

No. 829,127.

PATENTED AUG. 21, 1906.

J. B. STRAUSS.
MIXING APPARATUS.
APPLICATION FILED OCT. 3, 1905.

Fig. 1.

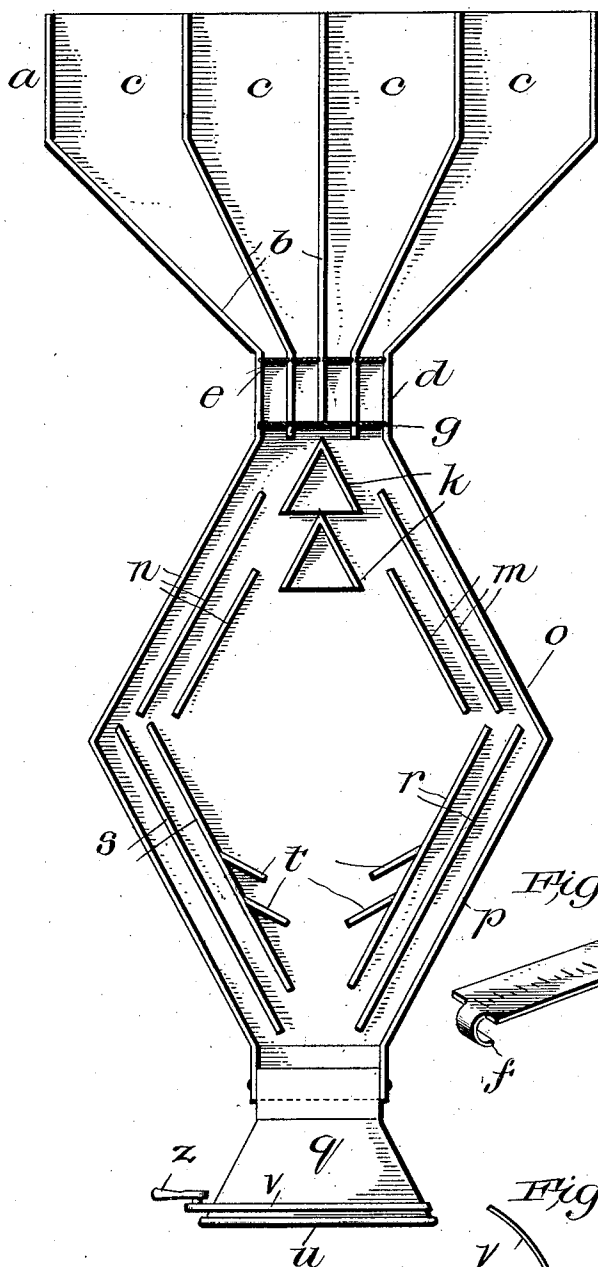


Fig. 2.

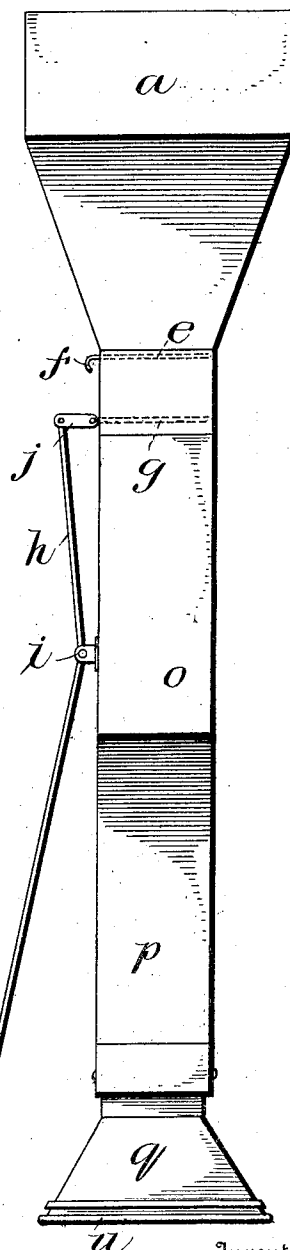


Fig. 3.

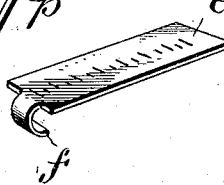
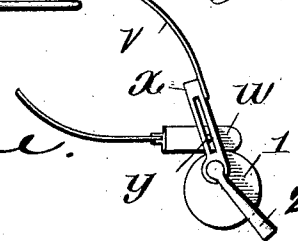


Fig. 4.



Witnesses:
Geo. A. Byrne.
Edw. Holmes.

Inventor
Julian B. Strauss
By *Wilkinson & Fisher*
Attorneys.

UNITED STATES PATENT OFFICE.

JULIAN B. STRAUSS, OF NEW ORLEANS, LOUISIANA.

MIXING APPARATUS.

No. 829,127.

Specification of Letters Patent.

Patented Aug. 21, 1906.

Application filed October 3, 1905. Serial No. 281,176.

To all whom it may concern:

Be it known that I, JULIAN B. STRAUSS, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Mixing Apparatus; 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.

My invention relates to improvements in mixing apparatus; and its object is to produce a simple apparatus which will deliver into a bag or other receptacle a mixture of different materials, the percentage of each material being accurately determined and the materials being thoroughly mixed together by passing through the apparatus.

