Dec. 1, 1931. J. UHL 1,833,923

MACHINE FOR AUTOMATICALLY SPREADING AND CUTTING BAR SHAPED LENGTHS OF DOUGH PIECES

Filed Aug. 11, 1930

Fig. 1

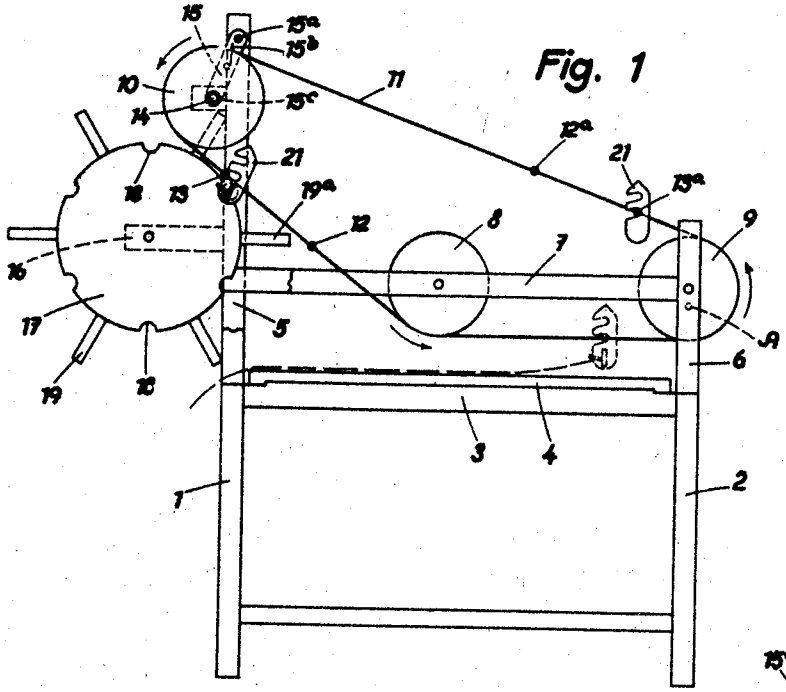


Fig. 3

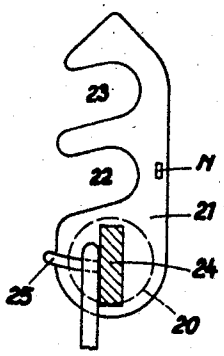


Fig. 4

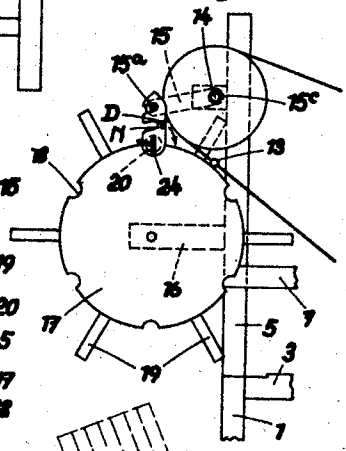


Fig. 2

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MACHINE FOR AUTOMATICALLY SPREADING AND CUTTING BAR-SHAPED LENGTHS OF DOUGH-PIECES

Application filed August 11, 1930, Serial No. 474,642, and in Germany August 14, 1929.

This invention relates to an improved machine for automatically spreading and cutting bar-shaped lengths of dough-pieces, the said machine working quite automatically and solely calls for manual attendance when suspending the lengths of dough-pieces from rakes, which are suspended in the device, and when removing the frame covered with the dough-pieces.

A machine constructed according to the present invention is illustrated by way of example on the accompanying sheet of drawings in which—

Figs. 1 and 2 show the machine in side view and front view respectively.

Fig. 3 is a detail view, and

Fig. 4 illustrates the operation of the machine when putting aside the empty frames.

In Figs. 1 and 2, the characters 1 and 2 designate the frame of the machine, 3 designates a table, which is constructed in the shape of horizontally disposed slides for guiding the frames 4 carrying the dough-pieces.

The stock, indicated in dotted lines in Fig. 2, is kept ready on the inclined plane E and always the foremost frame of this stock is folded down into the position 4^a, in which it is ready for being fed into the machine.

The following automatic device is provided for arranging the lengths of dough-pieces (for instance macaroni) on the horizontal frame, disposed at the time on the table 3.

Chain-wheels 8, 9 and 10 are arranged in pairs in the posts 5, 6 and 7. Chains 11, passing over the three sets of chain-wheels 8, 9 and 10 arranged at both sides of the machine, are connected with each other at a number of places, for instance at two places, by means of two successive transverse bars 12, 13 and 12^a, 13^a respectively, which are arranged at short distances apart. Short cranks 15 are mounted freely rotatable on the shaft 14 of the two chain-wheels 10 and may be rotated in the direction of the arrow shown in Fig. 1, whereby a spring is placed in tension. The upper ends of the said cranks are connected with each other and form an open swinging frame. A disc 17 is mounted freely rotatable on cantilevers 16 of the frame of the machine underneath each chain-wheel 10, and alternately a groove 18 and a feed-tooth 19 are provided on the circumference of each disc.

