Sheet 1, 2 Sheets.

L. Wilcox.

Grain Separator.

No. 21,227. Patented Aug. 17, 1858.

Fig: 1

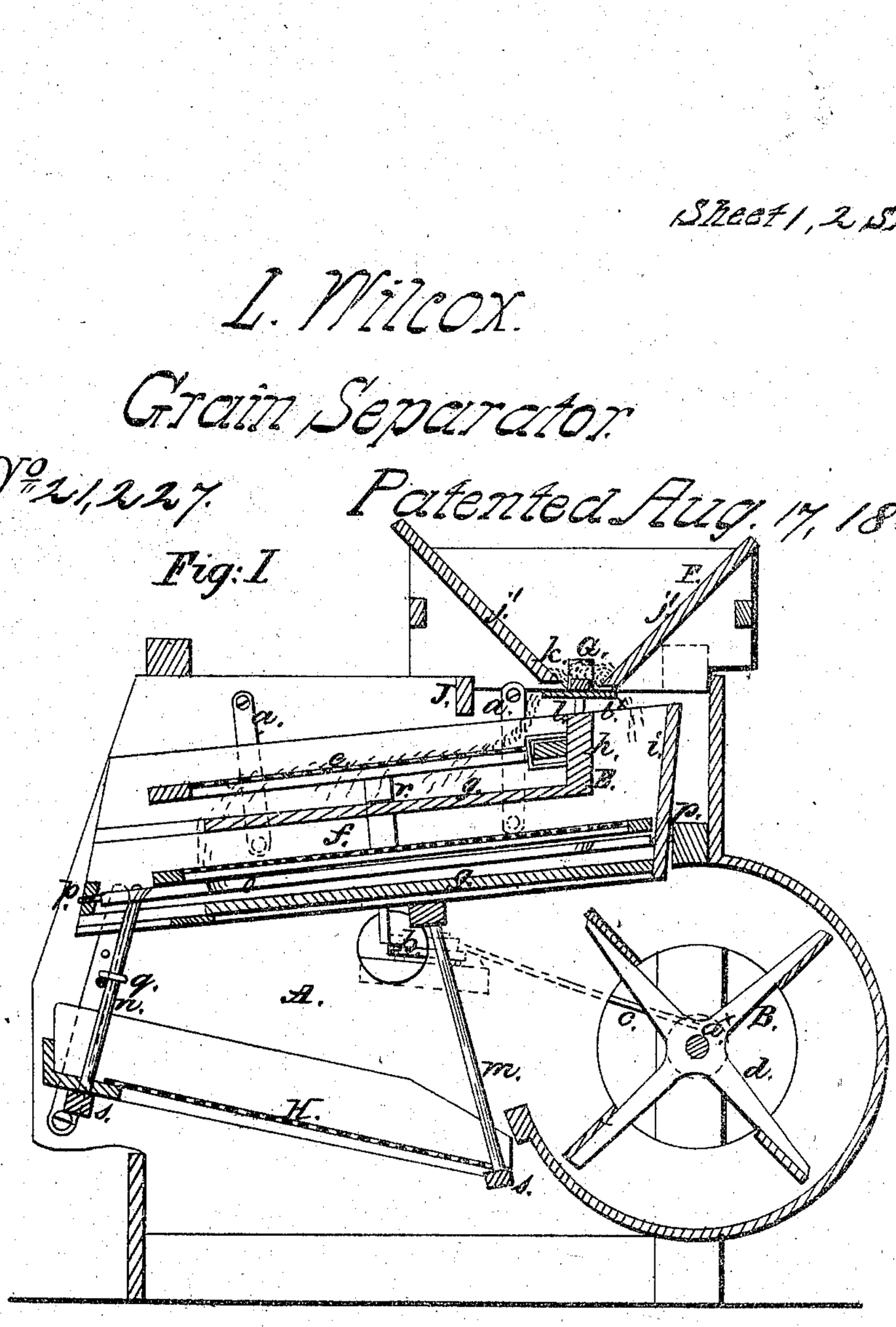
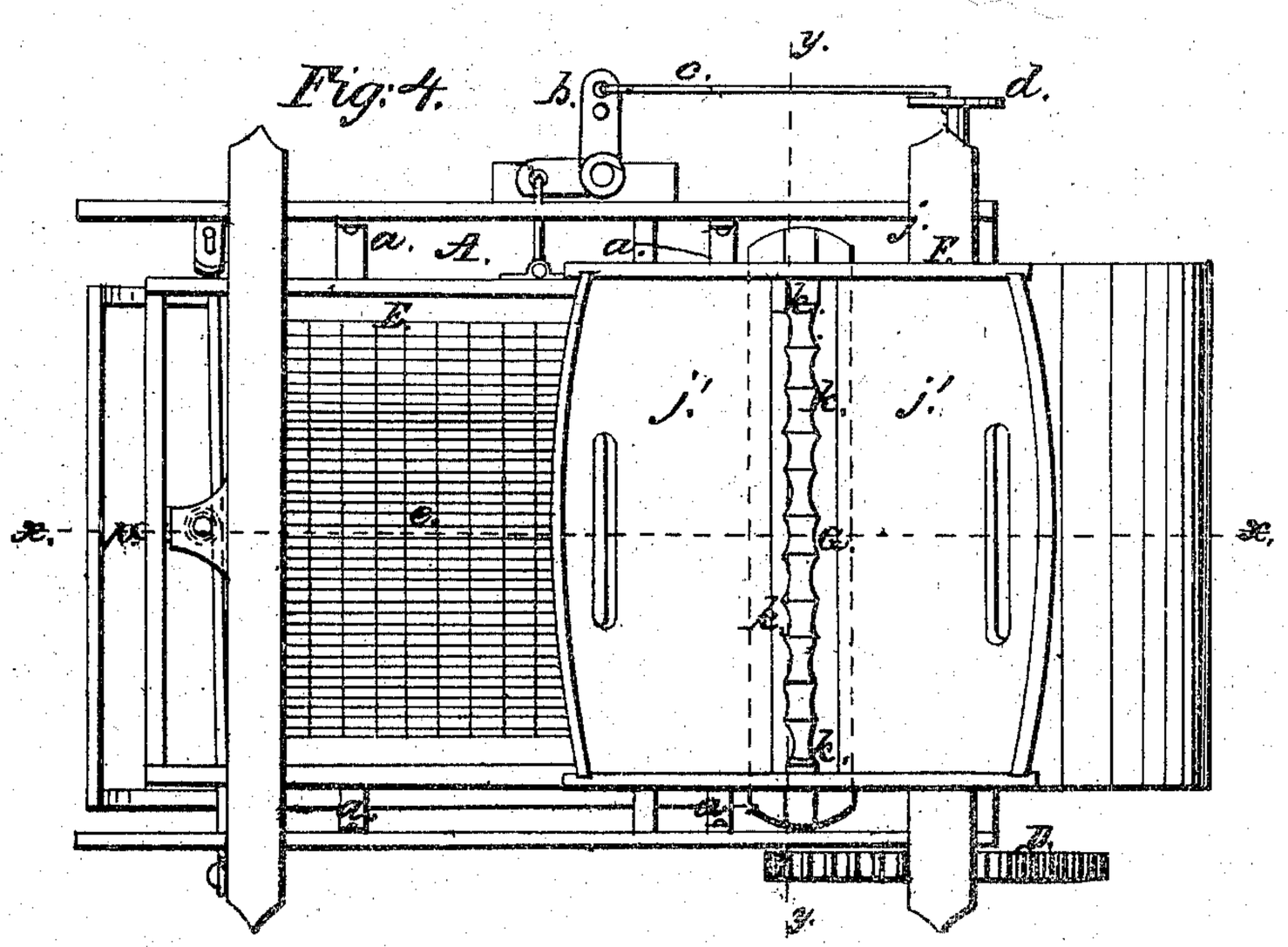


