(No Model.)

W. C. BUCHANAN.

SEPARATOR AND CLEANER FOR THRASHING MACHINES.

No. 278,502. Patented May 29, 1883.

Fig. 1.

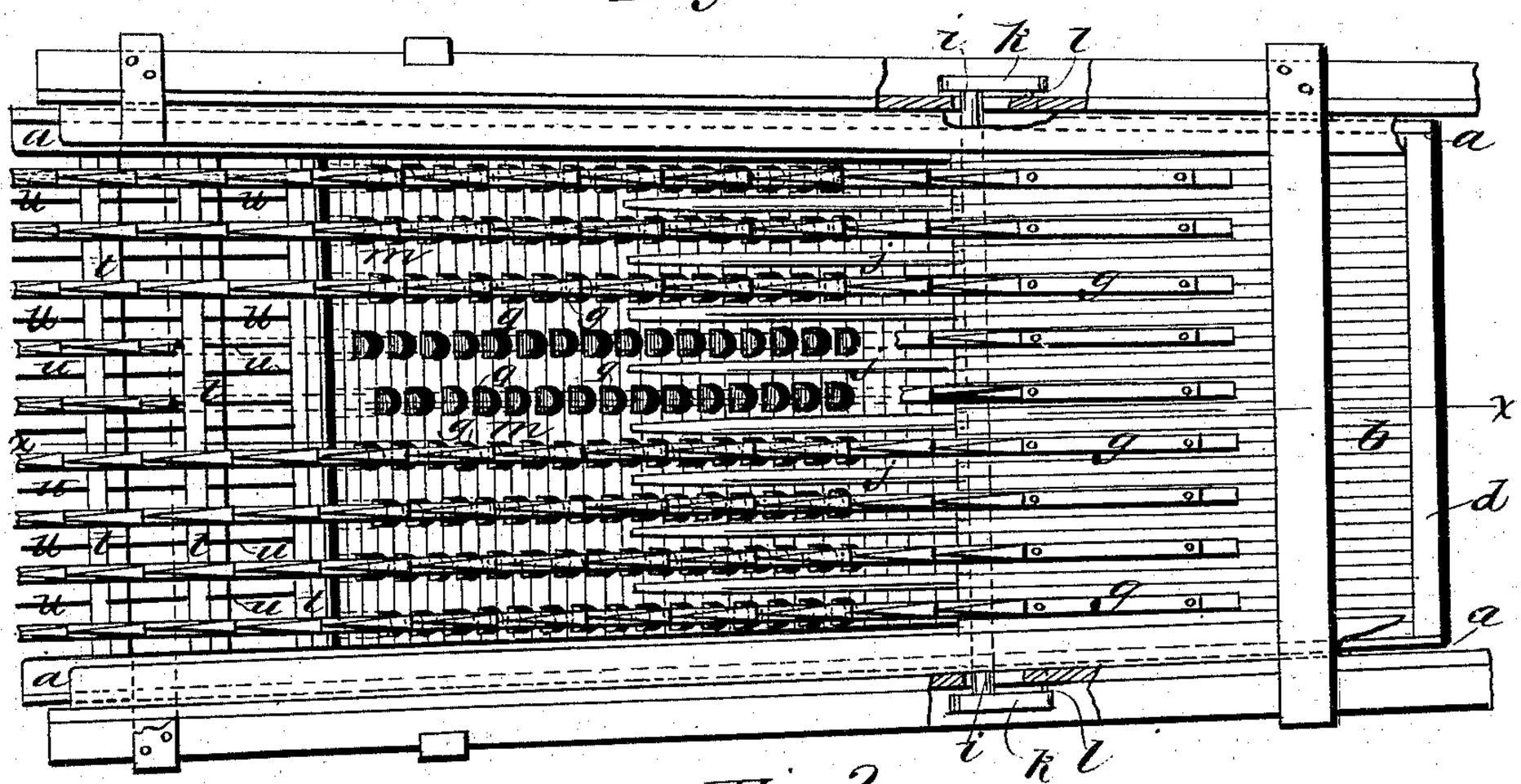


Fig. 2.

