

(No Model.)

3 Sheets—Sheet 1.

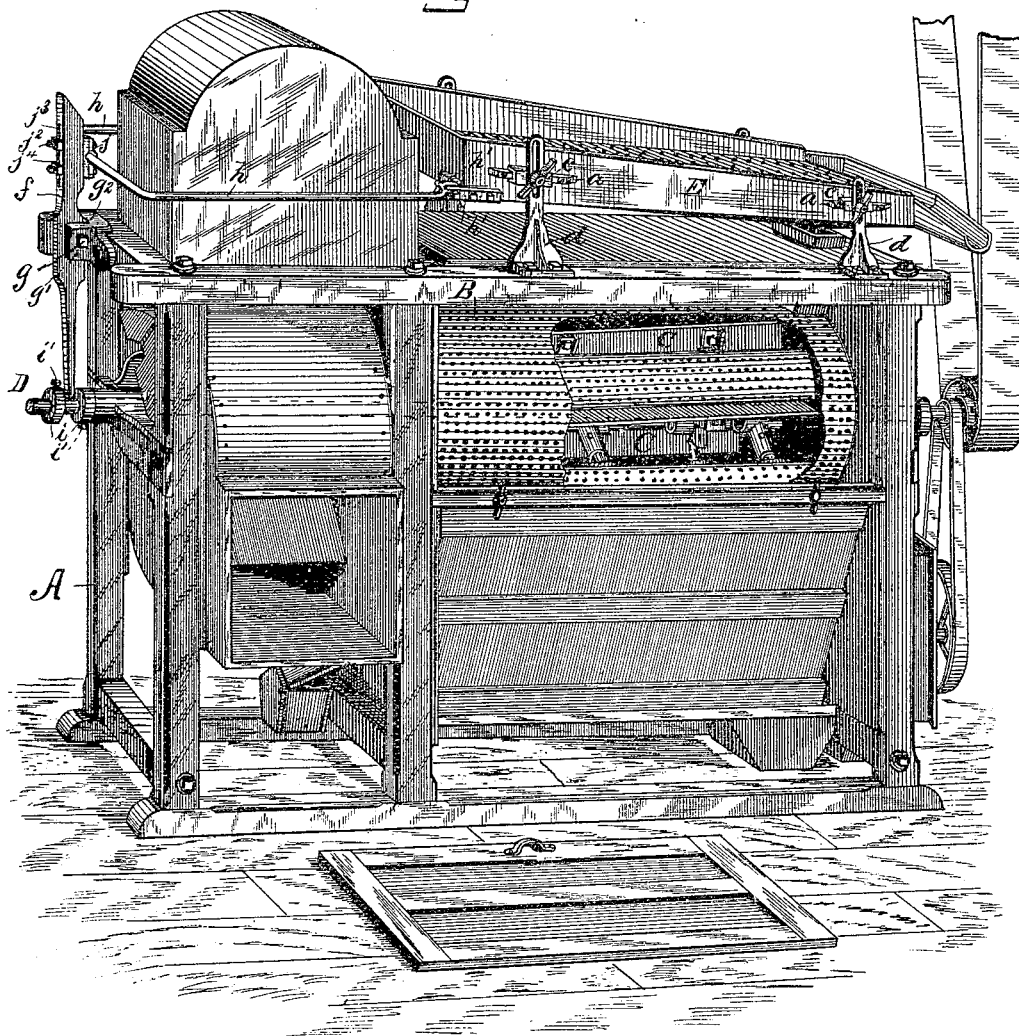
G. A. DAWSON.

GRAIN SEPARATOR.

No. 348,515.

Patented Aug. 31, 1886.

Fig. 1.



