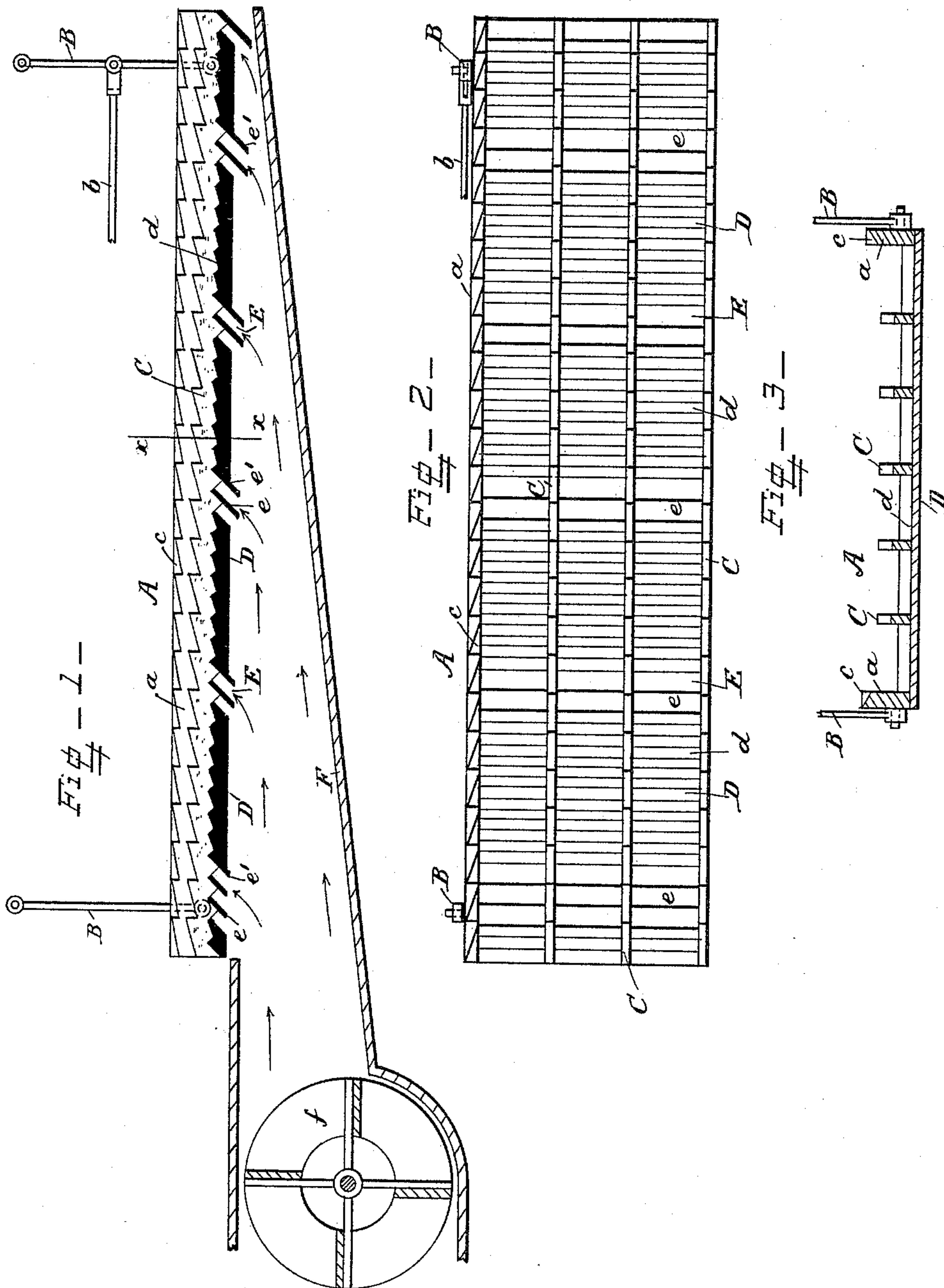


(No Model.)

F. F. LANDIS.
SCREEN.

No. 446,687.

Patented Feb. 17, 1891.



WITNESSES

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UNITED STATES PATENT OFFICE.

FRANK F. LANDIS, OF WAYNESBOROUGH, PENNSYLVANIA.

SCREEN.

SPECIFICATION forming part of Letters Patent No. 446,687, dated February 17, 1891.

Application filed September 15, 1890. Serial No. 365,076. (No model.)

To all whom it may concern:

Be it known that I, FRANK F. LANDIS, a citizen of the United States, residing at Waynesborough, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Screens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to screens, and more particularly to the screens used in grain-separators, although screens constructed according to this invention may be used for screening many other substances.

This invention consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a longitudinal section through a screen constructed according to this invention. Fig. 2 is a detail part plan view of the screen. Fig. 3 is a cross-section through the screen, taken on the line $x x$ in Fig. 1.

A is the screen, which is provided with the retaining-sides a for keeping the material upon its surface. The screen may be arranged horizontally, as shown, or it may be inclined in either direction. The screen is supported by the pivoted links B, or upon any approved form of supporting-guides, and has a longitudinal vibrating motion imparted to it by means of the rod b and driving mechanism of any approved construction for that purpose. The screen may be vibrated with a tossing motion, if desired, or in a straight line, according to the nature of the material to be operated on.

C are longitudinal ratchet-bars for causing the material to travel from one end of the screen to the other when the said screen is vibrated, and the sides of the screen are also provided with notches c to assist the travel of the material. The bottom of the screen consists of alternate sections of imperforate surfaces D and perforate surfaces E. The imperforate surfaces D may be flat on top; but in a grain-separating screen they are preferably provided with cross-grooves d , in which the grain may collect and be carried along by the motion of the screen independent of the straw above it, which is moved along by the bars C. The perforate surfaces E may be provided with apertures of any desired size

and shape, according to the material operated on. In a grain-separator each perforate surface preferably consists of a series of upwardly and forwardly inclined slats e , through which the grain may fall.

F is a gather-board under the screen, and f is a fan or other similar blower for causing a blast of air to pass upwardly through the perforate surfaces of the screen. The bottoms of the slats e preferably project slightly below the plane of the bottom of the screen, and the hindmost slats e' are preferably a little longer than those in front of them, so as to catch the air from the fan better. The perforate surfaces of the screen are small in area compared with the whole surface of the screen, so that the pressure of air passing through them is substantially uniform at all parts of the screen. The mixed straw and grain which is fed upon the screen is shaken and carried forward by the reciprocating motion and the ratchet-bars. The grain separates from the straw by gravity, and is carried along by the imperforate surfaces until it comes to the next perforate surface or series of slats. The grain falls through the slats against the pressure of the air being forced upward through them, which blows up the chaff and lighter particles. The continued repetition of the above-described operations at different points upon the length of the screen completely separates all the wheat from the light material, and the latter is discharged over the rear end of the screen. The imperforate surfaces decrease in area and the perforate surfaces increase in area from the front to the rear of the screen.

What I claim is—

The combination, with a vibrating screen provided with a bottom surface consisting of a series of sections of imperforate material provided with cross-grooves and a series of sections of inclined slats, the said sections being arranged alternately, of the longitudinal ratchet-bars for causing the material to travel over the screen, and a blower for forcing a uniform blast upwardly between all the said slats of the screen, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK F. LANDIS.

Witnesses:

HERBERT W. T. JENNER,
E. R. R. HOYT.