

Patented July 12, 1921.



By Eos J. Anglin Attorney

UNITED STATES PATENT OFFICE.

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PASTE-APPLYING APPARATUS.

1,384,048.

Specification of Letters Patent.

Patented July 12, 1921.

Application filed September 25, 1920. Serial No. 412,333.

To all whom it may concern:

Be it known that I, FREDERICK COATES, a citizen of the United States, residing at Wyoming, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Paste-Applying Apparatus, of which the following is a specification.

This invention relates to the manufacture of paper or pasteboard cartons. More particularly the invention relates to a machine for applying paste to the edge of such a carton so that the closure for the end of the carton may be securely attached to the body of the machine being in the nature of a paste applying apparatus.

In devices of this character considerable difficulty has been experienced in applying a uniform quantity of paste just at the mouth of the carton body in such manner that there will be no excess paste run down the inside of the carton.

One of the most important objects of this invention is to provide an improved arrangement whereby a uniform quantity of paste may be applied inside of the carton mouth in such manner that no excess of paste will exist and thereby there will be no running or dripping of the paste below the point to which it properly is applied.

Another objection that has heretofore existed has resided in the fact that the means employed for applying the paste was of such nature that when idle it has been either necessary to close a valve or an excess of paste would gather on the applying device.

A second important object of the invention is to provide an improved form of paste applying means wherein the paste will only be delivered to the part of such means that contact with the carton mouth at the time when the device operates to apply paste.

Another difficulty that has existed resides in the fact that it has been only through the use of apparatus of considerable complication that it is possible to apply paste both within and without the mouth of the carton so that carton ends which have their rims crimped over the body, said rims engaging both the inner and outer surfaces, were difficult of application.

A third very important object of this invention is to provide a very simple means

whereby both the inner and outer surfaces of the carton body will be coated, at its end, with the paste.

With the above and other objects in view, as will be hereinafter apparent the invention consists in general of certain novel arrangements of parts and combinations of details hereinafter fully described, illustrated in the accompanying drawings, and specifically claimed.

In the accompanying drawings like characters of reference indicate like parts of the several views and:—

Figure 1 is a side elevation of a paste applying apparatus constructed in accordance with this invention, the view being partly broken away to more clearly illustrate the apparatus.

Fig. 2 is a vertical section on the line 2--2 of Fig. 1.

Fig. 3 is a perspective view of a modification of the paste applying means.

The embodiment of the invention herein disclosed is one of many arrangements by means of which the purposes and objects herein set forth may be accomplished. This embodiment is therefore not to be taken as the sole form which the invention may assume but is to be understood as typical and is a concrete illustration of one manner of carrying out the invention.

In this particular embodiment there is provided a table 10 which may be supported in any desired manner, it being deemed unnecessary for the purpose of illustration to here disclose the particular type of support. Depending from this table 10 is a lug or bracket 11 whereeto is pivoted one end of a lever 12 which may be raised by hand or may have connection with a suitable power device, not shown, for the purpose of raising and lowering such lever. There also depends from the table a guide 13 through which passes a plunger 14 having its lower end connected by a pin and slot connection 15 with the lever 12. On the upper end of this guide 14 is a holder 16 which is recessed so that the finished part of the carton may be snugly seated therein and held in proper position for operation. In Figs. 1 and 2 of the illustration the carton disclosed is cylindrical and is illustrated at "A," the body only being shown. It will however be obvious that one head of the carton could be

applied before being placed in the carrier 16 this head being located on the lower end since all that is necessary is to have the upper end of the carton open.

5 Projecting upward from the table 10 is a standard 17 whereon is carried slidably a sleeve 18 which is held in adjusted position on the standard by means of a set screw 19. Projecting from the sleeve 18 is a bracket 10 20 which is firmly secured to a paste tank 21 having a closed bottom 22 and provided with an annular series of perforations 23 just above the bottom 21. This tank is also provided, above the perforations, with a peripheral flange 24 having suitable openings there- 15 in wherethrough pass headed screws 25. The lower end of the tank 21 is turned externally to provide a smooth surface so that a paste applying ring 26 may slide freely thereon. This ring 26 which is preferably 20 termed the pasting ring is of such size externally as to fit neatly within the carton "A" and in order that it may enter the carton without injuring the latter the lower 25 edge of the ring is beveled as at 27. Extending through the ring 26 are openings or ports 28 corresponding in number and position to the openings or ports 23 so that when the ring is slid upward from its lowermost 30 position the ports 23 and 28 will register and paste will escape from the tank 21 through such ports. This ring is provided at its upper end with a peripheral flange 29 into which the lower ends of the screws 25 35 are engaged and between the flanges 24 and 29 are springs 30 which serve to hold the pasting ring in its lowermost position.

At Fig. 3 is shown a rectangular pasting ring 31 which, in its details of construction, 40 is in all respects similar to the ring 26. It will be obvious that there is employed with such rectangular ring a rectangular tank and that the carton will also be rectangular. Furthermore, it will be obvious that many 45 different shapes of cartons may be pasted with this machine as it is merely necessary to vary the contour of the several parts 16, 21 and 26 to accomplish this result. It is not deemed necessary, in view of such obvious- 50 ness, to here illustrate either forms as hexagons, octagons, ovals, and the like. Furthermore it will be noted that the distance between the tank and its pasting ring and the table 10 may be varied at will by moving the sleeve up and down on the standard. 55 Thus cartons of different heights may be readily accommodated. It is furthermore noted that the flange 29 adjacent each ring is provided with an annular recess 32 which 60 recess is rounded at its inner part and is slightly wider than the thickness of the carton wall.

