

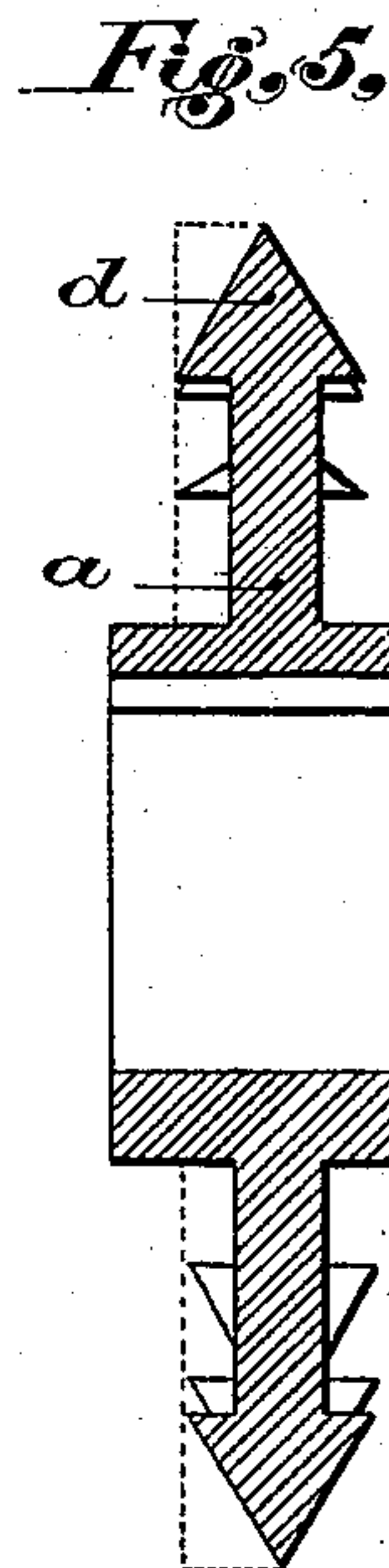
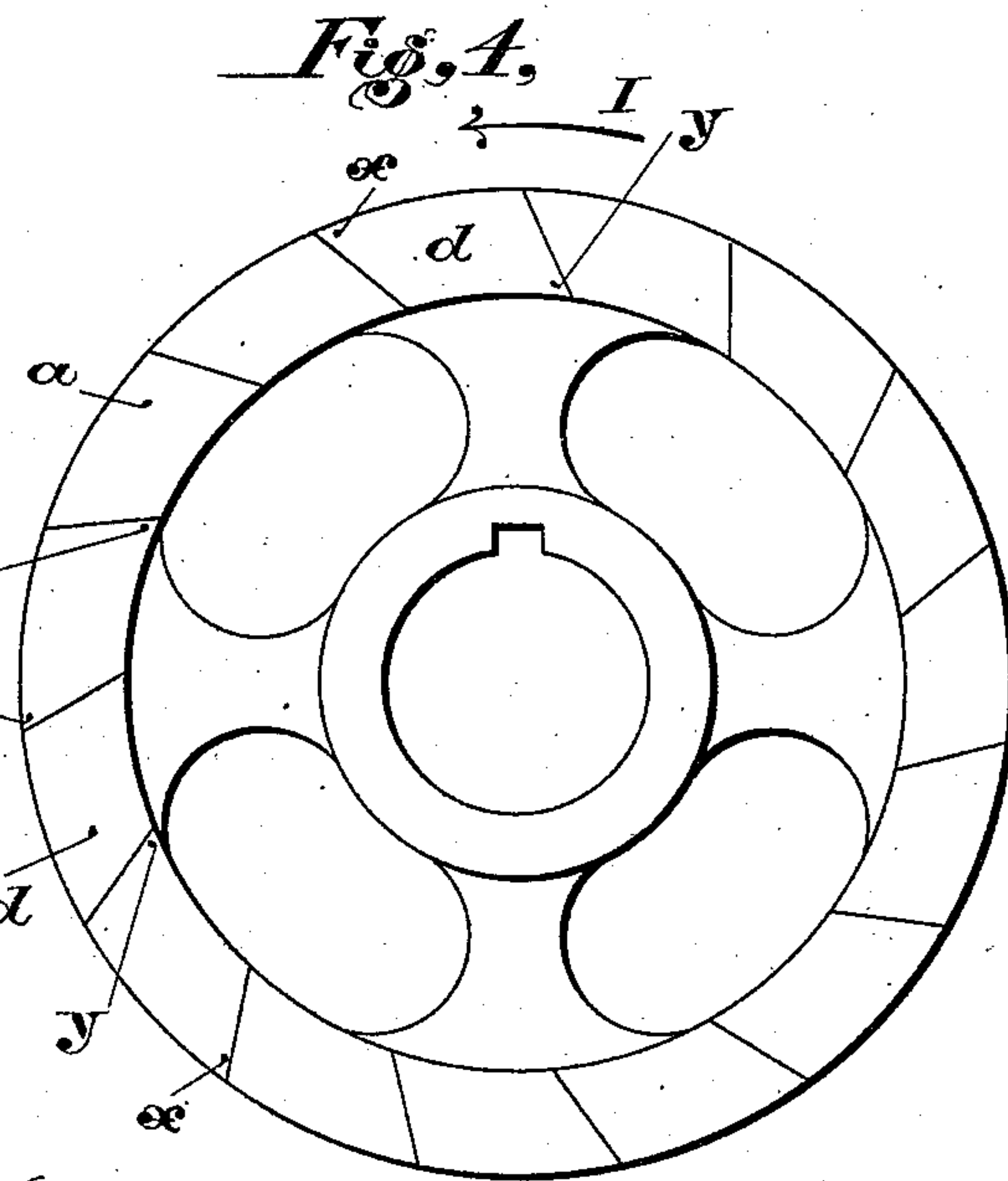