Witnesses;

R. F. Brandom.

E. C. Spencer.

Inventor,

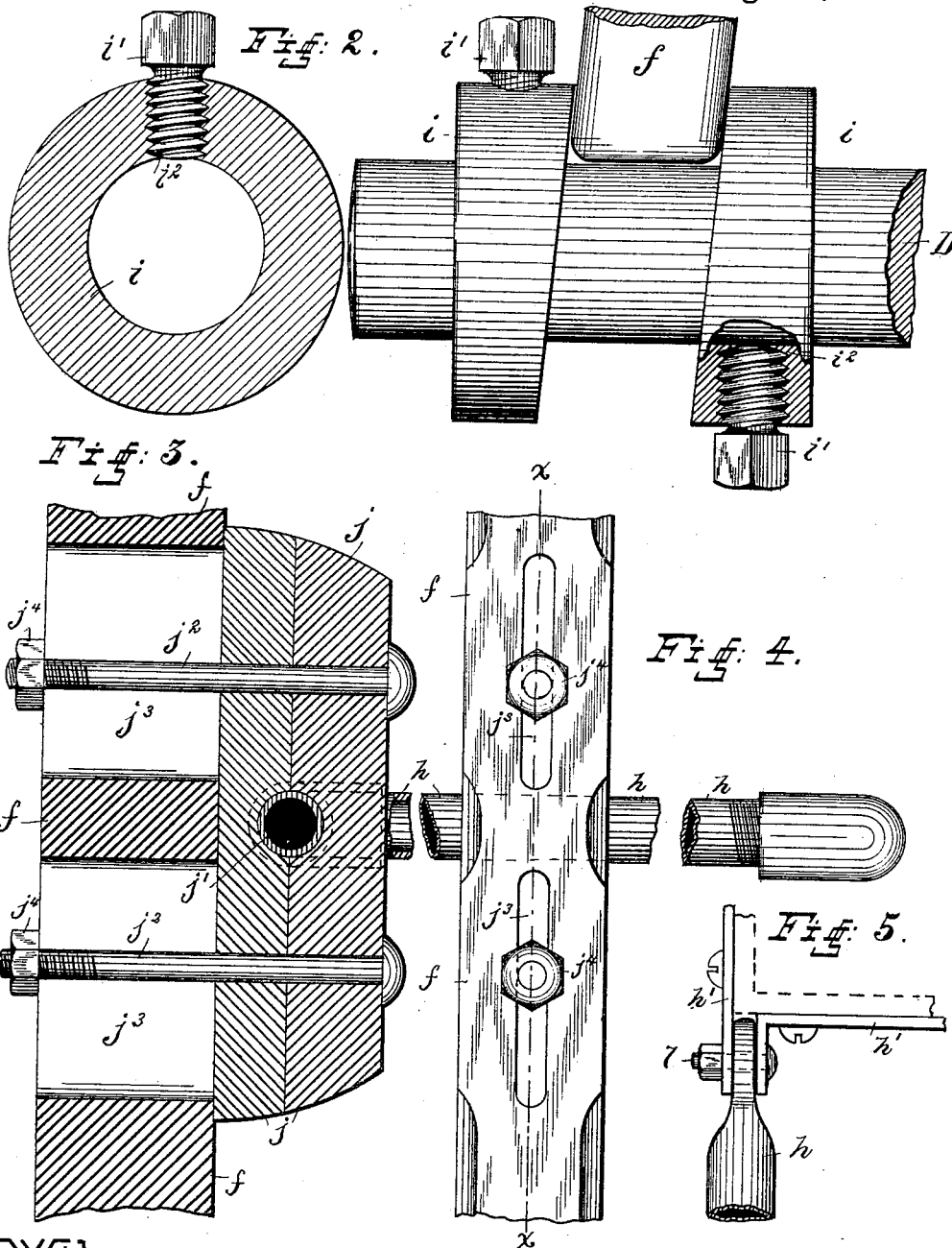
George A. Dawson.  
by V. C. Whitney, Attorney.

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Witnesses;

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(No Model.)

