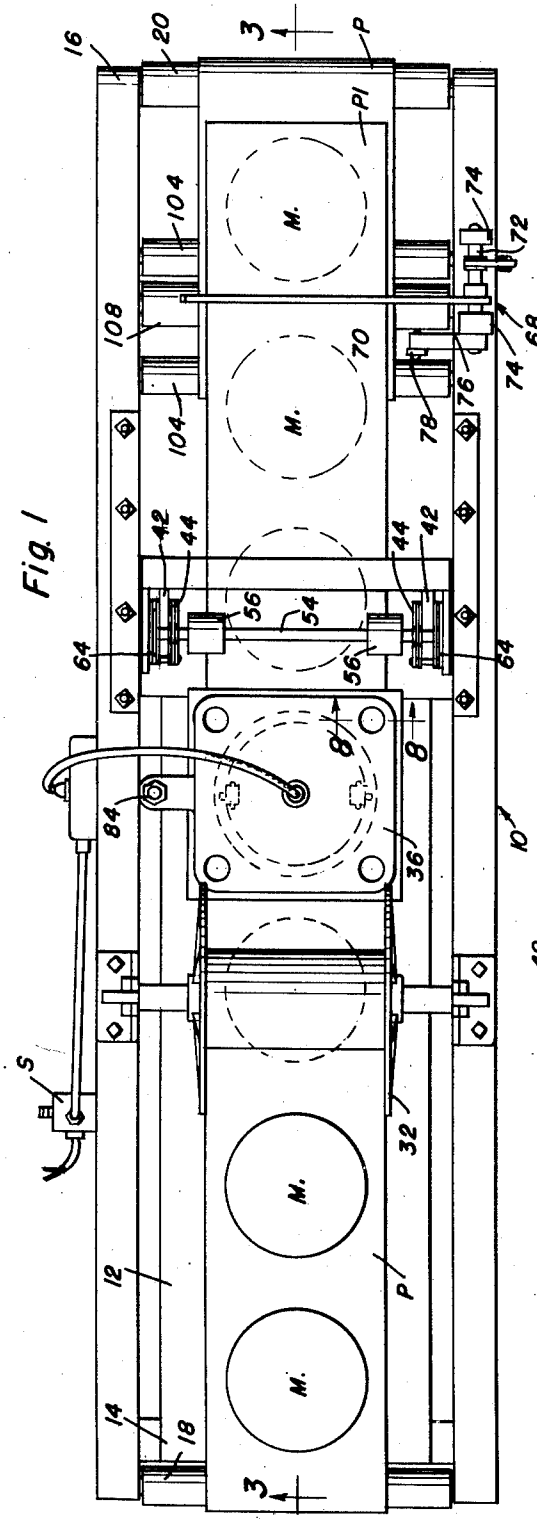
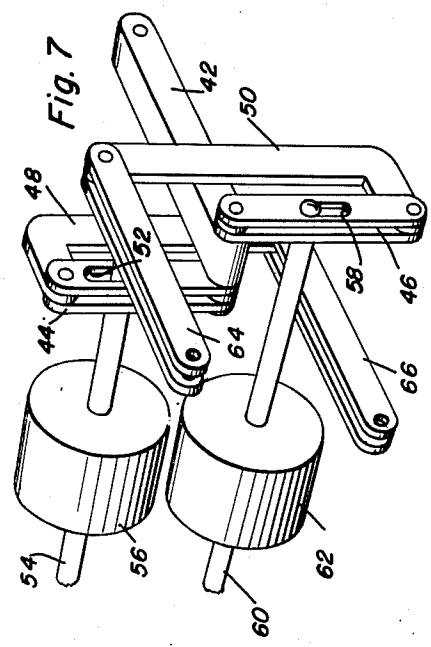
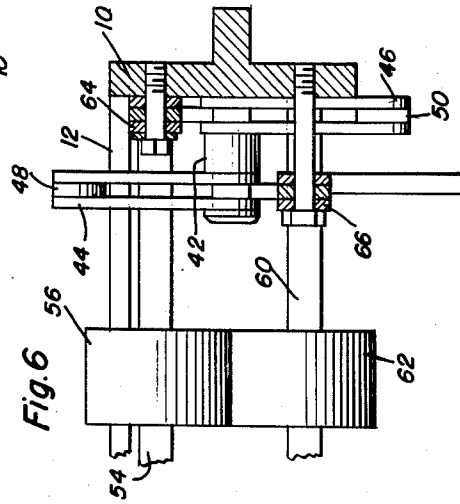
May 12, 1953 J. A. DREHER 2,637,959

