Dec. 15, 1936. B. G. BIALKOWSKY 2,064,406

MEANS FOR SCALLOPING PAPER NAPKINS

Filed Oct. 10, 1935 2 Sheets-Sheet 1

Fig. 1.

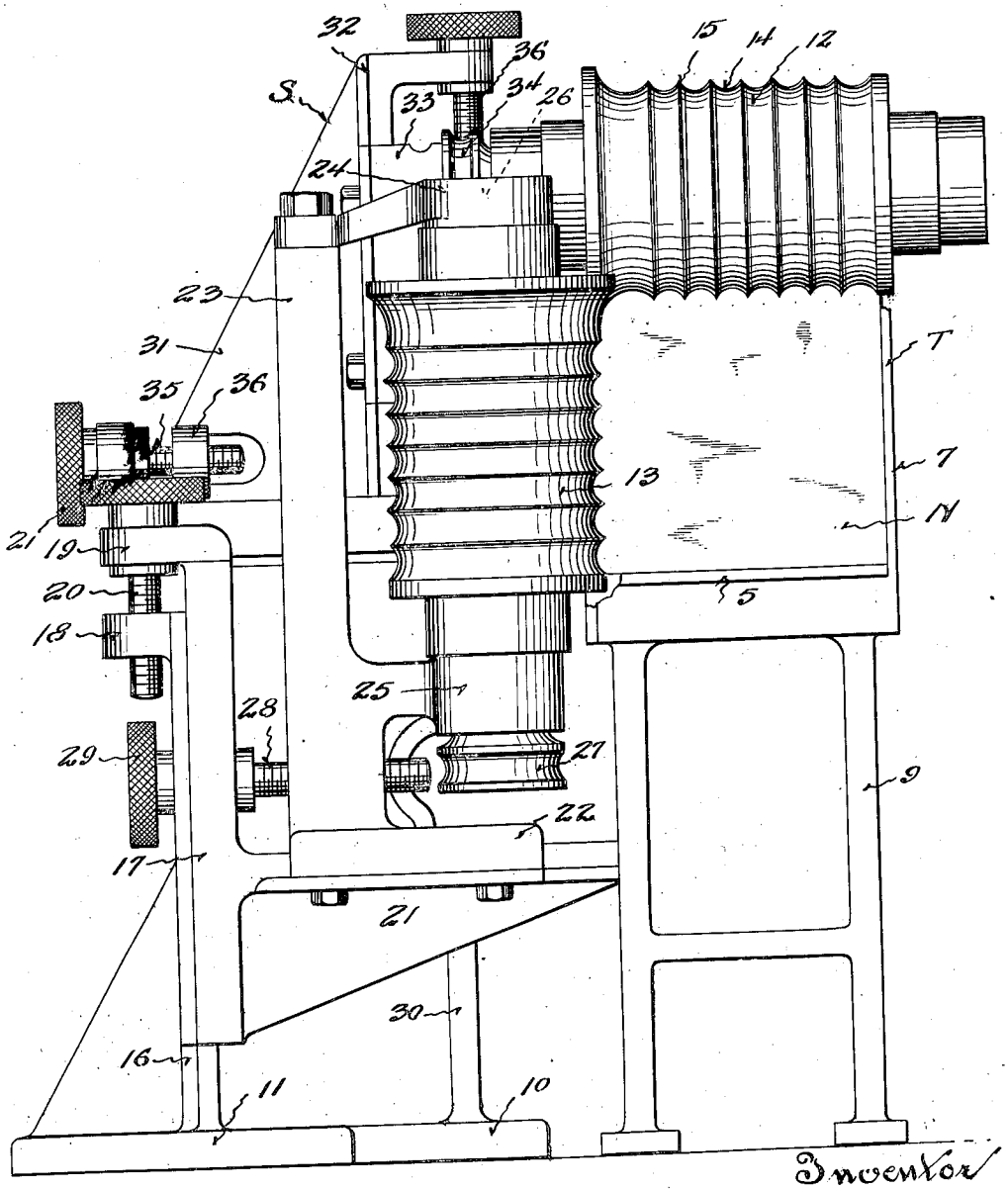

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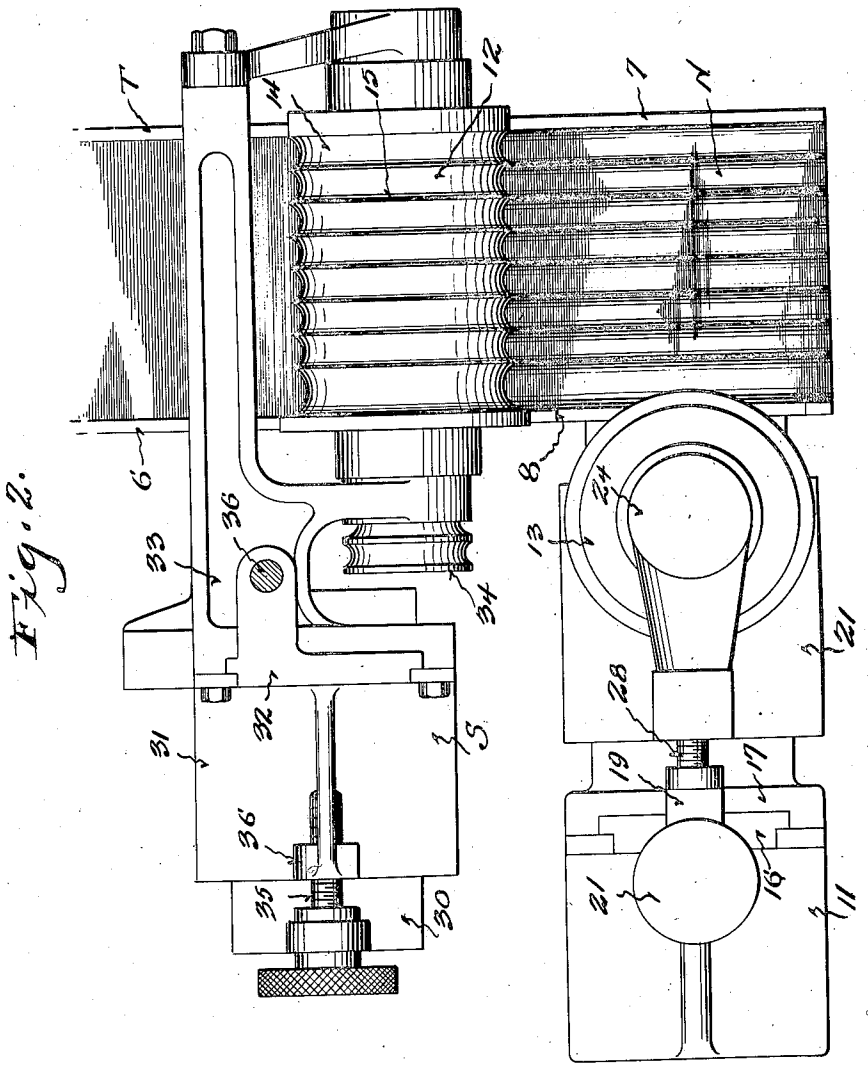
Fig. 2.



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MEANS FOR SCALLOPING PAPER NAPKINS

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11 Claims. (Cl. 51—74)

This invention appertains to novel means for facilitating the scalloping of napkins and similar paper articles.

Considerable difficulty is experienced in scalloping the edges of paper napkins and the like, and much time and labor are expended in this process. Ordinarily, the napkins with their straight edges are removed in small packs by an operator from the delivery trough or rack of a napkin embossing and quarter-folding machine. The scalloping is put on by means of a scalloping die actuated by an operator using the punch or die press. Obviously, this requires the service of operators for removing the napkins from the trough, for carrying the same to the press, and for operating the press, resulting in a loss of time and effort.

It is therefore one of the primary objects of my invention to provide an efficient means for scalloping the edges of the napkins directly in the delivery trough or rack, as the same are fed from the quarter-folding machine, whereby the necessity of providing an extraneous machine is eliminated, and whereby the unnecessary handling of the napkins is dispensed with.

Another salient object of my invention is the provision of rotatable, power-driven abrasive or cutting rolls arranged at the top and to one side of the quarter-folding delivery trough or rack, so that said rolls will operate on the edges of the napkins as the same are automatically fed through the trough.

