half the width of the others and provided with projecting pins *d d*, as shown. The slats are all made so thin and flexible that they will readily bend or twist by the turning of the loose head *E'*. Said head *E'* rests loosely on the shaft, so as to be turned in either direction. At its back is a shoulder *h*, Figs. 3 and 4, on the shaft, which keeps it from sliding endwise thereon, and in front are two splines or feathers *i i*, on which slides a coupling-head *k*. The contiguous ends of the coupling-head and the hub of the spider have ratchet-teeth *l l*, which interlock when the parts are brought together, thus securing the spider in place and preventing it from turning. *m* is a flat spring attached to shaft D, extending into a slot *n*, made in the coupling *k* and entering a socket *o* of the coupling, thereby preventing end movement of the coupling.

By the means above described the head *E'* can be turned to any desired degree, the other head *E* remaining rigid, and thus a twist can be given to the slats *K K'*, which are flexible enough for the purpose. To turn head *E* the coupling *k* is simply drawn back to disengage the ratchet-teeth, and when the adjustment has been made said coupling is pressed up to place again and locked by means of the spring. This is a convenient means for doing the work, as the coupling is readily reached by inserting the hand between the slats. The object of thus twisting the wings of the beater is to vary the force of the blast produced by same to drive the flour outward through the meshes of the screen. The tendency of the twisted wings is to produce a longitudinal current of air through the screen, thus facilitating the passage of the material to the discharge end and at the same time an outward current that

forces the fine flour through the meshes. The varying of the twist produces more or less of this action. The pins *d d* serve to break up lumps and disintegrate the mass.

5 P is a conveyer located in the bottom of the machine and serving to convey the flour to separate discharge-openings *v v*, where it is discharged. This conveyer consists of the shaft *w* and spiral wings *u u*. The spiral
10 wings are made separate from the shaft, with a central hole through them. The shaft is then inserted and the wings drawn or spread on the shaft from end to end and secured in place. By this means the wings can be made
15 to fit a shaft of any desired length. The fastenings of the wings to the shaft are simply at the ends.

Having described my invention, I disclaim a beater located inside the screen. I also dis-
20 claim, simply and broadly, slats connecting

the heads capable of being twisted to modify the blast.

What I claim as new, and desire to secure by Letters Patent, is--

The combination, with the beater C, con- 25
sisting of one stationary and one turning head and connecting-slats, of the coupling *k*, sliding on the shaft D, provided with teeth that engage with teeth of the turning head, and the spring *m*, attached to the shaft and lock- 30
ing the coupling in place, as herein shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CHARLES A. SCHIED.

Witnesses:

R. F. OSGOOD,

WM. J. MCPHERSON.