ARTICLE PACKAGING MACHINE

Filed March 14, 1951 4 Sheets-Sheet 1







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ARTICLE PACKAGING MACHINE

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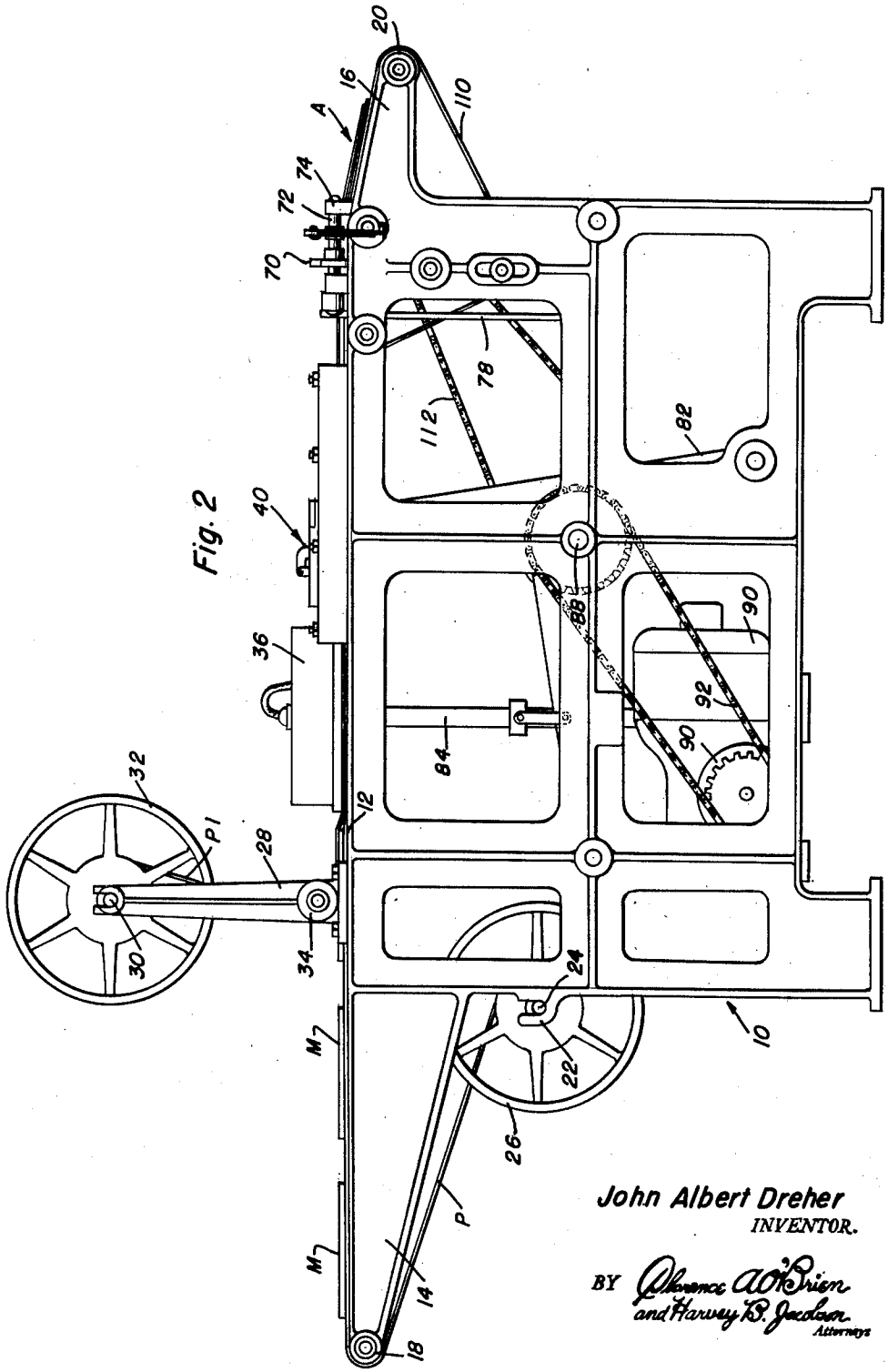


