

(No Model.)

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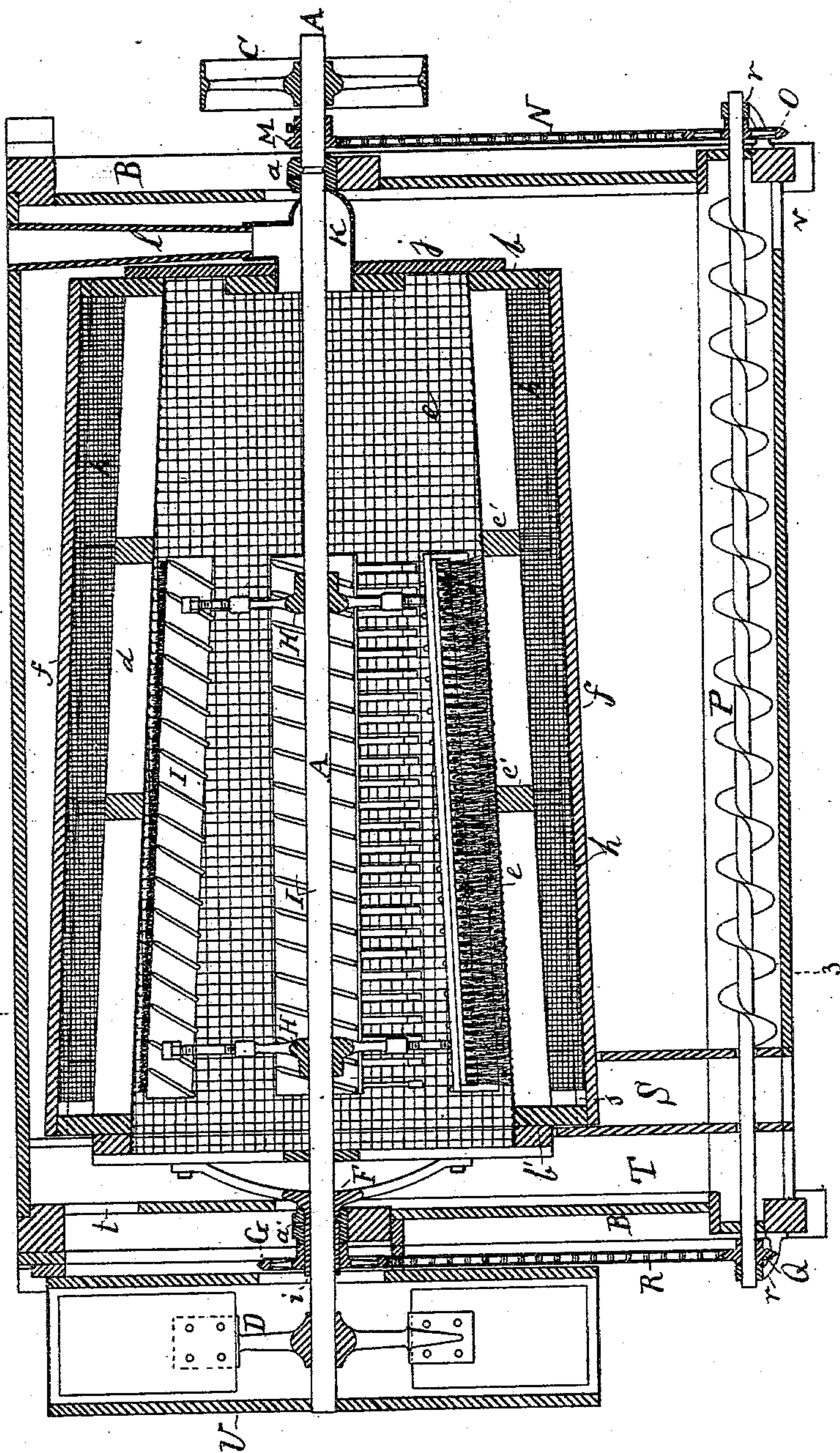
L. GATHMANN.

MACHINE FOR CLEANING SPLIT GRAIN.

No. 283,480.

Patented Aug. 21, 1883.

Fig. 1.