In the operation of the device a carton is 65 placed in the holder 16 and the lever 12 raised. This brings the carton up so that

the pasting ring 26 engages within the upper end of such carton. As the carton moves upward its upper edge enters the recess 32 and further movement causes the pasting ring to also move upward thus compressing 70 the springs 30 and bringing the ports 23 and 28 into registry. Paste will now escape through these ports. The lever 12 is then dropped and the parts resume the position shown in Fig. 1. The paste within the parts 75 28 oozes out and after one or two movements of the lever is spread all over the outer surface of the pasting ring 26. Now let us assume that the device has been in use a sufficient time to coat the outer surface of the 80 ring 26 with the paste. As the operation just described takes place the excess paste on the ring 26 is forced upward by the upper edge of the carton "A" and enters the 85 groove 32. As the upper edge of the carton follows into this groove the paste is squeezed out and as it cannot pass back down the surface of the ring it is squeezed down over the outer surface of the carton. Thus the carton 90 is pasted both on its inside and its outside and no excess of paste is left to run down the inside and injure the contents.

There has thus been provided a simple and efficient device of the kind described and 95 for the purpose specified.

Having thus described the invention what is claimed as new is:—

1. In a paste applying apparatus, a paste tank, a paste applying ring slidable on said tank, said ring and tank having cooperating 100 paste ports normally out of registry, and means to hold a carton arranged to bring the carton into engagement with the ring and thereby cause the ports to register.

2. In a paste-applying apparatus, a paste 105 tank, a paste applying ring slidable on said tank, said ring and tank having cooperating paste ports normally out of registry, means to hold a carton arranged to bring the carton into engagement with the ring and thereby 110 cause the ports to register, and means to restore the ring to initial position upon removal of the carton.

3. In a paste applying apparatus, a paste 115 tank, a pasting ring slidable on said tank, said tank and ring having cooperating paste ports normally out of registry, a carton holder axially aligned with the tank and ring, and means to reciprocate the carton holder whereby a carton therein may be engaged 120 with the ring to force it along the tank and bring the ports into registry.

4. In a paste applying apparatus, a paste 125 tank, a pasting ring slidable on said tank, said tank and ring having cooperating paste ports normally out of registry, a carton holder axially aligned with the tank and ring, means to reciprocate the carton holder whereby a carton therein may be engaged 130 with the ring to force it along the tank and

bring the ports into registry, and springs normally urging the ring toward the holder to bring the ports out of registry.

5 In a paste applying apparatus, a paste tank, a paste applying ring slidable on said tank, said ring and tank having cooperating paste ports normally out of registry, means to hold a carton arranged to bring the carton into engagement with the ring and there-
10 by cause the ports to register, and means carried by the ring for causing excess of paste on said ring to flow down the outside of the carton.

15 6. In a paste applying apparatus, a paste tank, a paste applying ring slidable on said tank, said ring and tank having cooperating paste ports normally out of registry, means to hold a carton arranged to bring the carton into engagement with the ring and there-
20 by cause the ports to register, means to restore the ring to initial position upon removal of the carton, and means carried by the ring for causing excess of paste on said ring to flow down the outside of the carton.

25 7. In a paste applying apparatus, a paste tank, a pasting ring slidable on said tank, said tank and ring having cooperating paste ports normally out of registry, a carton holder axially alined with the tank and ring,
30 means to reciprocate the carton holder whereby a carton therein may be engaged with the ring to force it along the tank and bring the ports into registry, and means carried by the ring for causing excess of
35 paste on said ring to flow down the outside of the carton.

8. In a paste applying apparatus, a paste tank, a pasting ring slidable on said tank, said tank and ring having cooperating paste
40 ports normally out of registry, a carton holder axially alined with the tank and ring, means to reciprocate the carton holder whereby a carton therein may be engaged with the ring to force it along the tank and
45 bring the ports into registry, springs normally urging the ring toward the holder to bring the ports out of registry, and means carried by the ring for causing excess of
50 paste on said ring to flow down the outside of the carton.

9. In a paste applying apparatus, a paste tank, a paste applying ring slidable on said tank, said ring and tank having cooperating paste ports normally out of registry, and

means to hold a carton arranged to bring the 55 carton into engagement with the ring and thereby cause the ports to register, a flange on said ring having a groove adjacent the ring into which the edge of a carton may enter whereby excess paste from the ring 60 will be forced into the groove and flow down the outside of the carton.

10. In a paste applying apparatus, a paste tank, a paste applying ring slidable on said tank, said ring and tank having cooperating 65 paste ports normally out of registry, means to hold a carton arranged to bring the carton into engagement with the ring and thereby cause the ports to register, and means to restore the ring to initial position upon 70 removal of the carton, a flange on said ring having a groove adjacent the ring into which the edge of a carton may enter whereby excess paste from the ring will be forced into the groove and flow down the outside of the 75 carton.

11. In a paste applying apparatus, a paste tank, a pasting ring slidable on said tank, said tank and ring having cooperating paste 80 ports normally out of registry, a carbon holder axially alined with the tank and ring, and means to reciprocate the carton holder whereby a carton therein may be engaged with the ring to force it along the tank and bring the ports into registry, a 85 flange on said ring having a groove adjacent the ring into which the edge of a carton may enter whereby excess paste from the ring will be forced into the groove and flow down the outside of the carton. 90

12. In a paste applying apparatus, a paste tank, a pasting ring slidable on said tank, said tank and ring having cooperating paste 95 ports normally out of registry, a carton holder axially alined with the tank and ring, means to reciprocate the carton holder whereby a carton therein may be engaged with the ring to force it along the tank and bring the ports into registry, and springs 100 normally urging the ring toward the holder to bring the ports out of registry, a flange on said ring having a groove adjacent the ring into which the edge of a carton may enter whereby excess paste from the ring will be forced into the groove and flow down 105 the outside of the carton.

In testimony whereof I affix my signature.
FREDERICK COATES.