No. 873,268. PATENTED DEC. 10, 1907.

P. RAABE.

DEVICE FOR AUTOMATICALLY DELIVERING ARTICLES OF MANUFACTURE FROM A COLLECTING RECEPTACLE.

APPLICATION FILED JUNE 27, 1907.

Fig. 1

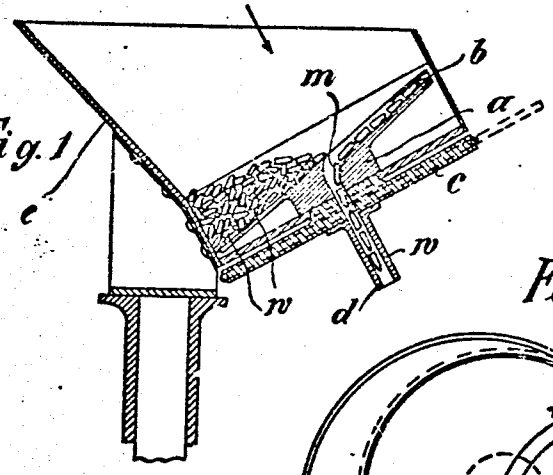


Fig. 2

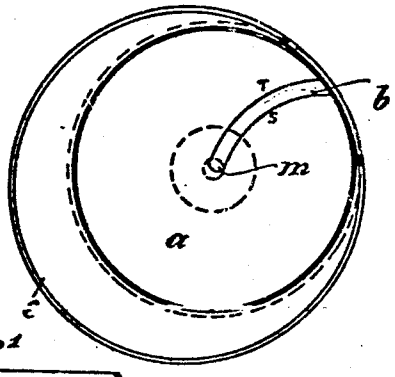


Fig. 3

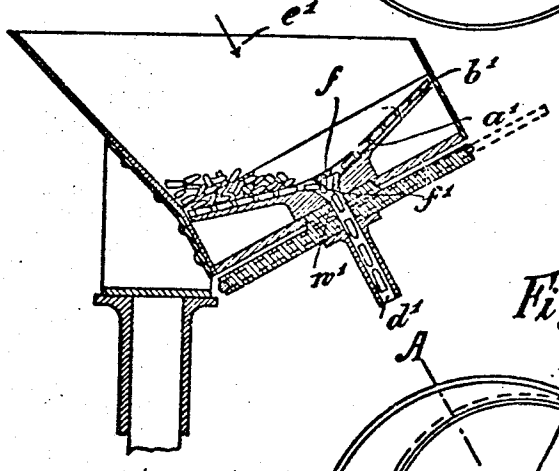


Fig. 4

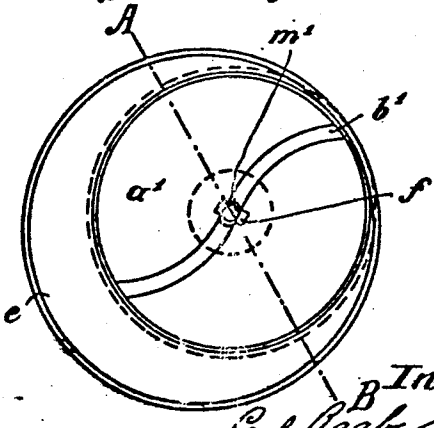
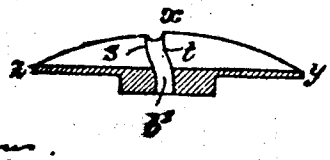


Fig. 5



781
X679
Misc

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UNITED STATES PATENT OFFICE.

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DEVICE FOR AUTOMATICALLY DELIVERING ARTICLES OF MANUFACTURE FROM A COLLECTING-RECEPTACLE.

No. 873,268. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed June 27, 1907. Serial No. 381,180.

To all whom it may concern:

Be it known that I, PAUL RAABE, engineer, a subject of the King of Prussia, and residing at No. 5 Bunsen street, in Karlsruhe, Baden, Germany, have invented certain new and useful Improvements in Devices for Automatically Delivering Articles of Manufacture from a Collecting-Receptacle; 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.

The present invention relates to that kind of devices for automatically delivering articles of manufacture from a collecting receptacle in which a disk which is to be moved rectilinearly or in a circle is arranged above the bottom or even at the bottom of the receptacle, the latter being mounted slantwise, so that the articles collect in the lower part of the same, are raised singly or in greater numbers by the disk and are delivered at the upper edge of the receptacle, whereas any surplus articles which are carried by the disk are automatically returned to the stock.

The device in accordance with the present invention differs in principle from known devices of this kind in that the articles, pieces of metal or the like are not delivered from the upper edge of the bottom of the receptacle as formerly, but in the middle or near the center of the same. Apart from the increased simplicity of the build of the device, an important technical improvement is obtained, as, in spite of considerably increased capacity of production, blocking of the articles is as good as impossible, and if such obstruction should occur fracture of the parts of the machine etc. is avoided without any additional auxiliary means.

In order that the invention may be clearly understood reference is made to the accompanying drawing in which two forms of the new device are represented by way of example and in which:

Figure 1 is a vertical sectional elevation; Fig. 2 is a plan in the direction of the arrow in Fig. 1; Figs. 3 and 4 show another form of the device, likewise in vertical sectional elevation and plan in the direction of the arrow respectively, and Fig. 5 is a section through the disk on the line A—B of Fig. 4.

