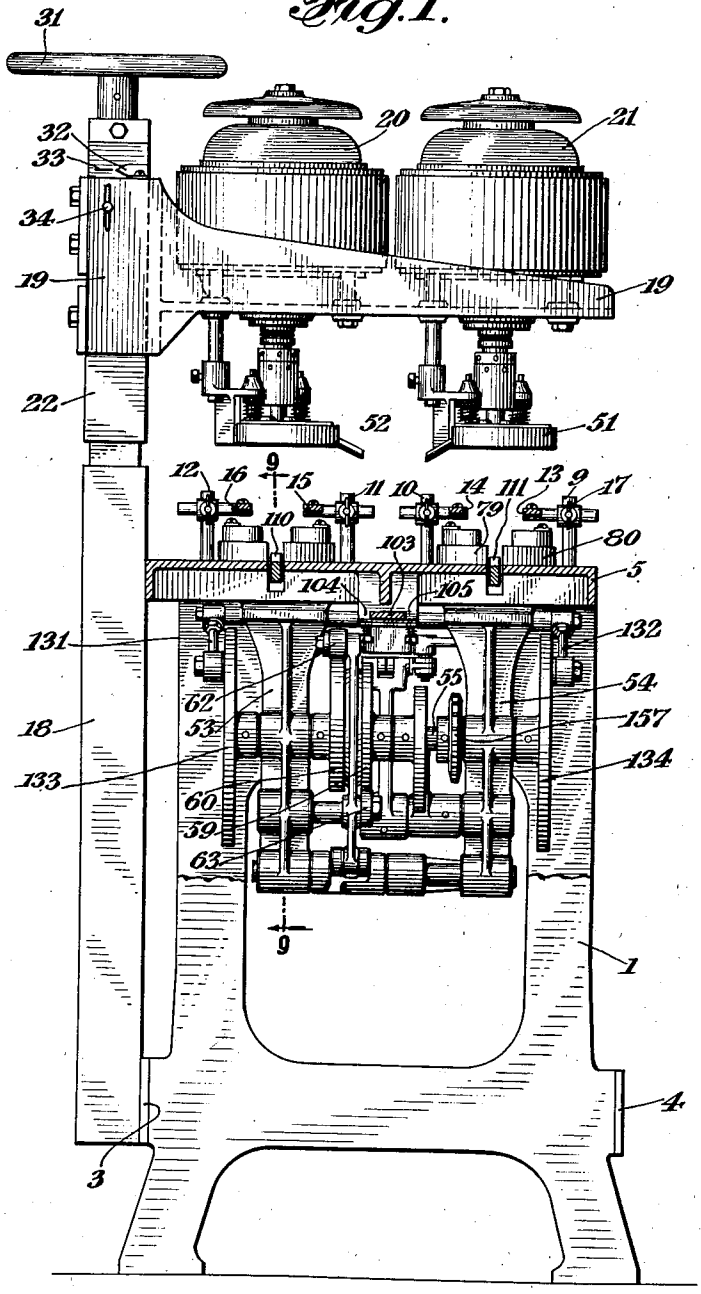
June 12, 1934. J. D. REIFSNYDER 1,962,787

MACHINE FOR OPERATING ON PAPER CONTAINERS

Filed Jan. 8, 1932 5 Sheets-Sheet 1

Fig. 1.



