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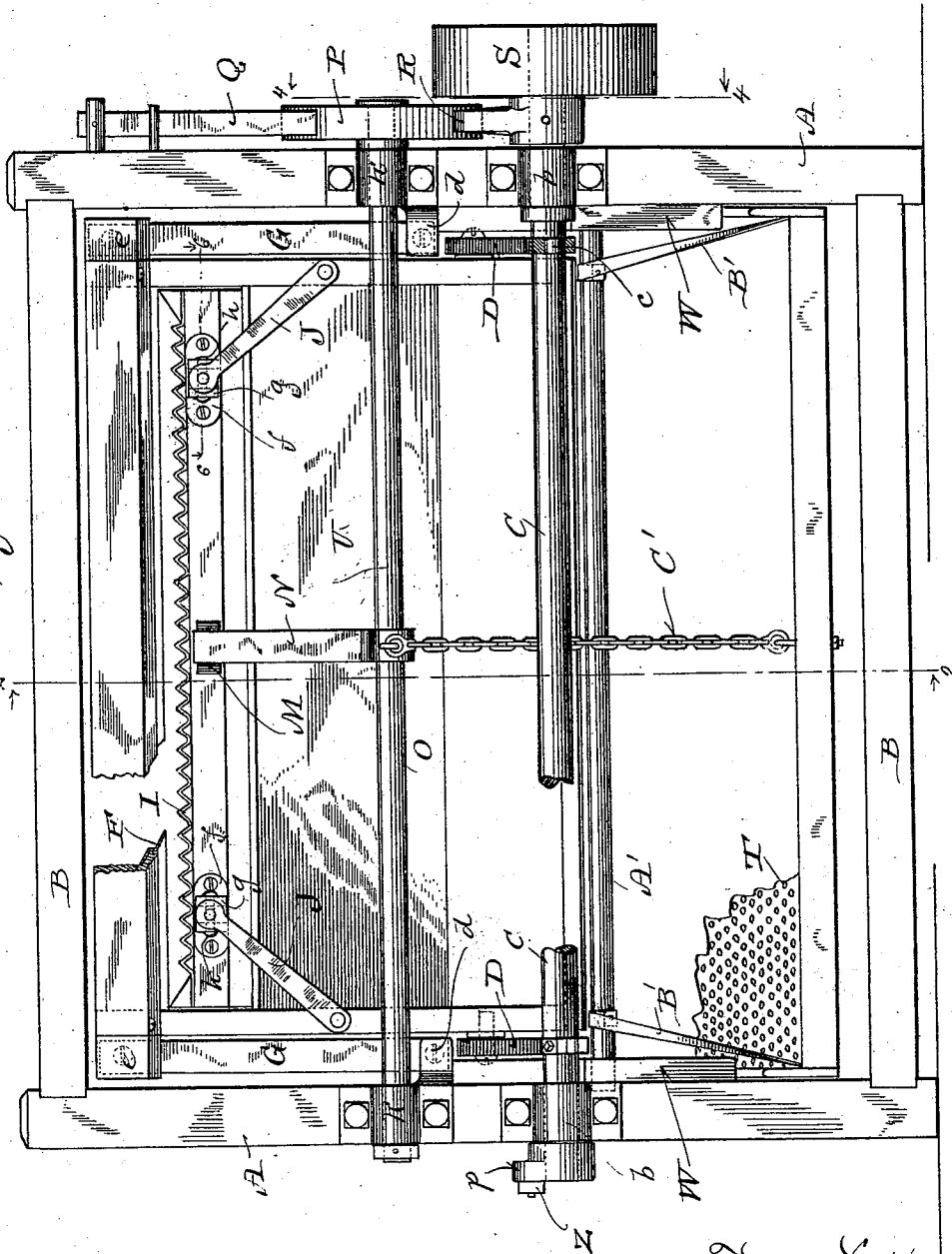
3 Sheets—Sheet 1.

J. BENESH.
FLAX SEPARATOR.

No. 514.899.

