

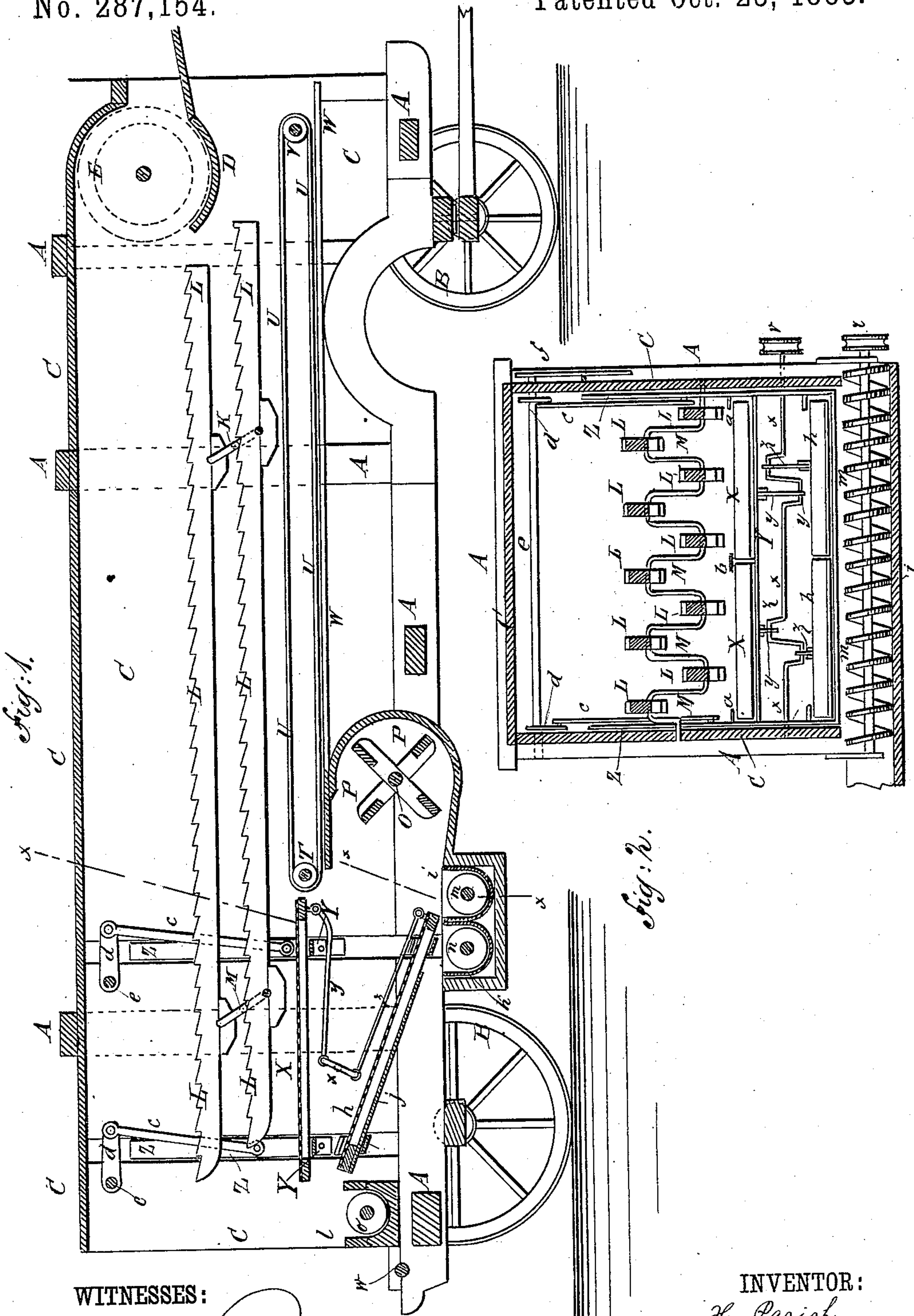
(No Model.)

