

2,379,357

SEALING MACHINE

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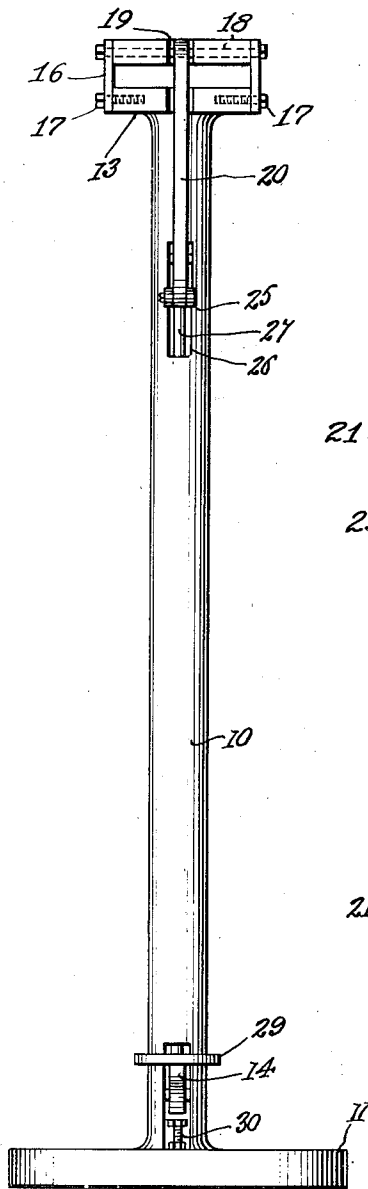


Fig. 3

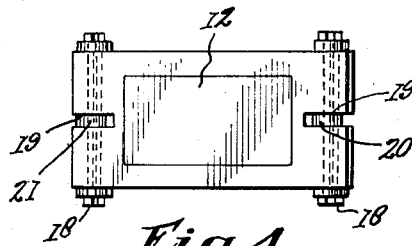


Fig. 4

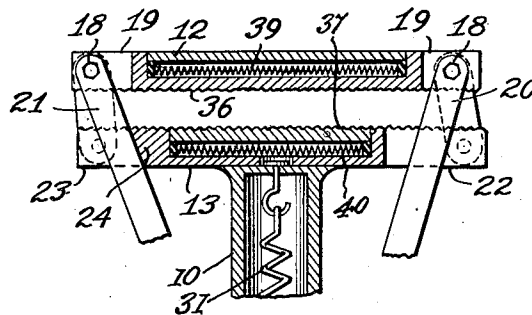


Fig. 5

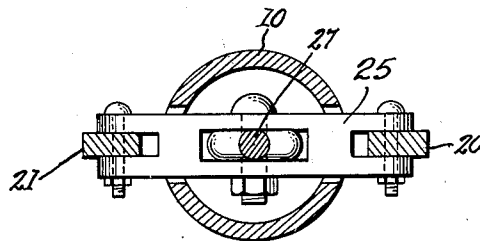


Fig. 6

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2,379,357

SEALING MACHINE

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4 Claims. (Cl. 154—42)

This invention relates to a sealing machine, and more particularly to a sealing machine for individually sealing the open ends of containers, as for example bags of relatively thin sheet material on the order of Cellophane or other light-weight and heavy-weight moisture-proof containers in order to hermetically seal the contents for protection until used.

Various sealing machines of this general character have been produced, but these machines have not proven satisfactory due to their cost, unwieldiness and being limited in the character of the work that they could perform, and where only a small number of sealing operations were to be performed the process was impractical due to the fact that it was necessary to operate a large machine.

It is an object of the invention to provide a small, simple, inexpensive, portable sealing machine of few parts readily usable for simple sealing operations, and operated manually.

