April 14, 1925. 1,533,523

W. THOMA

CUP SEPARATOR FOR FEEDS

Filed Nov. 25, 1924

Fig. 1.

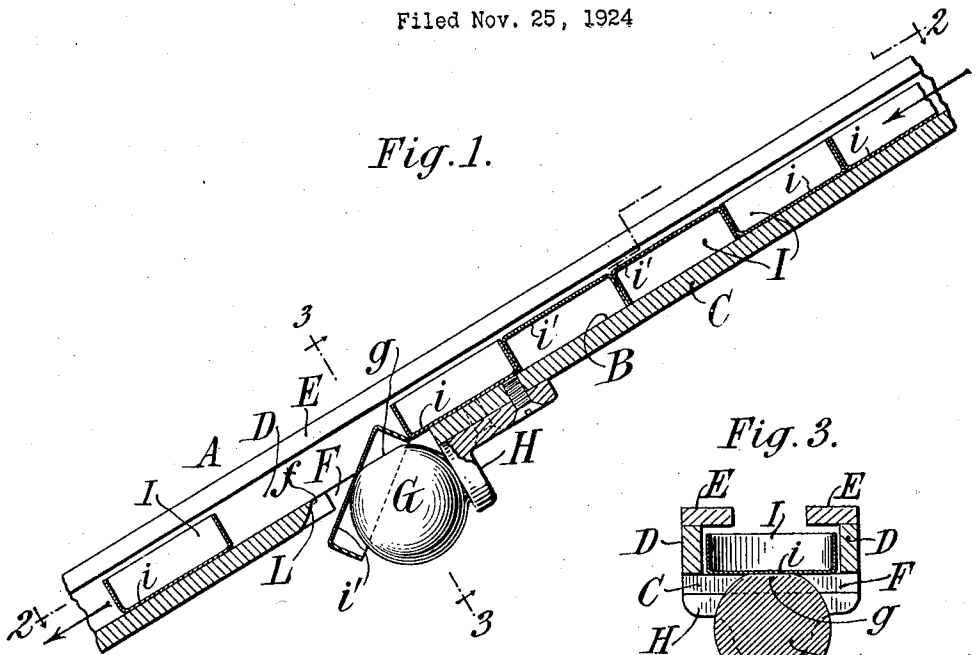


Fig. 3.

Fig. 2.

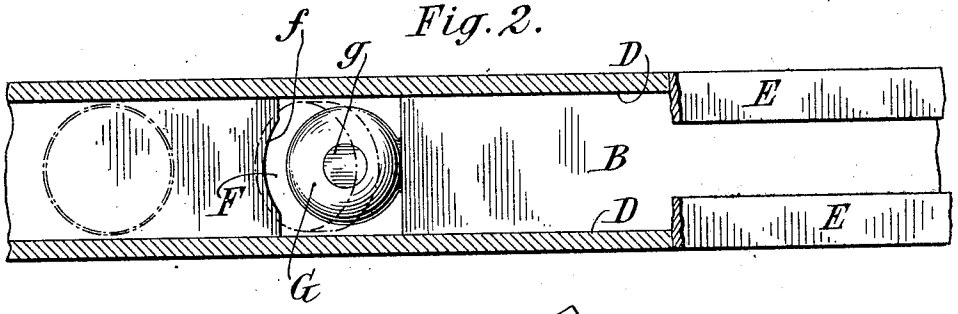


Fig. 5.

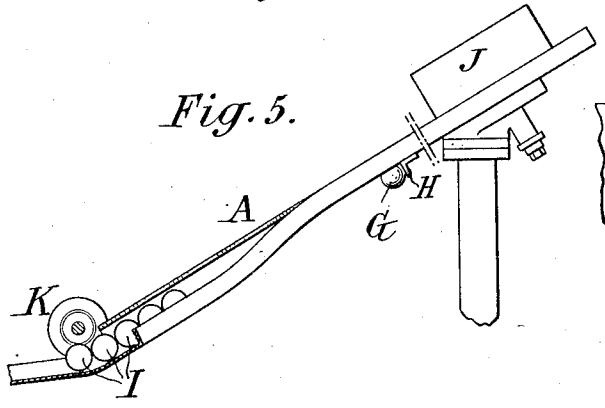
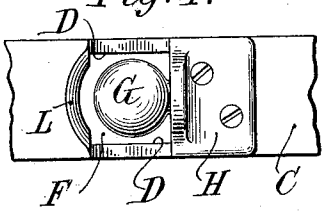


Fig. 4.



INVENTOR

Walter Thoma,

By Attorneys,

Fraser Myers & Manley

Patented Apr. 14, 1925. 1,533,523

UNITED STATES PATENT OFFICE.

WALTER THOMA, OF BROOKLYN, NEW YORK, ASSIGNOR TO E. W. BLISS COMPANY, OF BROOKLYN, NEW YORK, A CORPORATION OF WEST VIRGINIA.

CUP SEPARATOR FOR FEEDS.

Application filed November 25, 1924. Serial No. 752,077.

To all whom it may concern:

Be it known that I, WALTER THOMA, a citizen of the United States of America, residing in the borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Cup Separators for Feeds, of which the following is a specification.

The present invention relates to a cup separator for feeds and aims to provide improvements therein.

The invention provides a cup-separator for feeds which is simple in construction and simple and reliable in operation, which may dispense with moving parts, and which does not require the attention of an operator during use.