WITNESSES:

*Adam Geo. White*  
*Louis Kolling*

INVENTOR

*Louis Gathmann*

BY

*Wm C Lotz*

ATTORNEY



(No Model.)

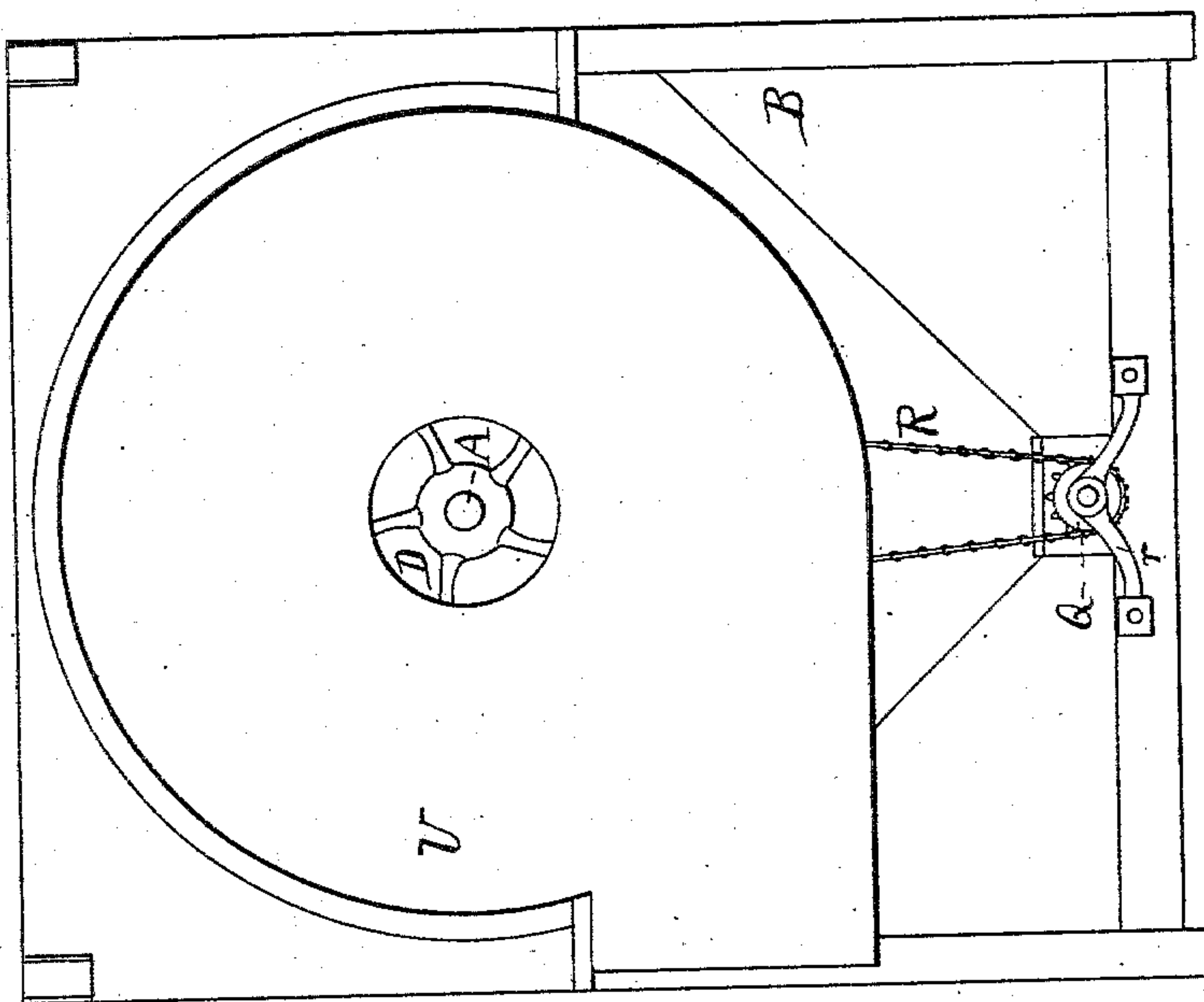
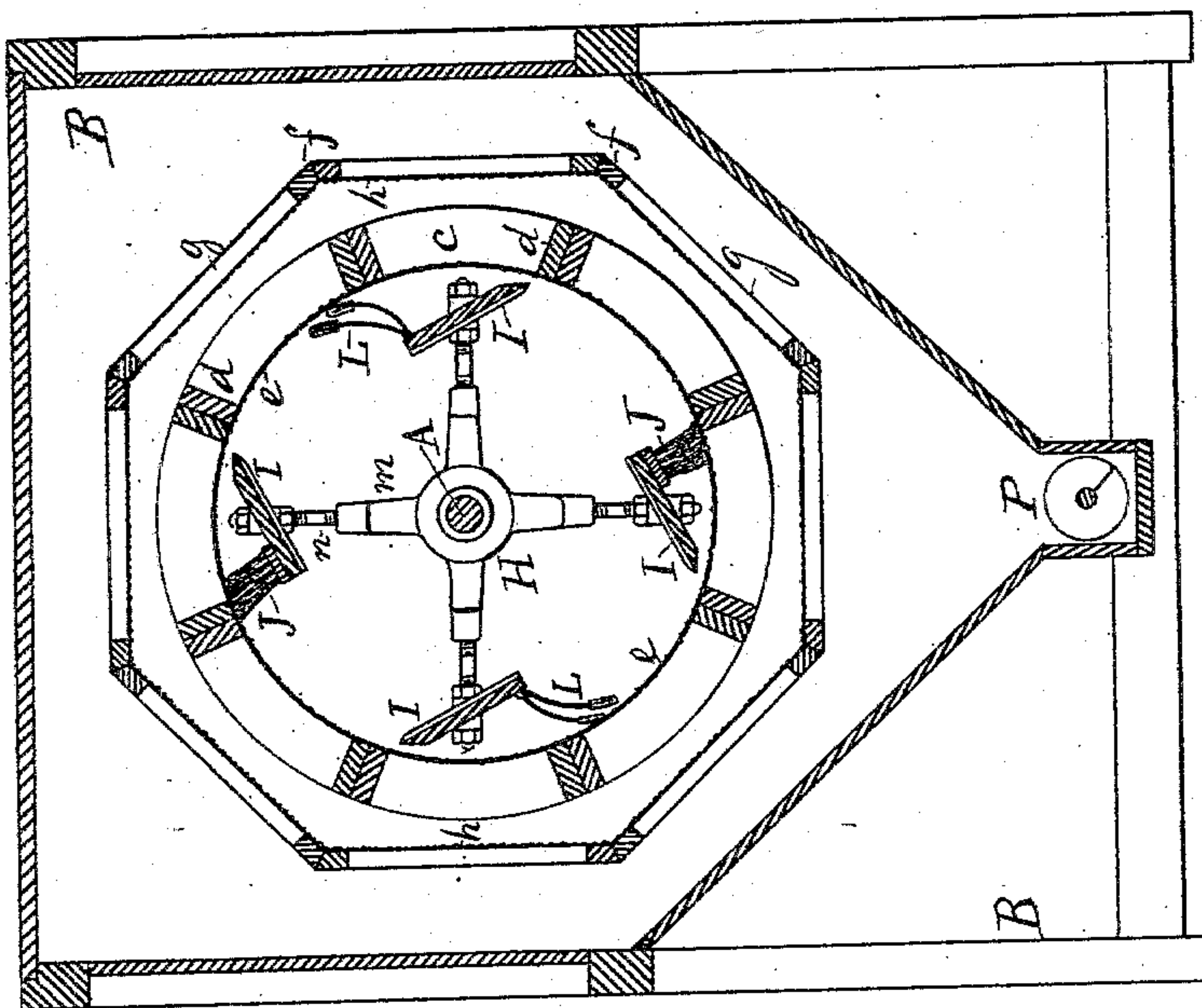
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WITNESSES:

