

(No Model.)

2 Sheets—Sheet 1.

D. WHITING.  
CLOVER HULLER.

No. 316,210.

Patented Apr. 21, 1885.

FIG. 7 -

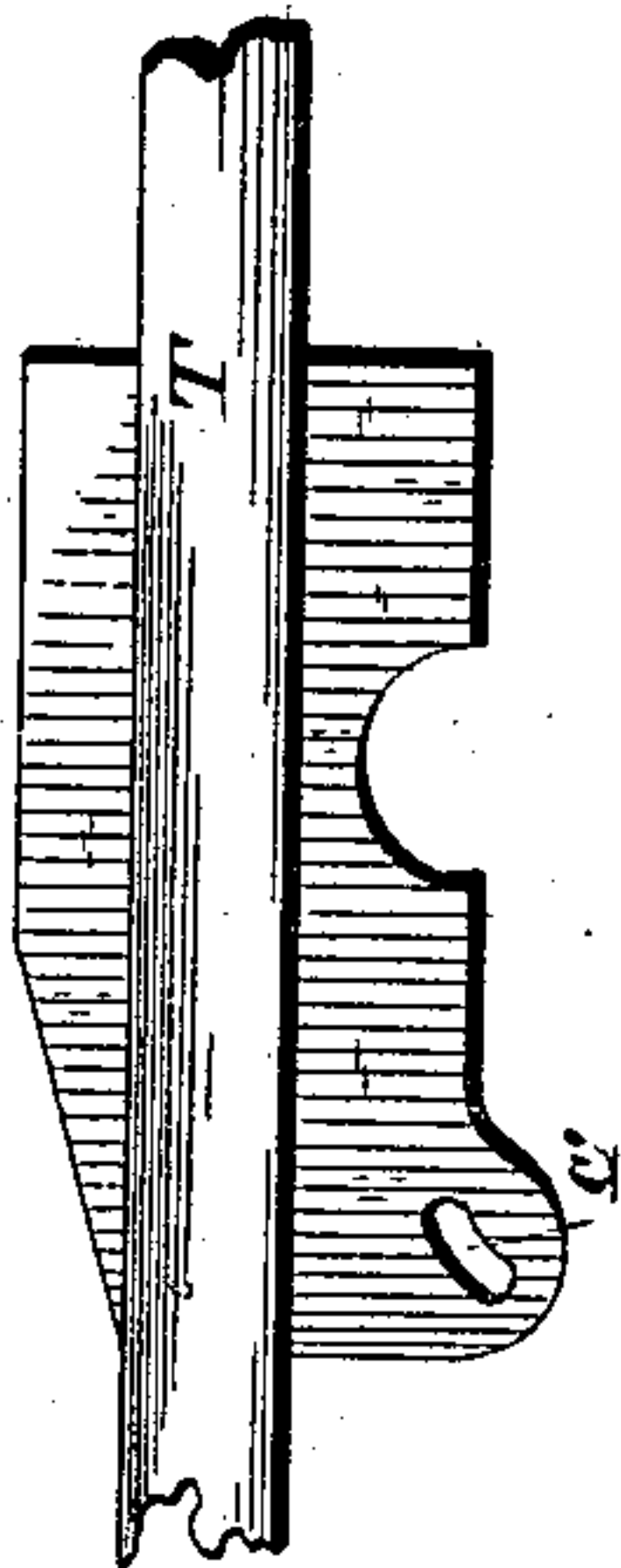


FIG. 6 -

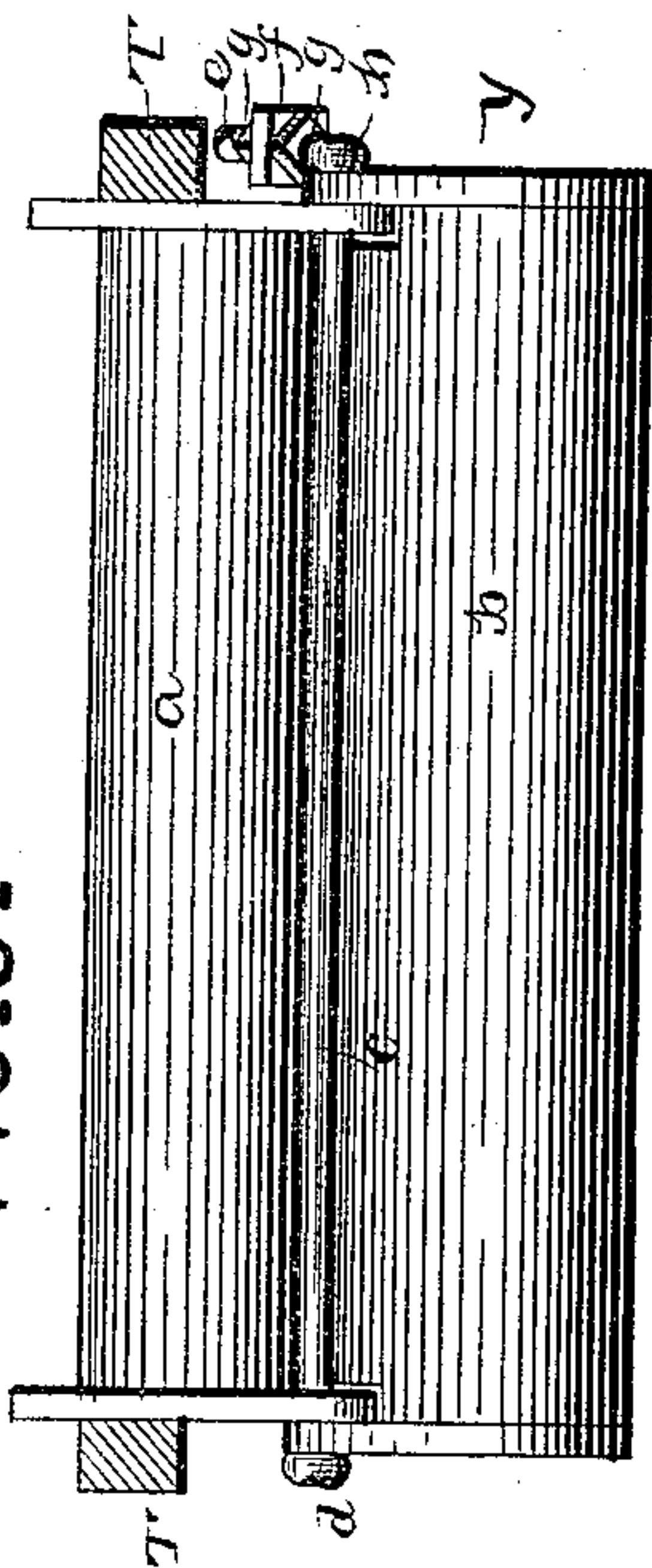
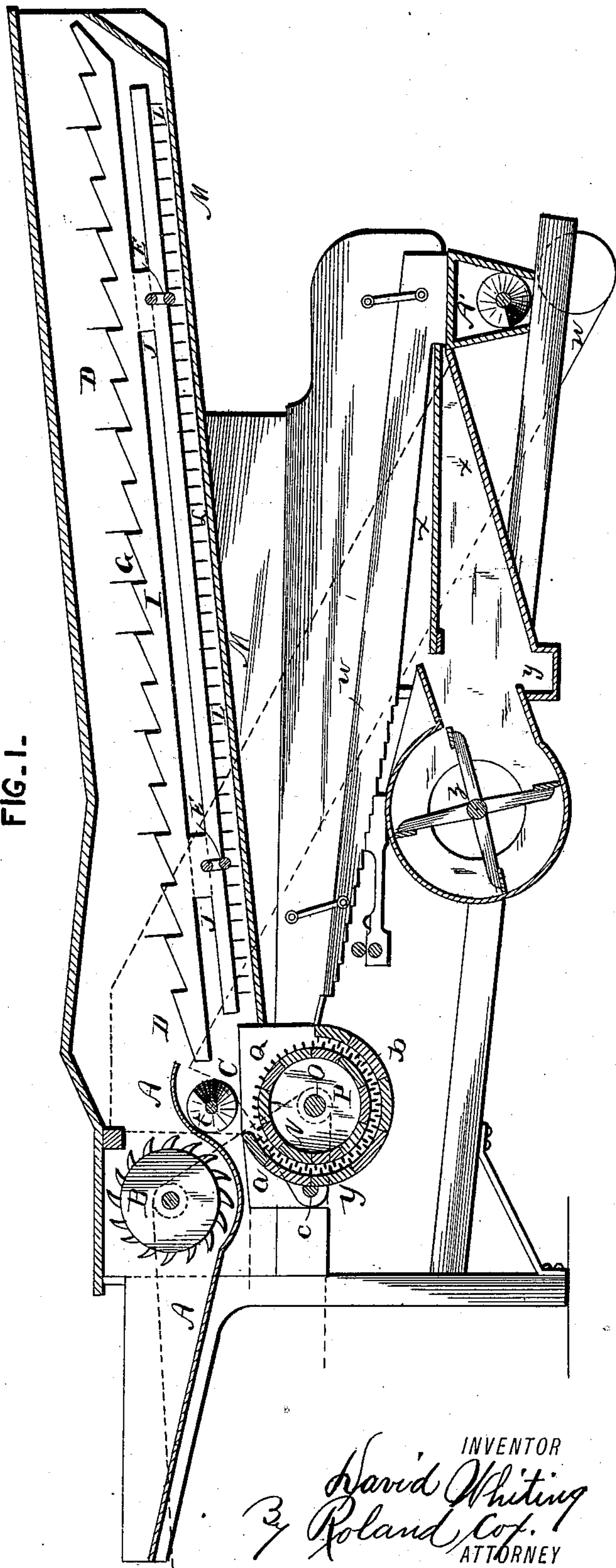


