

(No Model.)

2 Sheets—Sheet 1.

A. R. GUSTAFSON.
THRASHING MACHINE.

No. 417,175.

Patented Dec. 10, 1889.

Fig. 1.

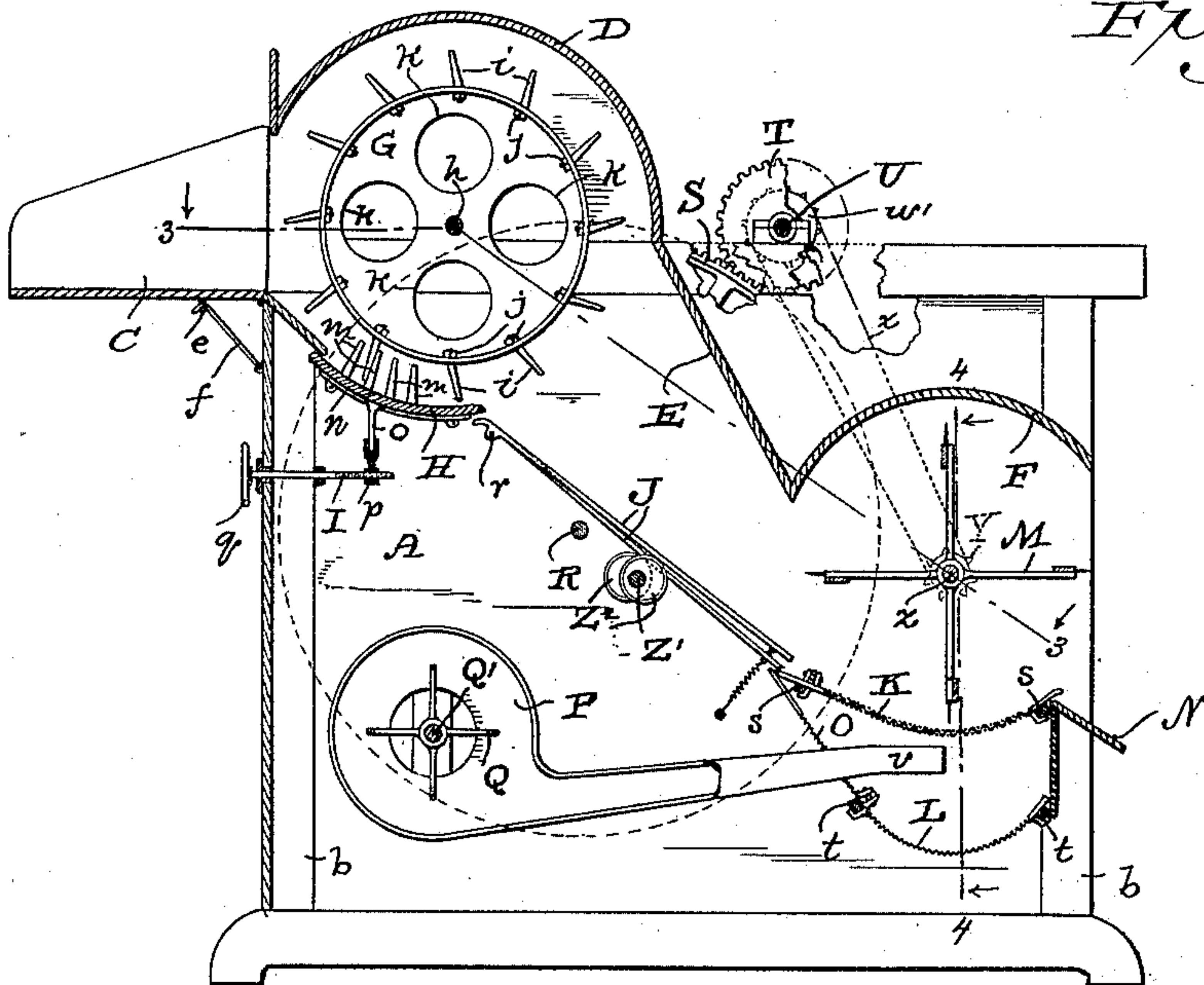
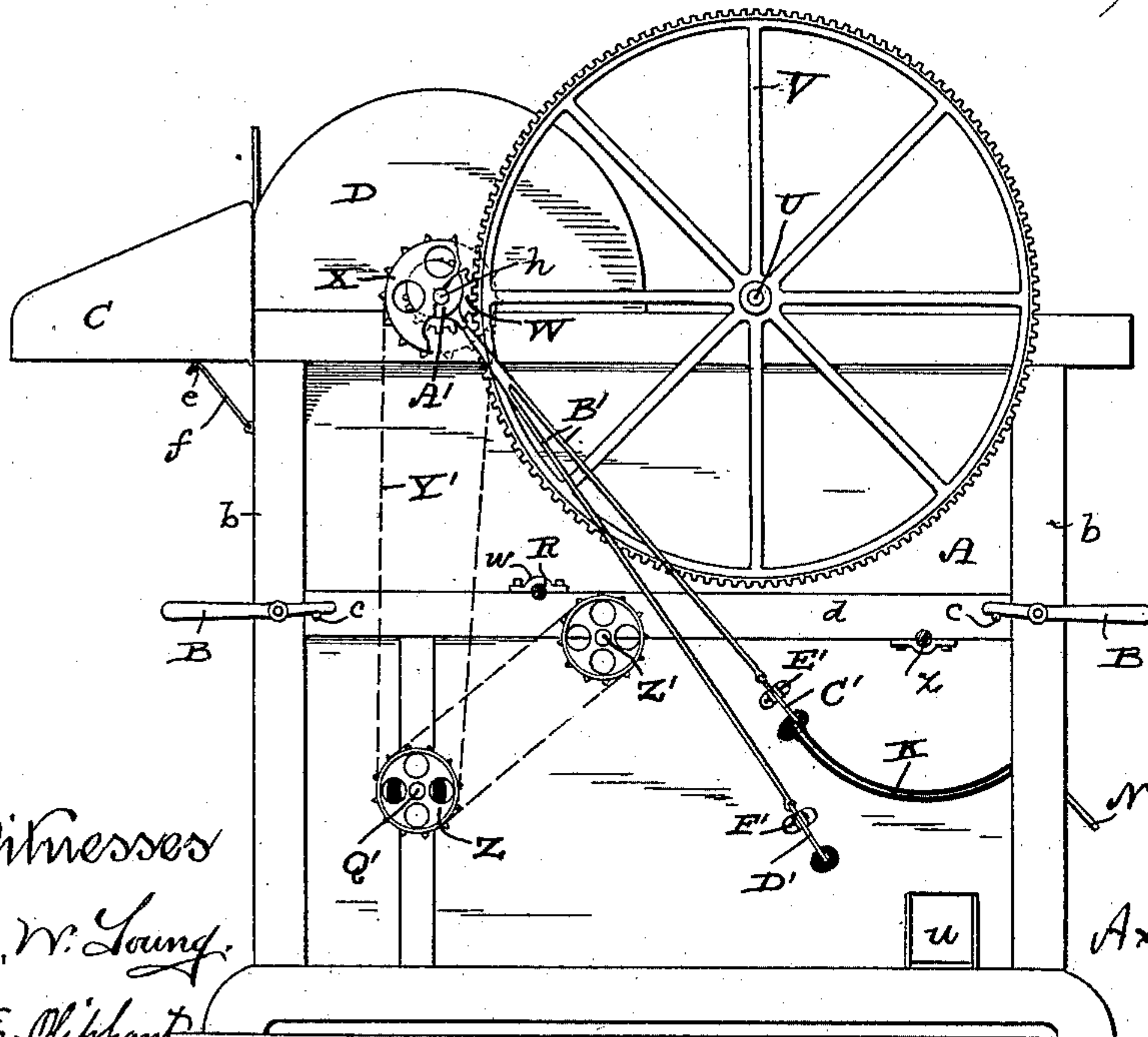