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MACHINE FOR OPERATING ON PAPER CONTAINERS

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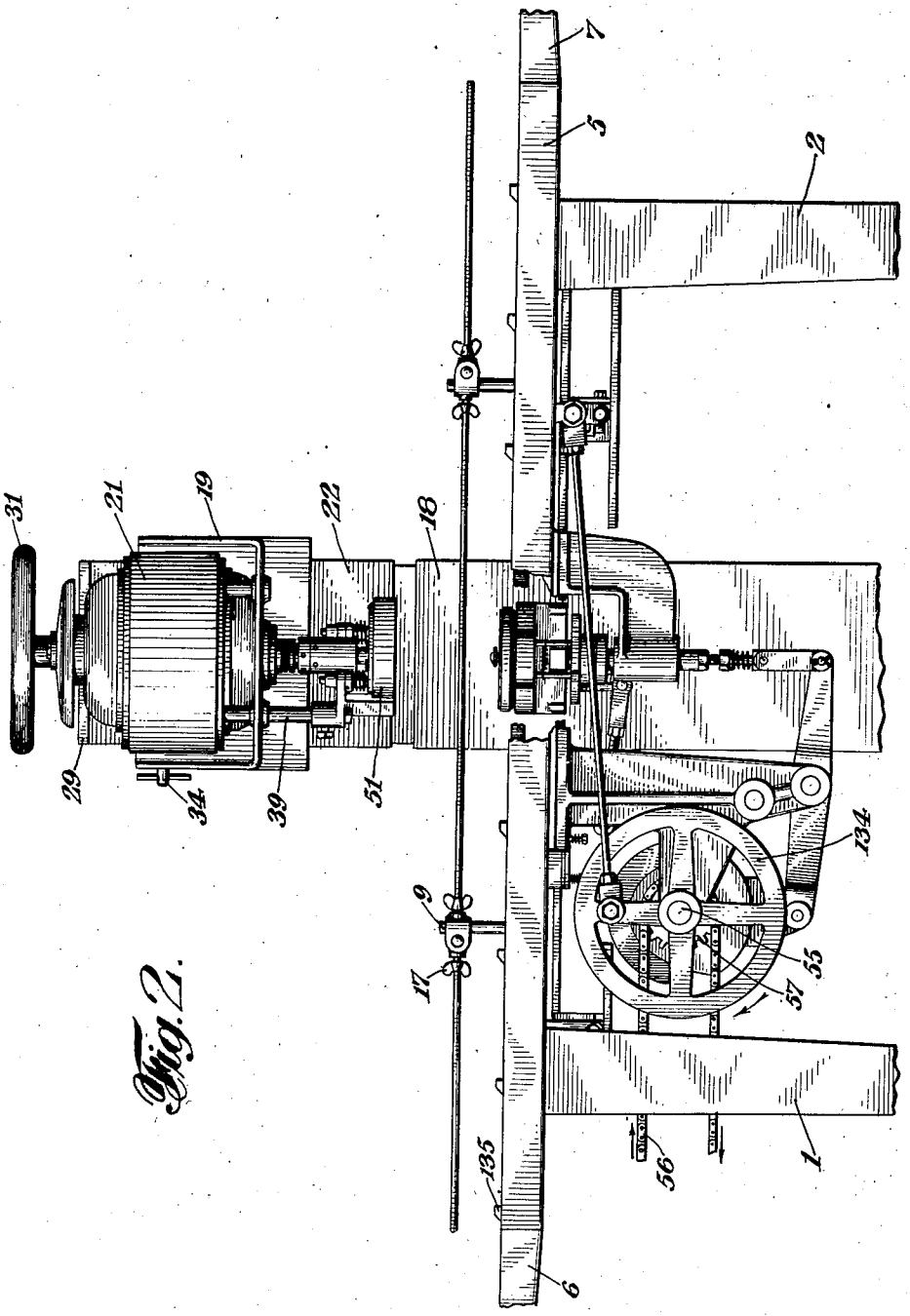


Fig. 2.