It is assumed, that both discs 17 (Fig. 1) are disposed in such a manner, that a groove 18 is located at the apex. Two lateral projections 20 of sheet-metal hooks 21 engage this groove, each of these hooks being provided with a bottom mouth 22 and a top mouth 23, and both hooks are connected with each other by a transverse rake 24, provided with a suitable number of uniformly distanced prongs 25. As shown in dotted lines in Fig. 2, the finished lengths of dough-pieces (macaroni) are placed by hand onto the said prongs.

Now if the chain-gear is rotated in the direction of the arrows, the transverse bar 12 moving in advance in Fig. 1 co-operates at both sides with the feed-teeth 19^a of the discs 17, which at the time are disposed in its path of movement, and thus rotates both discs to such an extent, that the two hooks 21 take up the position shown in Fig. 1. In this position the bottom mouth 22 is disposed in the path of movement of the transverse bar 13 which immediately follows. Now this transverse bar enters at both sides the mouths 22 and draws the rake together with the suspended lengths of dough-pieces across the frame 4, resting on the table, so that the dough-pieces are parallel disposed on the frame 4, as indicated in dotted lines in Fig. 1. Whenever the rake, fed by the transverse bar 13, has reached the end of the machine at the right hand side as indicated in dotted lines, the sheet-metal hooks will be inclined by stops A at both sides of the machine in such a manner, that the prongs 25 slip out of the dough-loops resting on the frame 4. The empty rakes are fed forward in the direction of rotation of the chain-gear and move in front of the swinging frame 15, 15^a, 15. The top mouths 23 of the hooks 21 engage both sides of the transverse bar 15^a, so that the empty rakes are suspended now from this transverse bar.

Thereafter the ends of the transverse bar 13, fed by the driving chain 11, strike against

the plate springs 15b, arranged on the cranks 15 at both sides, and thereby feed the swinging frame 15, 15a, 15 to such an extent whereby the tension of the springs 15c is gradually increased, until the transverse bar 13 (in the position shown in Fig. 4) slides past the bent plate spring 15b. In this position in which the swinging frame 15 just has disposed, by the aid of its hooks, the rake 24 in the grooves 18 of the discs 17, the cams D rotating with the chain 11 at both sides co-operate with the ears N of the hooks and turn both hooks in the direction of the arrow (Fig. 4) in such a manner, that the transverse bar 15a of the swinging frame is released and now the whole frame 15 jumps back into the initial position by the aid of the springs 15c.

Now the dough-pieces can be again suspended from the prongs of the rake.

The frames 4 supplied with a rake of dough-pieces, arranged in parallel rows, are shifted, for a width of the frame, on the table 3 transverse to the direction of the lengths of dough-pieces. Thereby the frames pass underneath two circular cutters M, which cut off the ends of the lengths of dough-pieces, so that the pieces of dough are cut at exactly uniform length and move forward to be dried. The removed frame 4 is replaced on the table 3 by a frame from the stock of frames in Fig. 2.

I claim:

1. Device for arranging lengths of dough-pieces on drying frames, comprising in combination a pair of rotary feed-chains, transverse bars connecting the latter, rakes from which the dough-pieces are suspended, hooks on said rakes, operating members moving said hooks into the path of movement of said transverse bars, and drying frames across which the rakes are moved by the transverse bars, for the purpose specified.

2. Device for arranging lengths of dough-pieces on drying frames, comprising in combination a pair of rotary feed-chains, transverse bars connecting the latter, rakes from which the dough-pieces are suspended, hooks on said rakes, operating members moving said hooks into the path of movement of said transverse bars, a stop on the device turning said rakes, and drying frames across which the rakes are moved by the transverse bars, for the purpose specified.

3. Device for arranging lengths of dough-pieces on drying frames, comprising in combination a pair of rotary feed-chains, transverse bars connecting the latter, rakes from which the dough-pieces are suspended, hooks on said rakes, operating members moving said hooks into the path of movement of said transverse bars, drying frames across which the rakes are moved by the transverse bars, and a swinging frame receiving the empty rakes from the rotating feed-chains, for the purpose specified.

4. Device for arranging lengths of dough-pieces on drying frames, comprising in combination a pair of rotary feed-chains, transverse bars connecting the latter, rakes from which the dough-pieces are suspended, hooks on said rakes, operating members moving said hooks into the path of movement of said transverse bars, drying frames across which the rakes are moved by the transverse bars, a swinging frame receiving the empty rakes from the rotating feed-chains, and rotary discs on the device into which the empty rakes are hooked by the swinging frame, for the purpose specified.

In testimony whereof I affix my signature.

JOSEF UHL.