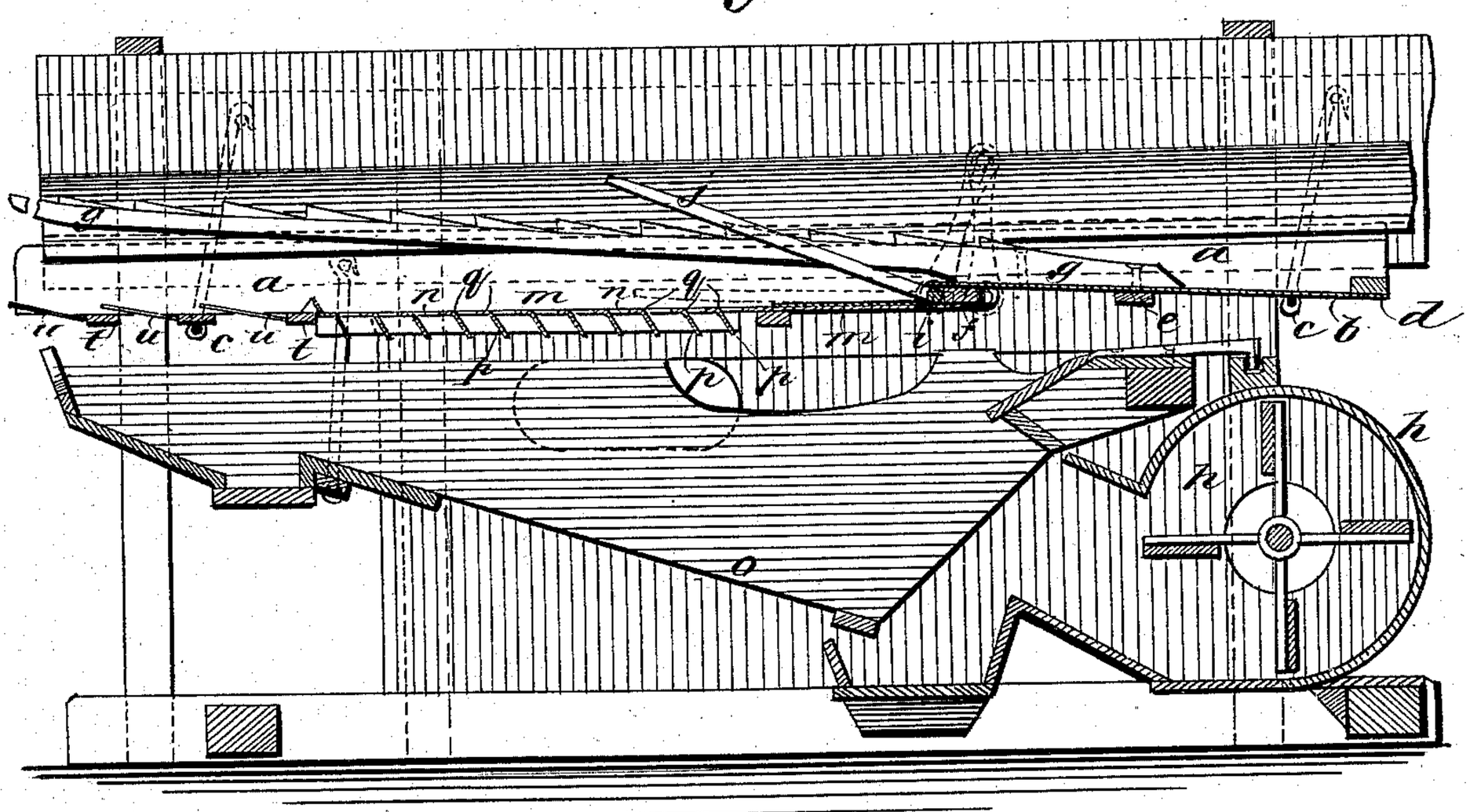
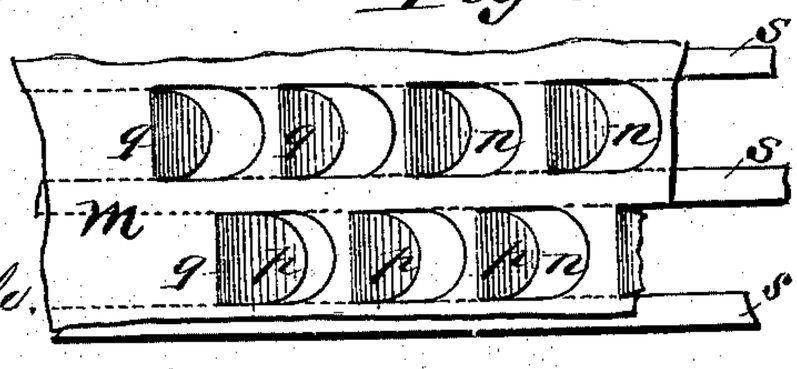


Fig. 3



WITNESSES:

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C. Sedgwick

INVENTOR:

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UNITED STATES PATENT OFFICE.