FIG. 1 -



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Fig. 2.

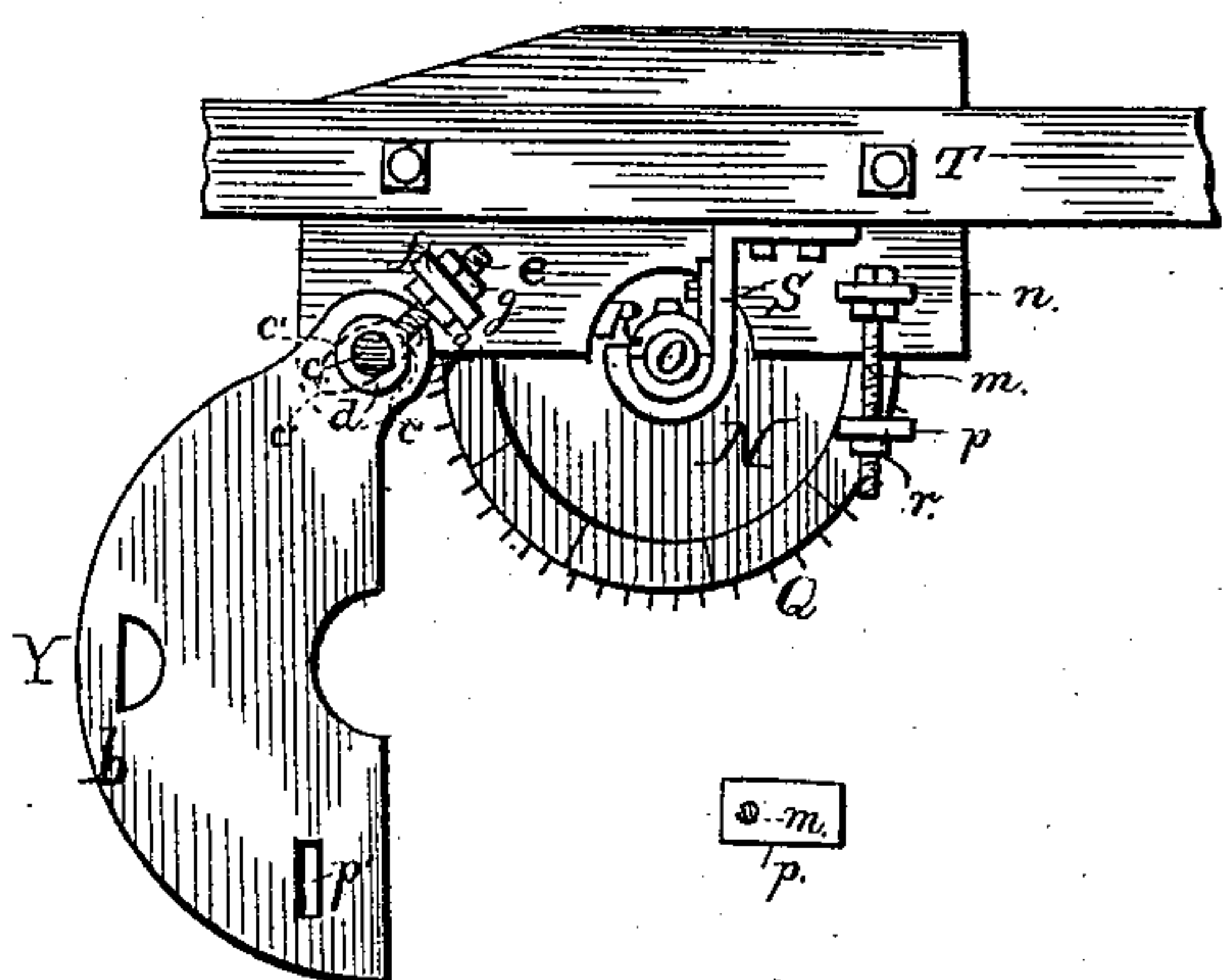


Fig. 3.

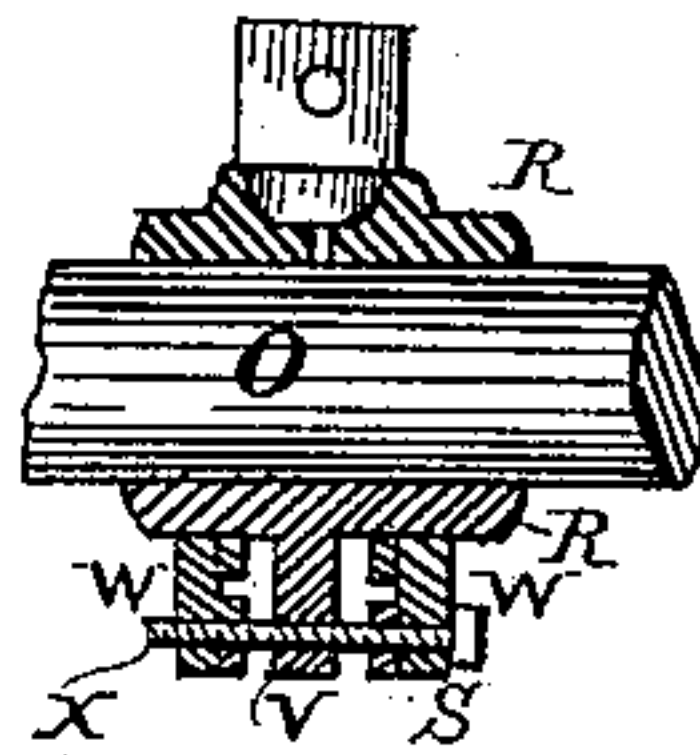


Fig. 4.

