May 31, 1938. L. SCHARF 2,119,358

MACHINE FOR PRESS SEALING ARTICLES IN CELLULOSE TUBES

Filed April 14, 1937 2 Sheets-Sheet 1

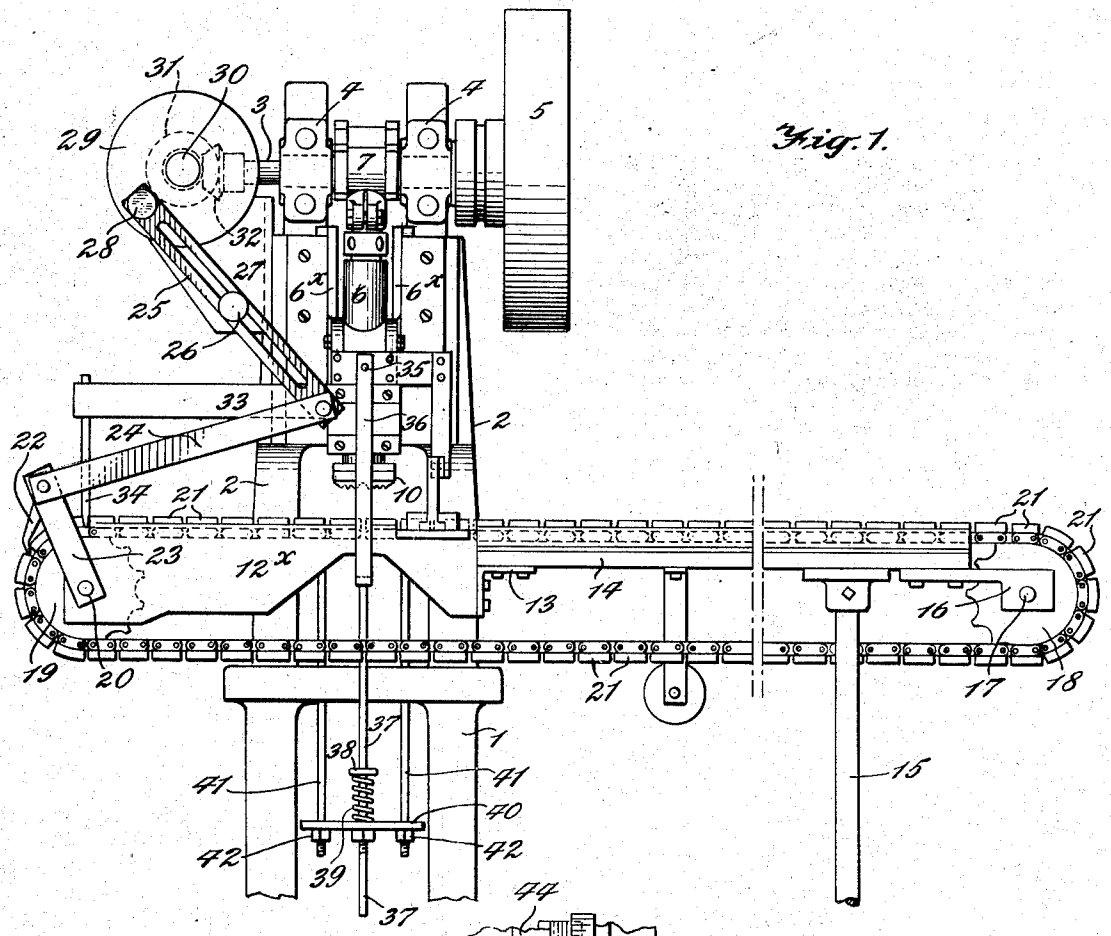


Fig. 1.