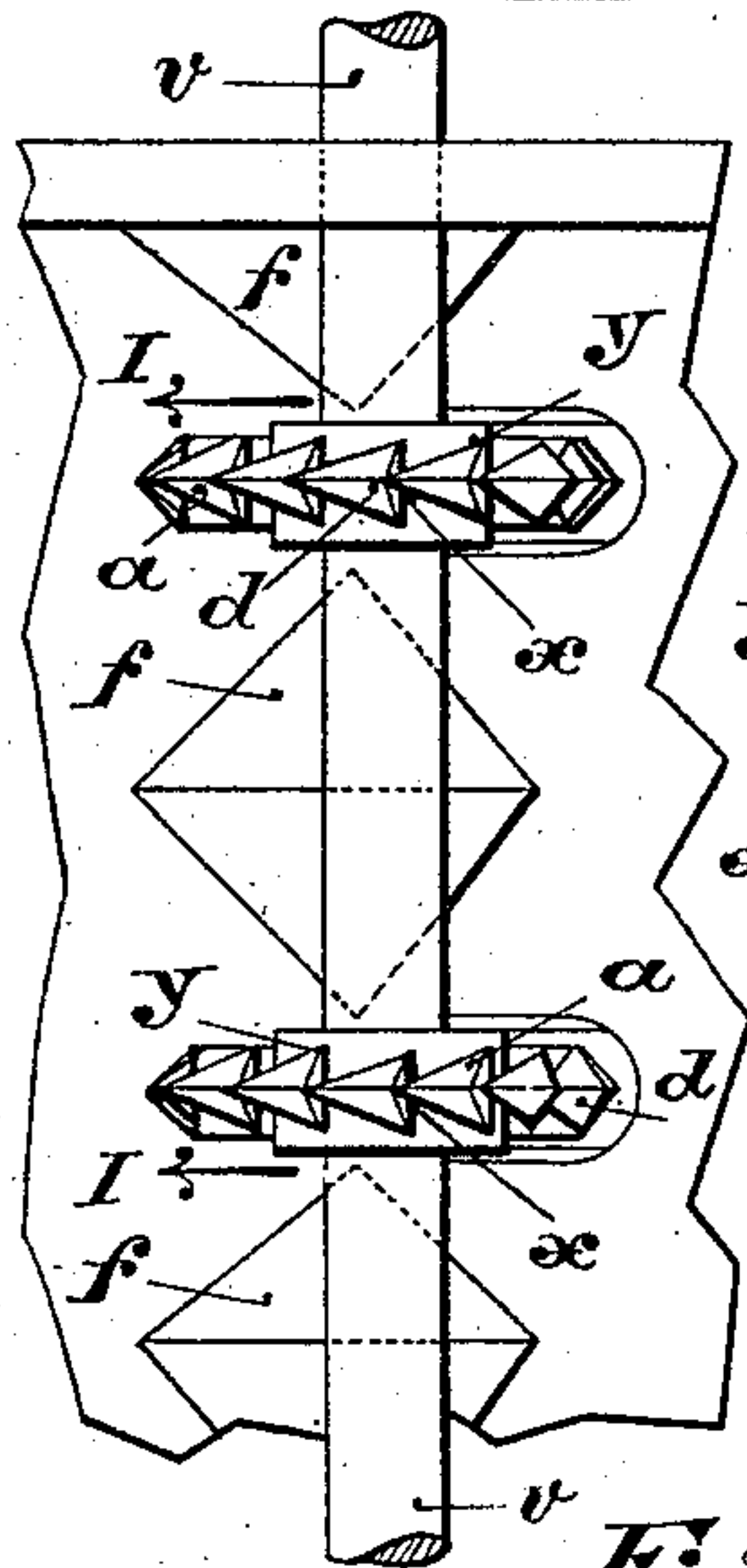
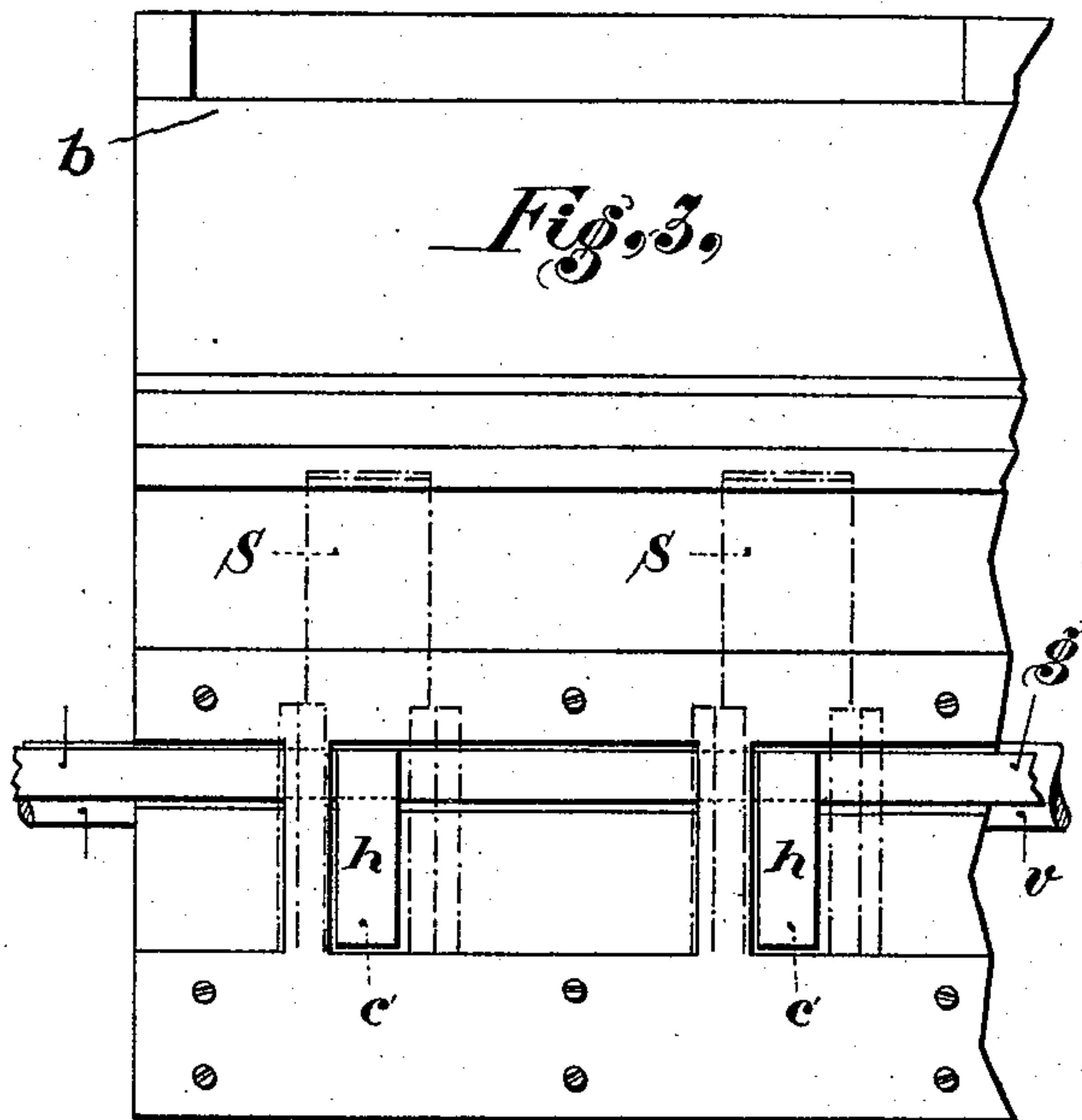