A further object of my invention is the provision of novel means for operating the rolls, and novel means for adjusting the rolls, so that the rolls can be accurately set to operate efficiently on the edges of the napkins, irrespective of the size of the napkins.

A further important object of my invention is the provision of an upper roll extending transversely across the delivery trough or rack of a quarter-folding machine, with means for adjusting the roll both transversely and vertically of the trough, and a side roll with means for adjusting the same both in a vertical and horizontal plane, whereby said roll can be moved toward and away from the rack, and vertically of said rack.

A still further object of my invention is the provision of novel means for scalloping the edges of napkins, and similar paper articles, directly in a delivery trough as the same leave a quarter-folding machine of the above character, which will be durable and efficient in use, one that will be simple and easy to manufacture, and one which can be incorporated with a delivery trough at a small cost.

With these and other objects in view, the invention consists in the novel construction, arrangement, and formation of parts, as will be hereinafter more specifically described, claimed, and illustrated in the accompanying drawings, in which drawings:

Figure 1 is an end elevation of my improved scalloping device, showing the same incorporated with the delivery trough or rack of a quarter-folding machine.

Figure 2 is a top plan view of the improved scalloping device, showing the same applied to the quarter-folding delivery trough.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter "S" generally indicates my improved scalloping machine, and "T" a delivery trough or rack. The delivery trough or rack "T" extends from a napkin embossing and quarter-folding machine, which can be of any standard construction and make. The trough forms a part of a standard quarter-folding machine, and the same includes a bottom wall 5, and longitudinally extending side walls 6 and 7. The side wall 6, in accordance with my invention, can be provided with a cut-out portion 8, for a purpose which will be later set forth. The trough or track "T" can be supported in any preferred manner, such as by the use of a table or supporting base 9.

My improved scalloping device "S" comprises supporting bases or standards 10 and 11, respectively, for an upper roll 12 and a side roll 13. These rolls 12 and 13 are of a similar construction, and can be formed from abrasive material for acting on the edges of the napkins "N," which are fed through the trough "T." The rolls, if preferred, can be in the nature of steel cutting rolls, and, as shown, the same are provided with spaced, arcuate annular grooves 14, defining sharp, annular ribs 15.

The base 11 for the side roll 13 embodies an upright standard 16 on which is slidably mounted the vertically movable guide 17. The upper end of the standard 16, and the upper end of the guide 17, are provided respectively with laterally extending lugs 18 and 19. The lug 19 rotatably supports a feed screw 20, which is threaded into the lug 18 of the standard. The feed screw 20 is provided with an operating head 21, and, obviously, by turning the screw the guide 17 can be raised or lowered. Formed on

the guide 17 is a laterally projecting supporting foot 21 which projects toward the base 9 of the trough "T". This foot 21 has slidably mounted thereon a guide 22, which in turn carries an upright or post 23. Bearings 24 and 25 are carried by the upright adjacent to the opposite ends thereof, and these bearings rotatably support the shaft ends 26 of the side abrasive roll 13. One shaft end can have formed thereon, or secured thereto, a drive pulley wheel 27, whereby the abrasive roll can be driven at a high rate of speed from a line shaft, or a suitable prime mover, such as an electric motor.

The guide 17 rotatably carries a feed screw 28, which can slidably extend through a slot formed in the standard 16. This screw 28 is threaded into the upright or post 23 adjacent to its lower end, and by turning the screw in the desired direction the guide 22 can be moved toward and away from the trough base 9. A handle on the manipulating head 29 is formed on the screw 28 to facilitate the manipulation thereof. The side abrasive roll 13 is mounted in the opening 8 formed in the side wall 6 of the trough "T", so that the roll will effectively operate on the side edges of the napkins. By arranging the roll in the manner described, the roll can be adjusted toward or away from the trough, and vertically of the trough by manipulating the feed screws 28 and 20.

The top abrasive roll 12 is mounted similar to the side roll 13, and hence the base 10 carries a standard 30 on which is mounted the horizontally movable head 31. The head 31 has formed thereon a vertically disposed guide 32 for slidably supporting the vertically movable bearing block 33. This bearing block 33 rotatably supports the top roll 12, and this abrasive roll can have formed thereon, or secured thereto, a drive pulley wheel 34. The pulley wheel 34 can be driven at a high rate of speed in any desired manner, such as an electric motor. I do not wish to limit myself to the exact means for driving the rolls, as obviously equivalent means can be provided for the pulley wheels 27 and 34.