In the accompanying drawings, wherein I have shown a preferred embodiment of my invention,—

Figure 1 is a longitudinal section partly in elevation of the cup separator.

Fig. 2 is a section taken along the line 2—2 of Fig. 1.

Fig. 3 is a transverse section taken along the line 3—3 of Fig. 1.

Fig. 4 is a partial bottom plan view of the device showing the cup separating means.

Fig. 5 is a somewhat diagrammatic view showing the invention in combination with a feed hopper and an operating machine, such for example as a thread-rolling machine.

Referring to the drawings, A indicates the cup separator as a whole, comprising a slideway B, preferably of the gravity type, having a base C and side walls D and preferably also overhanging top flanges E. Intermediate the ends of the base C of the slideway there is provided an opening F through which improperly positioned cups are adapted to be thrown out, and projecting into said opening is an element or guide G having the functions of supporting the properly positioned cups in passing over said opening and of letting down or guiding out through said opening F the improperly positioned cups. The guide G may be supported in any desired manner, and as herein shown, is carried by bracket H secured to the under side of the base C. The guide G is of smaller dimensions than the opening F into which it projects, and its upper surface *g* is preferably flattened, and lies substantially flush with the upper side of the base C. The guide G below the upper surface *g* thereof is preferably inclined or curved outwardly or downwardly, and as herein shown, is preferably in the form of a sphere. The edge of the surface *g* is spaced from the edge *f* of the base, opposite said guide G, a distance equal or approximating one-half the diameter of the cup which is to be fed.

The slideway B is designed to receive cup-shaped members I or the like from a feed hopper J of any suitable kind, and to feed said members in proper position to an operating machine K adapted to perform thereon some subsequent operation, such as rolling a thread or the like. It is important that the members I shall be fed to the machine K in proper position, but inasmuch as some of said cups are received from the hopper J in improper position, it becomes necessary to separate out these latter. The parts F and G accomplish this function in the following manner:

As the cup members I pass over the base C of the slideway they arrive at the opening F, into which projects the element or guide G. Now if the cups I are in proper position, as shown at *i*, i. e., sliding on their bottoms on the base C, they will slide over the opening F, and will continue downward on the slideway to the operating machine K, because the cup will have to pass more than one-half its diameter beyond the edge of surface *g* before it can begin to tilt, and as the edge *g* is spaced from the opposite edge *f* a distance approximating one-half the diameter of the cups, the front edge of the cup (bottom side down) will bridge the gap or opening between the edges *f* and *g* before the tendency to tip could cause the cup to fall below the edge *f*. After the front edge of a properly positioned cup *i* passes the edge *f*, the remainder follows, passing over the opening F onto the lower part of the slideway.

However, if said cups are in improper position, as shown at *i'*, that is, have their open or hollow sides facing the base C, the front edge or lip, upon passing over the forward end of the guide G, will drop, following the contour of the surface of said guide, into said opening F, and the entire cup will follow the front edge, dropping out over said guide G and through said opening F

into a receptacle placed below opening F to receive them. The inclined or curved walls of the element or guide G serve to guide and facilitate the separating out of the elements when passing over the slide in improper position. To further facilitate this separating out action, the forward wall of the opening F may be bevelled or undercut, as shown at L. The spherical contour of the guide G is of importance in properly guiding the cups out through the opening F when the slideway is tilted transversely.

The cup separator hereinbefore described is an exceedingly simple and practicable device and one which may be incorporated in existing feed mechanisms at very small cost.

While I have shown and described the preferred embodiment of my invention, it will be understood that I do not wish to be limited to the specific details thereof, since various modifications may be resorted to without departing from the spirit of the invention.

What I claim is:

1. A feed mechanism for cups or the like, comprising a slideway on which said cups are adapted to move, an opening in said slideway through which improperly positioned cups are adapted to drop, and means in said opening adapted to support the bottoms of cups which pass bottom side down over said opening, and adapted to allow cups which pass hollow side down to fall into said opening, and out.

2. A feed mechanism for cups or the like, comprising a slideway on which said cups are adapted to move, an opening in said slideway through which improperly positioned cups are adapted to drop, and means in said opening adapted to support the bottoms of cups which pass bottom side down over said opening, and adapted to allow cups which pass hollow side down to fall into said opening, and out, said supporting means comprising a guide or member spaced from the opposite edge of said slideway, across said opening, approximately one-half the diameter of a cup.

3. A feed mechanism for cups or the like, comprising a slideway on which said cups are adapted to move, an opening in said slideway through which improperly positioned cups are adapted to drop, and means in said opening adapted to support the bottoms of cups which pass bottom side down over said opening, and adapted to allow cups which pass hollow side down to fall into said opening, and out, said supporting means comprising a guide or member spaced from the opposite edge of said slideway, across said opening, approximately one-half the diameter of a cup, said guide or member having a portion inclined downwardly in said opening.

4. A feed mechanism for cups or the like, comprising a slideway on which said cups are adapted to move, an opening in said slideway through which improperly positioned cups are adapted to drop, and means in said opening adapted to support the bottoms of cups which pass bottom side down over said opening, and adapted to allow cups which pass hollow side down to fall into said opening, and out, said supporting means comprising a guide or member spaced from the opposite edge of said slideway, across said opening, approximately one-half the diameter of a cup, said guide or member having a substantially spherical contour.

In witness whereof, I have hereunto signed my name.

WALTER THOMA.