Fig: 4.



Sheet 2, 2 Sheets.

L. Wilcox.

Grain Separator.

No. 21,227. Patented Aug. 17, 1858.

Fig. 3.

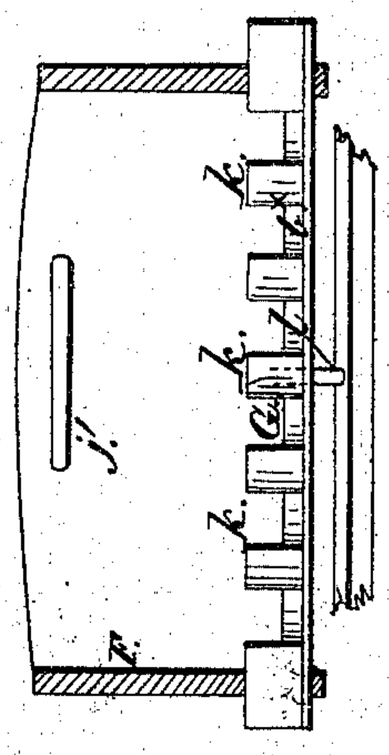
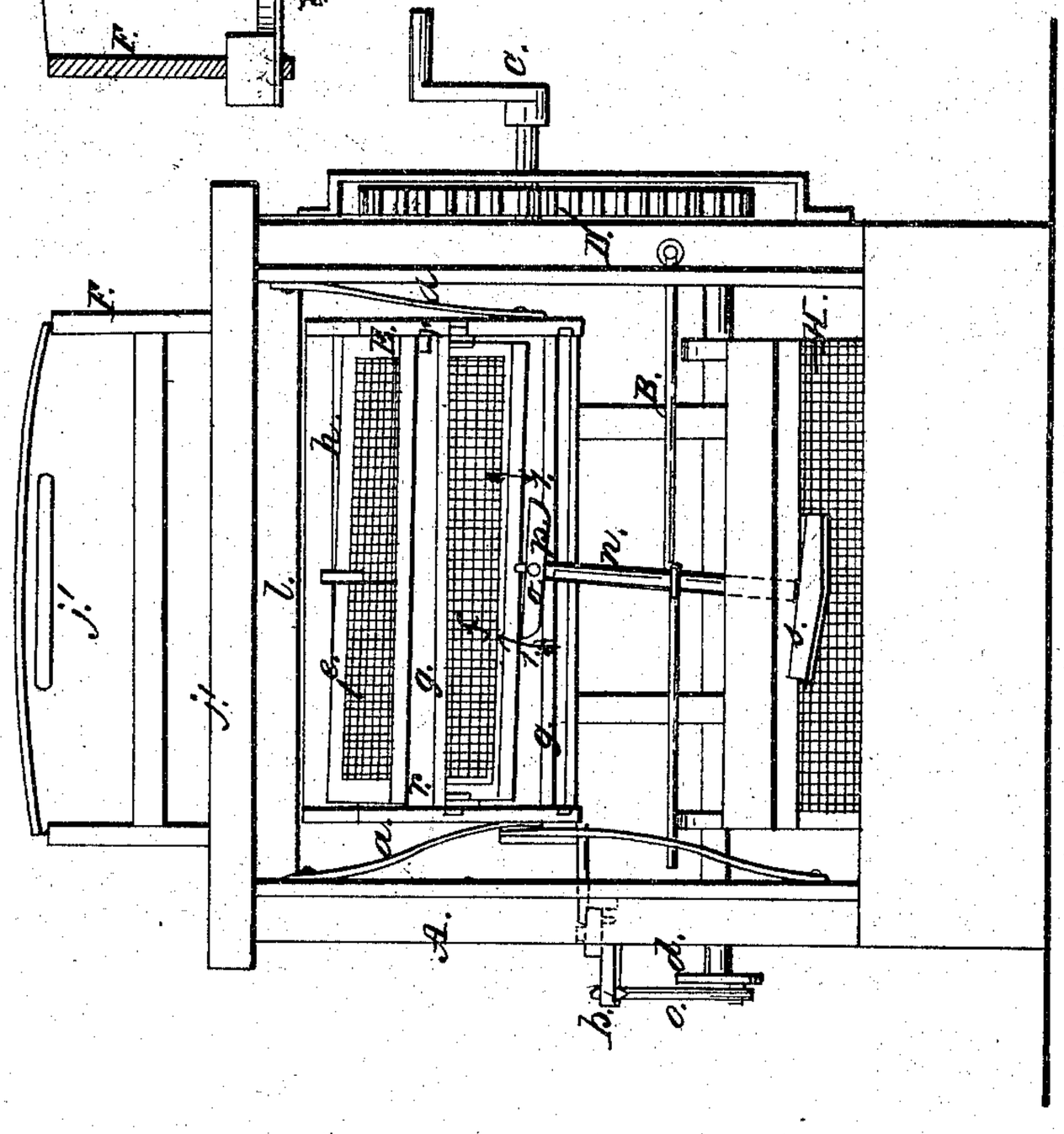


Fig. 2.



UNITED STATES PATENT OFFICE.

L. WILCOX, OF HUDSON, MICHIGAN.

GRAIN-SEPARATOR.

Specification of Letters Patent No. 21,227, dated August 17, 1858.

To all whom it may concern:

Be it known that I, L. WILCOX, of Hudson, in the county of Lenawee and State of Michigan, have invented a new and Improved Grain-Separator; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a longitudinal vertical section of my invention taken in the line *x*, *x*, Fig. 4. Fig. 2, is an end view of ditto. Fig. 3, is a detached vertical section of the hopper taken in the line *y*, *y*, Fig. 4. Fig. 4, is a plan or top view of ditto.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to augment the working capacity of a grain separator to a very considerable extent, by a novel arrangement of the screens, and operating said screens in a peculiar way, also, by a novel feeding device placed in the hopper to agitate the grain and insure its proper presentation to the screens, all of which are hereinafter fully shown and described.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents a suitable case or box constructed in the usual way and having the fan B, at one end said fan being rotated by a crank C, and multiplying gear D.