The apparatus is primarily designed for the mixing together of different kinds of grain, either in its natural condition or crushed, such as corn or meal, rice, wheat, barley, oats, &c.; but it is not restricted to such use, as it is capable of general application. Different grades and varieties of crushed ore, for example, may be mixed together, different grades of coffee, sugar, salt, mortar, and concrete, and in fact any granular or pulverulent materials can be mixed together by this apparatus.

With the objects stated in view my invention consists in the construction and combinations of parts, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a front elevation of my invention with the front part of the casing removed. Fig. 2 is a side view thereof. Fig. 3 is a perspective view of one of the small valves or gates, and Fig. 4 is a detail view illustrating the construction of the bag-holding part of the device.

a represents a casing or shell which is divided by partitions *b* into bins *c*. The partitions, except the central one, are inclined toward each other, forming comparatively narrow discharge-orifices at the lower ends of the bins, which orifices are located directly over a contracted throat *d*, the partitions *b* extending through said throat. Each bin is closed at its bottom by a gate or valve *e*, one of which is shown in perspective in Fig. 3. Each of these valves is provided with a curved handle *f* and on its upper face is provided with a scale, so that by moving the valve out

to one of the divisions of the scale the amount of grain or other material delivered from the corresponding bin may be accurately fixed.

The bottom of the throat *d* is completely closed by a gate or valve *g*, which is operated by an angle-lever *h*, pivoted in a bracket *i* on the casing, and which lever is connected to the valve or gate *g* by a link *j*. Obviously the movement of the lower end of the lever *h* toward the casing will withdraw the valve *g*.

Located centrally below the valve *g* are a series of deflecting-cones *k*, two being shown in the drawings; but of course any desired number may be used. *m* represents parallel deflectors arranged below the cones *k*, the outer one of said deflectors extending up above the top of the lower cone *k* and the lower one being substantially in line with the outer surface of the upper cone. *n* represents a similar series of parallel deflectors on the other side of the casing. I have shown two of these deflectors on each side of the casing; but it is obvious that any desired number may be used. Below the throat *d* the casing is expanded outwardly, as shown at *o*, forming a figure in the shape of a truncated cone in cross-section, and the deflectors *m* and *n* are preferably arranged parallel to the sides of the casing.

Below the deflectors *m* and *n* the casing is contracted, as shown at *p*, which delivers into a sack-holder *q*, which is fastened thereto by any suitable means. The whole casing roughly approximates a double hour-glass in shape as viewed from the front. Within the contracted portion *p* of the casing and parallel to the sides thereof are a series of deflectors *r r* and *s s*, arranged, respectively, parallel to the part *p* of the casing. These deflectors are arranged to catch the materials delivered from the deflectors *m m* and *n n*, respectively; but, as shown on the drawings, the lower series of deflectors is arranged a little farther out than the upper series of deflectors in order to catch and thoroughly mix the streams of material falling down. Any desired number of deflectors *r r* and *s s* may be used; but each of the internal deflectors of the lower series is provided with projections *t t*, arranged to throw the material against the material falling down in proximity to the opposite deflector.

The lower part of the apparatus is provided with a sack-holding device. The part *q*, which is in the shape of a truncated cone, has a rim *u* on its lower edge, and above that

rim is a strap *v*, the ends of which are connected to blocks *w* and *x*, the latter being slotted to receive a pin *y* on the block *w*.

z represents a handle pivoted in the block *x* and provided with an eccentric *l*. Obviously the rotation of the handle *z* will move the block *w* along the block *x*, tightening the mouth of the sack around the rim *u*.

The operation is as follows: The bins *c*, or some of them, being wholly or partially filled with the materials which it is desired to mix together, one or more of the valves or gates *e* are withdrawn, the scale on each of said valves serving to fix the proportion delivered from each bin. The lever *h* is then operated, and the materials in the throat *d* are discharged into the lower part of the casing, falling upon the cones *k*, by which they are deflected, and the principal part of the material passes in the form of sheet cones onto the deflectors *m* and *n*, the finer and lighter parts of the material, however, falling toward the center. After sliding down the deflectors *m* and *n* the material carried thereby is caught by the deflectors *r* and *s* and thrown toward the center, the result being that the materials as they fall through the apparatus are thoroughly mixed together when they are delivered into the sack and that a mixture is formed whose percentage is accurately known. Of course the sack could be dispensed with and the mixed material delivered into any other kind of a receptacle, if desired.

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

1. In a mixing apparatus, the combination of a casing, a narrow throat into which said casing delivers, a series of partitions passing

through said casing and through said throat dividing said casing into a number of bins and dividing said throat into a number of small compartments, a series of graduated valves located in the upper part of said throat, one in each of said chambers, a larger valve adapted to entirely close the lower part of said throat, means for operating said larger valve and means located below said throat for causing the materials under treatment to move back and forth and become thoroughly mixed together as they fall, substantially as described.

2. In a mixing apparatus, the combination of a casing provided with partitions dividing it into a series of bins, said casing being also provided with a narrow throat into which each of said bins delivers, a graduated valve for each of said bins, said valves being located in the upper part of said throat, a larger valve for all of said bins located in the lower part of said throat, and means for causing the materials as they fall after leaving said throat to become thoroughly mixed, said means including a series of deflecting-cones, a series of parallel diverging-deflectors arranged at a lower level than said cones and a series of converging parallel deflectors arranged below and outside of said first-named deflectors, the inner deflectors of the lower series being provided with portions projecting toward the center of the apparatus, substantially as described.

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

JULIAN B. STRAUSS.

Witnesses:

F. K. BACHERT,
MAX BACHERT.