Patented Feb. 20, 1894.

Fig. 1.



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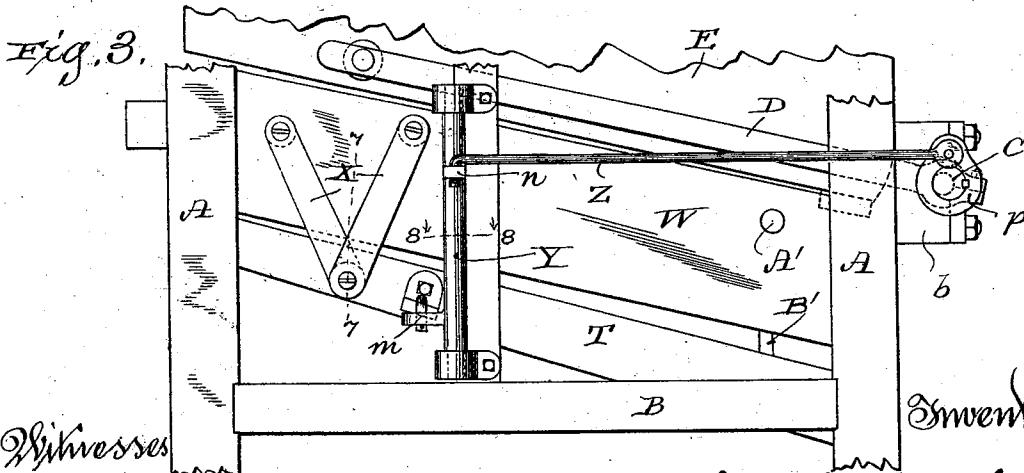
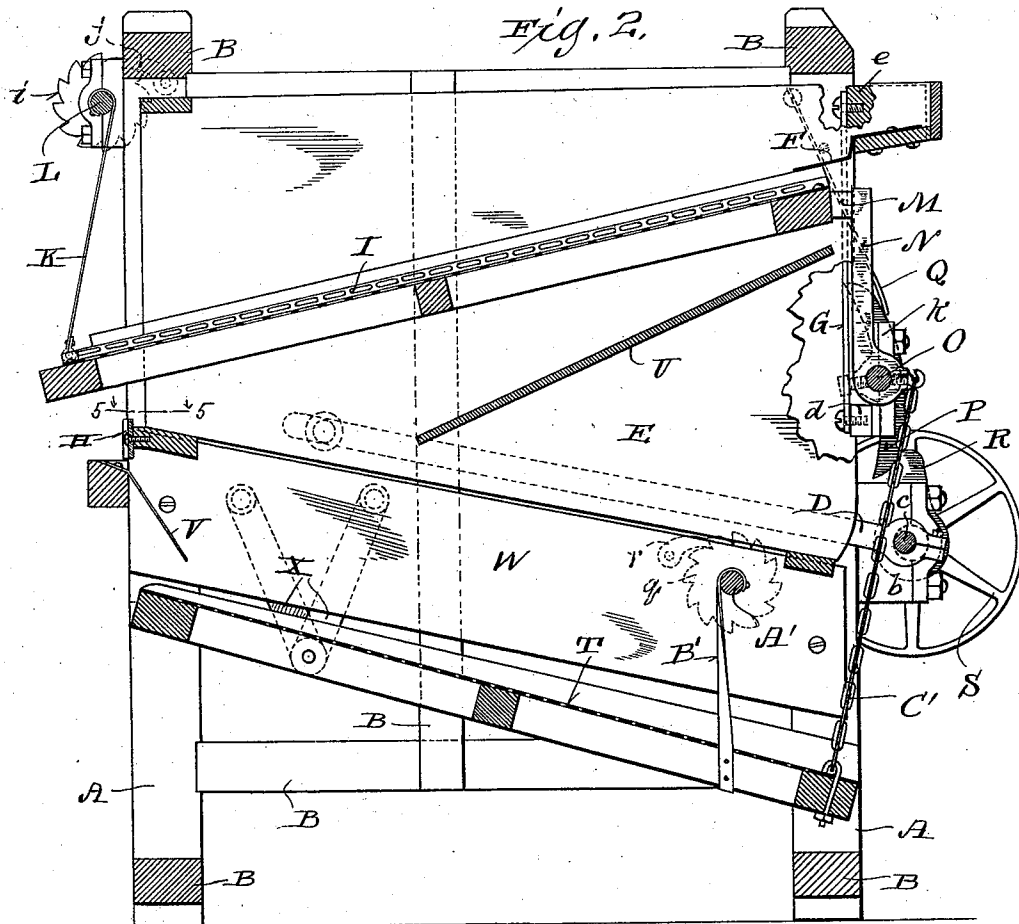
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FLAX SEPARATOR.