2 Sheets—Sheet 1.

H. PARISH.
GRAIN SEPARATOR AND CLEANER.

No. 287,154.

Patented Oct. 23, 1883.



WITNESSES:

Cas. Nida
B. G. Underwood

INVENTOR:

H. Parish

BY

Munn & Co

ATTORNEYS.

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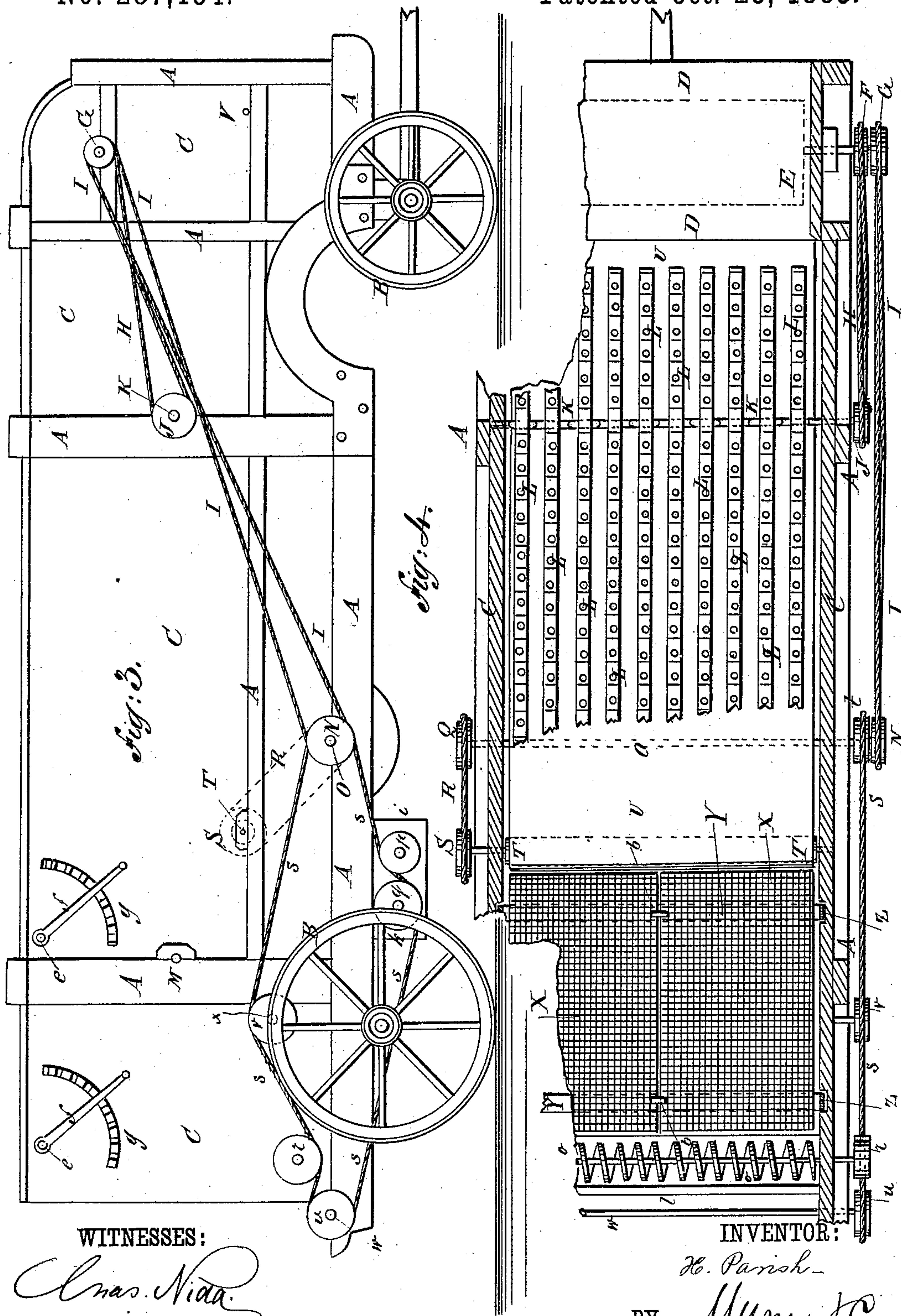
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UNITED STATES PATENT OFFICE.