Adam L. Pro. White -  
Louis Kottung

INVENTOR

Louis Gathmann

BY

Wm H Lotz

ATTORNEY

(No Model.)

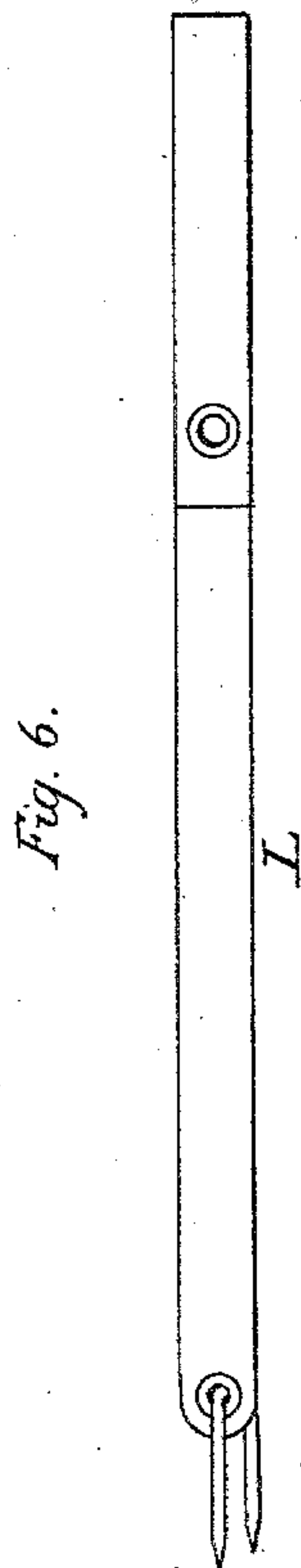
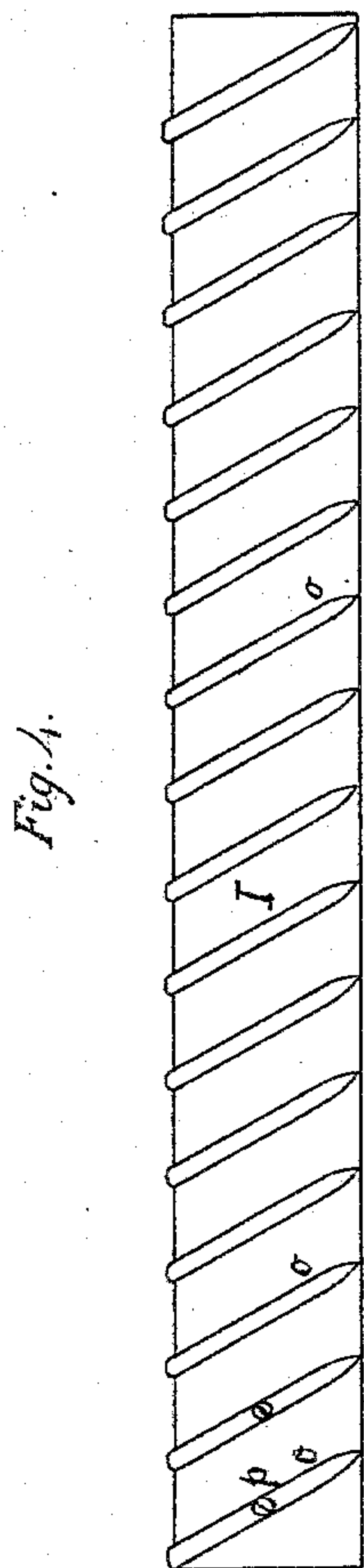
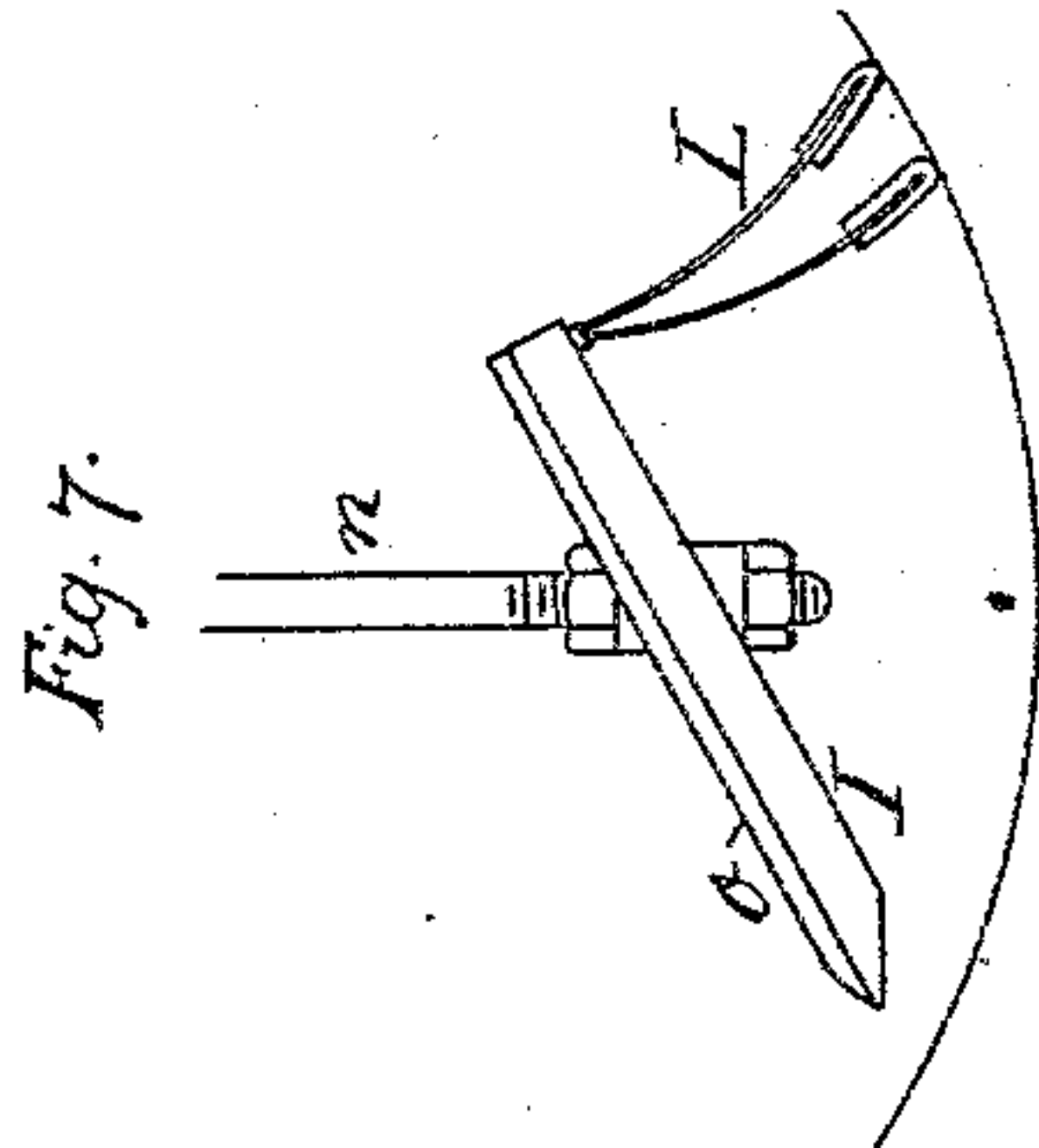