No. 514,899.

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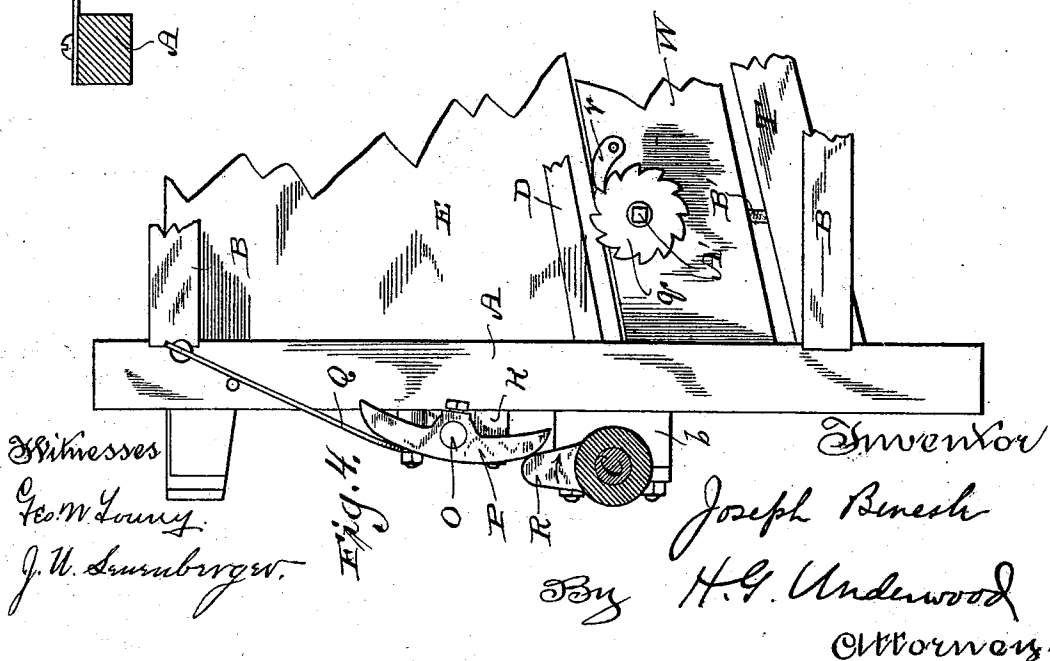
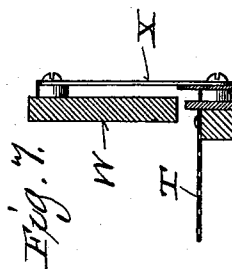
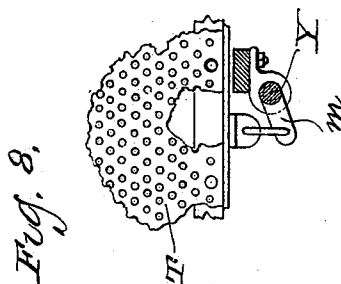
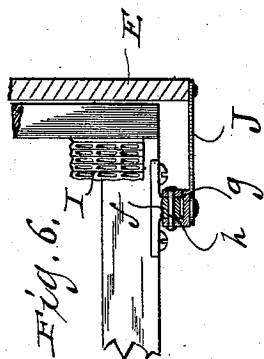
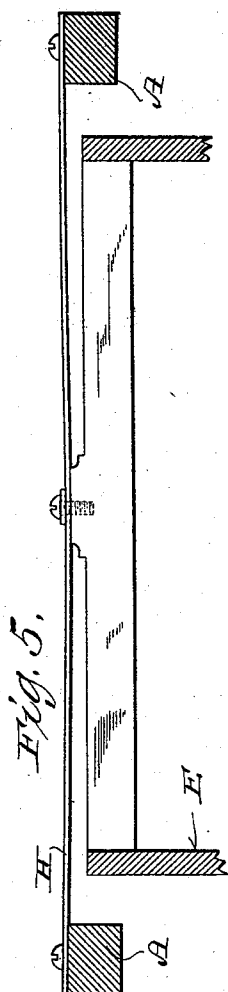
(No Model.)