Fig. 2

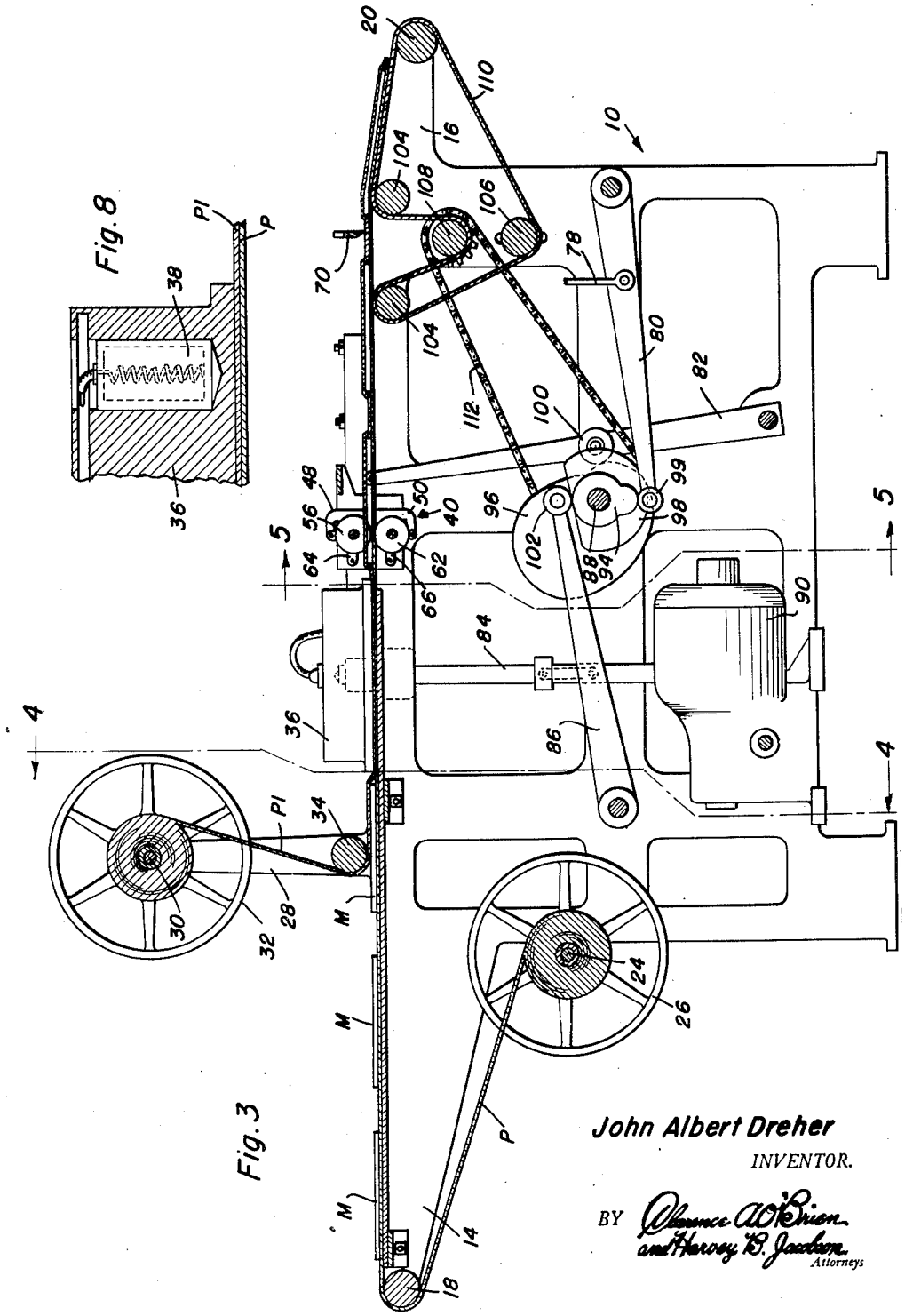
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ARTICLE PACKAGING MACHINE