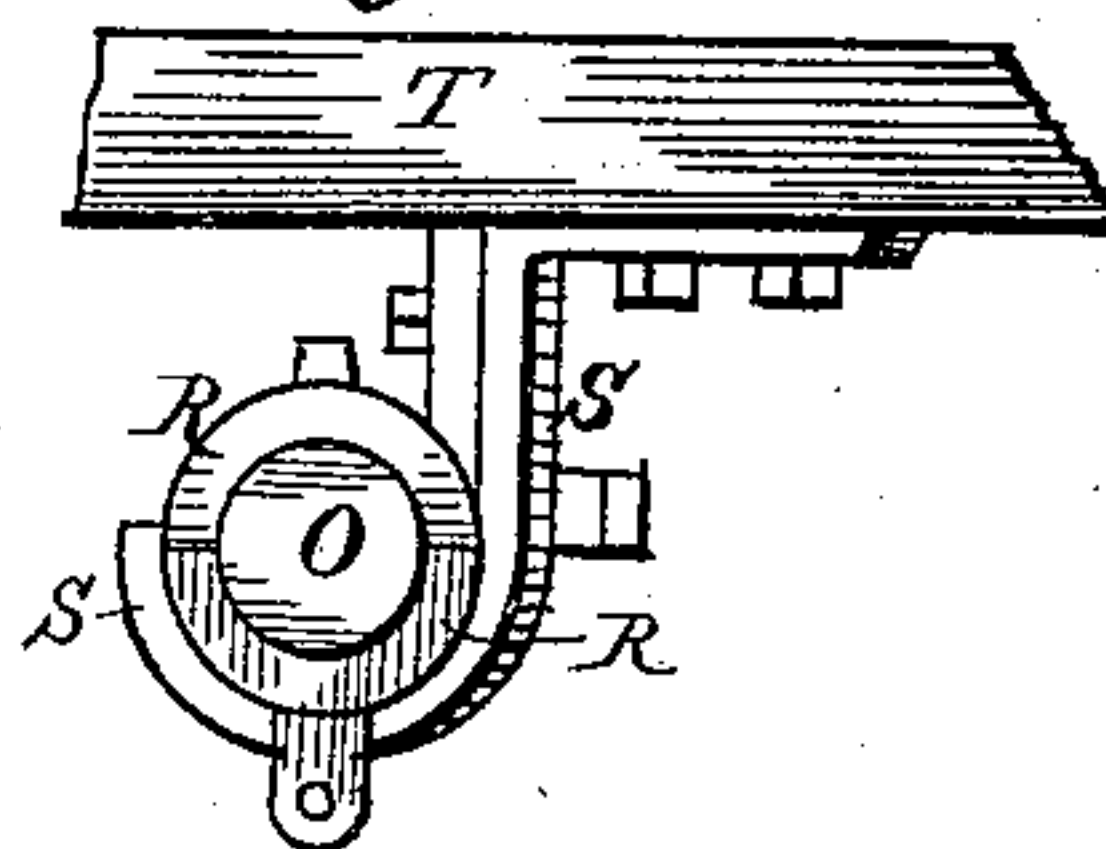