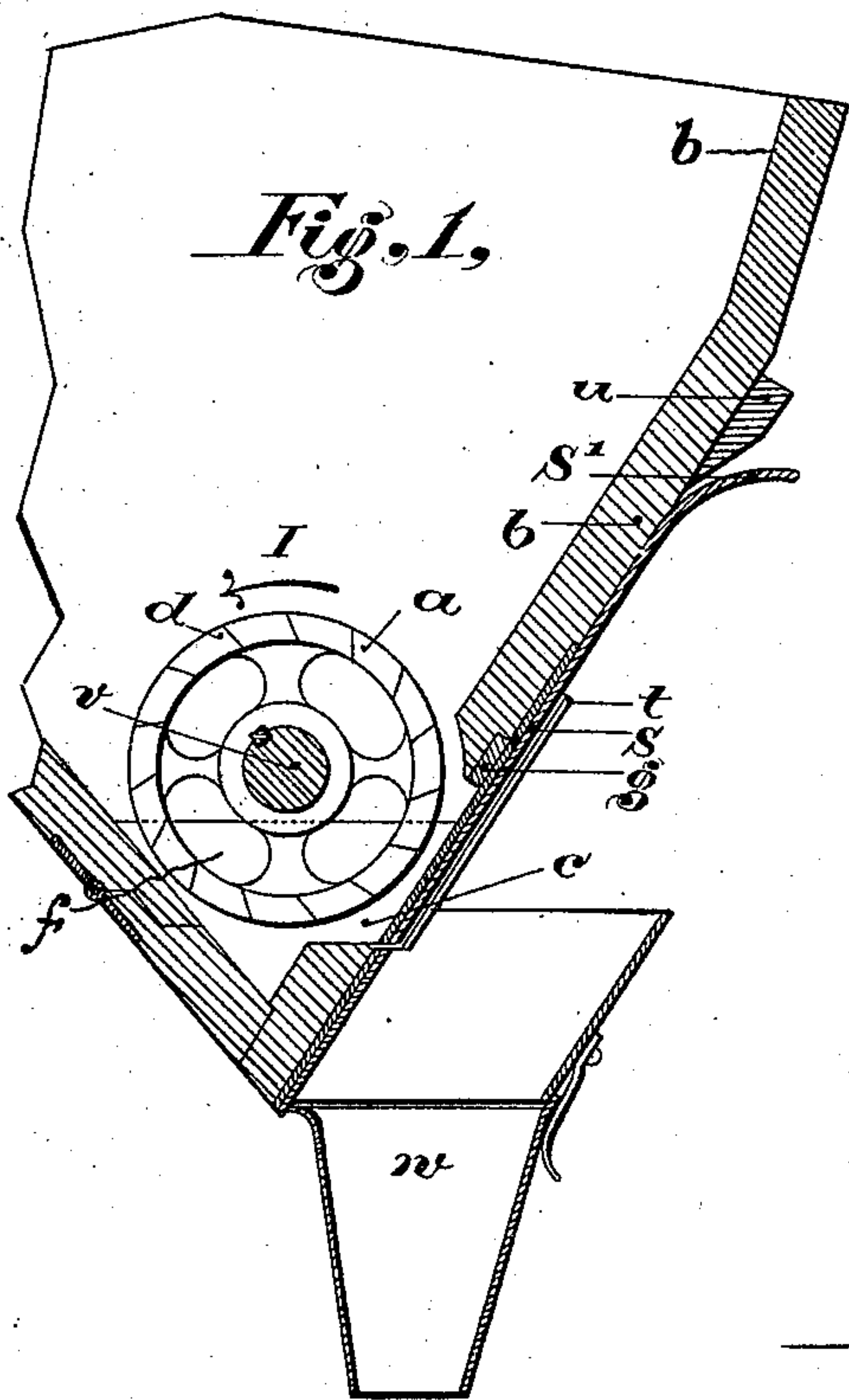
(No Model.)