A disk *a* which is rotated by a groove-wheel *c*, for example, or the like is situated above the bottom of the collecting receptacle *e*. The disk has on its surface one or more radial hollows or grooves *b* which are preferably blade-shaped. When the disk is rotated and when the blade-shaped groove *b* has reached its lower position the articles which are at the lowest part of the collecting receptacle go into the groove and are carried upwards when the disk is rotated still further, in order to then slide down in the groove *b* in consequence of their own weight and to be delivered through the center of the disk or the hole *m* into the tube *d* and from there into a supply conduit or the like. The disk *a* may also be shaped somewhat like a funnel instead of flat, but only to such an extent that the stock of articles does not cover over the center of the disk (compare Fig. 3). Further, the surface of the disk is preferably not smooth but made with an undulating surface by means of concentric waves. In this manner when the disk is rotated the pieces of metal are simultaneously raised and lowered and are consequently loosened. If the disk has two radial grooves these preferably lie each in a wave-crest *x* of the surface of the disk, whereas the hollows *z* and *y* of the waves are situated between them.

In order to facilitate the insertion of the articles in the blade-shaped groove *b'* the edge *s* of the groove which is at the front with regard to the direction of motion lies somewhat lower than the rear groove *t* which forms the highest point of the crest of the wave (Fig. 5).

In the case of disks with a plurality of grooves a small bridge *f* is arranged over the discharge hole and a pendulum-piece *f'* is attached to the bridge. When the disk *a'* is rotated this pendulum-piece *f'* always goes into the position shown in Fig. 3 on account of its own weight; it releases the discharge opening for the groove which is uppermost at any time and limits the width of the discharge hole *m'* which may never be so great that two or indeed several articles can come one beside another into the hole or the tube *d'*.

When the tube *d'* has filled up as far as the receptacle *e*, *e'*, the admission of articles into the tube *d'* ceases automatically and the arti-

cles which are carried upwards by the groove *b*, *b'* fall back at once to the stock. If the tube *d'* becomes empty, on the contrary, delivery of the articles takes place again without interruption.

The form of the device may also be such that the disk is not provided with hollow grooves, but with correspondingly shaped projections or the like. In the same manner the disk may be made stationary and the receptacle revoluble. In this case the receptacle would be provided with correspondingly formed driving members on its interior sides which supply the articles to the blade-shaped groove of the disk which are inclined towards the center.

What I claim as my invention and desire to secure by Letters Patent is:

1. A device of the type described for delivering articles comprising in combination a receptacle having an inclined bottom for said articles, a disk-shaped body revoluble at the bottom of said receptacle having a hole at its center and one or more carrying members proceeding from said hole towards the outside edge of the disk and forming ways, and means for rotating said body, whereby when said body is rotated articles are carried from the stock of the same in said receptacle and are delivered at the center of said body.

2. A device of the type described for delivering articles comprising in combination a receptacle having an inclined bottom for said articles, a disk-shaped body revoluble at the bottom of said receptacle having a hole at its center and one or more guiding members proceeding from said hole towards the outside edge of the disk, and means for rotating said body, whereby when said body is rotated articles are carried from the stock of the same in said receptacle and are delivered at the center of said body.

3. A device of the type described for delivering articles comprising in combination a receptacle having an inclined bottom for said articles, a disk-shaped body revoluble at the bottom of said receptacle having a hole at its center and one or more grooves proceeding from said hole towards the outside edge of the disk, a tube connected with said hole and means for rotating said body, whereby when said body is rotated articles are carried upwards in said grooves from the stock of the same in said receptacle and then slide down in consequence of their own weight in the grooves to the center of the disk and fall into the tube.

4. A device of the type described for delivering articles comprising in combination a receptacle having an inclined bottom for said articles, a disk-shaped body revoluble at the bottom of said receptacle having a hole at its center and one or more curved grooves proceeding from said hole towards the outside edge of the disk, a tube connected with said hole and means for rotating said body, whereby when said body is rotated articles are carried upwards in said grooves from the stock of the same in said receptacle and then slide down in consequence of their own weight in the grooves to the center of the disk and fall into the tube.

5. A device of the type described for delivering articles comprising in combination a receptacle having an inclined bottom for said articles, a disk-shaped body revoluble at the bottom of said receptacle having a hole at its center and a plurality of carrying members proceeding from said hole to the outer edge of the body, means for rotating said body and a swinging member attached to said body adapted to prevent all said carrying members except the uppermost communicating with said hole, whereby when said body is rotated articles are carried from the stock of the same in said receptacle and are delivered at the center of said body.

6. A device of the type described for delivering articles comprising in combination a receptacle having an inclined bottom for said articles, a wide-angled funnel-shaped disk revoluble at the bottom of said receptacle having an opening at its center and a plurality of channels leading from said opening to the side of the disk, a pulley for rotating said disk, a tube through said pulley connected with said disk communicating with said opening and a pendulum in said opening attached to said disk, whereby when said disk is rotated said channels are driven under the stock of articles in said receptacle, a number of articles are carried up in said channels and slide down the same in turn and into said tube.

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

PAUL RAABE.

Witnesses:
H. W. HARRY,
JOS. H. LEUTE.