

Sept. 5, 1944.

F. H. WELLS

2,357,786

SEAL FORMING MECHANISM

Filed Oct. 18, 1940

4 Sheets-Sheet 1

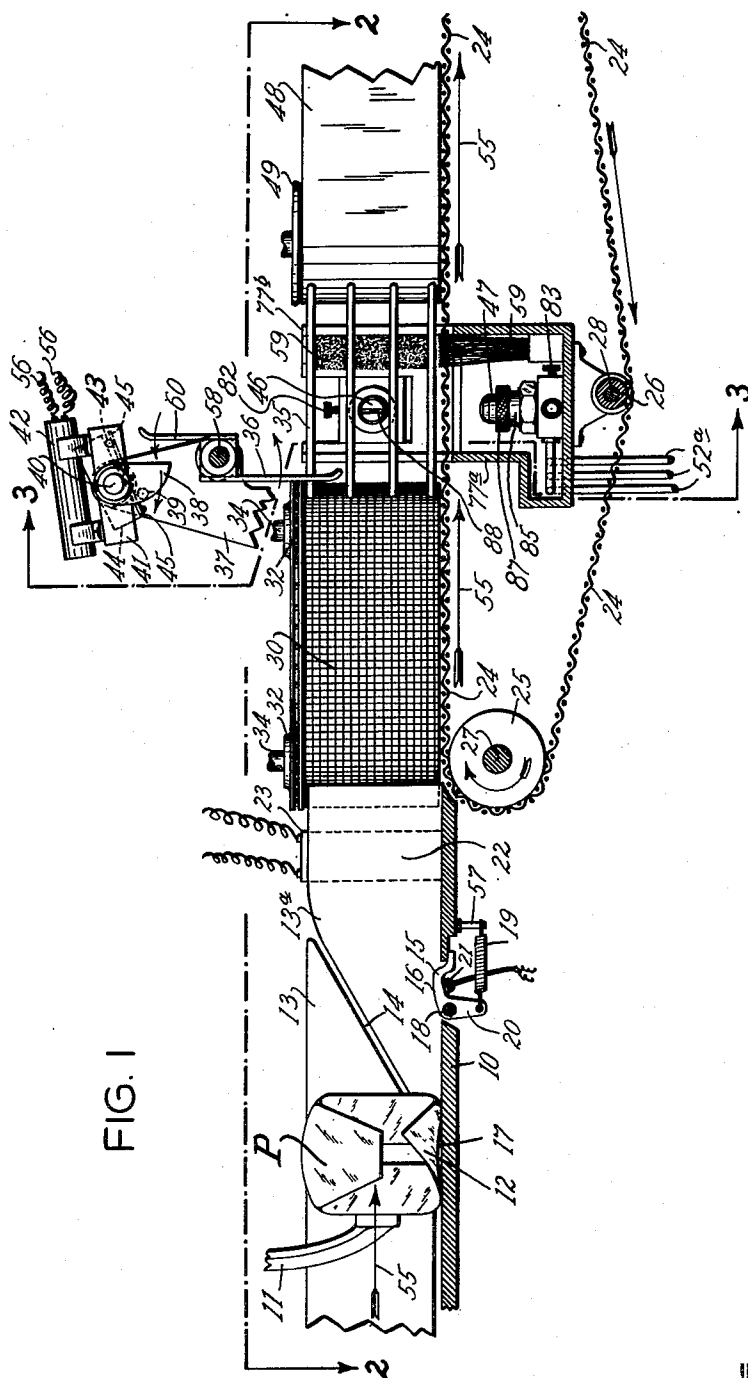


FIG. 1

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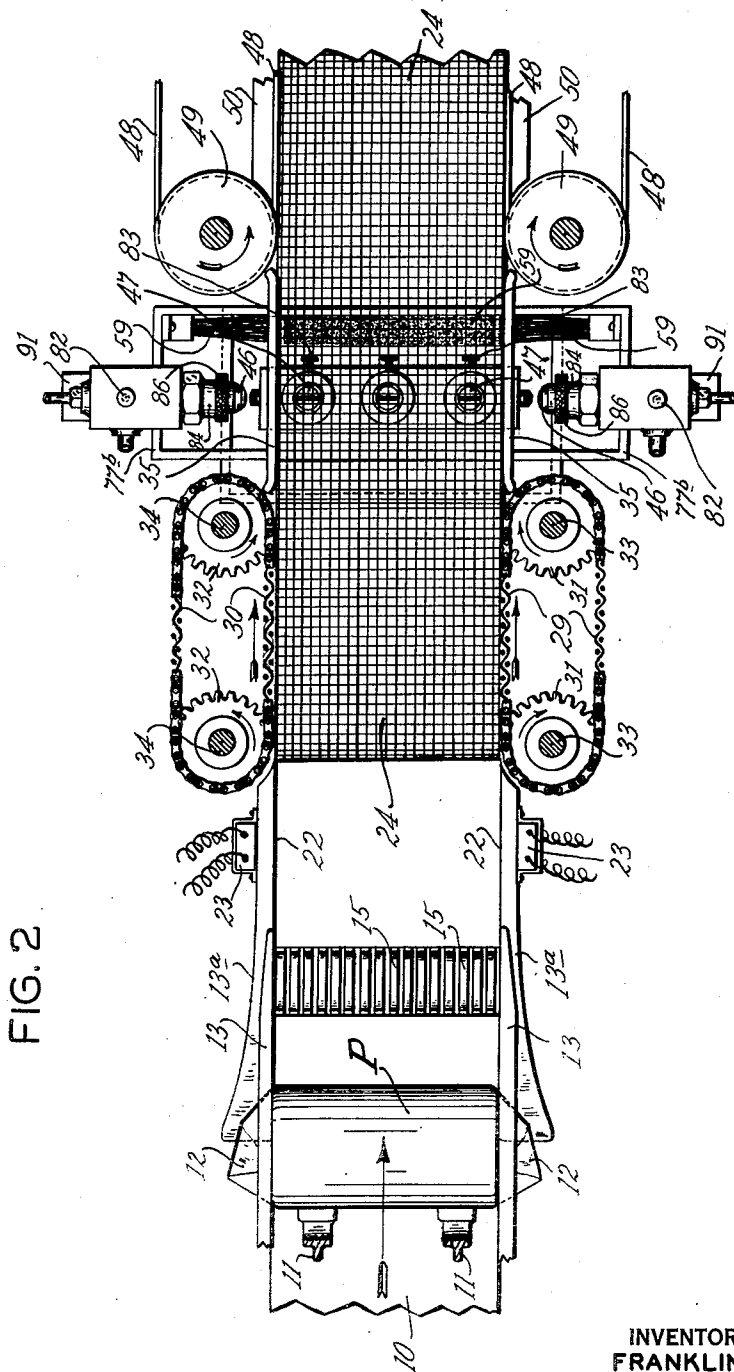