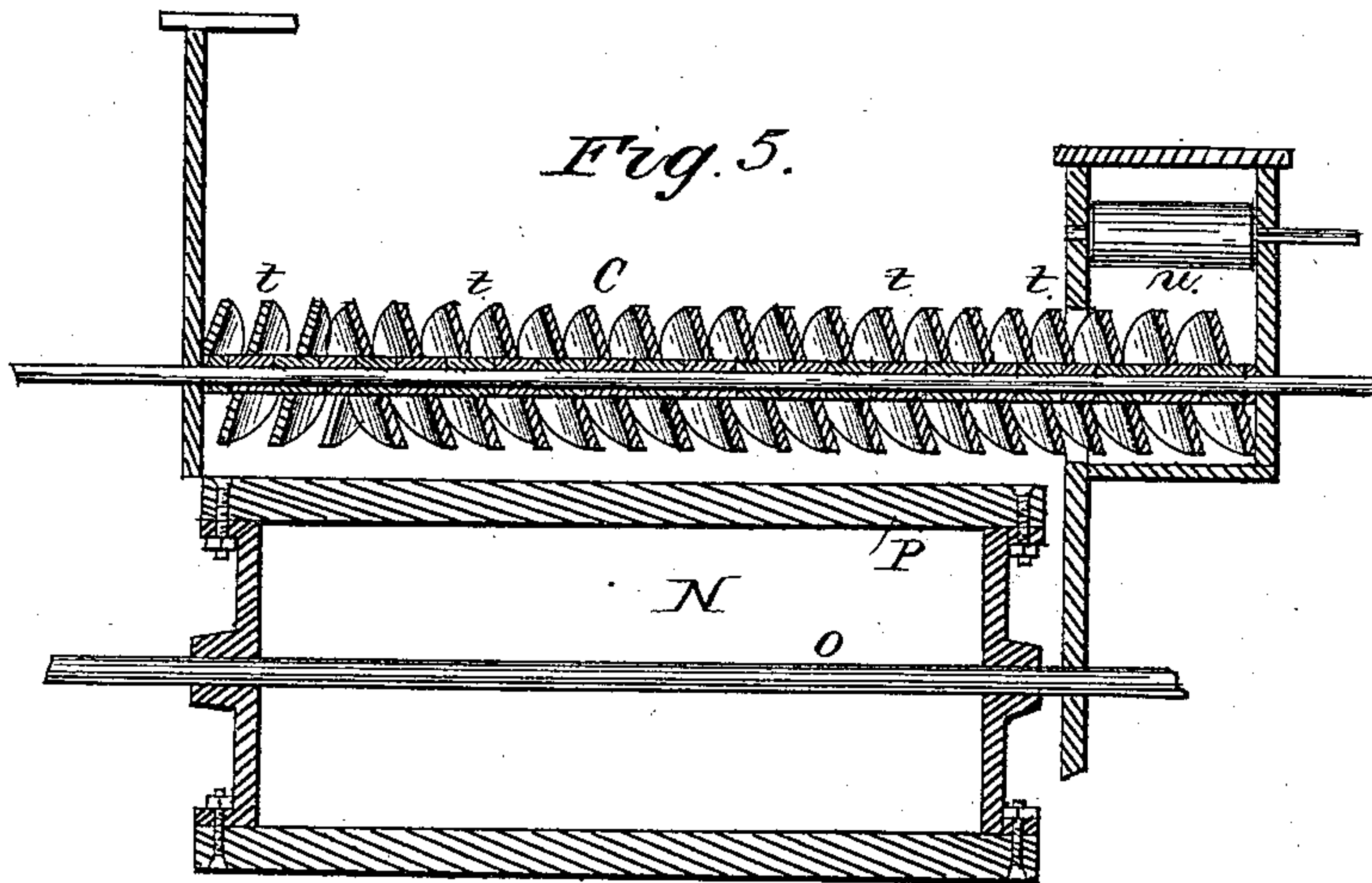