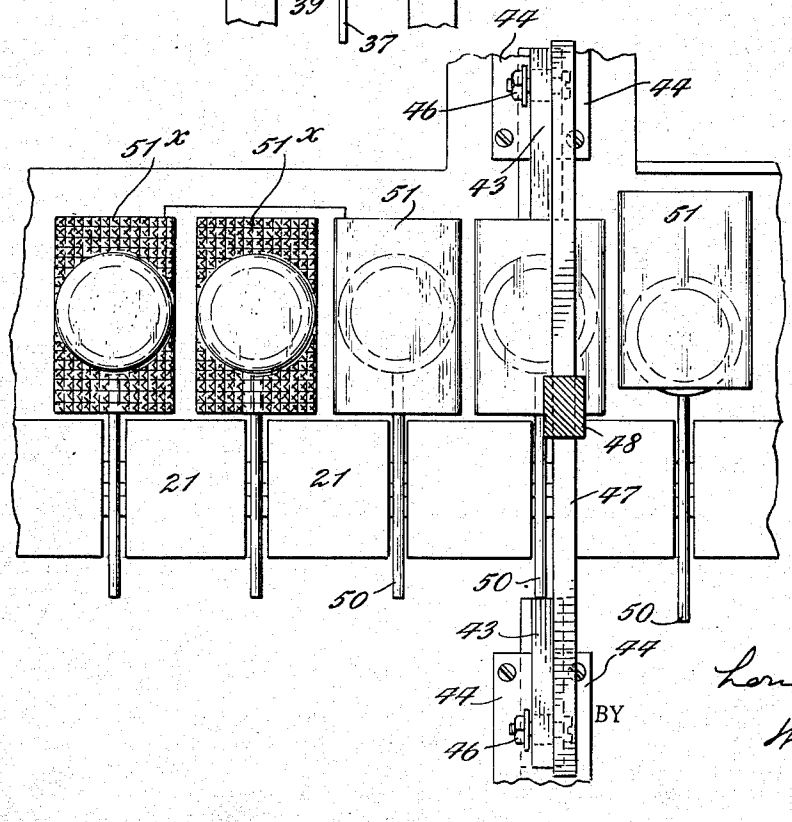


Fig. 2.

INVENTOR.
Lon Scharf
BY
H. Lee Helms
ATTORNEY.

May 31, 1938. L. SCHARF 2,119,358

MACHINE FOR PRESS SEALING ARTICLES IN CELLULOSE TUBES

Filed April 14, 1937 2 Sheets-Sheet 2

Fig. 3.