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4 Sheets-Sheet 2



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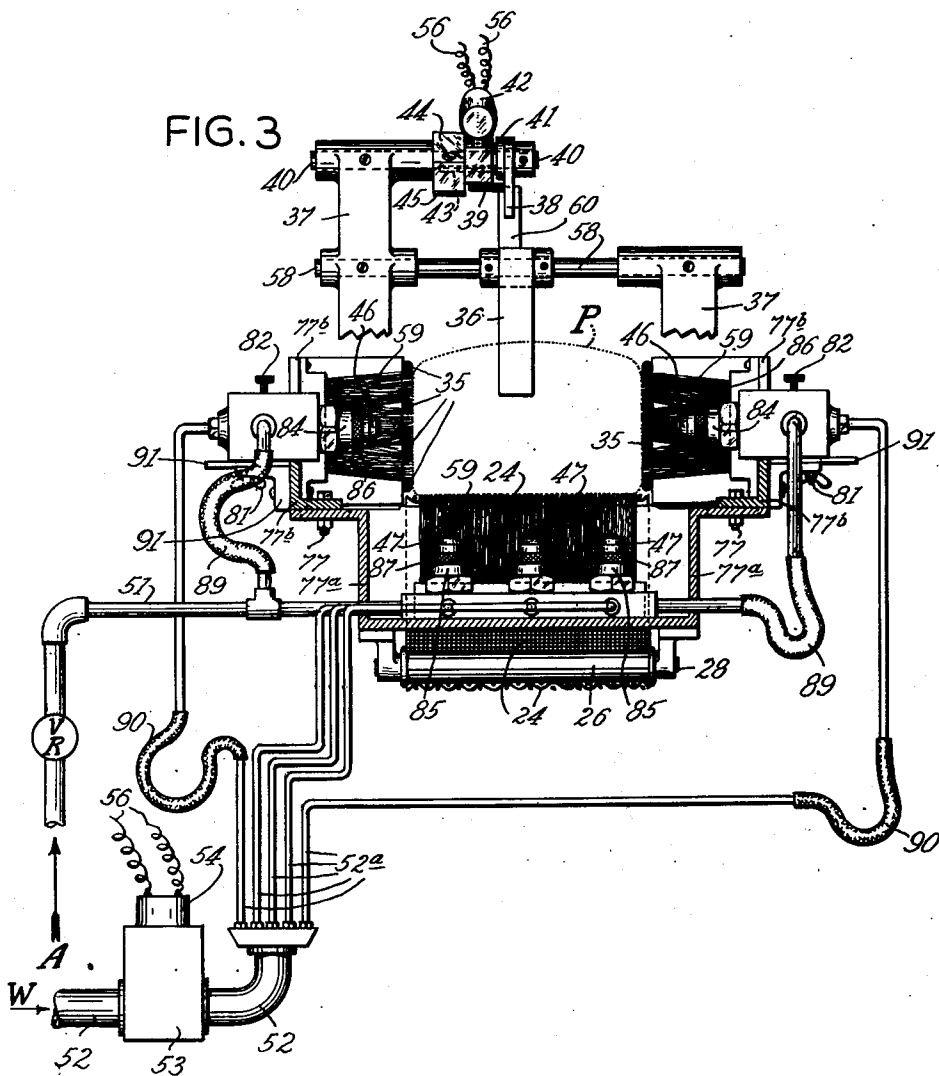
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4 Sheets-Sheet 3



