A. BLEILE.

DEVICE FOR HANDLING CRACKERS AND THE LIKE.

APPLICATION FILED DEC. 6, 1917.

1,268,919. Patented June 11, 1918.

Fig. 1.

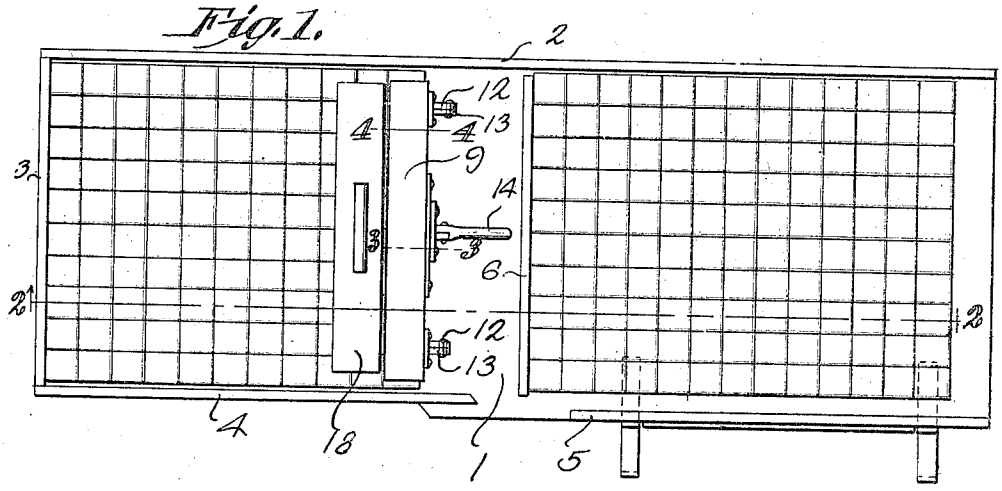


Fig. 2.

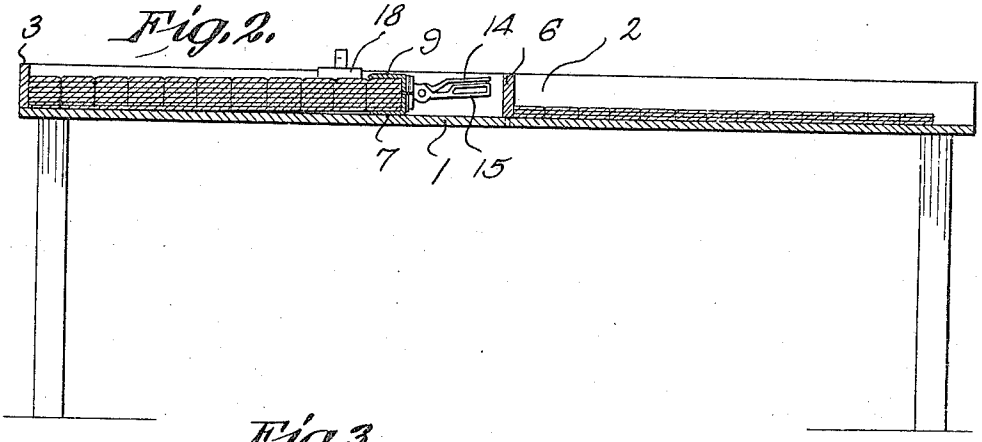
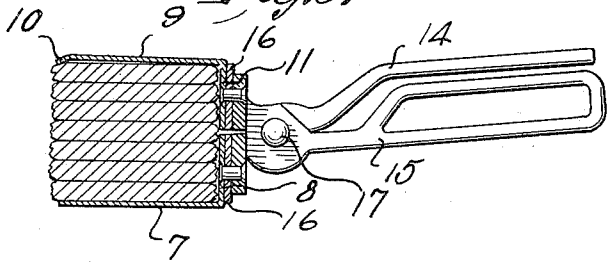


Fig. 3.



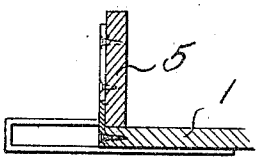
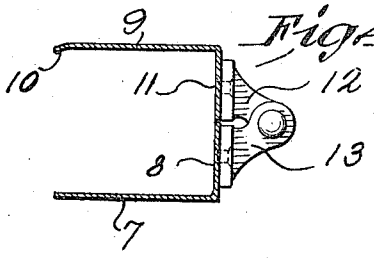


Fig. 5.

Fig. 4.



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DEVICE FOR HANDLING CRACKERS AND THE LIKE.

1,268,919. Specification of Letters Patent. Patented June 11, 1918.

Application filed December 6, 1917. Serial No. 205,794.

To all whom it may concern:

Be it known that I, ALBERT BLEILE, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Devices for Handling Crackers and the like, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a device for handling crackers and the like.