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MACHINE FOR OPERATING ON PAPER CONTAINERS

Filed Jan. 8, 1932 5 Sheets-Sheet 3

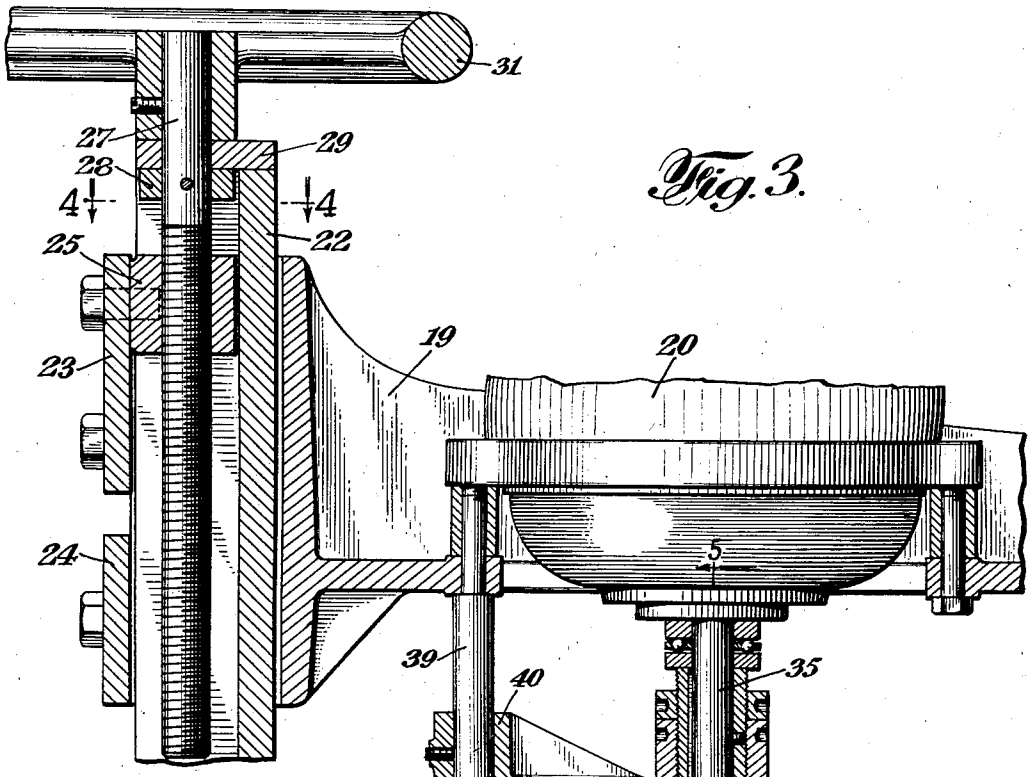


Fig. 3.

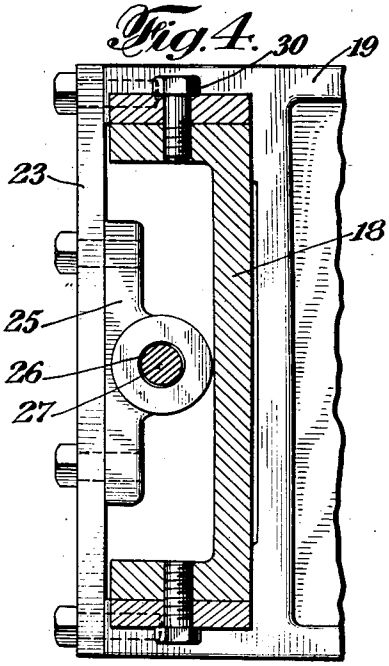


Fig. 4.

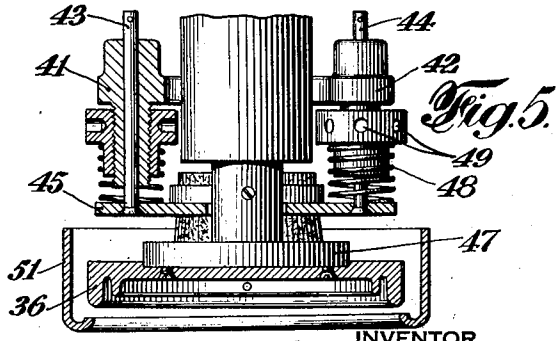


Fig. 5.

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MACHINE FOR OPERATING ON PAPER CONTAINERS

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Fig. 6.

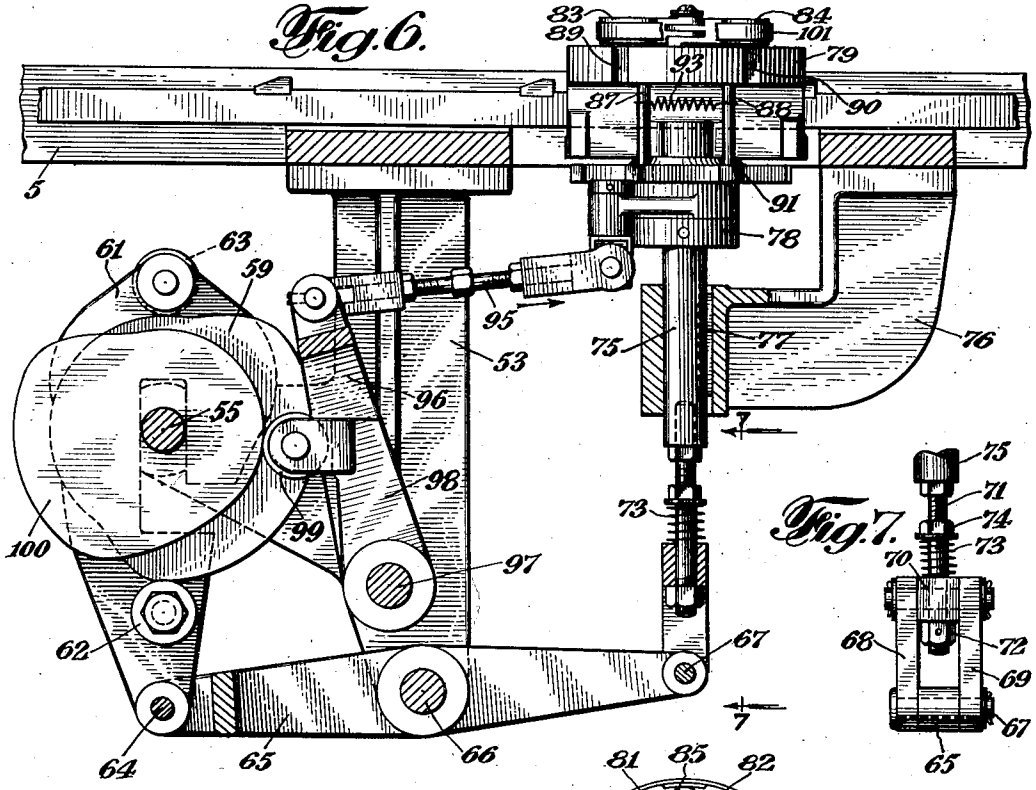


Fig. 7.