3 Sheets—Sheet 1.

E. CROLL.
SOWING MACHINE.

No. 574,883.

Patented Jan. 12, 1897.



Witnesses
Arthur Ashley
Foster Vinton

Ernst Croll, Inventor:
Lawson, Weaver, atty.

(No Model.)

3 Sheets—Sheet 2.

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Fig. 6.

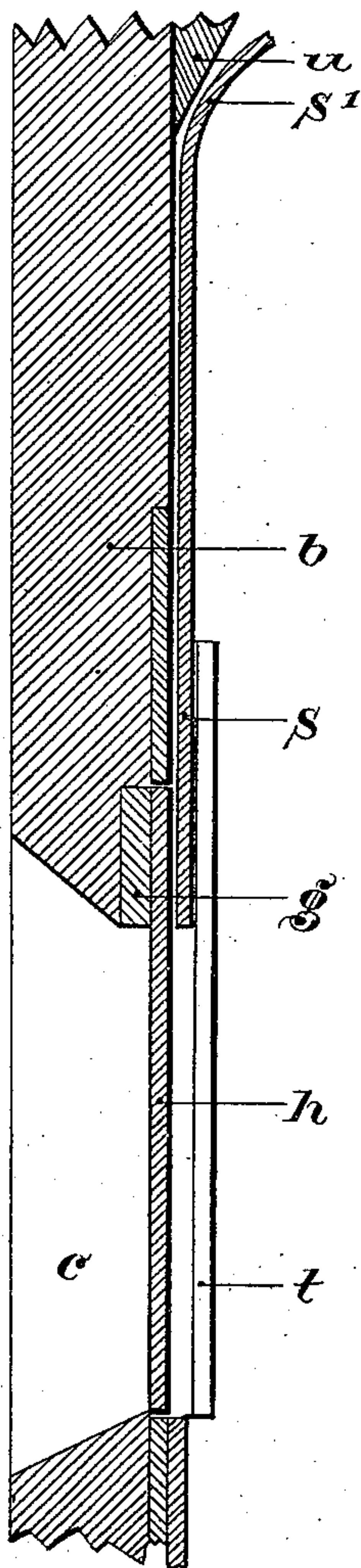
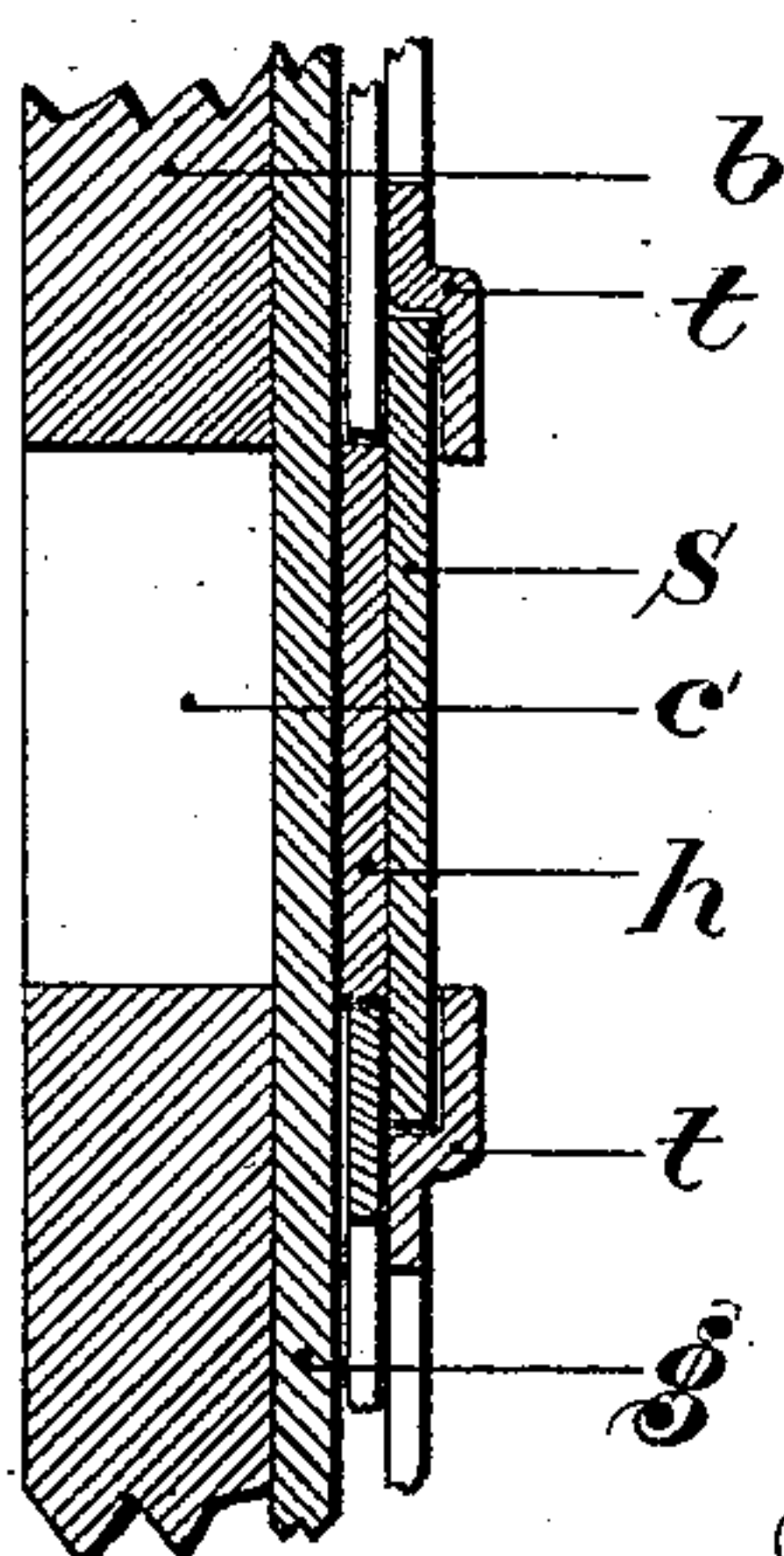