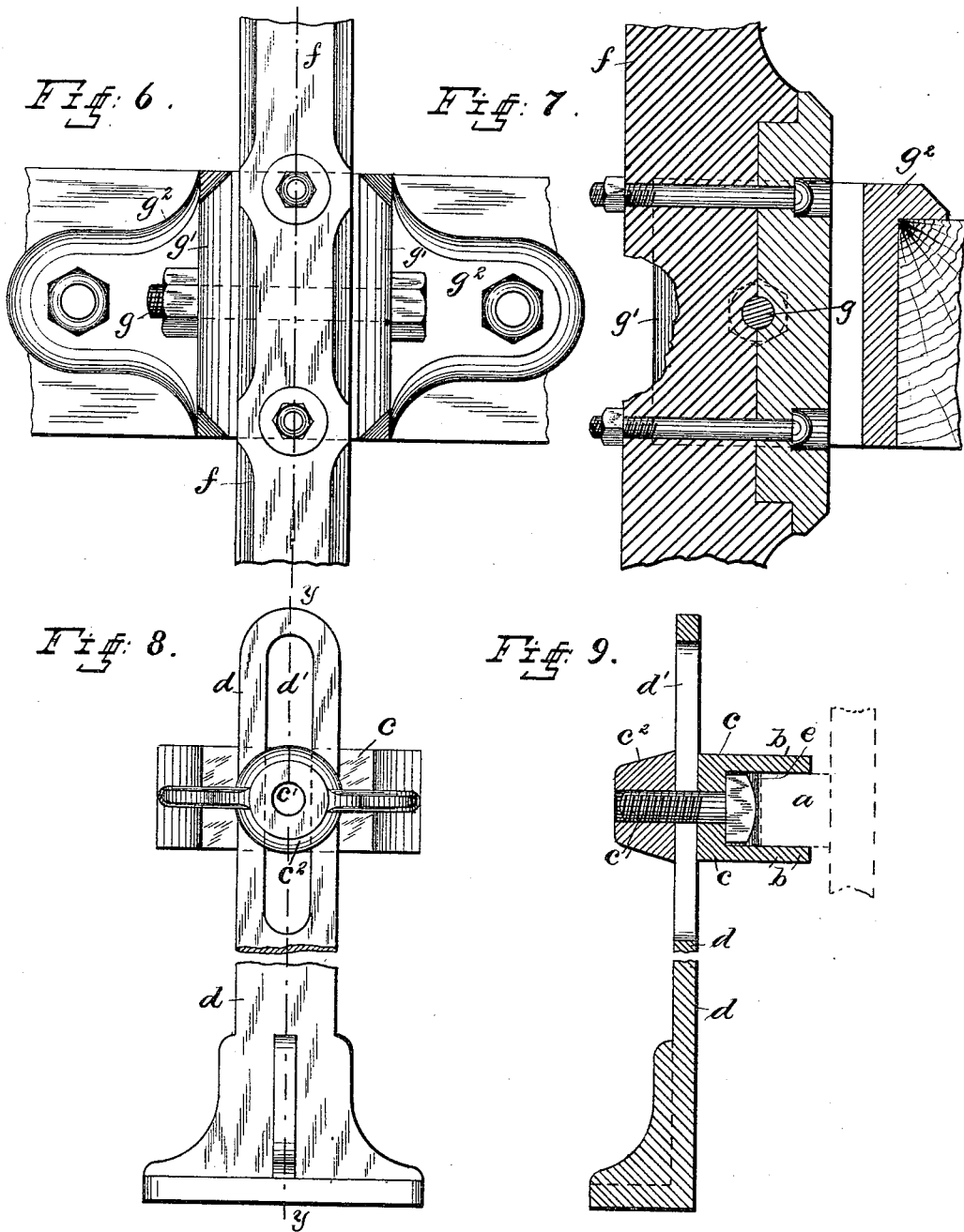
3 Sheets—Sheet 3.

G. A. DAWSON.

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No. 348,515.

Patented Aug. 31, 1886.



Witnesses:

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# UNITED STATES PATENT OFFICE.

GEORGE A. DAWSON, OF CARDINGTON, OHIO.

## GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 348,515, dated August 31, 1886.

Application filed January 5, 1886. Serial No. 187,715. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. DAWSON, of the city of Cardington, county of Morrow and State of Ohio, have invented certain new and useful Improvements in Grain-Separators, of which the following is a specification.

My said invention consists in improved means for mounting and operating the riddles of grain scourers, separators, and other machines with which riddles are used, by the use of which the pitch or inclination of said riddle and its travel or stroke may be regulated to accommodate the requirements of the work being done, as will be hereinafter particularly set forth.