E, is a shoe which is suspended within the case or box A, by elastic metal straps *a*, which are attached to each side of the shoe E. The shoe has a shake motion given it by a bell-crank *b*, which is attached to one side of the case or box and is operated by a rod *c*, attached to a crank pulley *d*, at one end of the shaft $a^{\times}$, of fan B.

Within the shoe E, there are placed two sets of screens *e*, *f*, one screen of each set is only shown, but in practice more would be used, probably in all cases. A close bottom *g*, is placed under the lower screen of each set and the upper set or screen *e*, has its inner end in contact with a vertical partition *h*, which is placed in the shoe E, a short distance from its back end so as to leave a space or passage *i*, between, as shown clearly in Fig. 1.

The partition *h*, is placed directly underneath the center of the hopper F, which is placed on traverse bars *j*, at the upper part of the case or box A. This hopper F, has its front and back sides *f'*, made adjustable so that they may be raised and lowered as occasion may require. At the bottom of the hopper F, a reciprocating bar G, is placed, said bar being attached to a plate $b^{\times}$, and having vertical teeth or projections *k*, formed on it. The bar G, is parallel with the lower ends of the inclined sides of the hopper and its ends work through the end pieces of the hopper. The bar G, is connected with the upper part of the partition *h*, by a rod *l*, and therefore said bar receives its motion from shoe E.

H, is a screen which is placed in the lower part of the case or box A, and is inclined in a reverse direction to the screens in the shoe E, see Fig. 1. The screen is supported at its inner and depressed end by a rod *m*, which is attached to the under side of the shoe E, and the outer end of said screen H, is supported by a rod *n*, the upper end of which is attached to a rock bar *o*, which is pivoted in the shoe E, as shown at *p*, *p*. The outer end of the bar *o*, where the screen *f* rests is made wider than at other parts in order to form a lever for said screen and modify the shake motion thereof as will be presently shown. The rod *n*, passes through an eye or guide *q*, which forms a fulcrum for the same. To each side of the lower screen *f*, a bar *r*, is attached, the upper ends of said bars being attached to the upper screen *e*.

The operation is as follows:—The grain to be cleaned and separated from foreign substances is placed in the hopper F, and motion is given the shaft $a^{\times}$, in any proper way. The sides *j'*, are raised at the proper height to regulate the feed of the grain to the machine. The shoe E, has a lateral movement given it by the bell crank *b*, and the bar G, as it moves back and forth feeds the grain down at each side of the plate $b^{\times}$, that which passes down at one side falling on the screen *e*, and that which passes down at the other side falling through the space *i* on the screen *f*. The screens *e*, *f*, have not only the lateral shake motion of the shoe E, but they have also an independent vibratory motion communicated to them, as indicated by the arrows 1, Fig. 2, by the bar *o*, which is actuated by the shoe E, through the medium of the rod *n*, and screen H. This compound motion of the screens *e*, *f*, causes them to act in the most efficient manner and the

meshes of the screens are prevented from being filled or choked up with chaff and other substances. The screen H, also has a compound motion its front and back ends moving simultaneously in opposite directions by means of the rods *m*, *n*, said screen H, also having an upward jarring movement in consequence of the rods *m*, *n*, passing through the ends of the screen H, and having bars *s*, attached which serve in a measure as knockers. The grain while passing down the screens *e*, *f*, is screened as usual the chaff being blown out of the case or box at the lower ends of the screens *e*, *f*, and the grain from both screens falling on the lower screen H.

It will be seen from the above description of parts that there are in fact two separators combined in one, as the grain is divided and passed over separate screens, and as the screens have a compound shake motion they act as before stated in the most efficient manner.

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

1. The reciprocating feeder bar G, provided with projections *k*, placed at the bottom of the hopper F, and attached to the shoe E, substantially as and for the purpose set forth.

2. The two sets of screens *e*, *f*, placed within one and the same shoe E, and arranged relatively with each other and the hopper F, substantially as described to operate as set forth.

3. Giving the screens *e*, *f*, a vibratory movement independent of the shake motion of the shoe E, through the medium of the rods *m*, *n*, screen H, and rod *o*, substantially as described for the purpose set forth.

4. The screen H, attached to the shoe E, by the rods *m*, *n*, provided with the bars *s*, and the rock bar *o*, for the purpose specified.

L. WILCOX.

Witnesses:
I. B. BRETT,
C. D. COGSWELL.