3 Sheets—Sheet 3.

J. BENESH.
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No. 514,899.

Patented Feb. 20, 1894.



UNITED STATES PATENT OFFICE.

JOSEPH BENESH, OF RACINE, WISCONSIN.

FLAX-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 514,899, dated February 20, 1894.

Application filed May 27, 1893. Serial No. 475,740. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BENESH, a citizen of the United States, and a resident of Racine, in the county of Racine, and in the State of Wisconsin, have invented certain new and useful Improvements in Flax-Separators; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a simple, economical separator for cleaning flaxseed and in which various necessary adjustments may be effected from time to time without stopping the machine.

The said invention therefore consists in certain peculiarities of construction and combination of parts hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings: Figure 1 represents a rear elevation of my improved separator having parts thereof broken away to facilitate illustration; Fig. 2, a section taken on line 2—2 of the preceding figure; Fig. 3, a detail elevation illustrating the mechanism for vibrating a lower screen that constitutes part of my machine; Fig. 4, a similar view partly in section on line 4—4 of Fig. 1; Fig. 5, a detail horizontal section on line 5—5 of Fig. 2; Fig. 6, a detail plan view partly in horizontal section illustrating a portion of the supporting mechanism for one end of an upper screen that constitutes another part of said machine, and Figs. 7 and 8 detail sectional views respectively taken on lines 7—7 and 8—8 of Fig. 3.

Referring by letter to the drawings A represents a series of corner-posts, and B a series of braces joined to the posts in any suitable manner to form the skeleton frame of my machine.

Arranged in bearings *b* on the corner-posts at one end of the machine is a drive-shaft C reduced at intervals of its length in such a manner as to form eccentrics *c* that work in pitmen D, the latter being pivotally connected to a shoe E that is provided with a feed-trough F extended beyond the frame of said machine, as best illustrated in Fig. 2.

Vertical spring-plates G connect ears *d* of the frame with other ears *e* that extend laterally from the feed-trough of the shoe E and

the lower portion of this shoe farthest from the feed-end is centrally connected to a horizontal spring-plate H that is fast at its ends to corner posts of said frame, as best illustrated by the detail view Fig. 5. The spring-plates herein specified constitute the sole means of support for the shoe E, and loose in this shoe is a screen I having its perforated portion preferably corrugated and the perforations of greater length than width. The feed-end of the screen I has lugs *f* joined to recess blocks *g* by means of pivot pins *h* to thereby form hinges, and by means of diagonally disposed spring plates J the blocks are connected to the side walls of the aforesaid shoe.

That end of the screen I farthest from the feed has flexible connections K with a shaft L arranged in bearings on the machine-frame and this shaft is provided with a ratchet *i* for engagement with a detent *j* on said machine-frame. By this construction and arrangement of parts the screen may be adjusted and held at various angles, the adjustment being effected without stopping the machine, inasmuch as said screen is loose in the shoe.

Centrally arranged on the feed end of the screen I is an elastic buffer M for a knocker-arm N that is fast on a rod O arranged in bearings *k* on the machine-frame counter to the drive-shaft C, and rigidly connected to one end of the rod is a cam P controlled by a flat-spring Q under tension on the machine-frame. The cam P is in the path of a wiper R fast on the drive shaft C, and adjacent to the wiper a belt-pulley S is also made fast to the shaft.

