

No. 770,507.

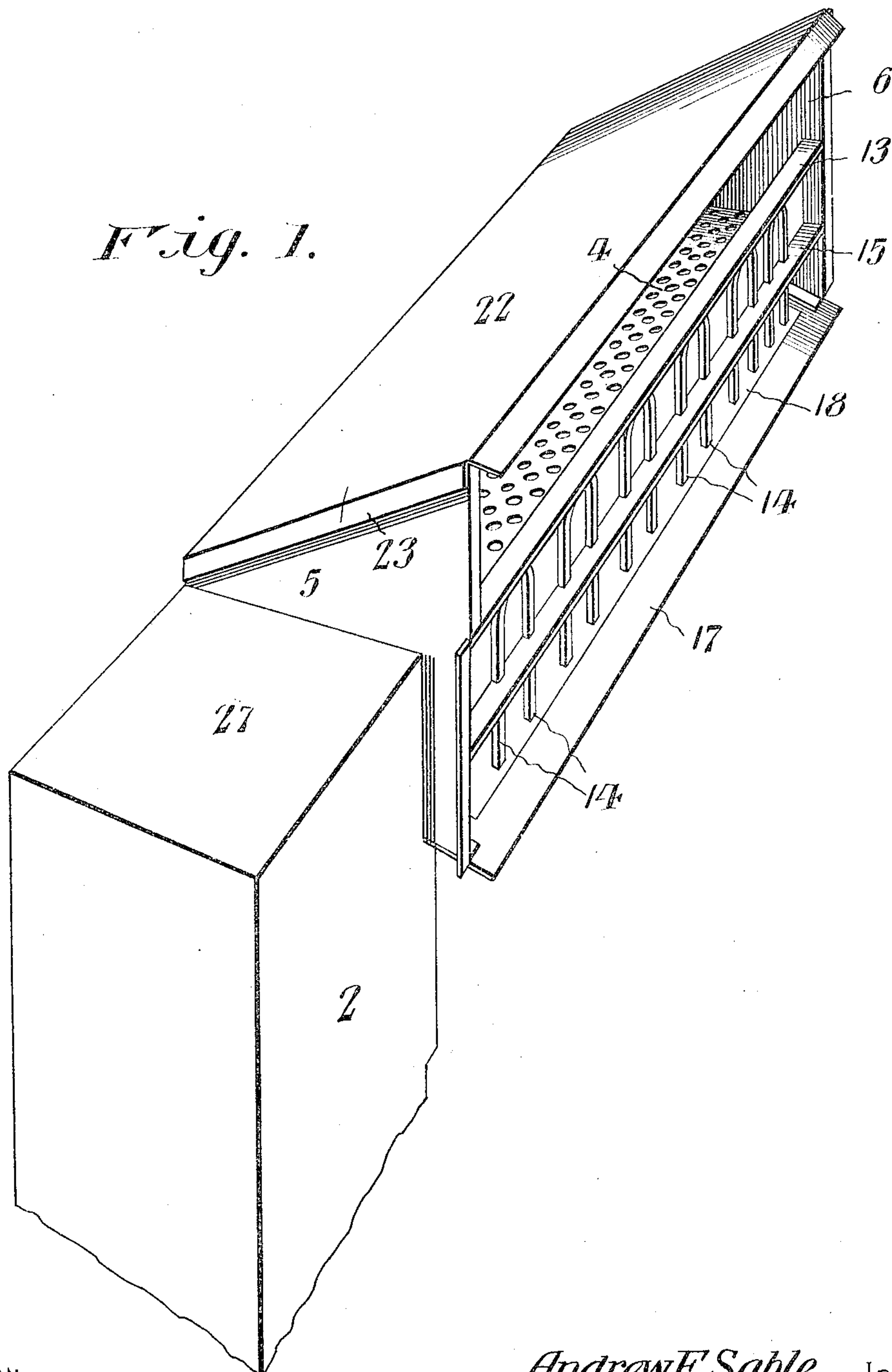
PATENTED SEPT. 20, 1904.