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4 Sheets-Sheet 4

FIG. 4

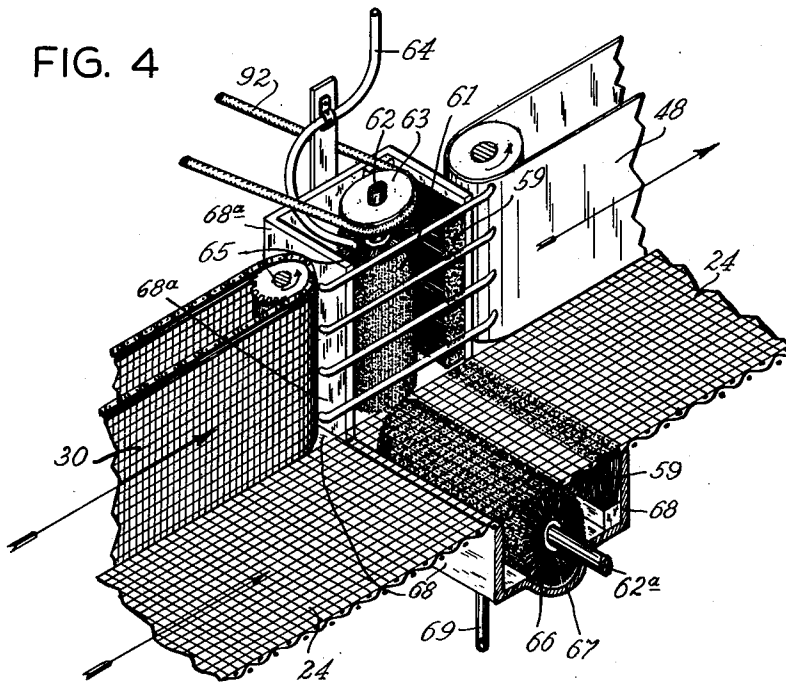
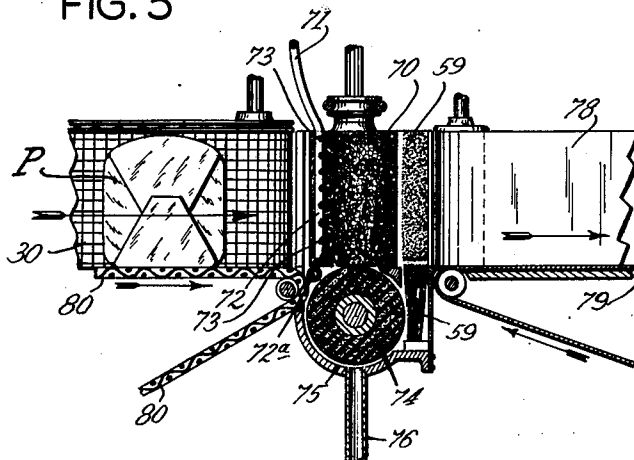


FIG. 5



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2,357,786

SEAL FORMING MECHANISM

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Application October 18, 1940, Serial No. 361,711

32 Claims. (Cl. 93—2)

This invention relates to improvements in seal forming mechanisms and is particularly adapted for use in machines operating to apply wax paper, "Cellophane," or other suitable wrapper medium having a heat responsive sealing agent thereon to packages or articles wherein the overlapping edges of the wrappers are sealed by means of heat.

Heretofore there have been two principal types of cooling devices employed for cooling wrappers bearing hot seals. The first type made use of very long canvas belts which continued to press against the hot seals until the atmospheric temperature cooled the seal. The disadvantage of using such a cooling device is that the belt would have to be of very great length in order to give the atmospheric temperature sufficient time to solidify the seal. The temperature would of course vary from day to day, causing the solidifying to take place at different periods of time. Another disadvantage was due to the fact that wax tended to accumulate on the conveying belts necessitating frequent stoppages of the machine for removing the accumulated wax.

The second type made use of a refrigerating system which artificially cooled the conveying belts before they came into contact with the hot sealed articles, thereby materially shortening the time required to cool and solidify the hot seal. This improvement over the prior art reduced the amount of space occupied by the machine and also materially reduced the time required for solidifying the seal. However, it had the disadvantage of requiring the use of a refrigerating system which is expensive not only as to initial cost but also as to maintenance. It also had the disadvantage of wax accumulating on the conveying members.

The main object of the present invention is to provide a simple and inexpensive cooling device which will not only cool and fix a hot seal more quickly, but also form a stronger, softer and neater appearing seal.

Another object of the present invention is to provide means which will cool a hot wax seal in such a way as to avoid accumulation of wax on the conveying members of the wrapping machine.

Another object is to utilize the cooling effect of evaporating moisture to lower the temperature of a hot seal and thereby cause the sealing substance to congeal.

Another object is to provide means for setting a seal by applying a fluid thereto in finely divided form.

Another object is to use a spraying device to

spray moisture or other fluid on to a hot seal to set and cool the same, and also means for adjusting the direction, shape and volume of said spray.