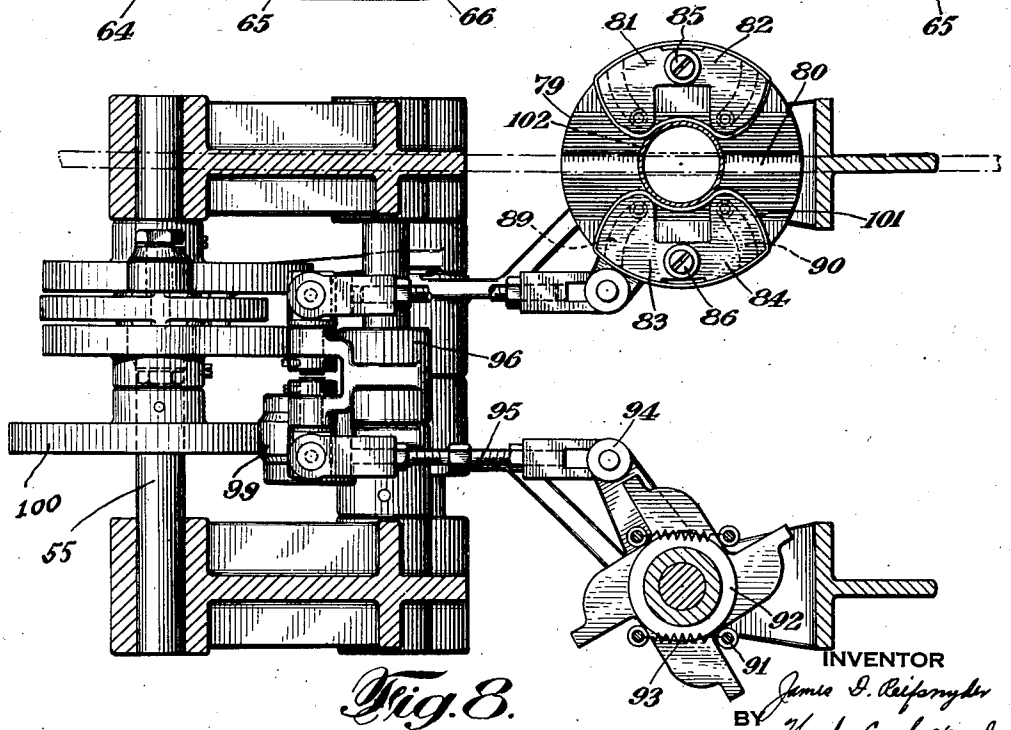


Fig. 8.

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MACHINE FOR OPERATING ON PAPER CONTAINERS

Filed Jan. 8, 1932 5 Sheets-Sheet 5

Fig. 9.