Fig. 2.



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Fig. 3.

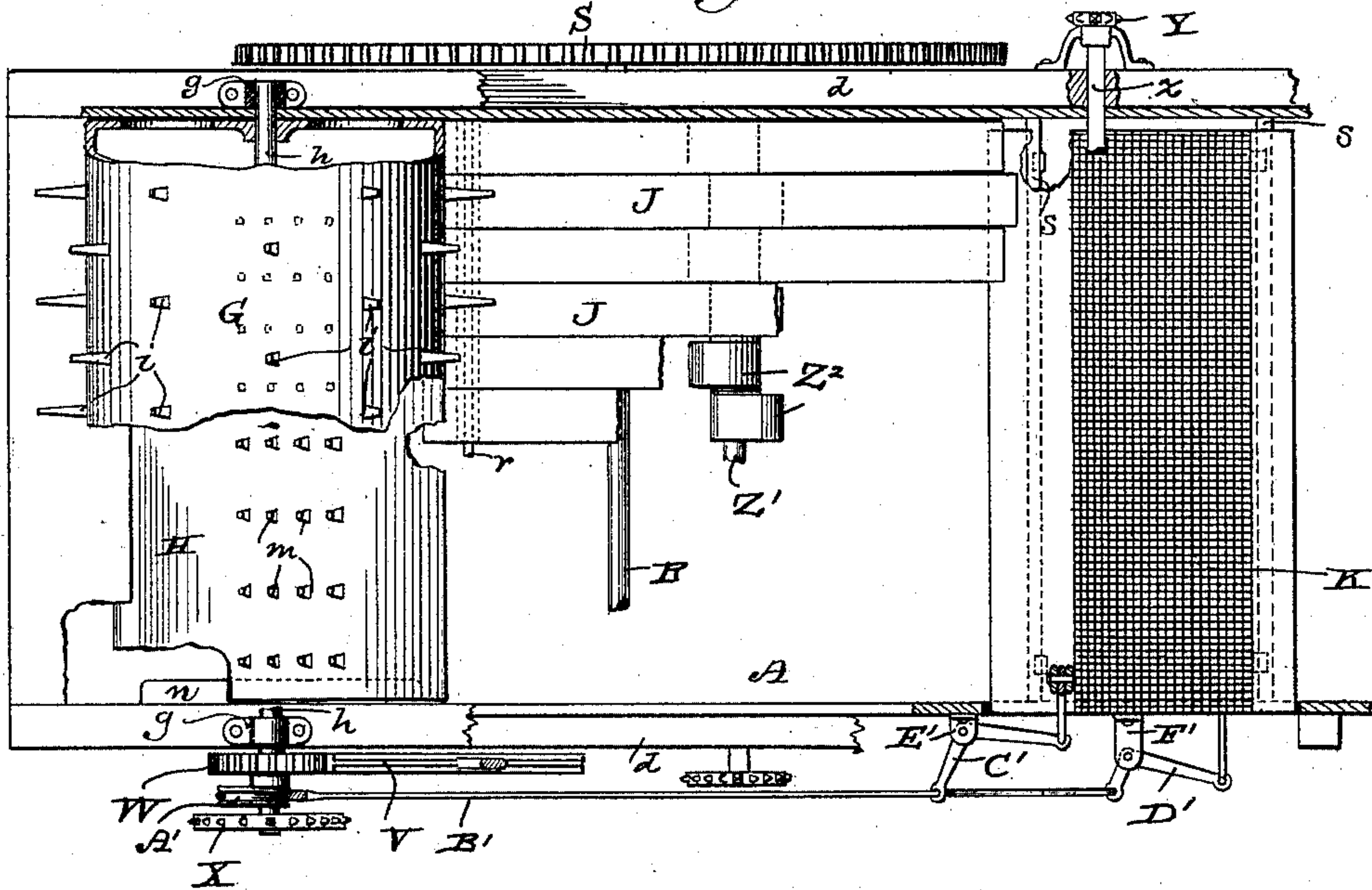
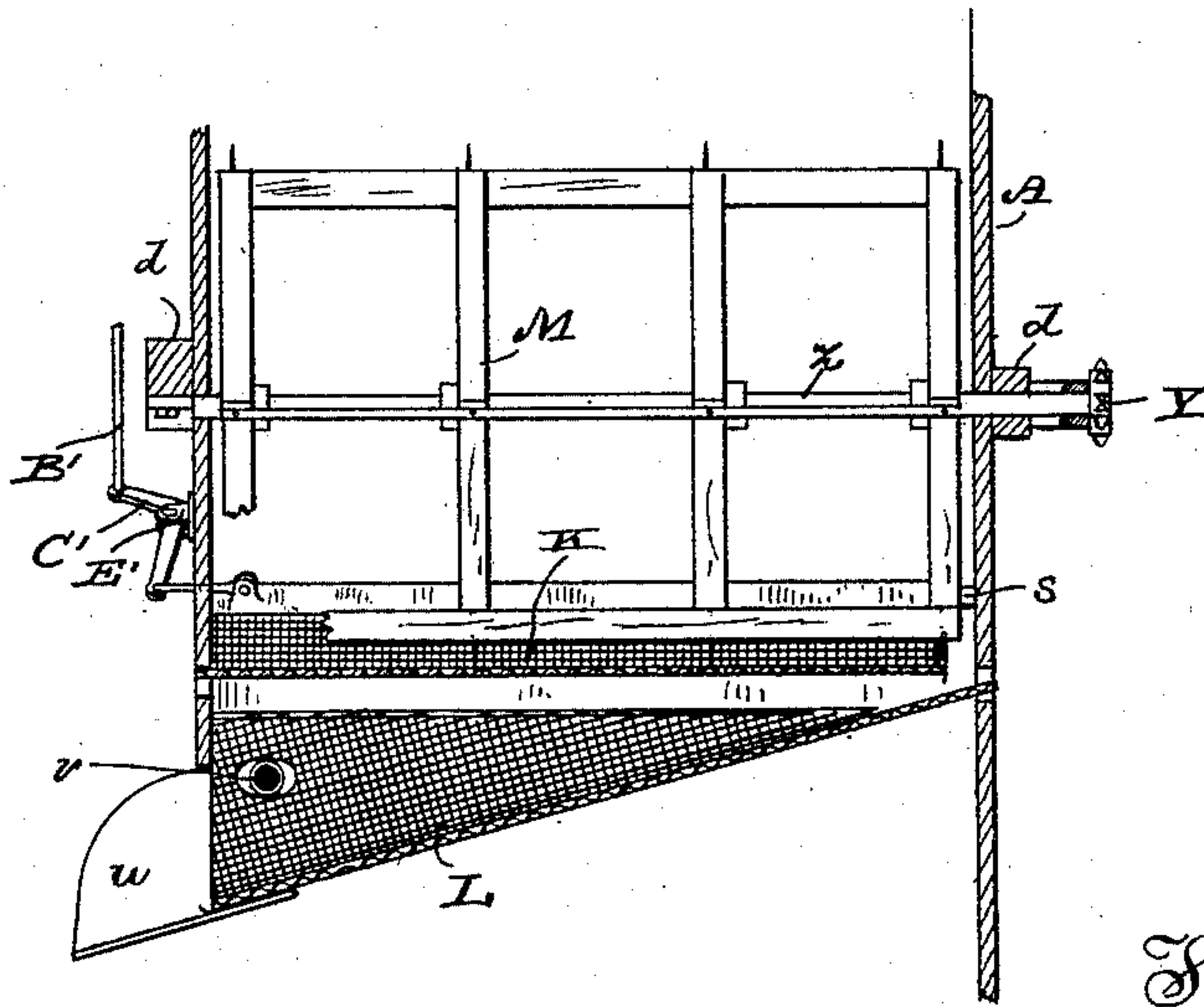