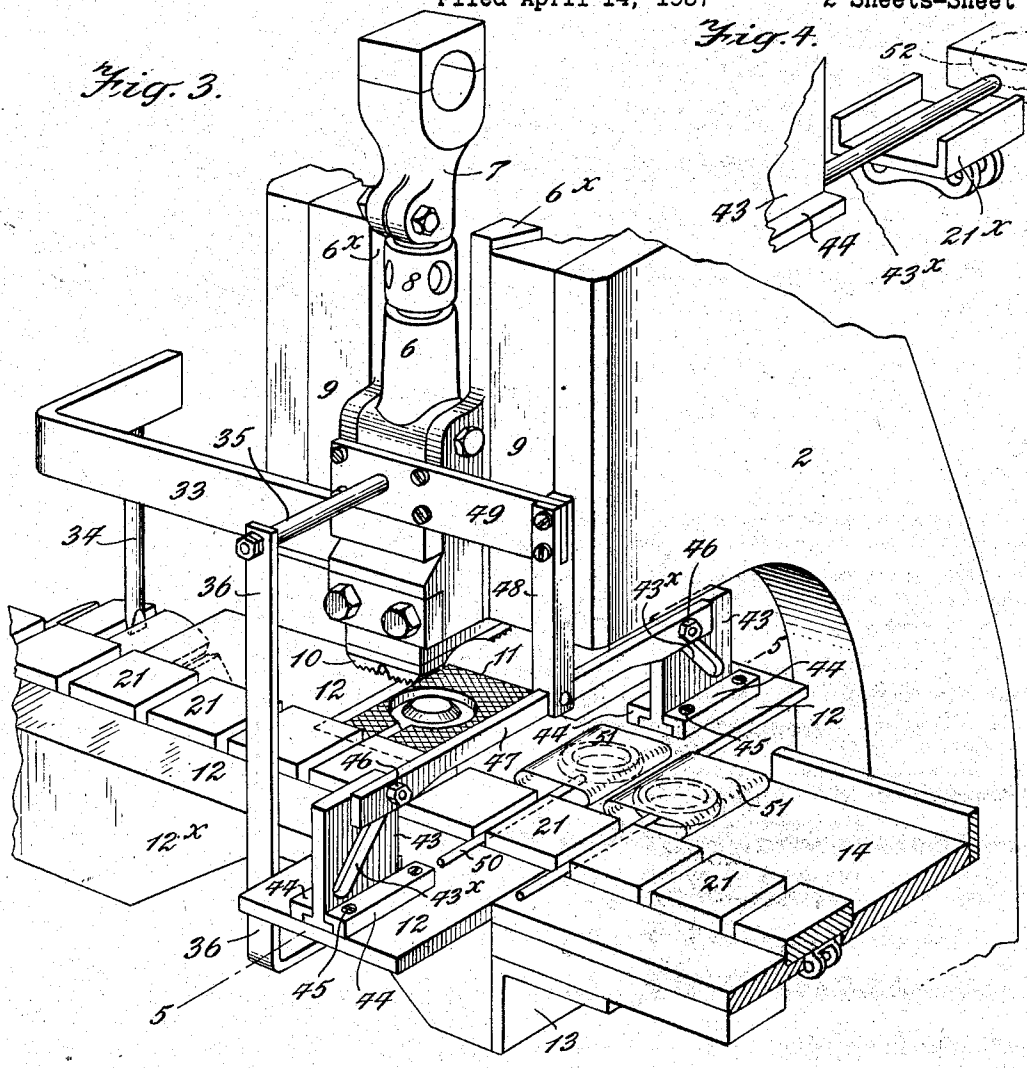


Fig. 4.

Fig. 6.

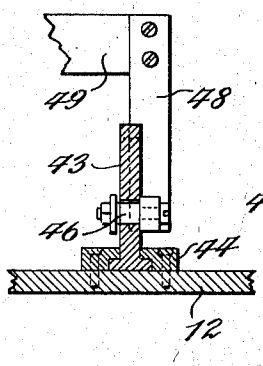
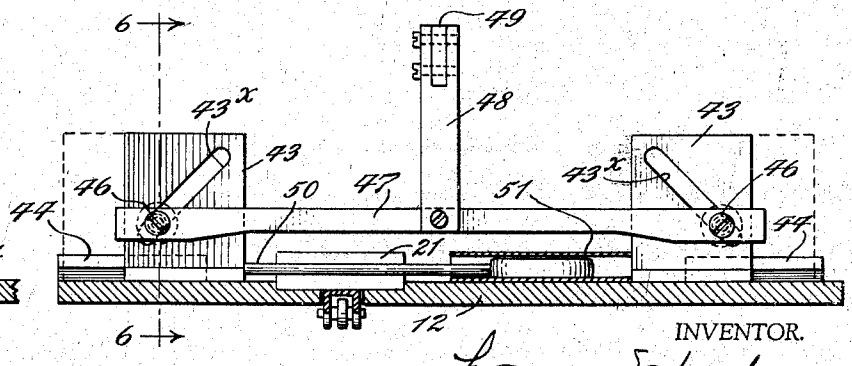


Fig. 5.



INVENTOR.
Lon Scharf

BY
H. Lee Helms
ATTORNEY.

