Dec. 9, 1924. 1,518,557

J. H. L. BOETTCHER

APPARATUS FOR STACKING ARTICLES

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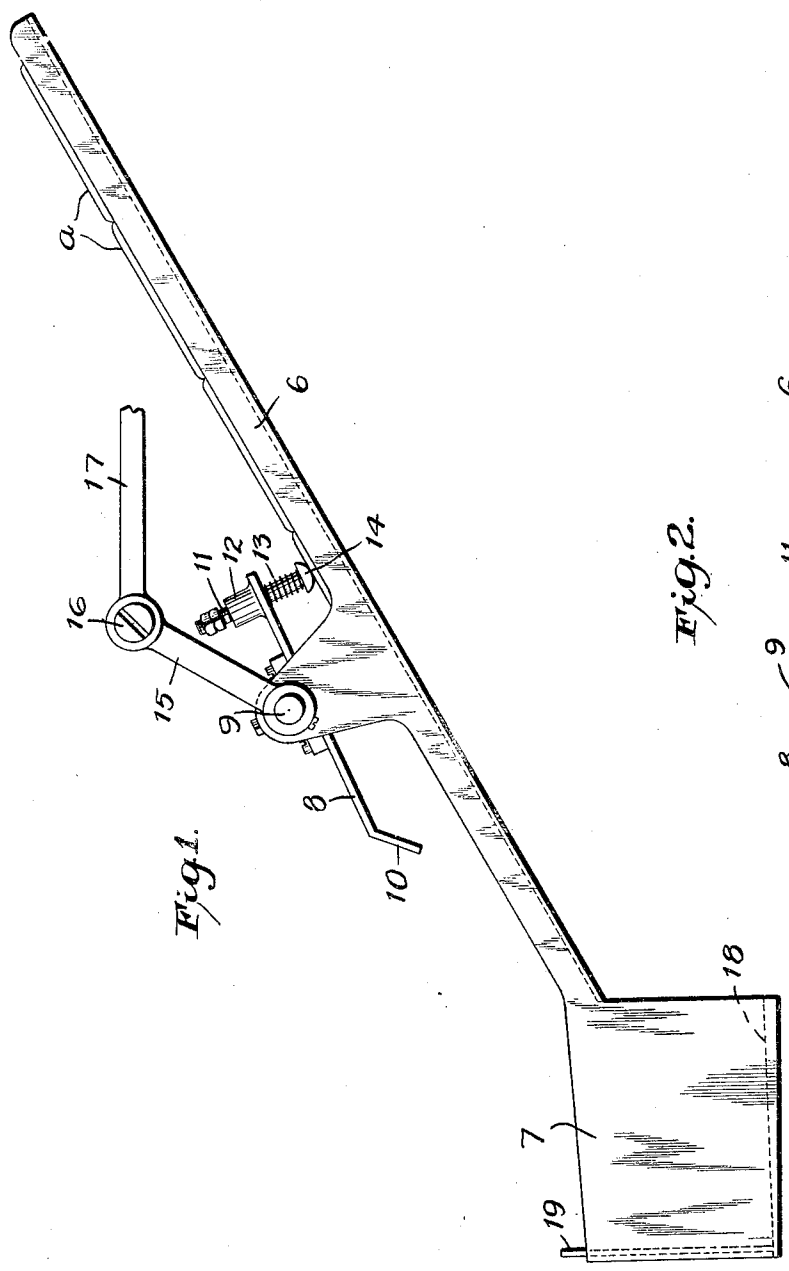


Fig. 1.

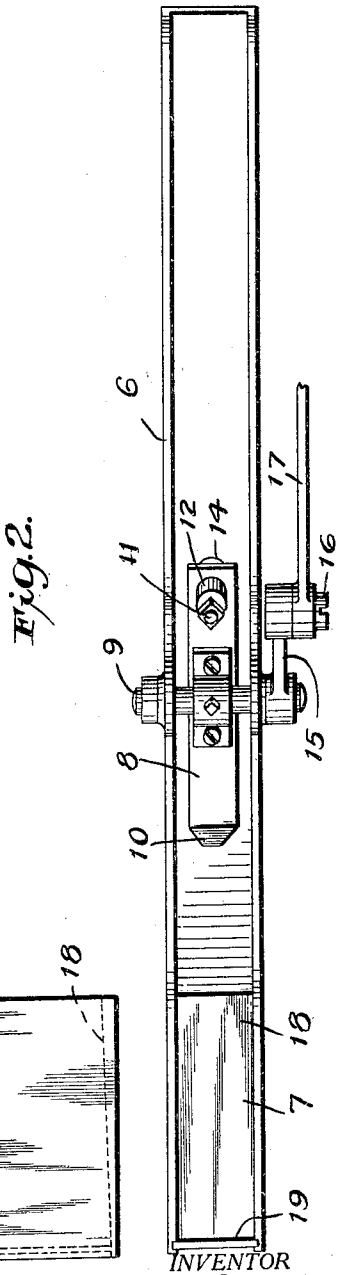


Fig. 2.

INVENTOR

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Fig.3.