From the foregoing it will be seen that the screen I has a reciprocation with the shoe E and also an independent reciprocation because of the knocker-and-spring mechanism specifically defined, this result being of material importance to the successful operation of my machine. In practice mustard seed and various other impurities mixed with flaxseed will run down the screen I and roll off at its lowest end while the latter seed will fall through the perforations of said screen onto another screen T arranged beneath the shoe E and having circular perforations as well as an inclination in a direction opposite

to the former screen, it being preferable to employ an inclined guide U in said shoe, this guide having also the function of a wind-board to deflect the air-current in case a blast is used in connection with the separator. Any of the flaxseed that may pass through the lowest portion of the screen I is guided to the other screen T by a deflector V that depends from a cross-piece of the machine-frame, and in practice all of the flaxseed deposited on the lower screen passes off at the lowest end of the same free from other seed of a round character, these round seeds finding their way through the circular perforations in said lower screen. In case a blast is employed, dust, chaff and light impurities will be blown away coincident with the separation of the seed, but this operation may be performed when necessary by a separate machine.

The higher portion of the lower screen is shown suspended from side-boards W of the machine-frame by spring-plates X arranged in pairs to diverge from pivotal points of attachment to said screen, and the latter is given a lateral vibration by means of a vertical rock-shaft Y having a crank connection *m* therewith and a similar connection *n* with a pitman Z joined to an eccentric *p* on the drive-shaft.

The lower portion of the lower screen has flexible connections B' with a shaft A' loose in the side-boards W of the machine-frame and this shaft is provided with a ratchet *q* for engagement with a detent *r* pivoted to an adjacent one of side-boards. By this construction and arrangement of parts the inclination of the lower screen may be varied at will without stopping the machine.

Another adjustable flexible device C' connects the lower portion of the lower screen T' with the knocker-arm N and in consequence of this connection there is a rocking motion of said lower screen on its pivots coincident with the operation of said knocker-arm, this rocking motion being simultaneous with the vibration above specified and greatly facilitating the separation of the flaxseed.

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

1. In a separator, the combination of a

spring-hung shoe, blocks having spring-connection with the feed-end of the shoe, a loose screen hinged at one end to the blocks, suitable supports for the other end of the screen, suitable means for imparting a reciprocative motion to the shoe, and a knocker for the screen, substantially as set forth.

2. In a separator, the combination of a spring-hung shoe, blocks having spring-connections with the feed-end of the shoe, a loose screen hinged at one end to the blocks, suitable supports for the other end of the screen, a rock-shaft provided with a knocker-arm for contact with the hinged end of said screen, a spring-controlled cam fast on the shaft, a drive-shaft provided with a wiper for the cam, and pitmen that are pivoted to said shoe and eccentrically connected to the drive-shaft, substantially as set forth.

3. In a separator, the combination of a spring-hung shoe, blocks having spring-connections with the feed-end of the shoe, a loose screen hinged at one end to the blocks, adjustable supports for the other end of the screen, a rock-shaft provided with a knocker-arm for contact with the hinged end of said screen, a spring-controlled cam fast on the shaft, a drive-shaft provided with a wiper for the cam, and pitmen that are pivoted to said shoe and eccentrically connected to the drive-shaft, substantially as set forth.

4. In a separator, the combination of a loosely hung shoe, a screen loosely supported therein, a rock-shaft provided with a knocker-arm for contact with the screen, a cam fast on the rock-shaft, a drive-shaft provided with a wiper for the cam, pitmen connecting the drive-shaft and shoe, another loosely hung screen below the first, a suitable shaking mechanism connecting said drive-shaft and lower screen, and a flexible device connecting the knocker-arm and said lower screen, substantially as set forth.

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

JOSEPH BENESH.

Witnesses:

FRANK STEGNER,
ALBERT KLEMA.