5 A further object is to provide an improved means for causing wax to solidify in an amorphous state.

A further object is to provide a cooling device which will apply moisture simultaneously to all parts including the indentation and cavities of the hot sealed portion of the wrapper.

Observation seems to indicate that the moisture, particularly when forced in between the wrapper folds, causes the wax paper fibers to swell which makes the paper thicker, and this causes the paper fibers to protrude through the wax which was heated much above the melting point. The protruding fibers of the overlapping folds intermingle; and additional moisture, together with the evaporation of some of the moisture already deposited, then solidifies the intermingled fibers and the wax so as to make a strong seal. The moisture also softens the paper so that not only a softer seal is formed, but also a smoother and flatter seal. It is therefore another object to form a stronger, smoother, softer and more uniform seal by fixing the same while the fibers of a wrapper having a thermo-plastic coating are intermingled.

30 Another object is to provide a means for pre-cooling a liquid without the use of a refrigerating unit and then applying said liquid in finely divided form to the hot seal to secure the same.

Other objects and features of the invention will appear as the description of the particular physical embodiment selected to illustrate the invention progresses.

In the accompanying drawings, which form a part of this specification, like characters of reference have been applied to corresponding parts throughout the several views which make up the drawings, in which

Fig. 1 is a sectional side elevation of the cooling device;

45 Fig. 2 is a plan view of the cooling device taken on line 2—2 of Fig. 1;

Fig. 3 is a sectional end elevation taken along the line 3—3 of Fig. 1;

Fig. 4 is an isometric view partly in section of a modified form of the cooling device, showing the employment of rotary brushes; and

50 Fig. 5 is a sectional side elevation of another modified form of the cooling device, showing the employment of sponge rubber rollers or similar materials.

Referring to Figures 1 and 2, the reference numeral 10 indicates a stationary platform or plate upon which packages P are being pushed continually along by means of pusher arms 11. Although the package P in the present drawings resembles a loaf of bread, other articles of different shapes might also have been used. Prior to coming into contact with the sealing mechanism, the package P is enfolded in the wrapping material 12. Suitable end folding plates such as 13 and 13A are provided to complete the folding of the wrapper 12 at the ends of the package. Slots 14 are formed in such folding plates to properly turn up the ends of the wrapper 12, as seen in Figures 1 and 2.

The package P is pushed along by pusher arms 11 over a series of yieldingly mounted heating plates 15. The upper surface 16 of said heating plates 15 are slightly convex in form in order to provide a positive means for heating all portions and indentations such as 17 on the under side of the package P. Said yieldingly mounted heating plates 15 pivoting on shaft 18 are held at all times under tension by means of springs 19 which are secured between arms 20 formed on plates 15 and pins 51 connected to platform 10. Said heating plates 15 are heated by suitable means such as the electrical element 21 shown in Figure 1 to seal the bottom seam of the wrapper, which in the case of wax paper wrappers is accomplished by melting the wax thereon.

The package P then comes in contact with the heated portion 22 of plate 13A which, by means of heat, seals the over-lapped ends of the wrapper, which in the case of wax paper wrappers, as already stated, is accomplished by melting the wax thereon. Said plates 22 may be heated by suitable means such as the electrical heating element 23 shown in Figures 1 and 2.

A moving horizontal wire net belt 24 may be provided, as seen in Figures 1, 2, and 3, to take the place of the platform 10 for conveying the wrapped package. Said wire net belt travels on suitable pulleys such as 25 and 26 which are mounted upon shafts 27 and 28 respectively. Said shafts are connected to the frame of the wrapping machine and the pulleys are driven by suitable means from some moving part of the machine. A pair of spaced opposed vertical wire net belts 29 and 30 mounted on pulleys 31 and 32 respectively are provided to move along with the package P while holding the sealed ends thereof in place. The pulleys 31 and 32 are mounted on shafts 33 and 34 respectively which are connected to some part of the frame of the wrapping machine. A moving part of the wrapping machine by suitable means drives the belts 24, 29 and 30 in timed relationship with one another so as to avoid opening or disrupting the sealed seams of the wrapper covering package P.

Wire net belts 24, 29 and 30, such as shown in Figs. 1 and 2, have the advantage not only of allowing air to get at the hot seals to partially cool said seal, but if desired they also allow air to be artificially blown directly on the hot seals to effectuate a quicker cooling and setting of the seal while the latter is being held properly in place.

A series of stationary bars 35 are provided at the end of belts 29 and 30 for the purpose of supporting the ends of the wrapped package P and holding the seals in place, while an atomizer sprays moisture onto all portions of the seal so as to cool and fix the same. A tripping device 36 swingingly mounted on a shaft 58 secured to bracket 37 formed on part of the frame of said

wrapping machine operates against a trip cam piece 38 having a stop pin 39 fixed therein. Said trip cam piece 38 is swingingly mounted on a shaft 40 also secured to bracket 37. A block 41 carrying a Mercoid switch 42 and a stop pin 43 is movably mounted on the shaft 40. Another block 44 having a spring 45 fastened thereto is fixedly mounted on the shaft 40.