Referring to the accompanying drawings, Figure 1, Sheet 1, represents in perspective a grain-scouring machine with my improved riddle supporting, adjusting, and actuating devices mounted thereon. Fig. 2, Sheet 2, represents enlarged details of the cam-faced collars which operate the riddle-actuating lever, the said figure showing a central longitudinal sectional view of one of the cam-faced collars, and a side elevation of a portion of the main shaft, showing the collars secured upon it. Fig. 3, Sheet 2, is a longitudinal section on dotted line *x x*, Fig. 4, of a portion of the riddle-actuating lever and the journal-box adjustably connected thereto; Fig. 4, Sheet 2, a rear elevation of the same, showing a portion of the rod connecting the lever and riddle; Fig. 5, Sheet 2, a plan view of one end of the connecting-rod, showing a portion of the straps, through the medium of which it is pivoted to the riddle-frame, a corner of the riddle-frame being shown in dotted lines. Figs. 6 and 7, Sheet 3, represent a rear elevation and a sectional view of a portion of the riddle-actuating lever, showing the shoe or bracket, through the medium of which the said lever is pivoted to the frame-work of the grain-scouring machine. Fig. 8, Sheet 3, is a front elevation of the riddle-supporting standard and guiding-shoe adjustably connected therewith; and Fig. 9, Sheet 3, is a central longitudinal section of the same on dotted line *y y*, Fig. 8, a portion of the side of the riddle-frame and its slide being shown in dotted lines.

The frame-work A, cylinder B, scourers C, main shaft D, shoe or riddle E, and all the

parts except the riddle supporting and actuating devices are shown in the drawings as, and will in practice be, of the same general construction and arrangement as the like parts illustrated in Patent No. 313,712.

Secured to the outer faces of the sides of the riddle-frame are oblong slides *a*, there being preferably four slides to the riddle—two to each side, one at or near each end of each side—the said slides being constructed, preferably, of wood and secured by means of screws to the riddle in a plane preferably parallel with its bottom. These slides are engaged by and (as the riddle is reciprocated) slide back and forth between inwardly-projecting flanges *b* of guiding-shoes *c*, each of said shoes being preferably constructed of cast metal and being adjustably secured to a vertical standard, *d*, having an elongated slot, *d'*, in its upper end, by means of a bolt, *e'*, extended through the shoe *c*, into and through the elongated slot *d'*, the said bolt being screw-threaded at its outer end and provided with a thumb-nut, *e''*, by means of which the guiding-shoe is firmly clamped against the inner face of the standard *d*, the said standard being flanged at its lower end and secured by means of bolts to the upper side beams of the frame-work A of the grain-scourer.

As illustrated in the detail, Fig. 9, Sheet 3, each guiding-shoe *c* is channel-shaped, it having a central longitudinal groove or channel, *e*, extending its entire length, the flanges formed by channeling the said shoe extending over and under the slide *a*, the said shoe being perforated horizontally and centrally between its ends to form an opening, through which the bolt *e'* extends, the approach to said opening being of a shape to correspond to the shape of the head of the bolt, and of sufficient depth to permit the head of the bolt to be countersunk below the face of the side wall of the channel-shaped guiding-shoe, the said bolt extending, as before described, through the longitudinal slot *d'* in the vertical standard *d*, and into a screw-threaded opening in a thumb-nut, *e''*, said thumb-nut bearing against the front face of the vertical standard and clamping the shoe and standard together.

By the construction and the arrangement of the riddle supporting and guiding devices, as described, it will be noticed that the riddle

may be given a greater or less pitch or inclination by simply sliding the guiding-shoes *c* up or down upon the supporting-standards *d* and setting or securing the same in adjusted position by means of the thumb-nuts *c'*, the bolts *c'* (being horizontally central between the ends of the shoes) permitting the shoes *c* to be inclined more or less to conform to the inclination of the slides *a* and riddle.