Fig. 4.



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UNITED STATES PATENT OFFICE.

AXEL R. GUSTAFSON, OF ASHLAND, WISCONSIN.

THRASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 417,175, dated December 10, 1889.

Application filed July 15, 1889. Serial No. 317,554. (No model.)

To all whom it may concern:

Be it known that I, AXEL R. GUSTAFSON, of Ashland, in the county of Ashland, and in the State of Wisconsin, have invented certain new and useful Improvements in Thrashing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to thrashing-machines; and it consists in certain peculiarities of construction and combination of parts, to be hereinafter described with reference to the accompanying drawings, and subsequently claimed.

In the drawings, Figure 1 represents a vertical longitudinal section of a thrashing-machine constructed according to my invention; Fig. 2, a side elevation of the same; Fig. 3, a plan view in section on line 3 3, Fig. 1; and Fig. 4, a vertical section on line 4 4, Fig. 1.

Referring by letter to the drawings, A represents the main casing of my machine, having the corner-posts *b* thereof provided with pivoted bars B, the latter being illustrated in Fig. 2 as raised up and rested at their inner ends against pins *c*, that extend laterally from longitudinal braces *d* of said casing. The bars B serve as handles, and when not in use they are turned on their pivots to lie parallel with the corner-posts and out of the way.

Pivotally connected to the rear upper end of the casing A is a feed-trough C, the latter being provided upon its under side with an eye or eyes *e*, for engagement with a hook or hooks *f* on said casing, whereby the feed-trough is supported in position for use; but when not in use this feed-trough may be lowered on its pivot to economize space in the matter of storage or shipment of the machine.

Supported on the casing A, adjacent to the feed-trough C, is a hood D, and extending from the inner edge of this hood down into said casing, and from side to side of the latter, is a deflector E, the lower edge of this deflector being joined to another hood F, as illustrated in Fig. 1.

Arranged in bearings *g* on the casing A is the shaft *h* of a cylinder G, that revolves below the hood D and is provided with a series of angularly-disposed teeth *i*, the shanks of the latter being passed through the cylinder

to engage set-nuts *j*, whereby said teeth are detachably retained in position, access being had to the set-nuts through openings *k* in the cylinder-heads.