Fig. 5.



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# UNITED STATES PATENT OFFICE.

DAVID WHITING, OF ASHLAND, OHIO.

## CLOVER-HULLER.

SPECIFICATION forming part of Letters Patent No. 316,210, dated April 21, 1885.

Application filed July 23, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID WHITING, a citizen of the United States, and a resident of Ashland, in the county of Ashland and State of Ohio, have invented certain new and useful Improvements in Clover-Hullers, of which the following is a specification.

The invention relates to improvements in clover-hullers, and its nature and distinctive characteristics are fully described hereinafter.

In the accompanying drawings I illustrate a clover-huller embodying the invention, Figure 1 being a central vertical longitudinal section of same; Fig. 2, a detached end view of the hulling-cylinder and its concave; Fig. 3, a vertical section of one of the hangers supporting the ends of the axle of the hulling-cylinder; Fig. 4, an end view of said hanger and axle; Fig. 5, a vertical transverse section on the line *x x* of Fig. 1. Fig. 6 is a vertical transverse section of the machine directly in front of the concave and hulling-cylinder, showing the pivot-rod *c* supporting the lower section of the concave; and Fig. 7 is a detached view of a portion of the side of the machine, illustrating the slots *c'* cut therein to receive the ends of the pivot-rod *c*.

In the drawings, A denotes the feed-trough, wherein is suitably mounted the thrashing or stemming cylinder B, of usual construction. The inner end of the trough A rises above the conveyer-shaft C and terminates over the adjacent end of the separating-frame D, which inclines upward toward the rear end of the machine, and is mounted upon the crank-axes E.

Between the two sides of the machine the axles E have a series of cranks, F, standing at different angles to each other, and upon each of which is mounted an independent part, G, of the separating-frame D. Each part G consists of a perforated bottom, H, and two notched sides, I, and is fastened upon blocks J, to which are attached the bars K, mounted upon the crank-axes E, and carrying pins or wires L on their lower surfaces.

Below the separating-frame D is an inclined board, M, leading to the hulling-cylinder N, which is mounted on an axle, O, and consists of the end pieces, supporting the cylindrical portion P, which is properly supplied over its surface with brad-spikes Q. The ends of the axle O rest in boxes R, which are sustained in

the curved lower ends of the depending hangers S, secured to the rails T, which extend along each side of the machine. The lower half of each of the boxes R has upon it the elongated lug V, which passes between the two portions W of the lower end of the hanger S, being therein retained by a bolt, X, as indicated in Fig. 3.