A. E. SABLE.  
GRAIN SEPARATOR.

APPLICATION FILED MAY 10, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

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*R. M. Elliott.*

*Andrew E. Sable* Inventor,  
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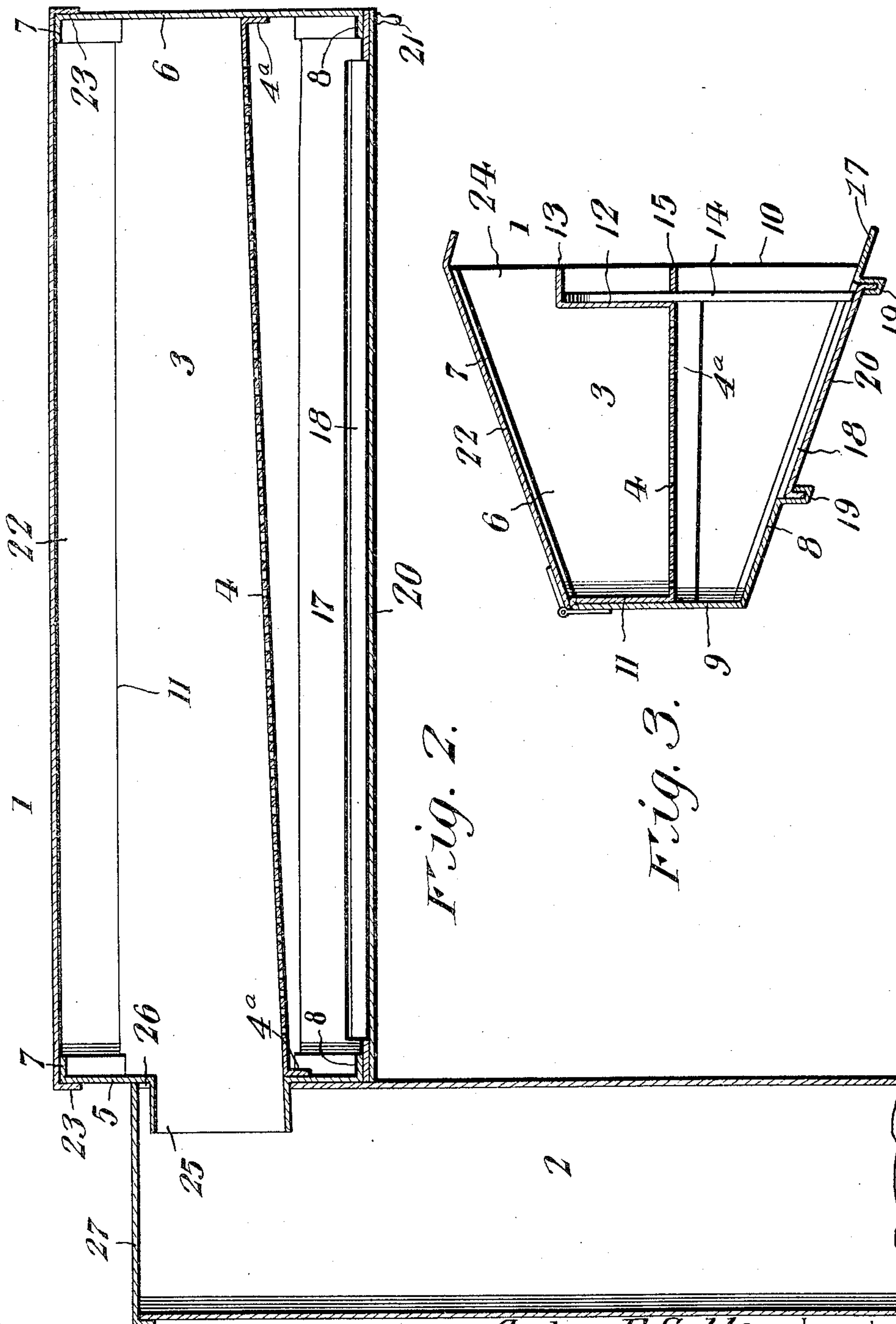
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NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:

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# UNITED STATES PATENT OFFICE.

ANDREW E. SABLE, OF NANTICOKE, PENNSYLVANIA.

## GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 770,507, dated September 20, 1904.

Application filed May 10, 1904. Serial No. 207,229. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW E. SABLE, a citizen of the United States, residing at Nanticoke, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Grain-Separator, of which the following is a specification.

This invention relates to grain-separators.

The object of the invention is in a rapid and thoroughly practical manner to effect separation of the grain from any contained impurities—such as pebbles, lumps of dirt, pieces of wood, and the like—and also to separate therefrom any metal, such as nails or pieces of wire, which by entering the mill would cause damage to its machinery.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a grain-separator, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof.