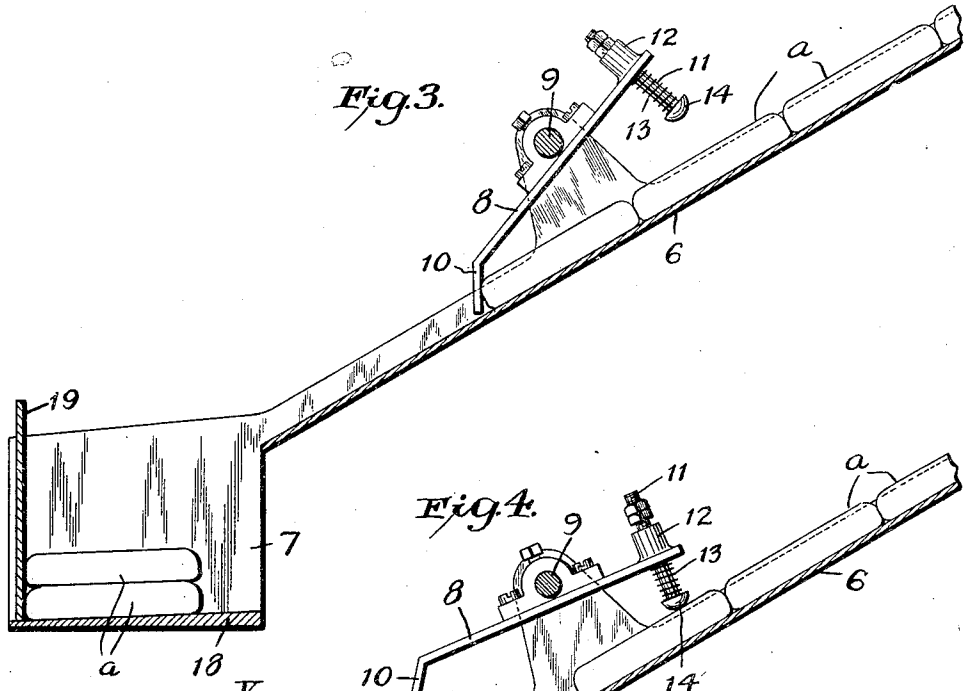


Fig.4.

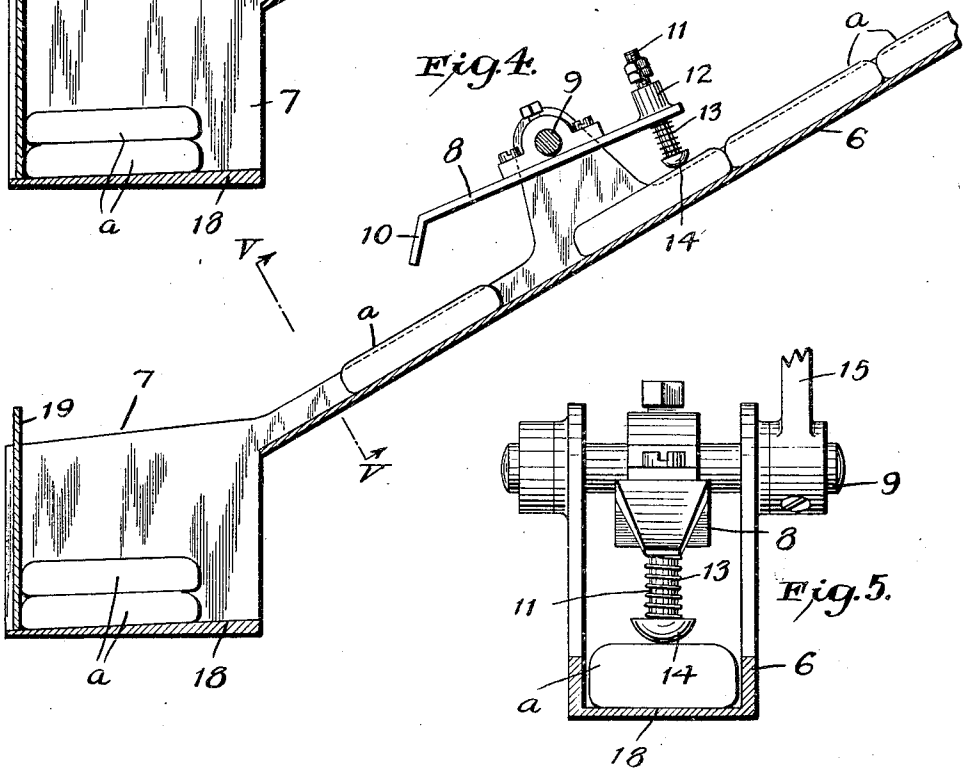


Fig.5.

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UNITED STATES PATENT OFFICE.

JACOB HEINRICH LUDWIG BOETTCHER, OF ORANGE, NEW JERSEY.

APPARATUS FOR STACKING ARTICLES.

Application filed June 4, 1923. Serial No. 643,354.

To all whom it may concern:

Be it known that I, JACOB HEINRICH LUDWIG BOETTCHER, a citizen of the United States, and resident of Orange, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Apparatus for Stacking Articles, of which the following is a specification.