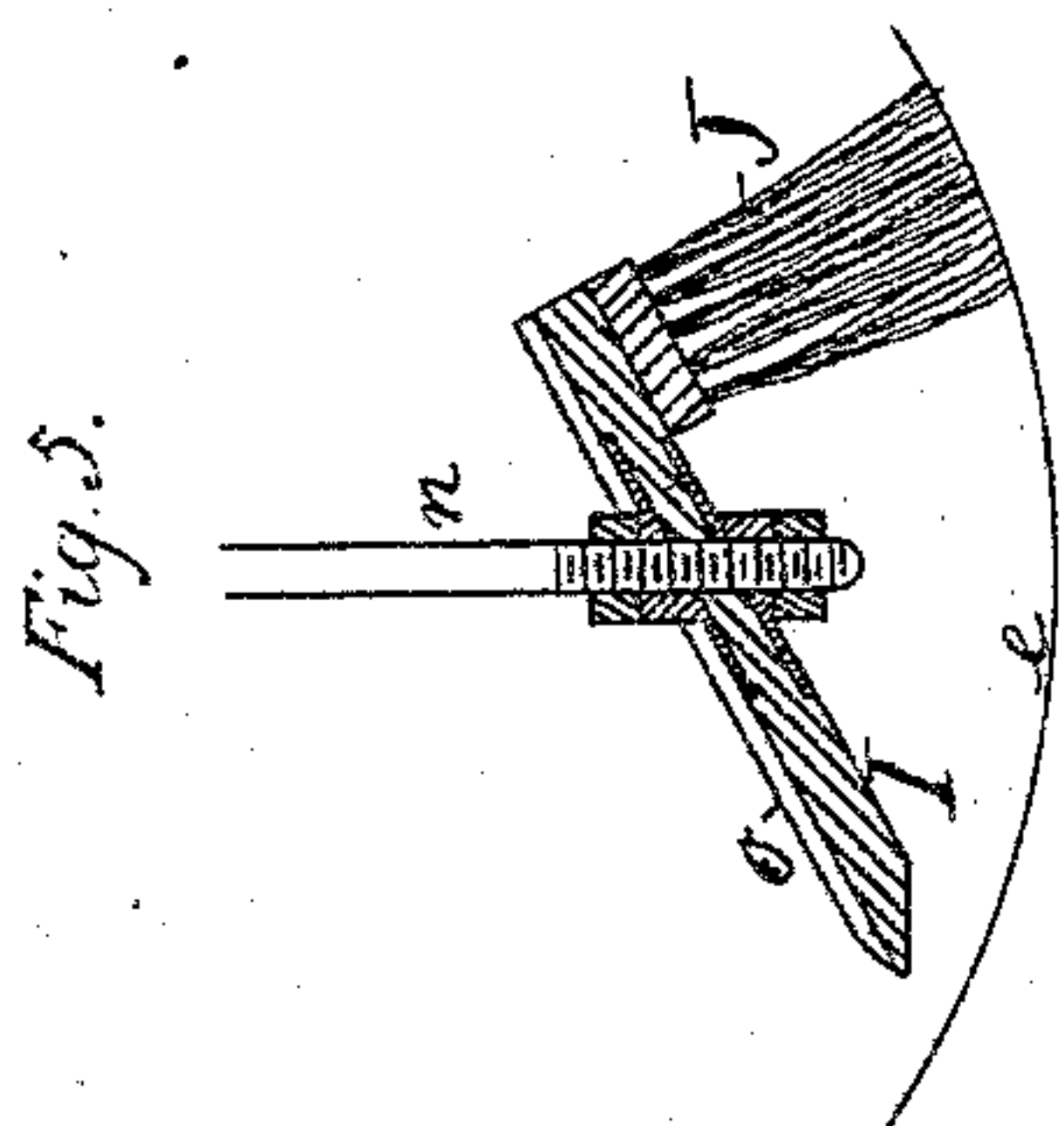
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WITNESSES:

Adam G. White  
Louis Nolting

INVENTOR

Louis Gathmann

BY

Wm. B. Lotz

ATTORNEY



# UNITED STATES PATENT OFFICE.

LOUIS GATHMANN, OF CHICAGO, ILLINOIS.

## MACHINE FOR CLEANING SPLIT GRAIN.

SPECIFICATION forming part of Letters Patent No. 283,480, dated August 21, 1883.

Application filed April 23, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS GATHMANN, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Cleaning Split Grain, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to machines for brushing and scouring, and more particularly for cleaning, purifying, and separating creased or lobated grain after it has been split through its crease, the object and process of which being described in Letters Patent of the United States No. 250,436, issued to me on December 6, 1881; and it consists of the novel devices and combinations of devices hereinafter described and specifically claimed.

20 In the accompanying drawings, Figure 1 represents a longitudinal vertical section of the entire machine; Fig. 2, an end elevation of the same; Fig. 3, a cross-section on line 3 3 of Fig. 1; Fig. 4 a side elevation of one of the scraping-boards; Fig. 5, a cross-section of a scraper-board with brush attached; Fig. 6, an elevation of one of the beaters, and Fig. 7 an end elevation of a scraper-board with beaters attached.

30 Corresponding letters in the several figures of the drawings designate like parts.

A denotes the main shaft, supported in journal-boxes *a a'*, that are secured upon cross-timbers in the end of main frame B. Upon one overhanging end of this shaft A is mounted the driving-pulley C, and upon its opposite overhanging end the hub of fan-blower D.

40 E is the conical cylinder, the skeleton frame of which is composed of end rings, *b b'*, and intermediate rings, *c c'*, that are connected by longitudinal ribs *d*. The interior of this skeleton is covered with wire screen or perforated sheet metal, *e*, jointed or lapped to form a conical surface that is true concentric with the axis of such cylinder. The end rings, *b b'*, are shaped exteriorly octagon, and are connected longitudinally by angular bars *f*, secured with their ends upon the corners of such rings *b b'*, which bars *f* again are laterally braced to each other by bars *g*. Against the interior sur-

face of bars *f* are stretched sheets of bolting-cloth *h*.

To ring *b*, at the large diameter end of cylinder E, are secured the arms of a spider, F, having a hub, *i*, which is sleeved or loosely 55 mounted upon main shaft A, and forms the journal that rests in box A' of frame B. A sprocket-wheel, G, is mounted upon the projecting end of hub *i*. The opposite end of cylinder E is closed by a disk, *j*, that is rigidly 60 secured against ring *b'*, and is loosely sleeved upon the annular rim of spout K, forming part of journal-box *a* and connecting with funnel *l*, through which the split grain is fed into cylinder E.

65 Two spiders, H, are mounted upon main shaft A, each consisting of a hub having four (more or less) arms, *m*, into which are tapped or otherwise secured round iron rods *n*, that are screw-threaded on their ends for adjustably securing by nuts angular boards I. These boards I, with their forward sharpened ends, reach within about one-quarter or three-eighths of an inch of screen, *e*, and their rear receding ends have either attached brushes J 75 or beaters L, or both, in alternate order. The beaters L are made each of a leather strip, having riveted to one end an overlapping piece of leather, or may have secured a brush formed of bristles, and has an eyelet in its opposite 80 end through which a small staple is passed that is driven into board I.

Instead of securing the brushes J rigidly to the ends of boards I, they may be coupled therewith by intermediate leather strips, so as 85 to be extended toward or against screen *e* by centrifugal force; or they may be connected to boards I by intermediate leaf-springs, that will yieldingly push them toward or against screen *e*. The inward face of each board I may be 90 provided with angular ribs *o*, that are either made rigid or secured by a central screw, *p*, to be adjustable as to degree of angle to act in the manner of a conveyer for accelerating the movement of the material that is scraped up 95 by the boards I, and is caused to slide over them. These boards I, with brushes J or beaters L, turn with the main shaft, while cylinder E is rotated in the same direction with a reduced speed, the motion being transmitted 10



from a small sprocket-wheel, M, that is mounted upon main shaft A by an endless chain, N, to a sprocket-wheel, O, that is mounted upon the end of the shaft of a screw-conveyer, P, and again from a small sprocket-wheel, Q, mounted upon the opposite end of such screw-conveyer shaft by an endless chain, R, to sprocket-wheel A, that is secured upon the hub *i* of spider F. By this arrangement the screw-conveyer is not only rotated itself the desired speed, but it also forms the intermediate or counter shaft for transmitting motion from shaft A to cylinder E. The conveyer P is arranged within a trough in the hopper-shaped bottom of frame B, and is pivoted in bracket-bearings *r*, which are bolted against the outside of frame B. The scraping-boards I, carrying brushes J or beaters L, extend only through the larger end of cylinder E about two-thirds of the entire length of the same, while in the smaller portion of this cylinder the screen *e* operates in the manner of a common bolt, and the bolting-cloth *h* does not extend quite to end ring *b*, but leaves a marginal opening, *s*, between its edges and such ring *b*, which leads into spout S.