In the manufacture of crackers, small cakes, and similar articles, it is customary to bake the same in sheets comprising a plurality of parallel rows of crackers united at their edges just as they come from the forming devices. When the sheets of crackers are removed from the oven they are broken up into strips, or rows, of crackers, each strip containing one or more rows of crackers, and these strips are placed in trays and taken to the packing rooms where they are separated into individual units, or crackers, and packed. If the sheets are broken up into individual crackers in the first instance it is necessary to handle each cracker separately, or gather them up into bunches, and the work and time required for handling is greatly increased. It is difficult to break these sheets into strips without breaking up the strips into individual crackers. This is particularly true in the case of certain goods, such as hard-tack, which are baked very hard and are consequently quite brittle when they come from the oven. Not only will the strips or rows break up into their individual units when an effort is made to break up the sheets into strips, but many of the crackers themselves will be broken in such a manner that they are not commercial, thus further increasing the cost of handling. Moreover, hard-tack and similar goods cool very slowly after coming from the ovens and cannot immediately be grasped in the hand for breaking up into strips.

The object of this invention is to provide a device by means of which the sheets of crackers can be broken up into strips or rows of crackers without breaking the strips into individual units, and which, further, will serve as a carrier to enable the strips to be placed in the trays without further handling.

To this end it is a further object of the invention to provide a device which will grip one edge of a pile of superimposed sheets of crackers and apply pressure thereto along the line of division between two rows of crackers and thus cause the row, or rows, of crackers gripped by the device to be separated from the sheet, or sheets.

It is also an object of the invention to provide such a device which will be very simple in its construction and operation and which can be manipulated rapidly.

It is a further object of the invention to provide in connection with such a device a supporting structure to receive the piles of sheets, as the latter are taken from the oven, and to arrange the same in superimposed alinement; and which will also be of such a character that while one pile of sheets is being broken up into strips other sheets can be piled upon another portion of the structure.

In the accompanying drawings Figure 1 is a plan view of a supporting structure and handling device embodying my invention; Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1; Fig. 3 is a sectional view of the handling device taken on the line 3—3 of Fig. 1; Fig. 4 is a sectional view of the handling device taken on the line 4—4 of Fig. 1; and Fig. 5 is a fractional detail view of the supporting structure showing the movable side wall therefor.

In these drawings I have illustrated one embodiment of my invention and have shown the same as designed more particularly for handling hard-tack, but it will be understood that the invention can be used for the handling of crackers, cakes, biscuits, or similar articles, whether edible or not. In these drawings I have shown the handling device in connection with a support comprising a table 1 which is of a length somewhat greater than the combined length of two ordinary sheets of crackers, it being understood that the term crackers is used to include any similar articles, as above mentioned. This table is provided at one side with a fixed wall 2 extending substantially for the full length of the table and is provided at its rear end with a fixed wall 3, and along the rear portion of the other side thereof with a fixed wall 4, this latter wall extending for approximately half the length of the table. The walls 2 and 4 are spaced apart a distance but little greater than the width of the sheets so that when a pile of sheets has been placed between the same and

against the rear wall 3 they will be retained in vertical alinement. The forward portion of the table is somewhat greater in width than the width of the sheets and is provided with a movable side wall 5 which is slidably mounted thereon and rests normally at the edge of the table, as shown in Figs. 1 and 5. As the sheets of crackers are taken from the oven they are piled one upon the other upon the wide forward portion of the table, the distance between the side walls of this portion of table being such as to permit the sheets to be readily placed thereon. A movable stop or partition 6 extends transversely of the table near the middle thereof, this partition being of a length approximately equal to the width of the sheets. When the desired number of sheets of crackers has been piled upon the table the side wall 5 is moved inwardly against the edges thereof to move the lateral edges of the several sheets into vertical alinement. The partition 6 is then removed and the pile of sheets moved to the rear end of the table, the partition 6 being, if desired, placed against the forward end of the pile to move it. After the pile of sheets has been moved to the rear of the table the partition 6 is returned to its normal position and other sheets are piled upon the forward portion of the table while the pile on the rear portion thereof is being broken up into strips.