Further objects and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawings, wherein:

Fig. 1 is a front elevation of a sealing machine in accordance with my invention, parts being broken away to illustrate the operating elements;

Fig. 2, a similar front elevation showing the sealing elements operated to closed position;

Fig. 3, a side elevation thereof with the sealing members in open position as shown in Fig. 1;

Fig. 4, a top plan view showing the upper sealing member;

Fig. 5, a fragmental vertical sectional view taken vertically through the sealing members at right angles to the view shown in Fig. 3 and

Fig. 6, a horizontal sectional view taken substantially along line 6—6 of Fig. 1.

Referring to the drawings the sealing machine includes, in general, a standard 10 comprising a tubular pedestal extending upwardly from a floor base 11 and carrying at its upper end co-operating upper and lower sealing elements 12 and 13. These sealing elements are connected through link type operating elements presently to be described with a foot lever 14 pivotally connected at 15 to the floor base 11.

More particularly with regard to the sealing operating elements, it will be noted that the lower sealing member 13 is mounted directly on the top of a pedestal or standard 10 in a horizontal position and the upper sealing member 12 is mounted in parallel relationship therewith, being connected by four links 16 each piv-

otally connected to the two sealing element members at the sides adjacent to their ends whereby sealing element 12 will be maintained parallel with respect to the lower sealing element 13 at all times and when moved downwardly the adjacent faces 36 and 37 of the sealing elements 12 and 13 will be brought into clamping relationship.

It will be seen that by means of these links 16 or shackles 16 the sealing elements or jaws 12 and 13 are maintained in alignment. In open position the upper sealing element or jaw 12 is not directly above the lower element 13 as it moves horizontally about the same distance that it rises vertically, due to the toggle action. When pressure is applied to the foot lever 14, the upper sealing element or jaw 12 moves both downwardly and laterally, following the arc of movement afforded by the links 16. This action gives greater pressure by the jaws compared with pressure applied to the foot pedal than would be possible if the jaws moved vertically only. These links 16 or shackles, serve to hold the sealing jaws more firmly and permanently in alignment than other methods in performing such sealing operations.

As best shown in Fig. 3 link elements 16 are mounted on pivot screws 17 extending into the lower sealing member 13 and a pivot member 18 extending horizontally through the upper sealing member 12. The upper sealing member has intermediate bifurcations 19 between which operating links 20 and 21 are mounted on the pivots 18 which extend through the upper ends of these links. Operating links 20 and 21 extend downwardly from pivots 18 through intermediate bifurcations 22 and 23 in the lower sealing member 13. Bifurcations 22 and 23 are similar to each other except that the innermost portion of bifurcation 23 is formed to provide an abutment 24 which is engaged by the inner side of link 21 when the sealing elements are in their fully open position which is determined by this engagement with abutment 24, as will be noted in Fig. 5. In the open position of the sealing members they are separated sufficiently so that the operator may readily position any type of container or any other article to be sealed in a sealing position between the sealing members 11 and 12. In such position the connecting links 16 are slightly inclined from a dead center position so that they will not interfere with the operation of the upper sealing element 12 from being drawn downwardly by operating links 20 and 21.

The lower ends of operating links 20 and 21 are pivotally connected with a cross head 25 on opposite sides of the pedestal or standard 10. The pedestal is provided with longitudinal vertical openings 26 on opposite sides through which cross head 25 is freely movable upwardly and downwardly. While an operating rod may be either inside or outside of the tubular pedestal, preferably, as shown operating rod 27 is within the pedestal and is pivotally connected adjacent to its upper end with cross head 25 and the lower end thereof is pivoted at 27a within the standard to the foot lever 14. Upon depression of the foot lever which has a foot rest 29 thereon the entire linkage is drawn downwardly so that the sealing member 12 is lowered from the position as shown in Figs. 1 and 3 to the closed or clamping position as shown in Fig. 2. Just below the lower ends of openings 26, the pedestal is provided with an interior guide sleeve 28 which surrounds operating rod 27 adjacent to its upper end and in this manner the tension on the operating links is equalized so that equal pressure is applied throughout the length of the sealing members to an article positioned between the sealing elements 12 and 13 to be sealed.