The spout T particularly and the spaces in and around cylinder E generally communicate through an opening, *t*, with the central opening of fan-casing U for extracting by air-suction the very light materials from the kernels and middlings during and after the scouring process. The split grain being fed into the small diameter end of screen *e* through funnel *l* and spout K, the middlings, germs, and other small particles that became separated during the process of splitting the grain will pass through the perforations of screen *e*, between rings *b'* and *c'*, before the half-kernels will arrive at the brushes J and beaters L, and will drop upon the exterior bolting-cloth, *h*. The meshes of this bolting-cloth *h* are to be large enough to allow small impurities to pass through and drop into the conveyer-trough, whence they are carried off and discharged through opening *v*. In the same manner will be discharged and carried off all dirt and impurities that are removed from the half-kernels by the brushes and beaters. The middlings and germs which have passed through screen *e*, but are too large for the meshes of bolting-cloth *h*, are discharged through marginal opening *s* and spout S. The half-kernels of grain, while rolling down the incline in rotary screen *e*, will come in contact with the brushes J and beaters L, and will be swept upward again and again by the brushes J and struck by the beaters L, that are rotated in the same direction, but with a greater velocity than the cylinder E. The bulk of material by its gravity collecting in the bottom of screen *e*, the inclined boards I, as they move in advance of the brushes or beaters, will scrape up the surplus of such material, leaving but a thin layer of kernels for the brushes or beaters to operate upon, and with their rotation such scraped-up material will

slide over the boards I, to drop off the opposite or receding edges of the same behind the brushes J or beaters L attached thereto. The angular strips *o* upon the inward faces of boards I will direct the material thus scraped up toward the discharge end of cylinder E, so as to operate in the manner of conveyers, which accelerate the motion of the material passing through screen *e*. The brushes and beaters thus rubbing, striking, and rolling the several kernels against such screen *e*, will loosen and separate all the dirt and foreign matter that adhered to the kernels of the grain, and that particularly collected in the creases of the same. After the half-kernels have been thus brushed and scoured they are discharged from the large end of screen *e* into spout T, where they pass through an upward air-current, produced by the suction of fan D. This air-current will separate and carry off all light material that was too large for passing through the meshes of screen *e*. The half-kernels, after thus having been scoured and cleaned in the above-described machine, are then in condition for further reduction.

What I claim is—

1. In a machine for cleaning split wheat, the cylinder E, having screen *e* and bolting-cloth *h*, in combination with flexible beaters L, substantially as and for the purpose set forth.
2. In a machine for cleaning split wheat, the rotary screen *e*, in combination with fan D and flexible beaters L, composed of leather strips provided on their lower ends with overlapping leather edges, substantially as and for the purpose set forth.
3. In a machine for cleaning split wheat, the rotary screen *e*, in combination with fan D and brushes J and beaters L in alternate order, substantially as and for the purpose set forth.
4. In a machine for cleaning split wheat, the cylinder E, constructed with screen *e* and bolting-cloth *h*, in combination with fan D and beaters L, substantially as and for the purpose set forth.
5. In a machine for cleaning split wheat, the cylinder E, constructed with screen *e* and bolting-cloth *h*, in combination with fan D and beaters L and brushes J in alternate order, substantially as and for the purpose set forth.
6. In a machine for cleaning split wheat, the rotary screen *e*, in combination with the scraper-boards I, adjustably secured to rods *n* and carrying brushes J, substantially as and for the purpose set forth.
7. In a machine for cleaning split wheat, the rotary screen *e*, in combination with scraper-boards I and beaters L, substantially as and for the purpose set forth.
8. In a machine for cleaning split wheat, the cylinder E, having screen *e* and bolting-cloth *h*, in combination with scraper-boards I and brushes J, substantially as and for the purpose set forth.
9. In a machine for cleaning split wheat, the



cylinder E, with screen e and bolting-cloth h, in combination with scraper-boards I and beaters L, all substantially as and for the purpose set forth.

5 10. In a machine for cleaning split wheat, the screen e, the scraper-boards I, having angular strips o and brushes J and beaters L,

substantially as and for the purpose set forth.  
In testimony whereof I affix my signature in presence of two witnesses.

LOUIS GATHMANN.

Witnesses:

LOUIS NOLTING,

ADAM GEO. WHITE.