Patented May 31, 1938 2,119,358

UNITED STATES PATENT OFFICE

2,119,358

MACHINE FOR PRESS SEALING ARTICLES IN CELLULOSE TUBES

Lou Scharf, New York, N. Y., assignor to Riverside Company, New York, N. Y., a partnership consisting of David Scharf, Joseph W. Scharf and Lou Scharf

Application April 14, 1937, Serial No. 136,822

5 Claims. (Cl. 226—2)

The object of the invention is to provide a machine which will receive articles disposed within cellulose wrappers, as, for example, tubes open at both ends and made of transparent cellulosic material capable of adhesion by hot plate pressure. The machine receives the tube-enclosed articles and advances them successively to the die members and preliminary to the sealing action the articles are automatically centered in the tube.

The invention will be described with reference to the accompanying drawings, in which:—

Figure 1 is a view in front elevation of an embodiment of the invention.

Figure 2 is a view in enlarged plan, partly in section, showing a portion of the supporting table and feed belt and elements of the centering means.

Figure 3 is a perspective view of the machine, partly broken away.

Figure 4 is a fragmentary perspective view showing a modified feed belt element and a centering finger for centering articles in open-ended box-like cellulosic enclosures.

Figure 5 is an enlarged sectional elevation on the line 5—5, Figure 3.

Figure 6 is a sectional elevation on the line 6—6, Figure 5.

The machine comprises a supporting frame member indicated at 1 from which rise frame bracket members 2 which, as shown in Figure 1, are formed with bearing recesses for a crank shaft 3 held in position by the removable straps 4.

Shaft 3 may be driven from any suitable source of power by drive wheel 5 and a crank on shaft 3 carries a plunger 6. The immediate members connecting the crank with the plunger comprise a yoke 7 which may carry at its lower end an adjusting sleeve 8. In practice, the adjusting sleeve 8 will have a threaded relationship with the plunger 6 so that when the sleeve is rotated the plunger will be moved toward or from the crank in accordance with the direction of rotation of the sleeve. At opposite sides thereof the plunger 6 has secured thereto a vertical guide arm 6x which abuts spaced guide plates 9 carried by the frame members 2.

At its lower end plunger 6 has removably secured thereto by any suitable means, die head 10 adapted to co-act with a fixed die head 11, fixed at head 11 and supported upon a table 12 horizontally carried by frame 2 the table having a vertical skirt 12x. At the right hand side of the table, looking at the drawings, there is secured thereto by an angle bracket 13 a table extension 14 which may be given additional support by means of the vertical standard 15, Figure 1.

At its end table extension 14 carries bearing brackets such as 16 for a shaft 17 carrying a sprocket wheel 18. A sprocket wheel co-acting with sprocket wheel 18 is shown at opposite sides of the machine at 19, it being carried by a shaft 20 which passes through skirt 12x.

Mounted for step-by-step movements by the sprocket wheels is an endless chain the links of which carry spaced feed blocks 21. The chain is given a step-by-step movement by a pawl 22 carried by a lever 23 having a fulcrum on shaft 20 and given forward and backward movements through a link 24 carried by the lower end of a drive lever 25 provided with a fulcrum stud 26 which enters a longitudinal slot formed in the lever and which is carried by a fixed block 27. The upper end of the lever is pivoted at 28 to a wheel 29 on a shaft 30 so that as the wheel rotates lever 25 is given both rocking and bodily endwise movements.

Shaft 30 carries a bevelled gear 31 in mesh with a bevelled pinion 32 on shaft 3.

Plunger 6 has fixed thereto a laterally extending centering arm 33 carrying a centering finger 34 which at the end of a positive movement of pawl 22 enters between two blocks 21 and centers the blocks relatively to the die heads.

Plunger 6 also carries a forwardly projected stud 35 to which is attached a bracket arm 36 which at its lower end is bent horizontally, the horizontally bent section carrying a rod 37 having thereon a fixed contact plate 38 engaged by a spring 39. The spring rests upon a platform 40 held by two spaced rods 41 carried from table 12. Rods 41 at their lower ends are threaded to receive nuts 42 upon which table 40 rests. This arrangement provides a spring cushion for the reciprocating movements for the plunger and die heads 10.