To break the sheets of crackers into strips, each consisting of one or more rows of crackers, usually one row, I have provided a suitable device for embracing the edge of the pile of superimposed sheets, gripping the row, or rows, of crackers which it is desired to sever from the pile, and applying pressure to the pile along the line of division between the row, or rows, of crackers which it is desired to sever and the succeeding row of crackers in the sheet. In that form of the device here illustrated this device comprises a pair of jaws movably connected one to the other and adapted to be opened to enable the one jaw to be placed beneath the pile and the other jaw to be placed above the same, after which the two jaws are moved together to cause them to grip the pile of sheets between them. The jaws may be of any suitable construction and are preferably of a length substantially equal to the width of the sheet, that is, they are of a length sufficient to enable them to simultaneously embrace all the crackers of a row of crackers, and the upper jaw is of such a width as to enable pressure to be applied to the row of crackers along its line of connection with the succeeding row, and at such a distance from said line of connection as will enable the rows of crackers gripped by the jaws to be broken from the sheets. In the present instance the two jaws are substantially the same width and are formed of sheet metal. The lower jaw 7 is flat and is provided at its rear edge with an upwardly extending flange 8, while the upper jaw 9 is shown as flat, except at its forward edge which is turned down slightly, as indicated at 10, to enable the pressure to be applied along the line of division. The upper jaw is also provided with a flange 11, the two flanges 8 and 11 being pivotally connected one to the other. Preferably the axis of this connection is arranged somewhat in the rear of the flanges so that the jaws as a whole will have bodily movement toward and from each other. In the form of the device here shown the flanges are provided with rearwardly extending lugs 12 and 13, respectively, arranged near the ends of the jaws and pivotally connected one to the other. Suitable handles are provided for manipulating the jaws and as here shown two intersecting handles 14 and 15 are connected to the flanges of the lower and upper jaws, the flanges being preferably reinforced by means of strips 16 at the point of connection with the handles. The intersecting handles are pivotally connected at 17 on an axis coincident with the axes of the lugs 12 and 13. Thus the jaws are, in the present device, connected one to the other at three points, but it will be understood that the number and character of the connections may be varied and in some instances the handles themselves might constitute the only connection required.

In operating the device the jaws are separated and are caused to embrace the several rows of crackers at one edge of the pile of superimposed sheets of crackers, as shown in Fig. 2. The jaws are then closed upon the sheets and the downturned edge 10 of the upper jaw is caused to bear firmly upon the upper row of crackers along the line of division between this row of crackers and the next succeeding row. A slight upward movement of the handle will turn the device as a whole about a longitudinal axis and thus sever the several rows of crackers which are gripped thereby along the lines of their connection with the succeeding rows of the respective sheets of crackers. Preferably some means are provided for holding the pile of sheets against upward movement during the severing operation, and in the present instance I have shown a pressure board 18 which is placed upon the pile of sheets near the line along which the row, or rows, of crackers are to be severed. This board will be grasped by one hand of the operator and pressed down upon the pile while the handling, or severing, device is grasped by the other hand and manipulated to sever the several rows of crackers. After the several rows of crackers, which are gripped by the device, are severed from the

sheets they are retained within the jaws and deposited within the receiving tray, which is arranged at a convenient point adjacent to the supporting structure, or table, 1.

The operation of the device will be readily understood from the foregoing description and it will be apparent that I have provided a device of this kind which is very simple in its construction and which can be easily manipulated to rapidly sever successive rows of crackers from the pile of sheets. It will also be apparent that the device is of such a character that it will not break the crackers themselves, or the rows or strips of crackers into individual units, thus eliminating the wastage due to the breaking of crackers and enabling the several rows of crackers to be placed simultaneously in the tray. Further the device enables the sheets to be broken up into strips immediately after they are removed from the oven without waiting for them to cool, thus avoiding the necessity of providing facilities for the cooling of the sheets, which in a plant having facilities for baking a large number of crackers will require a very large amount of space.

While I have shown and described one embodiment of my invention I wish it to be understood that I do not desire to be limited to the details of construction as various modifications will occur to a person skilled in the art.

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

1. The combination with a structure adapted to support a plurality of superimposed sheets of crackers in vertical alinement, the crackers in each sheet being arranged in parallel rows, of a device to grip the superimposed sheets along substantially their full width and arranged to exert pressure thereon along the line of division between two transverse rows of crackers.

2. The combination with a structure adapted to support a plurality of superimposed sheets of crackers in vertical alinement, the crackers in each sheet being arranged in parallel rows, of a gripping device comprising a pair of jaws of a length slightly less than the width of said structure and movably connected one to the other, one of said jaws being of such a width that its edge will engage the uppermost sheet adjacent to the line of division between two rows of crackers, and means for manipulating said jaws.

3. The combination with a structure comprising a table top adapted to support a plurality of superimposed sheets of crackers, the crackers in each sheet being arranged in parallel rows, and having a movable side wall normally spaced from the opposite side wall a distance greater than the width of said sheets of crackers and adapted to be moved into engagement with the edges of said sheets to move the latter into vertical alinement, of a device to grip the superimposed sheets along substantially the full width thereof, and having a part to engage the uppermost sheet near the line of division between two rows of crackers, and means to manipulate said device to cause pressure to be exerted on said sheets along the line of division between two rows of crackers.