In their closed or clamping position it will be noted that the proximity of the sealing elements and thereby the pressure afforded when they are applied in sealing a container may be adjusted by means of a set screw 30 extending upwardly from floor base 11 for engagement with the foot lever 14, preferably as shown within the confines of pedestal 10. When pressure on the foot lever 11 and foot rest 29 is released the sealing member 12 is operated to its upper position by means of a spring 31 within the upper end of pedestal 10. This spring is removably mounted in the pedestal having its upper end connected with a hook 32 secured centrally in the top end of the pedestal and the lower end of this spring is connected with a yoke 33 extending from a nut 34 in threaded engagement with the upper end 35 of operating rod 27 above cross head 25. By means of this threaded connection the tension of spring 31 may be adjusted whereby the pressure required in the operation may be suitably adjusted.

With reference to the sealing elements 12 and 13, as best shown on a larger scale in Fig. 5, it will be noted that the cooperating faces thereof are provided with transverse serrations 36 and 37 which may be of any desired configuration but are so formed when the sealing elements are actuated into sealing engagement with an article to be sealed these serrations will be brought into cooperative engagement as shown at 38 in Fig. 2. Further each of the sealing elements 12 and 13 is provided with electrical heating elements 39 and 40 which may be connected with a source of electric power in a well known manner. While as shown in my copending application Serial No. 530,056, filed April 7, 1944, now Patent No. 2,376,253, dated May 15, 1945, these heating elements may be connected with an adjustable thermostat, I am not claiming this feature in this particular application, therefore, I am not illustrating same. For practical purposes, on most occasions such a thermostat will not be essential in such a manually operated sealing machine as the heat control will be responsive to manual operations and likewise the operation of the sealer which is not subject to timing of a conveyor system belt or the

like as referred to in said Patent No. 2,376,253, dated May 15, 1945. Thus, I have disclosed a highly satisfactory form of pedestal type of manually operable container sealers.

It will be obvious to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is shown in the drawing and described in the specification but only as indicated in the appended claims.

What is claimed is:

1. A portable, manually operable sealing machine comprising a supporting base, a hollow standard extending upwardly from said base, and upper and lower cooperating sealing elements adjacent the upper end of said standard, means for heating said sealing elements, the lower sealing element being fixed to said standard, parallel pivot links connecting the upper sealing element with the lower sealing element, a lever for foot operation extending through said standard pivotally mounted on said base, a rod member connected with said lever and extending upwardly through said standard, spring means for maintaining said rod member and lever in elevated position, links connecting the upper portion of said rod member to the upper sealing element whereby the pressure on the foot lever will depress the sealing element into position for sealing an article placed therebetween, and means for adjusting the effect of said spring means on said rod member and the limit of its downward movement.

2. A portable sealing machine comprising a pair of cooperating sealing elements disposed one above the other, an upright tubular pedestal supporting the lower one of said sealing elements, a reciprocal lever extending through said pedestal adjacent to its lower end, an operating linkage connecting the upper sealing element through said pedestal with the operating lever at the lower end thereof, and interconnecting links between the upper and lower sealing elements to maintain them in parallel relationship in their open and closed positions.

3. A portable sealing machine comprising a pair of cooperating sealing elements, a member supporting one of said sealing elements, an operating lever extending transversely of said supporting member adjacent to its end, and operating linkage connecting the other of said sealing elements and said supporting member with the operating lever, and spaced links connecting said sealing elements to maintain them in parallel relationship and to cause one of them to travel both horizontally and vertically.

4. A portable sealing device, comprising cooperating sealing elements, means supporting one of said sealing elements in fixed relation and the other of said sealing elements movably, an operating member disposed transversely of said supporting means, operating linkage connecting said movable sealing element and said operating member whereby said movable sealing element will be moved toward said fixed sealing element to perform the sealing operation, and spaced connections between said sealing elements for maintaining them in parallel relation so that the movable sealing element will travel endwise of the other as it is moved toward and from the same.

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