The construction illustrated in Figures 1 to 3 and 5 and 6 of the drawings is designed more particularly for connection with the wrapping and sealing of the candy heads of lollipops, within Cellophane tube wrappers. To this end, the candy heads of the lollipops are inserted in the tubes and the sticks are placed so that each stick lies between two of the blocks 21, the lollipops being supported first by the table extension 14 and subsequently by the table 12. As the lollipops are fed step-by-step to the die blocks they approach a centering device which will now be described.

The centering device comprises, in the present embodiment, two reciprocating cam blocks 43 each having a T-shaped base resting upon table 12 and sliding between flanged guides 44 secured to table 12 by screws 45. Each centering cam block 43 is formed with a cam slot at 43x to receive a stud 46 carried by a horizontal frame 47 reciprocated by plunger 6 through bracket arms 48 and 49. Thus as the plunger 6 moves downward to carry the upper die head toward the lower die head, the centering cam blocks 43 are moved toward each other. One block will hold the tube while the other block engages the stick 50 of the lollipop and the tube indicated at 51 and candy head of the lollipop will be relatively positioned. The centering structure will then pass over the lower die 11 and the upper die will be brought down bringing that area of the Cellophane tube under compression and mutual adherence of its sections so that the final product will be as shown at 51x, Figure 2.

When the machine is designed to enclose articles such as powder puffs and the like, not having sticks, blocks 21 may be replaced by carriers such as 21x shown in Figure 4. A powder puff as an example is shown within the tube 51, the puff being indicated at 52. In this case one or both of the centering cam blocks 43 may carry a finger 43x to enter the tube and center the article within the same.

It will be understood that one or both of the die blocks 10, 11, may be heated, that the tubes may be formed of any suitable material, and that the specific nature of the articles received within the tubes prior to sealing of the latter is not limited to the articles illustrated in the drawings.

What I claim and desire to secure by Letters Patent, is as follows:—

1. In a machine for press sealing stick carrying articles in cellulose tubes, a table having two sections one for supporting an article and the second for supporting the stick, opposed upper and lower dies, means for relatively moving the upper die toward and from the lower die, an article carrier intermediate the table sections comprising a plurality of holding elements arranged side by side and adapted to intermittently move articles enclosed within cellulose tubes in succession to and from the dies, centering means comprising opposed members, one adapted to abut an edge of each of the successively presented cellulose tubes, and the second to abut the articles disposed within the tubes, and means for imparting relative movement to said centering members toward and from each other to center the articles in the tubes preliminary to pressing of the latter by the dies.

2. In a machine for press sealing articles in cellulose tubes, opposed dies, means for relatively moving the dies toward and from each other, an article carrier comprising an endless belt of holding elements adapted to receive and move articles enclosed within cellulose tubes in succession to the dies, a plunger carrying one of the dies, means for actuating the plunger, centering means comprising opposed members, one adapted to abut the successively presented cellulose tubes, and the second to abut the articles disposed within the tubes, and means actuated by the plunger for imparting relative movement to said centering members.

3. In a machine constructed in accordance with claim 2, in which the centering members are formed with cam slots, a cam actuating bar having studs entering said cam slots, and a bracket connecting the bar with the plunger.

4. A machine for press sealing stick carrying articles in cellulose tubes, constructed in accordance with claim 1, in which the holding elements of the article carrier are blocks held in spaced relation on a chain and adapted to receive between them the sticks led from the articles enclosed within the cellulose tubes.

5. In a machine for press sealing articles in cellulose tubes, a lower fixed die, an upper reciprocating die, a plunger carrying the upper die, means for actuating the plunger, an endless chain, article carriers carried by the chain and having a path of movement adjacent the fixed die, means for imparting intermittent motion to the chain, and means dependent upon the operation of the plunger to impart a movement of one of the articles relatively to the article carrier and the die preliminary to pressing of the tube by the dies.

LOU SCHARF.