4. The combination with a structure comprising an elongated table top adapted to support a plurality of superimposed sheets of crackers, the crackers of each sheet being arranged in parallel rows, one portion of said table having side walls spaced apart a distance approximately equal to the width of the sheets of said crackers, and another portion of said table having side walls spaced apart a distance greater than the width of said sheets of crackers, one of said last-mentioned side walls being movable to engage the edge of the pile and move the several sheets into alinement, a movable partition interposed between the two parts of said table and forming an abutment against which the ends of the several sheets may be alined and which may be removed to permit a pile of alined sheets to be moved onto the first-mentioned portion of said table, of a device to grip one edge of said pile of sheets along substantially the full length thereof, and having a part to engage the uppermost sheet near the line of division between two rows of crackers, and having means for manipulating the same to cause pressure to be applied to said sheets along the line of division of the two rows of crackers.

5. A structure comprising an elongated table top adapted to support a plurality of superimposed sheets of crackers, the crackers of each sheet being arranged in parallel rows, one portion of said table having side walls spaced apart a distance approximately equal to the width of the sheets of said crackers, and another portion of said table having side walls spaced apart a distance greater than the width of said sheets of crackers, one of said last-mentioned side walls being movable to engage the edge of the pile and move the several sheets into alinement, and a movable partition interposed between the two parts of said table and forming an abutment against which the ends of the several sheets may be alined and which may be removed to permit a pile of alined sheets to be moved onto the first-mentioned portion of said table.

6. A device to grip a pile of sheets of crackers, each of which sheets comprises a plurality of parallel rows of crackers, and to separate a row of crackers from each of said sheets, said device comprising members movable one toward the other and adapted

to embrace superimposed rows of crackers at one edge of said pile of sheets of crackers, said members being of a length substantially equal to the width of said sheets of crackers, and one of said members being arranged to engage the adjacent sheet of crackers near the line of division between two rows of crackers, and means for manipulating said device to cause pressure to be applied to said pile of sheets near the line of division between two rows of crackers.

7. A device to grip a pile of sheets of crackers, each of which sheets comprises a plurality of parallel rows of crackers, and to separate a row of crackers from each of said sheets, said device comprising a pair of jaws of a length substantially equal to the width of said sheets of crackers and having one jaw of such a width that its edge will engage said pile of crackers near the line of division between two rows of crackers.

8. In a device of the character described, a pair of jaws adapted to embrace the edge of a pile of superimposed sheets of crackers, each sheet comprising a plurality of parallel rows of crackers, one of said jaws having one edge arranged to engage said pile of sheets along the line of division between two rows of crackers, and a handle to cause said jaws to grip said pile of crackers, and to impart turning movement to said device as a whole to sever the several rows of crackers gripped by said jaws from the respective sheets of crackers.

9. A device of the character described comprising a pair of jaws pivotally connected one to the other and adapted to embrace the edge of a pile of superimposed sheets of crackers, each sheet comprising a plurality of parallel rows of crackers, one of said jaws being of a width slightly less than the width of a row of crackers and having its edge extending along the line of division between two rows of crackers, and a handle for manipulating said jaws and for imparting turning movement to said device as a whole.

10. A device of the character described comprising a pair of jaws adapted to grip the edge of a pile of sheets of crackers, each of said sheets comprising a plurality of parallel rows of crackers, the uppermost jaw having a downwardly extending portion along the forward edge thereof, said jaw being of such a width that said downwardly extending portion engages the uppermost sheet of crackers along the line of division between two rows of crackers, and means for manipulating said jaws.

11. In a device for severing a plurality of superimposed rows of crackers from the respective sheets of a pile of sheets of crackers, a pair of substantially parallel jaws each having at its rear edge a flange extending toward the other jaw, and pivoted handles connected with the respective flanges for actuating said jaws, one of said jaws being of a length substantially equal to the width of said sheets of crackers and of a width approximately equal to the width of one of said rows of crackers.

12. In a device for severing a plurality of superimposed rows of crackers from the respective sheets of a pile of sheets of crackers, a pair of substantially parallel jaws each having at its rear edge a flange extending toward the other jaw, and pivoted handles connected with the respective flanges for actuating said jaws, one of said jaws being of a length substantially equal to the width of said sheets of crackers and of a width approximately equal to the width of one of said rows of crackers, said last-mentioned jaw having its forward edge turned downwardly to engage a row of crackers along the line of division between said row and another row of crackers.

13. The combination with a table to support a pile of superimposed sheets of crackers, each sheet comprising a plurality of rows of crackers, a pressure board to engage the uppermost sheet of said pile at a point remote from the edge thereof, a pair of jaws adapted to embrace the edge of said pile of sheets, one of said jaws having its edge arranged along the line of division between the two rows of crackers, and means to manipulate said jaws to impart bodily turning movement thereto and to cause said edge of said jaw to exert pressure on said row of crackers.

In testimony whereof, I affix my signature hereto.

ALBERT BLEILE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."