The riddle actuating or reciprocating mechanism is composed of a main lever, *f*, pivoted at *g*, near its center, between ears *g'*, of a shoe, *g''*, secured by bolts to the end beam of the frame-work *A* of the grain scourer, a connecting-rod, *h*, having a pivotal bearing in the upper end of the lever *f*, said rod being preferably U-shaped, as shown in the drawings, and being pivoted at its forward ends by means of straps *h'* to the rear corners of the riddle, and removable collars *i*, having cam-faces secured to the rear end of the main shaft *D*. The lower end of the lever *f*, being extended between the cam-faces of the removable collars *i*, is oscillated thereby during the rotation of the main shaft *D*.

To facilitate the adjustment of the connecting-rod *h* at the end where it connects with the lever *f*, to bring the said rod into the proper position with relation to the movement and inclination of the riddle, and to increase or decrease its throw, I have provided the lever *f*, at its upper end, with a box, *j*, having a bearing, *j'*, for the reception of the rod *h*, the said journal-box being made vertically adjustable upon the lever *f* by means of bolts *j''* extending horizontally through the journal-box and through elongated slots *j'''*, formed longitudinally in the lever *f*, the bolts *j''* being screw-threaded at their ends and provided with set-nuts *j'''*, to bear against the outer face of the lever *f*, to clamp the journal-box tightly against the said lever and hold the same in position.

The connecting-rod *h* is herein shown as constructed of three pieces of gas-pipe, two sides and one end, the end piece being connected to the two side pieces by common L-joints, thus forming, substantially, a U-shaped connecting-rod, the distance between the sides being about the width of the riddle-frame, the end piece being seated near its center in the journal-box, adjustably secured to the lever *f*. The straps, through the medium of which the connecting-rod is pivoted to the riddle, are preferably made of flat bar-iron and of the shape illustrated in Fig. 5, they being bolted at one end to the sides and end of the riddle-frame at its corners, and being pivoted at their opposite ends to the ends of the connecting-rod *h* by means of bolts *l*.

The collars *i*, between the faces of which the lower end of the lever *f* extends, as before

stated, are adjustably secured to the shaft *D* by means of bolts *i'*, extending through screw-threaded holes *i''* in said collars, and bearing at their ends against the said shaft, the inner faces of the said collars being more or less undulated and forming, substantially, a cam-groove, through the medium of which the lever is oscillated or vibrated upon its axis during the revolution of the shaft *D*, to impart a reciprocating motion to the riddle.

By constructing the riddle-operating rod *h* of gas-pipe sections, as before described, I am enabled to secure the maximum strength with the minimum amount of material and weight. I do not, however, desire to limit myself to this special construction—as, for instance, the rod might be constructed from one piece, either of gas-pipe or round iron, and be bent to the desired shape or to the shape illustrated in Fig. 1, Sheet 1.

The lever *f* will preferably be constructed of wood, and may, if desired, be provided at its lower end with a metallic cap, plates, or friction-rollers to bear against the operating-faces of the collars *i*.

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

1. The combination of the riddle *E*, mounted between the standards *d*, said standards *d*, the guiding-shoes *c*, adjustably secured to said standards, and the slides *a* on the sides of said riddle, substantially as set forth.

2. The combination of the riddle *E*, its supports, means whereby it is rendered vertically adjustable therein, the operating-shaft *D*, the cam-rings thereon, the lever *f*, engaging said cam-rings at its lower end, and the rod *h*, connecting the top of said lever and said riddle, all substantially as set forth.

3. The combination of the riddle *E*, the slides *a*, secured to its sides, the vertically-slotted standards *d*, the guiding-shoes *c*, the bolt *c'*, and nut *c''*, the shaft *D*, lever *f*, and connecting-rod *h*, for operating said riddle, all substantially as set forth.

4. The combination of the lever *f*, connecting-rod *h*, shaft *D*, riddle *E*, and box *j*, adjustably mounted on said lever, one end of said connecting-rod being mounted in said box, and the other being connected with said riddle, substantially as described, and for the purposes specified.

In witness whereof I have hereunto set my hand and seal at Springfield, Ohio.

GEORGE A. DAWSON. [L. S.]

In presence of—

ORVILLE WATSON,  
FRED A. BAYER.