The teeth *i* on the cylinder are arranged to pass between teeth *m* on a segmental plate H, supported on guides *n* upon the inner sides of the casing, and provided with a depending arm *o*, that connects with a shackle *p*, screw-threaded to a rod I, the latter having its bearings in the rear end of the casing A, and provided with a hand-wheel *q*, by which it is actuated to adjust the segmental plate on its guides, this adjustment serving to regulate the distance between the cylinder and segmental plate, the latter being arranged eccentric to said cylinder.

Pivotally connected to a transverse rod *r* within the casing A, adjacent to the inner edge of the segmental plate H, are a series of spring-controlled and inclined slats J, that terminate adjacent to a riddle K, loosely supported on transverse guides *s*, above another and finer riddle L, the latter being also loosely supported on transverse guides *t*, and provided with a discharge-spout *u*, as best illustrated in Fig. 4.

Located between the hood F and the riddle K is a beater M, for discharging straw from the machine, said straw being passed out over an inclined board N at the tail of the machine.

Arranged between the inner edges of the riddles K L is a screen O, and passed through a slot in this screen, to terminate adjacent to the upper one of said riddles, is the forward end of a wind-trunk *v*, that leads from the casing P of a fan Q, the latter being shown in Fig. 1.

Supported in bearings *w* on the longitudinal braces *d* of the casing A is the main shaft R of my machine, said shaft being driven by any suitable power. Fast on the main shaft R is a gear-wheel S, that meshes with a pinion T, the latter being fast on a counter-shaft U, arranged in bearings on the top of the casing A, and this shaft carries a sprocket-wheel *w'*, connected by a drive-chain *x* with a similar wheel Y on the shaft *z* of the beater M.

That end of the counter-shaft U opposite the pinion T carries a gear-wheel V, that meshes with a pinion W on the shaft *h* of the

cylinder G, and a sprocket-wheel X on the cylinder-shaft is connected by a drive-chain Y' with a similar wheel Z on the shaft Q' of the fan Q, and the fan-shaft is also connected by sprocket-gear with another counter-shaft Z', that has its bearings on the longitudinal braces *d* of the casing A, and carries a series of cams Z², that impinge against the spring-controlled slats J, above described, the cams being so arranged that said slats are alternately actuated.

In addition to the pinion W and sprocket-wheel X, the cylinder-shaft *h* carries an eccentric A', connected to a bifurcated rod B', and the ends of this rod connect with bell-cranks C' D', pivoted to brackets E' F' on the casing A and linked to the riddles K L, as best illustrated in Fig. 2.

In the operation of my machine material is fed in through the trough C, to be acted upon by the teeth *i m*, respectively, arranged on the cylinder G and segmental plate H, the latter being adjusted to or from said cylinder in accordance with the kind of material to be thrashed. The teeth on the cylinder and segmental plate loosens the grain, and as the material passes down over the slats J this grain is shaken out and discharged onto the riddle K, the straw being discharged by the beater M. The grain that falls on the riddle K passes on to the next riddle L, the chaff being blown off by the blast from the fan Q through the wind-trunk *v*. The riddles K L are vibrated by the movement of the bell-cranks C' D', actuated by the movement of the bifurcated

rod B', connected to the eccentric A' on the cylinder-shaft *h*, and the thrashed and cleaned grain discharges from the spout *u* into any suitable receptacle.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a thrashing-machine, the combination of the toothed cylinder G, the angularly-disposed teeth *i*, detachably connected to the cylinder, the guides *n*, the segmental plate H, arranged on the guides and provided with teeth opposed to those on the cylinder, the arm *o*, depending from said segmental plate, the shackle *p*, connected to said arm, and the screw-threaded rod I, engaging said shackle, substantially as set forth.

2. In a thrashing-machine, the combination of a toothed cylinder, a toothed segmental plate in opposition to the cylinder, a series of cam-actuated inclined slats, the vibratory riddles K L, of different mesh, arranged below the slats, the screen O, arranged between said riddles, the wind-trunk *v*, passed through the screen, the casing P, connected to said wind-trunk, the fan Q, arranged in said casing, and the beater M, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand at Ashland, in the county of Ashland and State of Wisconsin, in the presence of two witnesses.

AXEL R. GUSTAFSON.

Witnesses:

PETER LAMAL,

R. G. RODMAN, Jr.