Fig. 7.



Witnesses
Arthur Ashley
Foster Kittenheimer

E. Croll,
Inventor
Edward Weaver,
att'y

(No Model.).

3 Sheets—Sheet 3.

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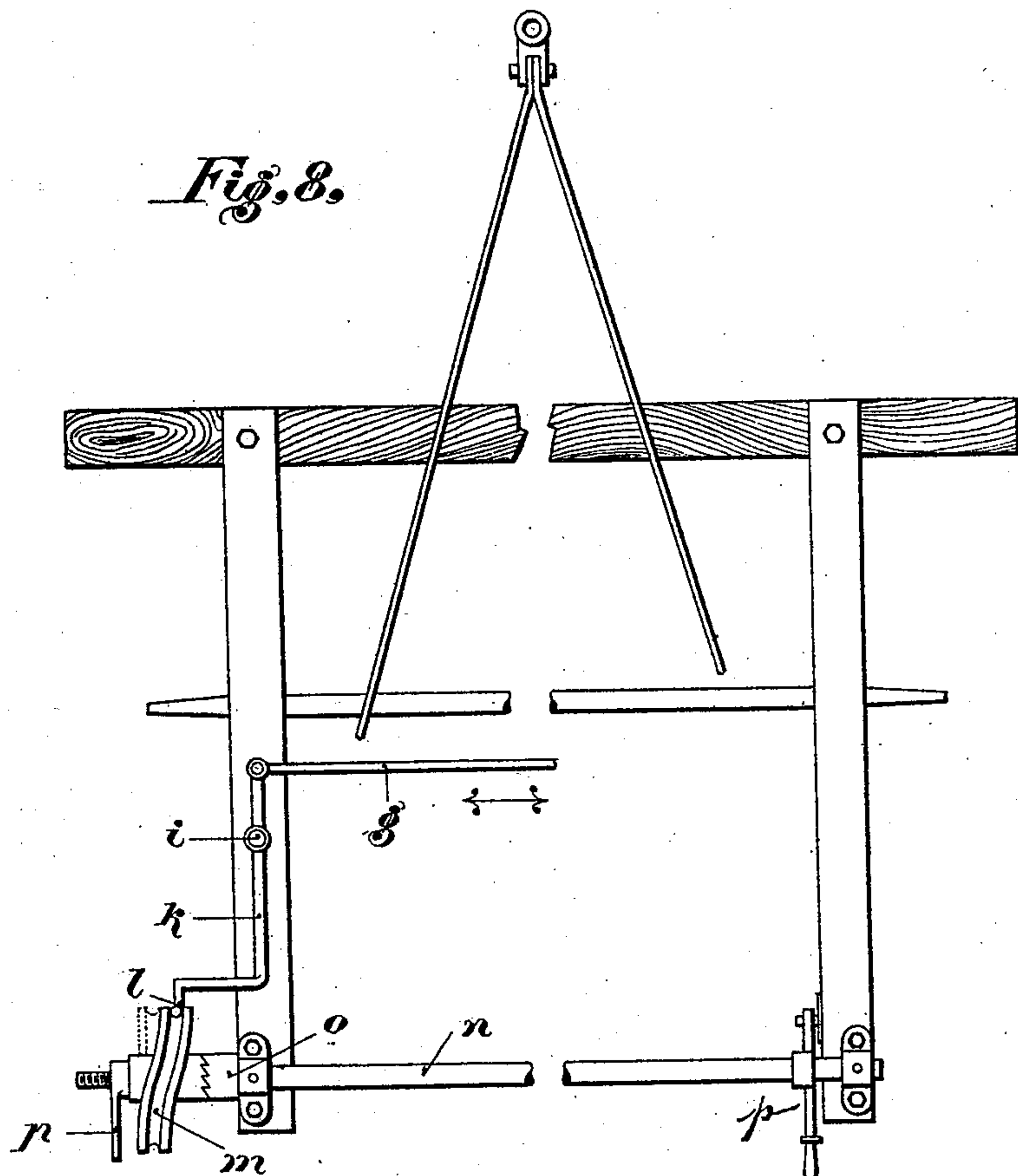