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ARTICLE PACKAGING MACHINE

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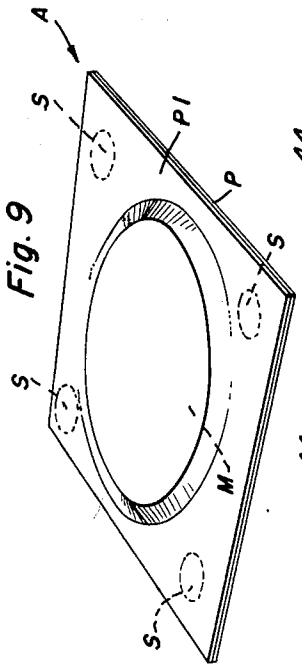


Fig. 9

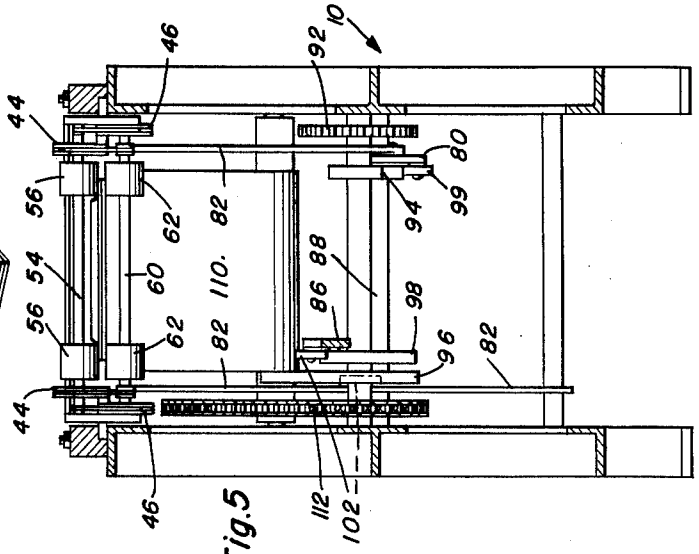


Fig. 5

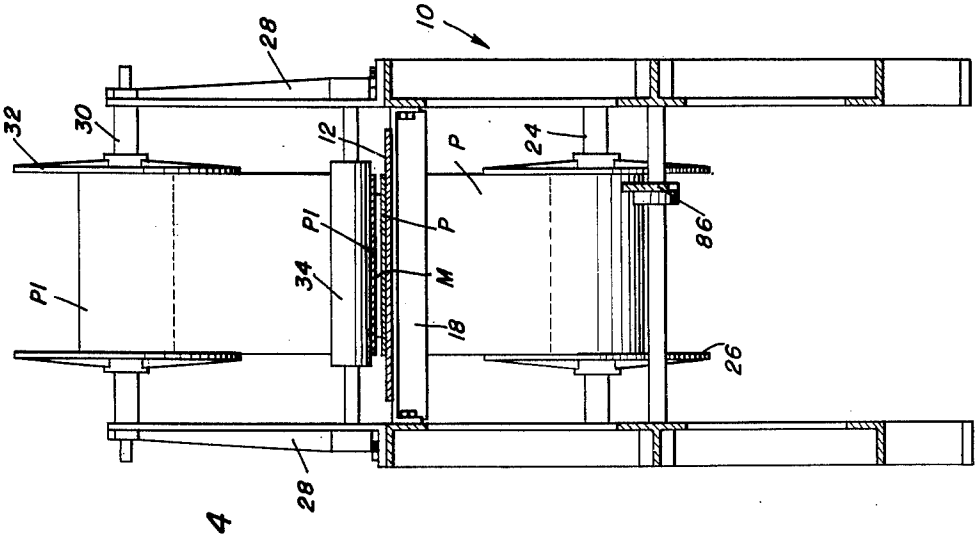


Fig. 4

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UNITED STATES PATENT OFFICE

2,637,959

ARTICLE PACKAGING MACHINE

John Albert Dreher, Trucksville, Pa.