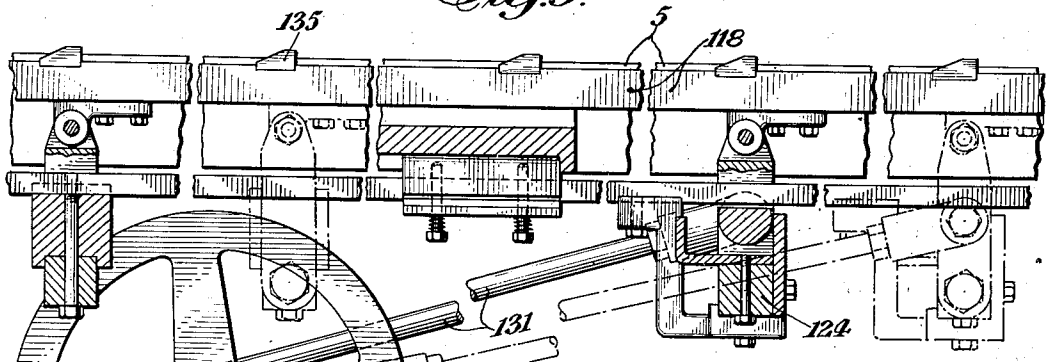
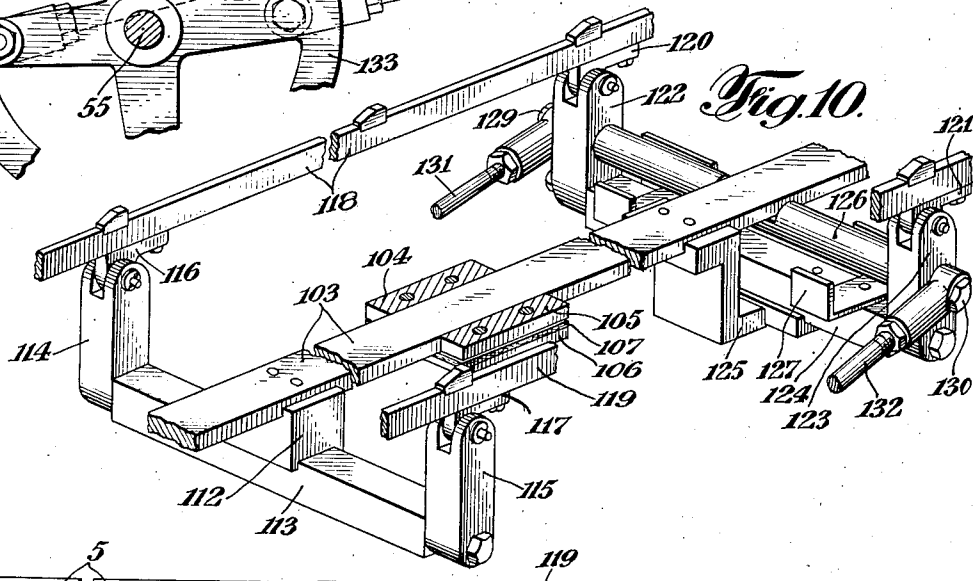


Fig. 10.



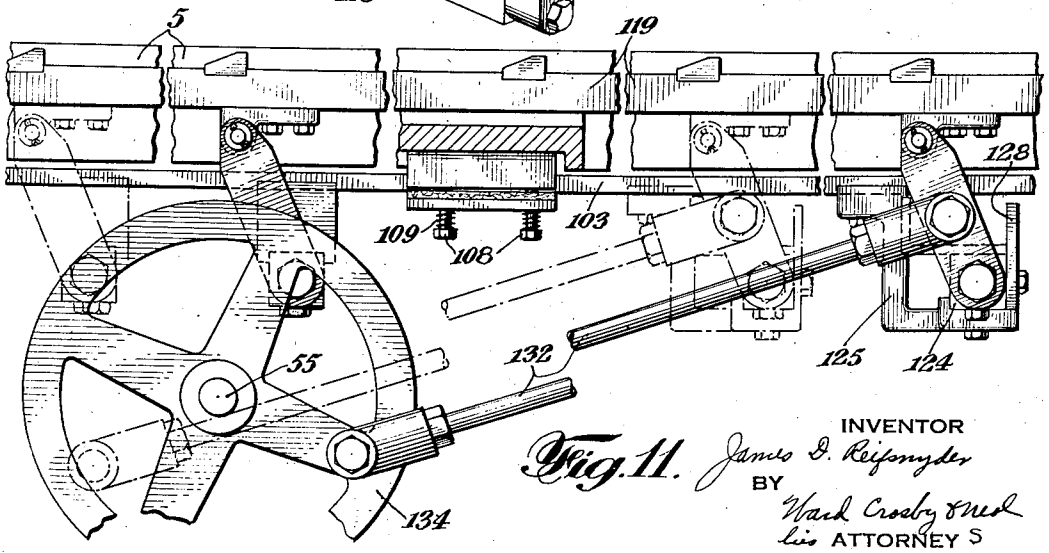


Fig. 11.

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Patented June 12, 1934 1,962,787

UNITED STATES PATENT OFFICE

1,962,787

MACHINE FOR OPERATING ON PAPER CONTAINERS

James D. Reifsnyder, Flushing, N. Y., assignor to Lily-Tulip-Cup Corporation, New York, N. Y., a corporation of Delaware

Application January 8, 1932, Serial No. 585,457

17 Claims. (Cl. 93—36)

This invention relates to machines for turning over the marginal edge of the body of a container, either for the purpose of sealing the bottom of the container in position or for the purpose of sealing the cover of the container in position after the container has been filled; the present embodiment of the invention being illustrative of a machine for the latter purpose. The machine to be presently described has been designed for operating upon containers of the character illustrated, and the manufacture of which is described in United States Patent No. 1,608,617, November 30, 1926, to James D. Reifsnyder.