Adjustable atomizers 84 are provided for spraying the hot sealed end portions of the wrapped package, and adjustable atomizers 85 are provided for spraying the hot sealed under portion of the wrapped package. Atomizers 84 mounted in the vertical member 77b may be moved toward or away from each other by means of adjusting screws 77 which slide in suitable slots formed in supporting brackets 77a so as to satisfactorily moisten different length packages.

The atomizers 84 can also be moved toward or away from the ends of the package by means of adjusting screw 81 which slides in a slot formed in the bracket 91 (Fig. 3). Adjusting valves 82 and 83 of atomizers 84 and 85 (Figs. 2 and 3) are provided for regulating the amount of liquid emitted by the atomizers when in operation. Replaceable nozzle heads 46 and 47 are secured to the body of atomizers 84 and 85 by means of knurled collars 86 and 87 (Fig. 3). Although Fig. 1 discloses a nozzle head 46 having a longitudinal slot 88 being used with the atomizers, it is also possible to substitute other type nozzle heads by unscrewing knurled collars 86 and 87 and inserting other nozzles having a different cutout portion for forming a spray having a different shape.

There may be provided adjacent said atomizers suitable means such as the brush elements 59 shown in Figs. 1 and 2 for wiping any excess moisture from the sprayed package. Belts 48 rotating on pulleys 49 which are connected to some moving part of the machine, or other suitable means, are provided for the further movement of the wrapped package. Said belts 48 may be supported by suitable elements such as 50 to prevent flexing of said belts under pressure of the wrapped package.

Fig. 3 shows means for operating the atomizers 84 and 85. One end of pipe 51 is connected to a source having air under pressure and at the other end is connected to atomizers 84 and 85. In between these two points there is provided a constant pressure reducing valve (V. R.) for regulating the amount of air issuing from the atomizers. A pipe 52 is connected to a water source for supplying water to the atomizers. Atomizers 84, as hereinbefore mentioned, can be moved toward and away from each other to accommodate different size packages. Flexible tube connections such as 89 and 90 are provided to permit this adjusting to be accomplished. A suitable valve 53 is provided in the pipe 52 for the purpose of turning on and shutting off the water received from said water source. Suitable connecting pipes such as 52a are provided for connecting the water pipe 52 with atomizers 84 and 85. The valve 53 is operated by means of a solenoid cell 54 which is controlled by the aforementioned Mercoid switch 42.

Instead of having a continuous blast of air issuing from the atomizers, it is possible to use other suitable means such as valving the air pipe 51. The air and water will then be released simultaneously to apply a brief blast of moisture to the hot sealed portion of the wrapper.

Although water has been mentioned for con-

venience as the liquid used for solidifying the seal, other type fluids may also be used with the rollers and atomizers to accomplish a setting of a hot seal, and the present invention therefore is not to be restricted to the use of water.

Fig. 4 discloses a modified form of the present invention wherein vertical and horizontal rotating circular brushes 61 and 66 respectively are employed as moisteners in place of the atomizers 84 and 85 disclosed in the figures heretofore mentioned. The horizontal brush 66 operates through the horizontal net belt 24 to apply moisture to the heat sealed portion of the wrapper. The brushes 61 and 66 are mounted upon shafts 62 and 62a respectively, which are rotated by suitable means such as the pulleys 63 and belt 82 (Fig. 4) connected to some moving part of the machine (not shown) in timed relation with the wire net belts 24, 29 and 30. The circular brushes may be rotated either clockwise or counter-clockwise depending upon which method produces the most satisfactory results for any given type of article being wrapped. A pipe 64 connected to a water supply (not shown) supplies water continuously to the top 65 of the brushes 61. A valve may, if desired, be connected to a pipe 64 to regulate the amount of water passing through said pipe onto the brushes. The water delivered through pipe 64 at the top 65 of the brushes trickles downward through the brush 61 moistening the same, and also moistening the horizontal brush 66.

A depressed portion 67 is provided in the bottom of the horizontal reservoir 68 to accumulate any excess water which may be delivered to brushes 61 and 66, and said excess water is removed through the drain pipe 69. A vertical walled chamber 68a, slidably mounted upon the horizontal reservoir 68, is provided to prevent moisture from escaping in the wrong direction when the vertical brushes 61 are rotated. The chamber 68a is secured to the horizontal reservoir 68 by means of adjusting screws similar to 71, as shown in Fig. 3, so as to allow the vertical brushes to be moved toward and away from one another to accommodate different size packages. A suitable belt tightener (not shown) is provided for taking up or letting out slack in the belt 92 when the vertical rolls are so adjusted. Wiper brushes 59 and the other elements of the wrapping machine operate in a manner similar to that heretofore described.

The rotating brush elements 61 and 66 have the advantage of contacting directly the various contours and indentations of the package bearing the hot seal, thereby applying a film of moisture evenly upon the entire portion of the package and not just to the high points and projecting portions of the folded seals. If the brush elements 61 and 66 are rotated fast enough, an atomizing effect will be produced similar to that obtained when using atomizers. The speed at which the brushes are rotated will depend on the type of article being sealed and speed produces the most satisfactory result for that particular article. This complete and uniform moistening causes all parts of the seal to solidify almost instantaneously and forms a stronger seal.