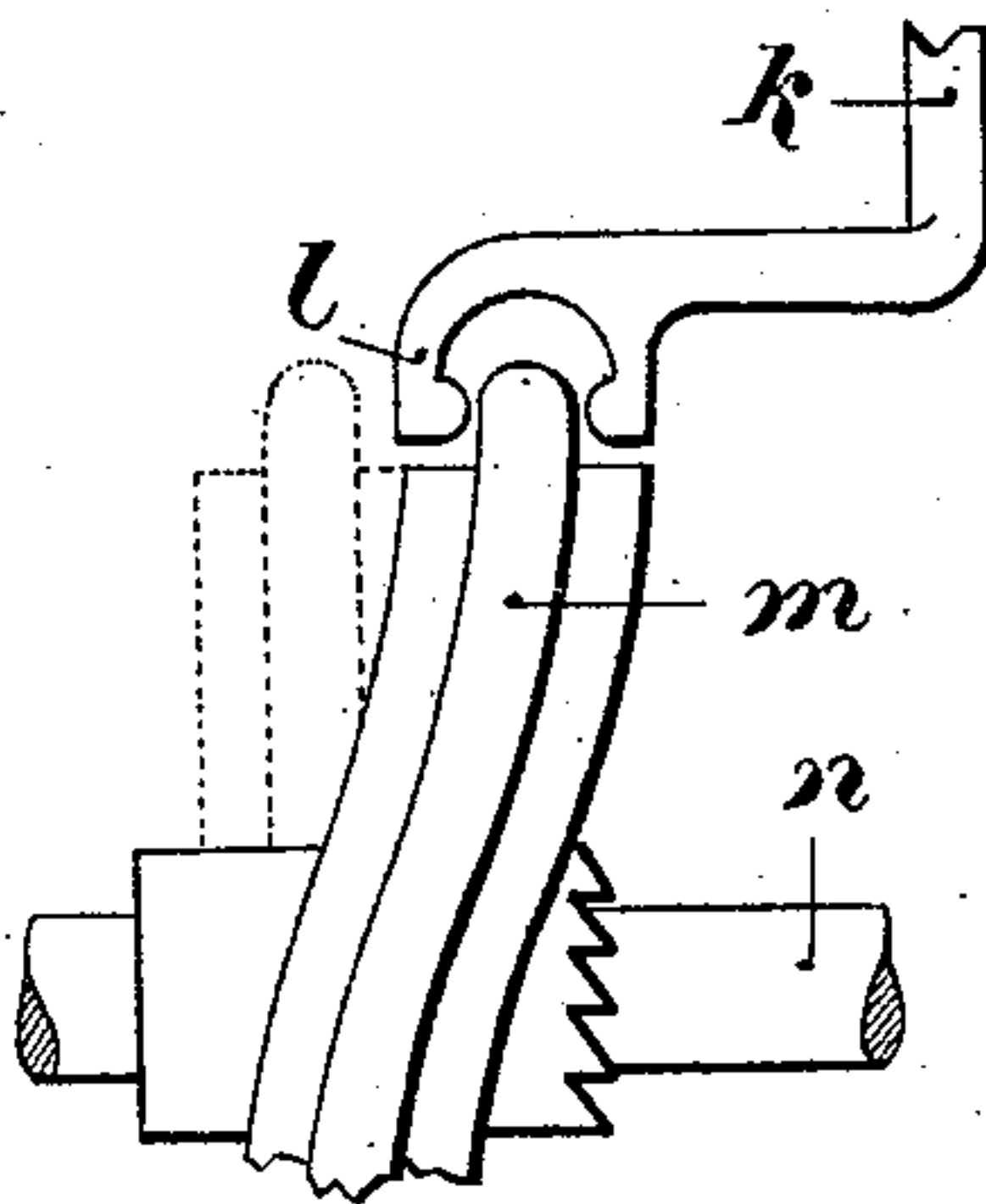
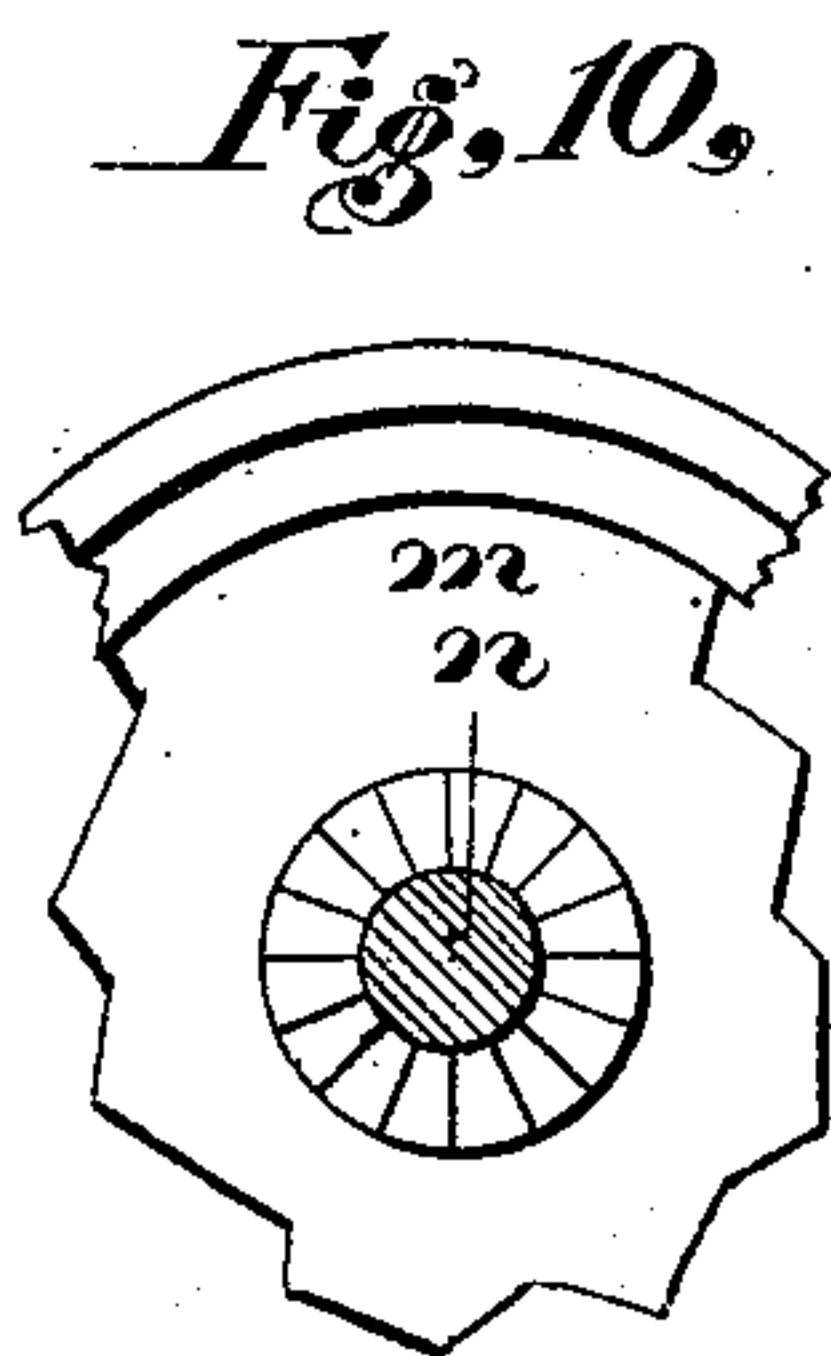
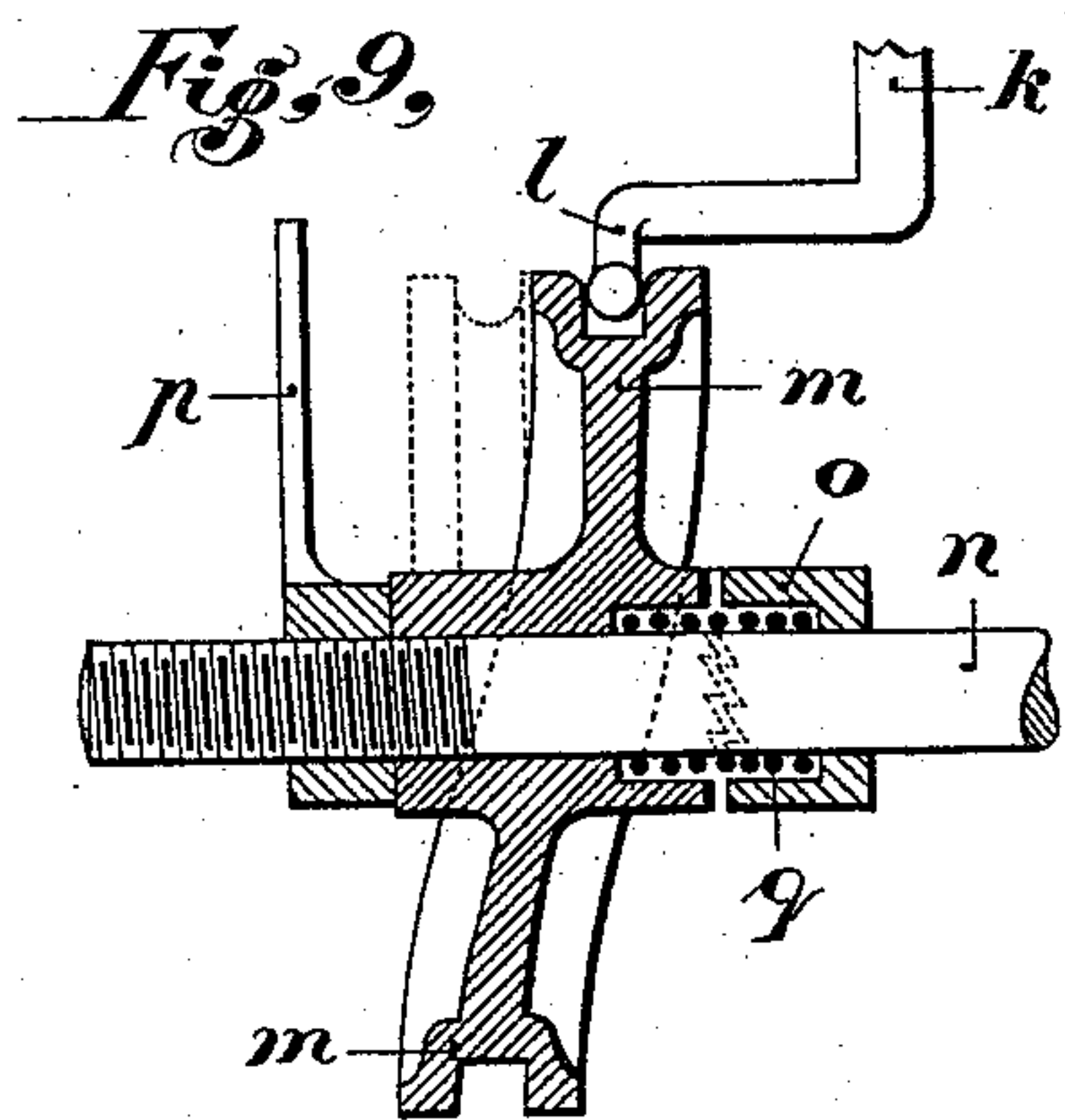