Application March 14, 1951, Serial No. 215,474

1 Claim. (Cl. 53—86)

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This invention relates to new and useful improvements in packaging machines and the primary object of the present invention is to provide a machine whereby small steaks, cheese, meats and the like may be packaged in a sanitary manner into small and compart articles.

Another important object of the present invention is to provide a packaging machine wherein a patty of meat is sealed between upper and lower layers of paper prior to the cutting of the paper into small squares so that the meat may be stored and sold in a sanitary and appetizing condition.

A further object of the present invention is to provide an article packaging machine wherein the meat is placed on a layer of paper, covered by another layer of paper, the layers of paper are sealed together and then the layers of paper are cut in a step-by-step process involving very little time and machinery.

A still further aim of the present invention is to provide an article packaging machine in which the aforementioned steps are carried out in sequence and automatically requiring a single operator for placing the patties on a traveling layer of paper.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a top plan view of the present machine in use;

Figure 2 is a side elevational view of Figure 1;

Figure 3 is a longitudinal vertical sectional view taken substantially on the plane of section line 3—3 of Figure 1;

Figure 4 is a transverse vertical sectional view taken substantially on the plane of section line 4—4 of Figure 3;

Figure 5 is a transverse vertical sectional view taken substantially on the plane of section line 5—5 of Figure 3;

Figure 6 is an enlarged fragmentary detail sectional view of a portion of the feeding mechanism;

Figure 7 is a fragmentary perspective view of the feeding mechanism used in the present invention;

Figure 8 is an enlarged detail vertical sectional view taken substantially on the plane of section line 8—8 of Figure 1; and

Figure 9 is a perspective view of an article dispensed from the present invention.

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Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents an elongated frame including a table top 12 having a forward end 14 and a rear end 16 that support forward and rear transverse rollers 18 and 20, respectively.

The forward portion of the frame 10, beneath the forward end of the table top, is provided with a pair of hooks 22 that removably support the ends of a shaft 24 on which there is rotatably mounted a lower paper holding roller 26.

Uprights 28 rise from the frame 10 and table top 12 and their upper ends are formed with recesses that receive the ends of a removable shaft 30 on which is rotatably mounted an upper roller 32 holding paper. The lower ends of the uprights 28 support a transversely disposed guide roller 34 that is disposed above the table top 12 and under which paper P and P1 from the rollers 26 and 32 is trained.

A heating unit 36 is mounted above the table top 12 rearwardly of the roller 34 for sealing the sheets of paper P and P1 together. This heating unit, 36, includes preferably four heating elements 38 that are electrically connected together and which are mounted in vertical recesses in the unit 36 as shown in Figure 8, so as to seal the papers P and P1 together at four points as illustrated in Figure 9 by the numeral S to form a sealed article A in which a patty of meat or the like M is enclosed.

A feeding mechanism 40 is disposed on the frame 10 rearwardly of the heating unit 36 and comprises, as shown in Figures 6 and 7, a pair of sliding bars 42 whose forward ends are pivotally secured to inner pairs of links 44 and outer pairs of links 46. The links 44 extend upwardly from the bars 42 and the table top 12 and are pivoted to inner bell cranks or L-shaped levers 48 whereas the links 46 depend from the bars 42 and the table top 12 and are pivoted to outer bell cranks or L-shaped levers 50.

The links 44 are formed with longitudinal slots 52 that slidably receive the ends of an upper rod 54 on which an upper pair of rollers 56 are secured and the links 46 are also formed with longitudinal slots 58 in which the ends of a lower rod 60 is slidably received. A pair of rollers 62 are secured on the rod 60 beneath the rollers 56, and the feeding mechanism 40 is located in an opening in the table top 12 as shown in Figure 3.

The upstanding ends of the levers 50 are pivoted

to the upper portion of the frame 10 above the table top 12 by links 64 and the depending and free ends of the levers 48 are pivoted to the frame 10 beneath the table top 12 by links 66 so that as the bars 42 are pulled rearwardly the rollers 56 and 62 will be urged into clamping engagement in order to pull the paper P and P1 rearwardly toward a cutting mechanism 68 now to be described.