An object of the invention is to provide an efficient and durable machine capable of automatically rapidly crimping or turning over the edge of the body of the container to seal one end of the container in position.

In order that the detailed description to be presently given may be better understood, the general features and operation of the machine will be first briefly set forth.

The machine herein illustrated is adapted to be used in conjunction with other apparatus (not forming a part of the present invention) for filling containers. After the containers have been so filled and the caps or covers placed in position, the containers are moved forward on a table in a single or a plurality of single series, each series being guided between guide bars so that successive containers will follow directly in line. A spinning or crimping die is supported over the table in alignment with each series of containers and in axial alignment with each spinning or crimping die a head is positioned within a bore in the table and is adapted to be raised at suitable intervals to raise successive containers into operative engagement with its spinning die. Each of the heads carries means for holding the containers thereon during the time that respective containers are being operated upon. The feed means for advancing the series of containers into operative position operates in a groove in the table and passes through a groove in the lifting head. This feeding means has a forward and backward reciprocating movement in the direction of the series of containers and also an up and down movement which permits it to be moved back to the commencement of its feeding stroke free from engagement with the containers, and when it is advancing on its feeding stroke it is in its raised position to engage the containers. The timing of the various mechanisms is such that the feeding of the series of containers, reciprocating of the lifting head to raise the containers and the clamping of the containers in position are all carried out as automatic operations. The guides and bars for guiding the containers in series movement are adjustable to provide for containers of varying sizes and likewise the spinning dies are adjustable in the direction of their axes in order to provide for containers of different height.

The invention consists in the novel features of construction, arrangement and combination of parts embodied, by way of example, in the apparatus hereinafter described as illustrating the preferred form of the invention, and the invention will be more particularly pointed out in the appended claims.

Further objects and advantages of the invention will more fully appear from the following description taken in connection with the accompanying drawings which show, by way of example, the present preferred embodiment of the invention.

Referring to the accompanying drawings in which like reference characters indicate the same parts in the various views:

Fig. 1 is an end elevation of the machine partly in section;

Fig. 2 is a side elevation of the machine with certain parts of the framework broken away;

Fig. 3 is a sectional view in elevation showing one of the dies and associated mechanism including adjustment means;

Fig. 4 is a transverse section taken at line 4—4 of Fig. 3;

Fig. 5 is a vertical section taken at line 5—5 of Fig. 3;

Fig. 6 is a vertical section taken through the lifting head and illustrating the mechanism for operating the same and for operating the holding means carried by the head;

Fig. 7 is a view taken at 7—7 of Fig. 6;

Fig. 8 is a plan view illustrating the parts shown in Fig. 6, with certain parts removed for the purpose of clarity;

Fig. 9 is a sectional view illustrating the feeding means and the mechanism associated therewith;

Fig. 10 is a perspective view illustrating further details of the mechanism shown in Fig. 9; and

Fig. 11 is a view somewhat similar to Fig. 9

showing the parts in their different positions of operation.

Supporting frame

Referring to Figs. 1 and 2: a supporting structure comprises the end standards 1 and 2 rigidly connected together adjacent their bottoms by means of the side pieces 3 and 4 and rigidly connected by and supporting on their upper ends the table 5. The table 5 is provided with end extensions 6 and 7. In the present embodiment the machine is designed to operate upon two series of containers and the width of the table is proportioned accordingly. Pairs of posts such as 9–10 and 11–12 project upwardly from the table and carry guide bars 13–14 and 15–16 extending lengthwise of the table and defining the path of movement of the respective series of articles. Respective pairs of guide bars are adjustable vertically and toward and from each other by suitable means such as the thumb screws 17 in order to accommodate containers of varying sizes. A column 18 is rigidly attached to the table and its supporting framework intermediate the ends of the table and extends upwardly to a position above the top of the table, carrying at its upper end a cantilever bracket 19 for supporting the electric motors 20 and 21 which drive the spinning dies. The bracket 19 and associated parts carried thereby is vertically adjustable in the manner to be more particularly described following.