HEBER PARISH, OF BURLINGTON, IOWA.

GRAIN SEPARATOR AND CLEANER.

SPECIFICATION forming part of Letters Patent No. 287,154, dated October 23, 1883.

Application filed August 6, 1883. (No model.)

To all whom it may concern:

Be it known that I, HEBER PARISH, of Burlington, in the county of Des Moines and State of Iowa, have invented a new and useful Improvement in Grain Separators and Cleaners, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1, Sheet 1, is a sectional side elevation of a machine containing my improvement. Fig. 2, Sheet 1, is a sectional end elevation of the same, taken through the broken line *xx*, Fig. 1. Fig. 3, Sheet 2, is a side elevation of the same. Fig. 4, Sheet 2, is a sectional plan view of the same, parts being broken away.

The object of the invention is to provide means whereby the two-part sieve and screen, (of a separator and cleaner,) which balance each other, may be simultaneously shaken, and whereby the sieve may be supported and adjusted, as hereinafter described and claimed.

A represents the frame of the machine, which is designed to be mounted upon wheels B in the ordinary manner. The machine is inclosed at the sides and top by a casing, C, attached to the frame A.

In the forward upward part of the machine is placed the thrashing-concave D, above which is placed an ordinary thrashing-cylinder, E, as indicated in dotted lines in Figs. 1 and 4. The journals of the cylinder E revolve in bearings attached to the frame A, and to one of the said journals is attached a pulley to receive the driving-belt, which pulley and belt are not shown in the drawings, as there is nothing new in their construction. To the other journal of the thrashing-cylinder E are attached two pulleys, F G, around which pass two belts, H I. The belt H is crossed and passes around a pulley, J, attached to the end of the shaft K, which is journaled in bearings attached to the frame A.

Upon the shaft K are formed two sets of cranks, projecting in opposite directions and alternating with each other, and upon which are pivoted the forward parts of two sets of separating-bars, L. The rear parts of the separating-bars L are pivoted to corresponding

cranks formed upon the shaft M, the journals of which revolve in bearings attached to the rear part of the frame A, and which is revolved by the movements of the bars L, caused by the revolution of the crank-shaft K. With this construction, as the crank-shaft K is revolved the bars L of the two sets will successively move upward, rearward, downward, and forward, the bars of each set raising the straw, carrying it forward, and lowering it to the other set, separating the grain from it and carrying the straw toward the rear end of the machine. The bars L have ratchet-teeth formed upon their upper sides, to cause them to take a better hold upon the straw, and have openings formed through them, to facilitate the escape of the grain as it is separated from the straw.

The belt I is crossed, and passes around a pulley, N, attached to the end of the shaft O of the fan-blower P, by which a blast of air is forced against the grain as it falls from the endless apron and passes down the sieve, hereinafter described. To the other end of the fan-shaft O is attached a pulley, Q, around which passes a belt, R. The belt R also passes around a pulley, S, attached to the journal of the roller T, pivoted in bearings attached to the frame A, and around which passes the endless apron U. The endless apron U also passes around a roller, V, pivoted to the frame A, beneath the concave D, and is made of such a length that the grain received from the separating-bars L will be discharged from its rear end upon the lower part of the sieve, hereinafter described.