Fig. 11,



Witnesses
Arthur Ashley
Foster Kutenheimer

Ernest C. Hall, Inventor:
Lawrence Weaver, atty

UNITED STATES PATENT OFFICE.

ERNST CROLL, OF LANGENSALZA, GERMANY.

SOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 574,883, dated January 12, 1897.

Application filed April 4, 1896. Serial No. 586,194. (No model.)

To all whom it may concern:

Be it known that I, ERNST CROLL, machine-maker, a subject of the King of Prussia, Emperor of Germany, residing at Langensalza, in the Kingdom of Prussia and German Empire, have invented new and useful Improvements in Sowing-Machines, of which the following is a specification.

My invention relates to a sowing-machine which, while being thoroughly efficient, shall be simple and cheap to construct. According thereto I provide the seed-distributing box or boxes with small wheels of peculiar construction, they being furnished with teeth of wedge-like form, as hereinafter fully described. The wheels are located in the interior of the seedbox immediately opposite the adjustable seed-exit slots or openings, the arrangement being such that the seed is caught in the spaces between the consecutive teeth of the wheels and is pressed outward through the exit slots or openings of the seedbox by means of the oblique surfaces of the teeth.

Figures 1 and 2 of the drawings show, respectively, a partial cross-section and a partial plan of the seedbox of a sowing-machine according to my invention. Fig. 3 is a rear elevation showing the adjusting apparatus. Figs. 4 and 5 show, on a larger scale, a sowing-wheel in front elevation and cross-section, respectively, Fig. 5 showing in dotted lines a modified form. Figs. 6 and 7 show, also on a larger scale, a slide arrangement in vertical section and horizontal section, respectively. Fig. 8 is a plan of the slide-operating mechanism, and Figs. 9 to 11 represent two constructions of the cam suitable for actuating the slide mechanism.

a are the peculiarly-formed wheels hereinafter referred to. They are journaled in the seedbox b , near to the bottom thereof and close to the exit-openings c therein, in such a manner that they will, as they revolve, move forward the seed toward the said openings. Each of the said wheels is provided on its periphery with wedge-shaped teeth d , which end in points either on both sides of the wheel, as shown in full lines in Fig. 5, or on one side only, as indicated by the modified construction shown in dotted lines in Fig. 5, and broaden inwardly in a wedge-like man-

ner and so form a circular row of wedge-shaped points. When one of these wheels is rotated in the direction indicated by the arrow I, Figs. 1, 2, and 4, seed is caught in the recesses e between the consecutive teeth thereof, and the ascending surfaces f of the teeth press the seed through the exit-openings c .

f are blocks arranged in the seedbox and have inclined upper surfaces to guide the seed down toward the lower portions of the wheels a .

The regulation of the quantity of seed sown is effected simultaneously and uniformly for all the seed-exit openings c by suitably adjusting the breadth of such openings. For this purpose there are secured on a rod g slides h , which are caused to more or less cover or completely close the said openings by moving the rod g longitudinally. For the purpose of shifting the rod g as required the said rod is connected to a lever k , which is pivoted at i and whose end l engages in or embraces, as the case may be, a cam m , Figs. 8 to 11. One half of the guiding periphery of the cam m is such as to give a straight development, so as to hold the lever stationary, while its other half is helical. The cam m is mounted on the shaft n for moving the seed-funnels, and consequently moves with the latter.

To permit of the adjustment of the slides h , the cam m is not fixed on the shaft n , but is only held in rotative connection therewith by a half-clutch o , keyed fast on the shaft n , so that after disengaging the cam m from the half-clutch o the former can be rotated on the shaft n . To enable this to be done, the cam is liberated by means of a handle p , that is screwed on the shaft n , whereupon a spring q , inserted between the half-clutch o and the cam m , presses the latter from the former.

Then the cam m is so placed that during half a revolution of the shaft n , for the purpose of adjusting the seed-funnels, its helical curve is in engagement with the end l of the lever k , the rod g will be shifted endwise a certain distance and the slides h consequently opened to a determined extent. When, however, during another half of revolution of the shaft n , and consequently of the cam m , the straight guiding portion of the latter is in en-

gagement with the end *l* of the lever *k*, the slides *h* are not shifted and the seed-slits *c* remain open.

The cam *m* may be in the form of a cam-shaped groove (see Figs. 9 and 10) or a cam-shaped ridge, (see Fig. 11,) the effect being the same in each case.

For enabling the seed-exit openings *c* to be closed separately there are provided slides *s*, which are located behind the slides *h* and are movable in guides *t*. The slides *s* have bent ends *s'*, arranged to bear against a wedge-shaped strip *u*, secured to the rear wall of the seedbox *b*. When one of the slides *s* is drawn up into the position shown in Fig. 6, the end *s'* wedges itself against the wedge-shaped strip *u*, whereby the slide is held fast in its open position. In this manner the fixing of the slides *s* by screws is obviated.

The wheels *a*, of which there may be any desired number, are located in the seedbox on a driving-shaft *v*, and are arranged at suitable distances apart.

Having now particularly described the nature of my invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a seed-sowing machine, the combination with the seedboxes having seed-openings therein, the rotatable wheels having peripheral triangular or wedge-shaped teeth, of the slides for varying the area of said seed-open-

ings, the rod to which they are secured, the angle-lever connected therewith, the cam with which said lever engages having its periphery made partly helical and partly circular, and means for rotating the same, substantially as described. 35

2. In a seed-sowing machine, the combination with the seedboxes having seed-openings therein, the rotatable seed-disks having peripheral wedged-shaped teeth, and the guide-blocks located between said wheels, having their upper sides inclined in opposite directions, of the slides for varying the area of the seed-openings, the rod to which they are secured, the angle-lever, the cam-wheel having its periphery made partly circular and partly helical, the screw-shaft on which said wheel is journaled, the clutch member secured to said cam-wheel, the fixed clutch member on said shaft, the coiled spring interposed herebetween and the handle having a screw-threaded aperture engaging with the correspondingly-threaded end of said shaft, substantially as described. 40 45 50 55

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ERNST CROLL.

Witnesses:

FANNIE MOORE,
A. STILLÉ IVES.