Dies and associated mechanism

The upper end of the column 18 (Figs. 1 and 2) is provided with a finished upper portion 22 which is slidably engaged by the cantilever bracket 19 (Figs. 3 and 4) which is held in position thereon by jib plates 23 and 24, the upper of which bears attached to its inner face a screw nut bracket 25 provided with screw thread 26, into which the cantilever screw 27 is cooperatively threaded. A screw collar 28 is rigidly attached to the screw 27 and serves to hold the screw against upward movement with respect to the end 22 of the column by engaging the underside of the screw plate 29 which is rigidly attached to the bracket 19 such as by studs 30. A hand wheel 31 is rigidly attached to the screw 27 and serves in conjunction with the collar 28 to hold the screw 27 against axial movement with respect to the plate 29 and column 18. It will therefore be seen that by rotating the hand wheel 31 and attached screw 27, the screw block 25 and the bracket 19 rigidly attached thereto is raised or lowered as desired. Referring to Fig. 1, it will be seen that suitable indicia, such as the index 32 and marks 33 carried respectively by relatively movable parts, serve to indicate the desired predetermined setting of the dies carried by the bracket 19. In order to rigidly lock the bracket 19 in such predetermined position a lock pin 34 is provided: the pin being seated in a bore in the bracket sleeve and being adapted to register with a corresponding hole of a series of holes carried by the column 18 for the purpose of the various settings or adjustments desired.

Each of the motors, such as 20, (Fig. 3) is provided with an armature shaft such as 35 to which is suitably attached a spinning or crimping die such as 36 which is provided with suitably formed and constituted means for turning over the edge of the receptacle to be operated upon, such for example as the die groove 37 and the die studs 38: the specific details of the curling features of the die not falling per se within the present invention need not be described with more particularity, it being within the knowledge of those skilled in the art to select or construct a suitable die for the purpose desired. In order to provide for different size containers and for containers of different specific characteristics, the dies are removably mounted to permit change.

One of the studs which is utilized to hold the motor such as 20 in place is provided with a lower extension 39 adapted to carry a bracket 40 which is adjustably supported thereon. The bracket 40 is provided with bifurcated ends (Fig. 5) 41, 42 in the form of bearings into which are respectively positioned studs 43, 44 attached at their lower ends to a plate 45 which carries friction means such as the cork stoppers 46 whose lower ends bear on the die plate 47 and which are held in frictional engagement therewith by resilient means such as the springs 48, the tension of which is adjusted by means of the nuts 49 in threaded engagement with the bifurcations such as 42. It will therefore be seen that as the die rotates, the corks 46 being held stationary, sufficient heat is generated to heat the die 36: the heat thus generated being sufficient to melt the coating of wax-like substance with which the containers are often treated or to melt such wax-like composition as may be utilized in connection with the sealing of the containers. No claim is made herein to the specific features of the friction heating element, since this forms the subject matter of an independent and copending application. It is further apparent that any suitable heating element, such as an electrical heating element, may be used for the purposes above mentioned.

The bracket 40 also carries a depending arm 50 to the lower end of which is rigidly attached an annular guard or ring 51 which surrounds the die 36 and is adapted to collect particles of said wax-like substance and also any particles liberated as a result of the abrasive effect of the die on the container edge. In order to prevent the liquid wax-like substance or other particles, liberated from the die, from being deposited in adjacent parts of the machine or the articles being operated upon, the lower edge of the guard 51 is turned inwardly to collect such materials and a spout 52 is in communication with the channel so formed to conduct such materials to a suitable container (not shown) which may be placed on the table 5. Referring to Fig. 1, it will be seen that the spouts such as 52 are directed toward a common point to facilitate catching the particles emitted therefrom.

Lifting head and holding means

Referring more particularly to Figs. 6, 7, 8 and 1: the pair of lifting heads and associated mechanism will now be described.

Rigidly attached to the inner side of the table 5 is a pair of cam and lever shaft bearings such as 53—54 (Fig. 1). Journaled in suitable bearings in these brackets is the main power shaft 55 which may be supplied with driving power by any suitable source such as the drive chain 56 (Fig. 2), which engages the sprocket 57 suitably attached to the shaft 55. Rigidly attached to the power shaft 55 and adapted to rotate therewith is a pair of plate cams 59—60 so formed as to raise and lower the container raising head in proper timed relation to be de-

scribed more fully following. Positioned between this pair of cams is a cam roller plate 61 carrying the cam rollers 62 and 63 in peripheral engagement respectively with the cams 59 and 60. The cam roller plate 61 is suitably guided and restricted to substantially a vertical rise and fall and its lower end is pivotally attached at 64 to a cam roller slide lever 65 which is journaled as at 66 to a bracket 53. The lower end of the lever 65 is pivotally connected at 67 between a pair of links 68—69 which are pivotally attached at their upper ends to trunnion studs formed integral with the trunnion block 70 which is provided with a vertical bore in which is positioned a stud 71, which is held therein against upward movement by the collar 72 attached thereto and positioned below the trunnion block 70 and is resiliently held against relative downward movement by the springs 73 which is adjustably held between the trunnion blocks 70 and the nut and washer 74. The stud 70 has its upper end screw-threaded into the shaft 75 into which it is suitably locked by means of a lock nut. The shaft 75 is journaled in the bracket 76, rigidly attached to the underside of the table 5, for vertical reciprocal movement with respect thereto but is limited against rotary movement by means of the key 77.