Fig. 5 discloses another modified form of the present invention wherein vertical and horizontal sponge rubber rollers 70 and 74, or rollers composed of similar material, are employed for supplying moisture to the hot sealed portion of the wrapped package P for cooling and and congeal-

ing the seal thereof as the package passes by the rollers 70 and 74.

A water pipe 71 is connected to a water supply and has a vertical section 72 which is parallel to the vertical rollers and supplied moisture thereto through a series of holes 73 formed in the pipe 72.

The horizontal roller 74 is moistened in a similar fashion by means of a perforated pipe 72a which is also connected to a water supply. Suitable valves may be provided, if desired, in said pipes for regulating the amount of water flowing from pipes 72 and 72a. Some of the water supplied to rollers 70 and 74 will be applied to ends of the package P and the remainder will drain to the bottom of the curved reservoir 75 to be removed by the drain pipe 76.

In this modified form of the invention, a horizontal net conveyor 80, similar to the net conveyor belt 24 shown in Figs. 1 and 2, in cooperation with side belts 29 and 30, forwards the package P to the rollers 70 and 74. Vertical roller 70 rotates counter-clockwise, and horizontal roller 74 rotates clockwise so that the package P is forwarded by means of these rollers, together with a second vertical roller (not shown), at this part of the runway. It will not be noted that the rollers 70 and 74 in contacting the hot sealed portions of the wrapped package P apply moisture to all portions of the hot seal, and not just to the raised or high parts of the hot seal. As already stated, this almost instantaneously fixes the seal and also forms a stronger seal. The vertical sponge rubber rollers may be so mounted that they can be moved toward or away from each other so as to accommodate different size packages in a manner similar to that shown in Fig. 5.

The package P is then advanced, past a set of wiper brushes 59 (Fig. 5) which remove any excess moisture left by the sponge rubber rollers, on to suitable conveyor means such as side guide belts 78 and horizontal conveyor belt 79.

The operation of the present invention may be briefly described as follows.

As already stated, the package P is pushed along the platform 10 by means of arms 11, past suitable folding means such as 13, 13a and 14. The under folded portion of the package P is sealed by the heated elements 15; and as the package advances further, the heated portion of the plate 13a seals the overlapped ends of the wrapped package. The package P is advanced on to the conveyor wire net belts 24, 29 and 30 by the pusher arms 11. Said belts then provide the means for conveying the package P in the direction of the arrows 55.

The conveyor belts because of their net-like construction provide satisfactory means for allowing the excess heat caused by the heated members 15 and 22 to escape from the ends and bottoms of said package. Additional cooling means may be provided at this point by connecting a pipe adjacent to the conveying belts for directing a current of air against the heated surface of the package.

As the package P continues its advance, its upper portion strikes the tripping device 36 and the upper member 60 of said tripping device in turn strikes the trip cam piece 38. The stop pin 39 mounted in trip cam piece 38 then strikes one end of block 41 having a Mercoid switch 42 mounted on top thereof, tilting it in the direction of electrical wires 56, and completes the circuit through said wires by connecting the same momentarily. A stop pin 43, mounted in the

other end of block 41 and located between fixed block 44 and spring 45, presses downward on said spring 45. The Mercoid switch 42, through the connecting of electrical wires 56 and the completion of the circuit thereby, operates the solenoid cell 54. This cell 54 opens valve 53 so as to permit water to enter through pipe 52 past said valve into the atomizers 84 and 85, causing a spray of moisture to be deposited on the heat sealed portions of the wrapped package P, thereby immediately setting and congealing the melted wax or other sealing base.

The trip cam piece 38 is short so that the Mercoid cell 42 is held in the forward operating position only momentarily while the upper member 60 of the tripping device 36 slides past the trip cam piece 38, after which the Mercoid cell is pushed quickly back into inoperative position by means of spring 45. This brief energizing of the solenoid cell 54 causes a spray of water to be momentarily blasted upon the hot sealed portions of the package P as the same passes by the atomizers 46 and 47 to cool and congeal the seals thereof.

From observation of this device, it would appear that the cooling and sealing effects are produced as follows:

The compressed air is precooled by reason of its expanding after being released from pressure. The spray also undergoes a further cooling by evaporation of some of the water particles themselves before being deposited on the sealed portion of the wrapper. The wax paper wrapper, after leaving the heating plates where the wax is melted, is still hard and not very flexible although the wax has been melted. When the sealed portion of the wrapper reaches the moisture applier, the bars provided for holding the overlapped seals in place permit the folds to open somewhat. As already stated, the wax is heated much above the melting point and when the first moisture strikes the wrapper it softens the paper and makes it somewhat thicker. This in turn causes the paper fibers to protrude through the wax and intermingle with the fibers of the overlapping folds. The depositing of additional moisture on the paper, together with the evaporation of the moisture already on the paper, causes the wax to solidify in an amorphous state while the fibers are intermingled. This results in a much stronger, more flexible and smoother seal than is attainable by means of cooling belts or plates. A spray also has the advantage of reaching all portions of the hot seal simultaneously, even those within the folded portions of the wrapper, thereby causing the entire seal to solidify at the same time.