In the drawings, Figure 1 is a view in perspective viewed from the front side of the machine. Fig. 2 is a view in longitudinal section. Fig. 3 is a view in transverse section.

The apparatus comprises a separating-chamber 1 and an offtake-chute 2, through which refuse matter divided from the grain is conveyed to a suitable place of deposit. The separating-chamber comprises a receiving-trough 3, the bottom 4 of which is made of suitable foraminous or reticulated metal forming a screen to effect cleaning of the grain, the screen being provided at its ends with downturned flanges 4<sup>a</sup>, which are suitably secured to the end plates 5 and 6 of the separating-chamber, thus to hold the screen in proper operative position. The plates 5 and

6 have converging upper and lower sides provided with inward-projecting flanges 7 and 8 and parallel ends 9 and 10, the object of having the upper and lower sides disposed at an angle to each other being to furnish a hopper-shaped mouth to receive the grain and an inclined discharge-chute for directing the flow of grain from the machine. The rear wall 11 of the trough is plain throughout and is secured to the ends 9 of the separating-chamber; but the front wall 12 is provided with an outward-extending flange 13, against which are adapted to bear the crests of a series of vertically-disposed horseshoe-magnets 14, the limbs of which pass through perforations in a flange 15, projecting from the trough. These magnets are closely disposed and operate in a positive manner to catch and retain any metallic particles that might escape through the screen along with the grain. Beneath the screen and secured to the flange 8 of the end plates is a deflector-plate 17, constituting the bottom of the separating-chamber, provided throughout the greater portion of its length with an opening 18, and arranged on the under side of the deflector-plate are a pair of guides 19, in which works a slide 20, provided at its outer end with a handhold 21, the object of the slide being normally to close the opening 18, but when removed or withdrawn from under the opening to permit of detachment from the magnets of any caught metallic substances. To the rear upper part of the chamber is hinged a door 22, provided with downturned flanges 23, which are adapted to engage with the outer sides of the end plates, the door being held in an inclined position by the inclined upper sides of the end plates, thus forming a mouth or opening 24 at the front of the device, through which grain is fed to the separating-screen.

Carried by the end plate 5 is a rectangular spout or extension 25, which, in effect, constitutes a continuation of the trough and is designed to project through an opening 26 in one side of the upper end of the offtake 2. This latter is a rectangular structure and has its upper end closed by a plate 27, which may be rigid therewith or removable therefrom, as desired.



In the operation of the device the grain is supplied through the mouth or chute to the trough and thence passes down the deflecting-plate between the magnets to the place of deposit. The foreign matter separated from the grain—such as sticks, stones, or the like—pass through the offtake, it being understood that the separating-chamber is slightly longitudinally inclined to cause the feed of refuse to the said offtake. Any fine metallic substances—such as bits of wire, nails, or the like—that escape through the separating-screen are caught and retained by the magnets 14, from which from time to time they are removed through the opening 18 by withdrawing the slide 20.

The apparatus of this invention is exceedingly simple of construction, will be found thoroughly efficient and durable in use for the purposes designed, and owing to the manner in which the parts are constructed and assembled repairs may readily be effected when necessary.

Having thus described the invention, what is claimed is—

1. In a grain-separator, a separating-chamber having an inclined bottom and screen, and a series of magnets inset from the front of the chamber and resting upon the said bottom.

2. In a grain-separator, a separating-chamber, provided with an inclined bottom and with a screen, a series of magnets inset from the front of the chamber and resting upon the

bottom, and a slide constituting a portion of the bottom and disposed beneath the magnets.

3. In a grain-separator, a separating-chamber, a trough disposed therein and having an outturned flange, and an open-work bottom constituting a screen, a flange projecting from the lower portion of the trough and provided with a series of openings, and horseshoe-magnets having their limbs arranged within the openings and their crests disposed beneath the first-named flange.

4. In a grain-separator, a separating-chamber, a trough arranged therein and provided with an open-work bottom forming a screen, and a series of magnets inset from the front of the chamber and held in position on a projection from the trough.

5. In a grain-separator, an offtake-chute having an opening near its upper end, a separating-chamber having a trough arranged therein and provided with an extension engaging the opening in the offtake-chute and with a screen constituting its bottom, and a series of magnets inset from the front of the chamber and held in place by the trough.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ANDREW E. SABLE.

Witnesses:

THOS. HAMILTON,  
JAMES STROUD.