The hulling-cylinder N is encompassed, as to its lower half and upper front quarter, by the concave Y, consisting of the upper and lower sections, *a b*, respectively. The upper section, *a*, of the concave Y is rigidly affixed in position, and the lower half is arranged to close around the hulling-cylinder N, or to be opened therefrom, in the manner indicated in Fig. 2, the pivot *c* permitting this movement. The pivot *c* extends from one side of the machine to the other, and its ends pass through eyes *d* on the bolts *e*, which enter lugs *f*, and are provided with a nut or nuts, *g*, for the purpose of locking the bolt in any set position in the lug.

The sides of the machine have elongated slots *c'*, to receive the ends of the pivot *c*, so that when the bolt *e* is adjusted in the lug *f* the pivot *c* may be elevated or depressed, whereby the lower half of the concave is brought nearer or removed from the hulling-cylinder N.

The end of the concave Y farthest from the pivot *c* will be held in position on each side of the machine, when the concave is closed, by means of the bolt *m*, which is hung in an eye, *n*, its lower end entering a lug, *p*, to be inserted in the slot *p'* when the concave is elevated, and being provided with a locking-nut, *r*.

The lower section of the concave Y, as will be observed, may be adjusted either vertically or horizontally with relation to the cylinder N.

The surface of the cylinder N and the inner surface of the concave Y are supplied with brad-spikes, upon the ends of which the seed is hulled.

Directly over the cylinder N is mounted the conveyer-shaft C, consisting of an axle carrying the deflecting blades or worm *t*, the purpose of which is to operate as a feed to distribute the clover-heads over the cylinder N and to convey the tailings from the return-elevator *u*. At the left-hand end of the conveyer-shaft C the blades *t* for a proper distance are



deflected in an opposite direction to those on the main portion of the shaft, and the object of this arrangement is to prevent the heads of clover from pressing or packing against the side of the machine.

In rear of the hulling-cylinder N is the shaking-screen *w*, below which are the inclines *x*, leading to the delivery-spout *y*, and forming a chute for the blast from the fan *z*.

Below the rear end of the shaking-screen *w* is a worm-shaft, A', for moving the tailings into the lower end of the return-elevator *u*.

In the operation of the machine the clover is fed into the trough A, where it is acted upon in the usual manner by the thrashing or stemming cylinder B, and moved upward upon the agitating-frame D, which separates the seed and heads from the stems, straw, &c., the latter passing out at the rear end of the machine, while the former falls through said frame upon the inclined board M, and passes thence to the cylinder N, their movement being facilitated by the pins L. The clover-heads are broken and hulled by the cylinder N and concave Y, and discharged upon the shaking-screen *w*, which sifts the seed upon the inclines *x*, and permits the refuse to be blown out through the end of the machine. The cleaned seed is conveyed away by the spout *y*, and the partially-hulled clover-heads are returned to the hulling-cylinder N by the elevator *u*.

The arrangement hereinbefore described of the hangers S, the hulling-cylinder N, and hinged concave Y is very advantageous, in that, among other things, it avoids the usual labor

of removing the cylinder N when repairs are necessary or it is desired to remove the concave Y.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a clover-huller, the combination of the hulling-cylinder N, the machine-frame, the concave Y, composed of sections *a b*, the pivot-rod *c*, sustaining the slotted sections *b*, the eyebolts *e*, lug *f*, nuts *g g*, and a bolt, *m*, for securing the said section when closed, substantially as set forth.

2. In a clover-huller, the combination, with the hulling-cylinder N, having a central axle, O, of hangers S, depending from beams T of the machine-frame, and having curved lower ends composed of parts W W, the boxes R, the lower end of which having a lug, V, between parts W W, and a screw, *x*, passing transversely through the said parts W and lug V, substantially as set forth.

3. In a clover-huller, the trough A, stemming-cylinder B, combined with the separating-frame D, worm-conveyer C, hulling-cylinder N, and concave Y, the worm-conveyer being located directly over the cylinder N and between the cylinder B and frame D, substantially as set forth.

Signed at Ashland, in the county of Ashland and State of Ohio, this 7th day of May, A. D. 1884.

DAVID WHITING.

Witnesses:

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