This invention relates to a certain new and orginal apparatus for stacking crackers or other articles adapted to be stacked thereby.

Ordinarily these articles are arranged by hand in a plurality of stacks and then placed in the boxes or containers. This invention has to do particularly with arranging the articles in stacks, and provides an exceedingly simple and effective way of doing this.

An object of the invention consists in providing such an apparatus which includes means for feeding the articles in sequence, and for restraining the movement of the following articles while each leading one is passed into its stacked position.

Another object consists in providing such an apparatus which is very simple and cheap to manufacture, while very accurate and effective in operation.

Another object consists in providing certain improvements in the form, construction and arrangement of the several parts, whereby the above named and other objects may be effectively attained.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Fig. 1 represents a side elevation of the apparatus.

Fig. 2 represents a top plan view thereof.

Figs 3 and 4 represent longitudinal sectional views illustrating the operation, and

Fig. 5 represents a cross sectional view taken in the plane of the line V—V of Fig. 4, looking in the direction of the arrows.

The apparatus includes an inclined trough or guideway in which the articles are placed in line, and includes means for intermittently releasing the leading article and restraining the succeeding articles while the leading one is sliding from the inclined trough to stacked position in a receptacle. The apparatus also includes a receiving receptacle so arranged as to permit a stack of articles to be bodily removed therefrom.

The reference numeral 6 designates a sloping guideway or trough terminating in the reservoir or container 7. The articles *a* may be placed in the trough in any convenient manner from any type of feeding device, or by hand.

Means is provided over the trough for releasing one article at a time and holding the others while this one is being released. This means comprises a rocking lever 8 secured to a shaft 9 in any convenient manner, over the trough, preferably near the reservoir or container. One end of this lever is bent downward at 10 to facilitate holding the row of articles, as shown in Fig. 3. As this lever is moved from the position in Fig. 3, the articles will start moving by gravity to the position shown in Fig. 4. A plunger 11 (hereafter described) will then rest on the second article in the row and thus hold them all back while the first one continues moving towards the container.

The plunger 11 is mounted in a bearing 12 on the lever 8 and has an expansion spring 13 between the lever and a rounded head 14 on the plunger. This compensates for variations in the thickness of the articles and provides a means for firmly holding the articles without injury to them.

Secured to the outer end of the shaft 9 is a crank 15 which has pivoted to it at 16 a link 17, which may be connected with any source of power for imparting a reciprocating motion thereto in order to give the necessary rocking motion to the lever 8.

The bottom 18 of the container 7 is preferably sloped slightly in the same direction as the slope of the trough 6. This is desirable as it prevents the articles when they land in the container from being up-ended and getting out of the desired position. Both the slope 18 at the bottom of the container and the slope of the trough 6 may be changed to suit the article that is being stacked.

As shown, the end of the container 7 nearer to the trough is open and the opposite end is closed by a removable gate 19. The reason for this is that, when the desired number of articles has been placed in the container, the gate 19 may be removed and a pusher of any type may enter at the open end and remove the stack of articles from the container. This pusher and the gate may be operated automatically in any convenient manner.

A brief description of the operation follows: Referring to Figs. 3 and 4, the desired number of articles are fed into the trough 6 and held by the end 10 of the lever 8 from advancing to the container 7. The lever 8 is rocked by its crank 15 and the row of articles starts to move. When the lever 8 is in the position shown in Fig. 4, the spring pressed plunger 11 holds the second article, and thus the row, until the one that has just been released is out of the way of the lever, when the latter returns to the position of Fig. 3. When the lever returns to said position the row of articles moves from the position of Fig. 4 to that of Fig. 3, so that, as the operation continues, they are fed one at a time into the container until the desired number are stacked therein.

It will be understood that various changes may be resorted to in the form, construction and arrangement of the several parts without departing from the spirit and scope of my invention; and hence I do not intend to be limited to the details herein shown and described except as they are included in the claims.

What I claim is:—

1. An apparatus of the character described comprising, a support for the articles in their stacked position, a chute so spaced above said support as to permit the assembly of a vertical stack of articles upon the said support, and means for feeding one article at a time from the chute to the support upon which the articles assemble in superposed relation.

2. An apparatus of the character described comprising, a support for the articles in their stacked position, a chute so spaced from said support as to permit the assembly of a vertical stack of articles upon the said support and to permit the operation of displacing means to remove the stack from the support, and means for feeding one article at a time from the chute to the support upon which the articles assemble in superposed relation.

3. An apparatus of the character described comprising, a chute from which the articles to be packed are discharged one at a time, means in the chute for controlling the discharge of the articles, and a box-like receptacle at the discharge end of the chute in which receptacle the articles assemble in a vertical stack, said receptacle being larger in cross section than the stack of articles to permit the operation of displacing means to force the assembled stack from the receptacle and having an opening through which the stack may be removed, and said chute being connected with said receptacle at an upper portion thereof.

In testimony, that I claim the foregoing as my invention, I have signed by name this 31st day of May, 1923.

JACOB HEINRICH LUDWIG BOETTCHER.