Since the moistened portions of the wrapper are exposed to the atmosphere, the moisture evaporates rapidly and causes the seal to solidify almost immediately. Where the older type cooling belts and plates are used, however, the cooling is hindered because air pockets frequently separate the hot seal from the cooling plate.

It is also possible to eliminate this apparatus for intermittently operating the atomizers and instead have the atomizers adjusted to continuously spray moisture in the path of the hot sealed packages.

As already mentioned, the atomizers are adjustably constructed so that the direction as well as the volume of the spray can be adjusted as desired. In continuing its advance, the package P then passes by a set of wiper brushes 59 which remove any large particles of moisture remaining thereon. The seals having been completely

formed and secured, the package P is then carried to another part of the wrapping machine for further disposition by suitable means such as belts 48 rotating on pulleys 49.

5 A cooling mechanism, such as disclosed in the present application, has the desirable feature of not accumulating wax and also preventing wax from accumulating upon the other conveying members.

10 The invention above described may be varied in construction within the scope of the claims, for the particular device selected to illustrate the invention is but one of many concrete embodiments of the same. The invention, therefore, is not to be restricted to the precise details of the structure shown and described.

What is claimed is:

1. A cooling device for heat sealed wrappers comprising in combination, a runway along which packages having sealed wrappers pass, means for applying moisture to the heat sealed portions of said wrappers to cool the seal as the same passes along said runway, and means adjacent to said moisture applying means for removing any excess moisture applied.

2. A cooling device for heat sealed wrappers comprising a runway along which packages having heat sealed wrappers pass, means for applying moisture in finely divided particles to the heat sealed portions of a wrapper to set and congeal the seal, and means adjacent to said moisture applying means for removing any excess moisture applied.

3. A cooling device for heat sealed wrappers comprising conveying means for forwarding packages having a wrapper with overlapped portions sealed by means of heat, a foraminous member adjacent to the path of movement of the wrapped loaves, means for applying a liquid through said foraminous member to the heat sealed portions of the package to set the seal, and means adjacent to said liquid applying means for removing any excess liquid applied to said wrapper.

4. A thermo-plastic sealing mechanism comprising means for supporting articles bearing hot seals, means for spraying a liquid upon said hot seals to set the same, and means for holding the seals in place while being sprayed.

5. A wax seal cooling mechanism comprising means for supporting articles bearing hot seals, an atomizer, means for causing said atomizer to spray moisture when an article comes in the scope of operation of the atomizer upon the wrapper to set the seal and to prevent the wax from accumulating on the conveying members, and means for supplying said atomizer with moisture and air pressure.

6. A thermo-plastic sealing mechanism comprising means for supporting articles bearing hot seals, an atomizer, means for causing said atomizer to spray moisture when an article comes in the scope of operation of the atomizer upon the wrapper to set the seal, means for supplying said atomizer with moisture and air under pressure, and means for continuously moving said supporting means.

7. A wax seal cooling mechanism comprising means for supporting articles bearing hot seals, an atomizer, means for causing said atomizer to spray moisture when an article comes in the scope of operation of the atomizer upon the wrapper to set the seal, means for supplying said atomizer with moisture and air pressure, and a

75 wiping element adjacent to said atomizer for re-

moving any excess moisture applied to the wrapper.

8. A cooling mechanism for heat sealed wrappers comprising a runway for supporting articles bearing hot seals, a moisture applier for applying moisture in finely divided form to the seals of the supported articles, and means for removing any excess moisture applied to the seals of said articles.

9. A cooling device for heat sealed wrappers comprising in combination, a conveying device for forwarding packages having heat sealed wrappers, and means for blowing a liquid mixed with air upon the heated seals to set the same.

10. In a wrapping machine having a cooling device, the combination of a conveying mechanism having foraminous belts for advancing packages bearing hot seals formed by a heated member, a moisture applier for applying moisture in finely divided form through said foraminous belts, to the hot seal for setting and cooling the same, and means actuated by the advancing package for starting and stopping said moisture applier.

11. A wrapping machine having a seal forming device comprising a runway along which packages having newly sealed wrappers pass, a moisture applier applying moisture to the sealed portion of said wrapper to set and congeal the seal as the same passes along said runway, and means located adjacent to said moisture applier for removing any excess moisture applied to the sealed portion of the wrapper.

12. A wrapping machine having a seal forming device comprising a runway along which articles having wrappers provided with a heat energizable sealing coating pass, and means for applying a liquid in the form of a spray to the heat energized portion of said wrappers as the same pass along said runway.

13. The method of cooling a hot seal formed on a wax paper wrapper which consists in spraying moisture onto the hot sealed portion of the wrapper so as to first set the seal by contacting it with the water and then cool the same through the evaporation of the moisture from the seal.