WILLIAM C. BUCHANAN, OF BELLEVILLE, ILLINOIS, ASSIGNOR TO THE HARRISON MACHINE WORKS, OF SAME PLACE.

SEPARATOR AND CLEANER FOR THRASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 278,502, dated May 29, 1883.

Application filed February 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. BUCHANAN, of Belleville, in the county of St. Clair and State of Illinois, have invented a new and Improved Separator and Cleaner for Thrashing-Machines, of which the following is a full, clear, and exact description.

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

Figure 1 is a plan view of the vibrating separator of the thrasher, including the winnower and shoe, with some of the parts in section. Fig. 2 is a longitudinal sectional elevation of Fig. 1 on the line *x x*, and Fig. 3 is a detail of the punched-lip section of the separator in plan view.

At the front end of the vibrating pan of the separator, of which *a* represents the sides, and along a suitable portion of the length of said pan, I employ a solid or imperforate sheet-metal section, *b*, of the bottom of the pan, on which the straw, chaff, and grain are to be received from the thrasher, to be passed along the pan, which is made to vibrate forward and backward by swinging on the hangers *c*, as usual in such machines, for causing the straw and other matters to pass along it, said section of sheet metal *b* being suitably strengthened by transverse re-enforcing bars *d*, *e*, and *f* for enabling it to support the long notched fingers *g*, which are attached to it and extend to the rear end of the pan, said fingers being elevated sufficiently above the rest of the pan to hold up the straw, so as to afford more efficient action of the wind blast from the fan *h* to carry off the chaff, short straws, and other matters falling through the main body of the straw on the notched fingers. Said notched fingers also facilitate the passage of the straw along the pan by means of these notches, which are located in the upper side of the fingers and suitably arranged for pushing the straw along the pan. Under the rear end of this sheet-metal section *b*, I have arranged a rock-shaft or rake-head, *i*, having a series of fingers, *j*, extending along the pan, and arranged to play up and down between the notched fingers *g* to beat the straw and separate the grain, the motion being caused by the movement of the rock-shaft with the pan while being connected at each end by an arm, *k*, with a stud-pin, *l*, projecting from the side of the case. From section *b* the grain passes onto the upper end of the punched-lip section *m*, which is also in this case imperforate for a short space, but may be punched up to the end of section *b*, if desired.

The punched-lip device consists of the perforations *n*, through which the grain is to pass to the riddle *o* below, made by only partly punching out the metal and bending it down and forming lips *p*, which incline toward the fan to catch the wind and cause it to pass up through the perforations to carry off the chaff, while allowing the grain to fall through, which is a contrivance peculiarly adapted for the reciprocating separator, along which the straw and chaff pass above, so as to glide over the angles *q* at the rear of the perforations, where the metal forming the lips bends down and forms smooth inclines, over which the chaff and other light matters will pass without lodging, as it does against the edges of perforations out of which the metal is wholly punched, or against the wires of woven separators. The perforations may be curved or square at the ends from which the lips are cut, as preferred. To prevent the chaff that may pass through the perforations from lodging between the rows of lips below by catching on the corners and crowding between the lips of the different rows, also to fill up the spaces, so that they will not form channels along which the air may escape without being deflected by the lips up through the perforations, I fill in the spaces with wooden strips *s*, which also serve to re-enforce and stiffen the plate, which is weakened by the perforations. I have in this example represented the punched-lip separator section as terminating short of the end of the pan, the rest of which, so far as the separating portion or bottom is concerned, consisting of the "wire throats" made of cross-bars *t* and wire fingers *u*, the bars extending from side to side *a*, and connected to them to support the fingers, and

the fingers being pitched on a slight ascent and projecting slightly over the next bar behind to carry off the chaff and straw, which I propose to employ in some cases, together with the punched-lip device; but I will, when preferred, dispense with them and extend the punched-lip separator to the end of the pan.

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

The combination of the vibrating frame *a*, the transverse re-enforcing pieces *d e f*, the plate *b*, the plate *m*, formed with the longitudinally-bent tongues, the longitudinal re-enforcing bars *s s* arranged between the tongues, and the fan, substantially as and for the purpose set forth.

WILLIAM C. BUCHANAN.

Witnesses:
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