The cutting mechanism 68 consists of a horizontally disposed vertically reciprocating cutter 70 that extends transversely across the table top rearwardly of the feeding mechanism. One end of the cutter 70 is pivoted on a shaft 72 that is rotatable in bearings 74 on the table top 12. A link 76 projects laterally from the shaft 72 and pivotally supports a depending rod 78 whose lower end is pivoted to a vertically swingable arm 80 carried by the frame 10.

A pair of vertically swingable arms 82 are pivoted at their lower ends to the frame 10 and the upper ends of the arms 82 are pivoted to the rear ends of the bars 42 so that as the arms 62 are swung back and forth the feeding or paper moving mechanism will be actuated.

The heating unit 36 is connected to a vertically reciprocable member 84 which in turn is connected to a vertically swingable arm or a pair of arms 86 slidably carried by the frame 10.

A horizontally disposed driven shaft 88 is rotatably supported on the frame 10 and parallels the pivots for the arms 80, 82 and 86. The shaft 88 is operatively connected to a motor 90 on the frame 10 by a drive connection 92. The shaft 88 supports cams 94, 96 and 98 that will engage rollers 99, 100 and 102 on the arms 80, 82 and 86, respectively, and the cams are shaped as shown best in Figure 3 of the drawings.

Means is provided for dispensing article packaged by the machine. This dispensing and conveying means is located at the rear end 16 of the table top and comprises an upper pair of horizontal rollers 104, a lower horizontal roller 106 and an intermediate horizontal roller 108. The rollers 104, 108 and 108 are all rotatably mounted on the frame 10 and the roller 106 is also vertically adjustable on the frame 10.

An endless belt or webbing 110 is trained under the roller 106, over the rollers 104 and 20, and under the roller 106, as shown in Figure 3, and the roller 106 is connected to the shaft 88 by a drive connection 112 whereby the belt 110 will move in a clockwise direction, as shown in Figure 3.

In practical use of the present invention, the motor switch S is manually actuated to start the machine and meat patties or small steaks M are manually placed on the paper P overlying the forward end 14 of the table top.

The feeding mechanism 40 is horizontally reciprocated as the cam 96 rides against the roller 100 and the rollers 56 and 58 are urged toward each other as the mechanism 40 is moved rearwardly to pull the paper P and P1 rearwardly whereby the paper P and P1 with a meat patty M therebetween will be pulled under the electrical heating unit 36.

The heating unit 36 is vertically reciprocated as the cam 98 rides against the roller 102 so

that the heating unit 36 will be lowered to seal the paper P and P1 about the meat patty or small steak M.

Next, the paper is moved to the cutting mechanism and the cutter 70 is vertically reciprocated to cut the paper as the cam 94 rides against the roller 99. Then the cut article A passes onto the conveyor 110 where the article is discharged into a suitable container or another conveyor (not shown).

The cams 94, 96 and 98 are so shaped as to cause the sealing unit 36, feeding mechanism 40 and cutter 70 to be actuated in timed relationship whereby the sealing unit will descend directly over a meat patty M and whereby the cutter 70 will cut the paper P and P1 between adjacent meat patties M.

Obviously, the device may be employed for packaging material other than meat, such as cheese, powdered material and the like. Also, a dispenser may be employed for discharging material on the paper P prior to the roller 34. The paper employed is preferably transparent to permit the contents of the articles A to be easily visible.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the construction, operation and advantages of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claim.

Having described the invention, what is claimed as new is:

An article packaging machine comprising a frame including a table top, a vertically reciprocating heating unit on the frame for sealing a pair of paper sheets together, a feeding mechanism on the frame for gripping the marginal edges of the sheets and thereby moving the sheets along the table top sealed by the heating unit, a vertically reciprocating cutter on the frame for cutting paper sealed by said heating unit, and a conveyor at one end of the table top for dispensing paper cut by said cutter, said feeding mechanism being located between said heating unit and said cutter, said feeding mechanism including inner and outer pairs of bell cranks pivoted to said frame, a pair of sliding bars, upper links connecting the inner bell cranks to said bars, lower links connecting the outer bell cranks to said bars, upper and lower rods slidably carried by said upper and lower links respectively, and rollers on each rod.

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