To the casing C, beneath the endless apron U, is attached a close bottom, W, to receive any grain that may fall from the edges of the said endless apron. The sieve X is made in two parts or halves, which are placed side by side and rest and slide upon cross-bars Y, attached at their ends to the lower parts of upright bars Z, sliding in vertical grooves in the side casings, C. The parts of the sieves X are kept in place at their outer edges by lugs *a*, Fig. 2, attached to the upright bars Z, and at their inner edges by T-lugs *b*, attached to the centers of the cross-bars Y, as shown in Fig. 2.

To the upright bars Z are pivoted the lower ends of the connecting-bars *c*, the upper ends

of which are pivoted to the ends of crank-arms *d*, attached to the rods *e*. The rods *e* extend across the machine, and rock in bearings in the upper parts of the side casings, C.

5 To one or both ends of the rock-rods *e* are attached crank-arms *f*, which move along curved catch-bars *g*, attached to the casing C, so as to hold the said crank, and with it the upright bars Z and sieve X, securely in any
10 position into which they may be adjusted, so that any desired inclination can be given to the said sieve X.

Beneath the sieve X is placed the screen *h*, which is also made in two parts or halves, and
15 of such a fineness of mesh as to prevent the kernels of grain from passing through it, while allowing small seeds to pass through freely. The sieve X and screen *h* are made of such a length that the grain that drops from their
20 lower ends will fall into the forward trough, *i*. To the lower side of the frame of the screen *h* is attached a screen-board, *j*, which is made of such a length that the small seeds that drop from its lower end will fall into the trough *k*,
25 placed at the rear side of the trough *i*. The tailings that fall from the rear end of the sieve X and from the rear ends of the separating-bars L are received in a trough, *l*, placed at the
30 rear end of the machine, and which is designed to discharge the said tailings into the well of an elevator, to be carried up by the said elevator and discharged into the thrasher, to again pass through the machine. The grain and the small
35 seeds are discharged from the troughs *i k l* into separate receivers, from which they can be removed when desired.

The contents of the troughs *i k l* are discharged from the said troughs by spiral screws *m n o*, pivoted to bearings attached to the said
40 troughs or to the frame of the machine.

To the journals of the feed-screws *m n o* are attached pulleys *p q r*, which are driven by the belt *s*. The belt *s* passes around a pulley, *t*,
45 attached to the shaft O of the fan-blower P, over the pulley *p*, under the pulley *q*, around the

pulley *u*, under the pulley *r*, and over the pulley *v*. The pulley *u* is attached to the end of a shaft, *w*, which revolves in bearings attached to the lower rear part of the frame A. The shaft
50 *w* is designed to give motion to the carrier of a straw-stacker, and may also be used to give motion to the carrier of the tailings-elevator. The pulley *v* is attached to a journal of a shaft, *x*, which revolves in bearings attached to the
55 frame A, and upon which are formed two double cranks.

To opposite parts of the cranks of the shaft *x* are pivoted the rear ends of two connecting-
60 rods, *y*, the forward ends of which are pivoted or attached to the center of the forward ends of the frames of the parts or halves of the sieve X. To the other opposite parts of the said
65 cranks are pivoted the rear ends of the connecting-rods *z*, the forward ends of which are pivoted to the centers of the forward ends of the parts or halves of the screen *h*, so that the
70 parts of the sieve X and screen *h* will be vibrated by the revolution of the crank-shaft *x* and will balance each other, so as to work with very little jar.

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

1. The combination, with a two-part sieve, X, and a two-part screen, *h*, of the double-
75 cranked shaft *x*, the two rods *y y*, and the two rods *z*, whereby the shaft *x* will simultaneously shake the two-part sieve and screen, which balance each other, as described.

2. In a grain separator and cleaner, the combination, with the casing C and the sieve X, of
80 the cross-bars Y, the upright sliding bars Z, the connecting-bars *c*, and the rock-rods *e*, having arms *d* and *f*, and catch-bars *g*, substantially as herein shown and described, whereby
85 the said sieve can be readily adjusted and will be firmly supported, as set forth.

HEBER PARISH.

Witnesses:

CHARLES HOOD,

MARION J. HADDIX.