14. The method of setting a seal formed by heat which consists in first exposing the hot seal to the atmosphere so as to allow the excess heat to escape, then spraying moisture on said seal so as to fix the seal and finally allowing the moisture to evaporate to cool the seal.

15. The method of forming soft and flexible seals on wrappers which comprises spraying a liquid onto the hot sealed portion of the wrapper to set and cool the seal and then allowing the sprayed liquid to evaporate to cool the seal still more.

16. The method of setting a thermo-plastic seal formed by heat which consists in pre-cooling moisture by releasing it from under pressure, then cooling the moisture still more by permitting some of it to evaporate then depositing the remaining moisture on the hot seal to lower the temperature thereof by absorbing the heat, and then permitting the moisture to evaporate to lower the temperature of the seal still further to solidify the same.

17. The method of setting a seal formed by heat on a wax paper wrapper which consists in releasing compressed air and water together through a spraying device to apply the same onto all portions of the hot seal to soften the paper and allow the fibers thereof to interlock and then

spraying additional moisture thereon to fix the seal.

18. A seal setting device for a wrapping machine comprising in combination a runway along which pass wrapped packages having seals formed on the ends thereof, means for spraying a fluid onto said end seals to fix the seals as the same pass along said runway, means for supplying said sprayer with a fluid, and means for increasing and decreasing the distance between said spraying means and the end seals of the wrapped package.

19. A thermo-plastic sealing mechanism comprising means for supporting articles bearing hot seals, an atomizer, means for supplying said atomizer with water and with air under pressure, means for regulating the amount of water and air emitted from said atomizer, and means for operating said atomizer so as to spray moisture onto the hot sealed portion of a wrapped article.

20. A thermo-plastic sealing mechanism comprising means for forwarding articles bearing hot seals, an atomizer, a detachable nozzle connected to said atomizer for shaping the spray, means for supplying said atomizer with water and with air under pressure, and means for operating said atomizer so as to spray moisture onto the hot sealed portion of a wrapped article.

21. In a wrapping machine, the combination of a seal setting device comprising a runway along which packages having sealed wrappers pass, an atomizer, and mechanism for operating said atomizer so as to secure the seal as the package advances past the atomizers.

22. A seal setting device for heat sealed wrappers comprising in combination, a runway along which packages having sealed wrappers pass, an atomizer for spraying a fluid to the heat sealed portions of said wrapper to set the seal as the same passes along said runway, means for adjusting said atomizer so as to vary the direction of the spray, and mechanism for operating said atomizer.

23. A seal setting mechanism comprising a runway along which packages having sealed wrappers pass, an atomizer, mechanism for causing said atomizer to spray moisture upon the sealed portion of a wrapper to fix the seal as the package passes along the runway, and means for adjusting said atomizer so as to vary the amount of the spray.

24. A seal setting device for a wrapping machine comprising in combination, a runway along which packages pass having seals formed on the ends of the wrapped package, and spaced opposed means for spraying a liquid onto the sealed end portions of the wrapped package to fix the seal as the same passes along said runway.

25. A seal setting device for a wrapping machine comprising in combination, a runway along which pass wrapped packages having seals formed on the ends thereof, spaced opposed means for spraying a liquid onto said end seals to fix the seals as the same pass along said runway, and means for increasing and decreasing the distance between said spaced opposed spraying means to accommodate different size packages.

26. A cooling device for heat sealed wrappers comprising in combination, a runway along which wrapped packages having heat seals formed on their under portion pass, and means for blowing a liquid mixed with air upon the under portion of the package to fix the seal.

27. In a wrapping machine, the combination of a seal setting device comprising, a runway

along which packages having sealed wrappers pass, an atomizer, means for supplying moisture to said atomizer, and mechanism for intermittently operating said atomizer to moisten the sealed portion of the wrapper to secure the seals thereon.

28. A cooling device for heat sealed wrappers comprising a runway along which packages having sealed wrappers pass, moisture applying rolls spaced from the path of travel of said packages, means for supplying moisture to said rolls, and means for rapidly rotating said rolls so as to spray moisture on the sealed portion of the package to set the seal thereof.

29. A thermo-plastic sealing mechanism comprising, means supporting articles bearing hot seals, and means for spraying a liquid upon said hot seals to set the same.

30. A cooling device for heat sealed wrappers comprising, a foraminous member for engaging and conveying articles bearing hot seals, and means operative while said articles are conveyed by said member for applying a liquid through the

openings of said foraminous member onto said articles to set the seals.

31. A cooling device for heat sealed wrappers comprising conveying means for forwarding packages having a wrapper with overlapped portions sealed by means of heat, a foraminous member adjacent to the path of movement of the wrapped loaves supporting said loaves and contacting with said conveying means to transport said loaves, and means operative while said loaves are supported by said member for applying a liquid through the openings of said foraminous member to the heat sealed portions of the package to set the seal.

32. A wax seal cooling mechanism for use in cooling heat sealed portions of wrappers provided with a thermoplastic coating comprising a moisture applier for applying moisture in spray form to said heat sealed portions of said wrappers to cool the same, and means for supplying moisture to said moisture applier.

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