In order to bring out the adjusting of the roll 12 transversely of the trough "T", and vertically of the trough I provide adjusting screws 35 and 36. The adjusting screw 35 is rotatably carried by the base 30, and is fitted into a feed nut 36 carried by the head 31. By turning this nut the head 31 can be moved toward and away from the trough, and consequently the abrasive roll 12 can be adjusted transversely of the trough. The feed screw 36 is rotatably carried by the guide 32, and the stem is fitted into a suitably threaded opening formed in the bearing block 33. By turning this screw 36, the block can be raised or lowered for moving the roll toward and away from the trough. The screws 35 and 36 can be provided with suitable manipulating heads.

In use of my improved invention, the napkins "N" are fed through the trough "T" from the napkin quarter-folding machine, and as these napkins are automatically fed past the rolls 12 and 13, the rolls will effectively operate on the edges of the napkins, and form the desired scallops therein. As stated, the rolls are preferably driven at a high rate of speed, and the scallops are formed in a clean and efficient manner. Obviously, after the rolls 12 and 13 are initially adjusted and set, the same operate automatically on the napkins, and require little or no attention from an operator.

In Figure 2 the napkins at the upper end are shown with their straight edges, as the same are fed from the quarter-folding machine, and at the bottom of the figure with their scalloped edges, as the same leave the abrasive rolls.

It is to be understood that in actual practice refinements can be made to the apparatus, such as a hood and suction means for carrying away dust and scrap paper as the same is ground or cut away from the edges of the napkins.

Changes in details may be made without departing from the spirit or the scope of the invention, but what I claim as new is:

1. The combination with the delivery trough of a paper napkin quarter-folding machine, of means for scalloping the edges of the napkins in the trough as the same are fed through the trough.

2. The combination with the delivery trough of a paper napkin quarter-folding machine, of scalloping rolls carried by said trough.

3. The combination with the delivery trough of a paper napkin quarter-folding machine, of scalloping rolls carried by said trough, and means for rotating said rolls.

4. The combination with the delivery trough of a paper napkin quarter-folding machine, of scalloping rolls disposed adjacent to the trough for engaging the edges of the napkins as the same are fed through the trough, and means for initially adjusting the position of the rolls relative to the trough.

5. The combination with the delivery trough of a paper napkin quarter-folding machine, of scalloping rolls disposed adjacent to the trough for engaging the edges of the napkins as the same are fed through the trough, means for initially adjusting the position of the rolls relative to the trough, and means for rotating said rolls.

6. In a machine of the character described, a trough for holding quarter-folded sheets in an upright position, and rotatable scalloping rolls extending vertically and transversely of the trough for engaging the edges of the sheets.

7. In a device of the character described, a trough for receiving quarter-folded sheets in a vertical position, a rotatably driven scalloping roll extending transversely across the trough, and a vertically disposed scalloping roll disposed adjacent to one side of the trough, and means for rotating said vertically disposed roll.

8. In a device of the class described, a trough for receiving quarter-folded sheets in an upright position, a rotatable scalloping roll extending transversely across the trough, a rotatable side roll extending vertically of the trough, the rolls being adapted to engage the edges of the sheets, and means for adjusting said rolls in vertical and horizontal paths independently of one another.

9. The combination with a delivery trough of a paper napkin quarter-folding machine including bottom and side walls, one of said side walls having an opening therein, of means for scalloping the edges of the napkins as the same pass through the trough including a top scalloping roll extending transversely across the trough for engaging the upper edges of the napkins, a side rotatable, vertically disposed roll received in the opening in the side wall of the trough for engaging the side edges of the napkins in the trough, means for vertically adjusting the rolls, and means for adjusting the rolls in a horizontal plane.

10. In a device of the character set forth, a

trough for receiving quarter-folded sheets in a vertical position, scalloping rolls for engaging the edges of the sheets in said trough, each of said rolls including spaced arcuate annular grooves and sharp annular cutting ribs.

11. In a device of the character set forth, a trough for receiving folded sheets, rotatable scalloping rolls for engaging the edges of the sheets in the trough, and means for rotating said rolls.

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