The upper end of the shaft 75 carries a collar 78 rigidly attached thereto and carries suitably attached to its upper end a head 79 for raising the articles being operated upon into operative relation with the die previously described. It will therefore be seen that upon rotation of the shaft 55, plate cams 61 and 62, through the intermediary of the cam rollers, cam plate and cam lever and interconnected mechanism previously described, serve to raise and lower the head 79; and it will be particularly noted that the spring 73 provides a resilient means in the mechanical train operating to raise the head so that after the cam roller 63 is positioned on the maximum raise of the cam and is held in such position, without further moving the cam plate or cam lever, the spring 73 resiliently holds the head and container carried thereby against the die and continuously resiliently feeds the container to the die until the die has completed its operation upon the container. By suitably adjusting this resilient means in connection with the stud by which it is carried, the feed of material to the die may be adjusted as desired.

The means for holding the container on the head will now be described with reference to the mechanism previously described. The head 79 comprises a disc-like upper surface in the general form of a flange with the hub of the head extending downwardly. This flange is provided with a transverse recess 80 for accommodating the feeding means hereinafter to be described, and the hub of the head extends downwardly and is rigidly attached to the upper end of the shaft 75 previously referred to.

To the top of the head 79 are pivotally attached two pairs of jaws 81, 82 and 83, 84; each pair of jaws being attached to the head by a stud freely journaled in the head and secured to the head by means of the screws 85, 86. Each of the jaws is provided with a rigidly attached downwardly projecting stud, and the studs thus connected to the jaws 83, 84 will be designated as 87, 88. These studs pass through arcuate grooves such as 89, 90 formed in the upper flange of the head 79 and extend downwardly below the lower extremity of the head 79, carrying at their lowermost ends cam rollers such as 91, which are adapted to engage respective cam operating surfaces formed on a cam such as 92 which surrounds the lower hub extension of the head 79 and is supported on the collar 78 secured to the shaft 75. The pairs of studs such as 87, 88 are normally held toward each other by means of the springs such as 93, which serve to thereby hold the corresponding pair of jaws such as 83, 84 normally inwardly in what will be termed the closed position. The cams such as 92 are each provided with an operating arm 94, to which is attached an adjustable link connection such as 95 which is operatively connected at its other end to a lever 96 rigidly attached to the shaft 97 journaled in the bracket 53. It will be noted that since there are two links such as 95, the lever 96 is bifurcated (Fig. 8) at its upper end to provide means for attaching the respective links. Also pivotally attached to the shaft 97 is a cam lever 98 (Fig. 6) carrying a cam roller 99 which is in operative engagement with the periphery of a cam 100 which is operatively connected to the drive shaft 55 and adapted to be rotated therewith. This cam is so formed and adjusted as to actuate the levers and linkages above referred to in suitable timed relation to effect the opening and closing of the holding jaws in proper timed relation in the manner to be hereinafter described. Each pair of holding jaws such as 83—84 is surrounded by a rubber band 101 which normally lies tangential to the inner ends of the pair of jaws and when the jaws are gripping the container, such as is indicated in Fig. 8 as 102, the rubber band yields to frictionally engage the outer periphery of such container. In the position of the parts as shown in the drawings, the cam roller 99 is positioned on the lower surface of the cam and the springs such as 93 are operating to hold the jaws in their normal closed position to engage the container as indicated in Fig. 8.

Feeding means for advancing the series of containers to the raising heads

Referring to Fig. 10: a slide bar 103 is slidably seated in three pairs of lugs such as 104—105 which are formed in the under side of the table 5 longitudinally thereof, with each pair of lugs providing lateral guiding means for the bar 103. The bar 103 is held in position by means of supporting plates 106 and a frictional plate or washer such as the leather strip 107 is positioned between the plate and the bar 103 at the central supporting lug assembly. The central supporting plate and friction strip are adjustably attached by means of studs 108 which are screw-threaded into the lugs and springs 109 are interposed between the stud heads and the plate 106. It will therefore be seen that the bar 103 is longitudinally supported in relative sliding movement with respect to the table head. Referring to Fig. 1: it will be seen that the bar 103 is positioned intermediate the sides of the table 5. Grooves 110 and 111 are provided in the table 5, extending lengthwise thereof parallel to the bar 103 and respectively in axial alignment with the path defined by the guide bars 15—16 and 13—14 and in alignment with the grooves 80 formed in the raising head 79.

Adjacent one end of the bar 103 (Fig. 10) is a spacer block 112 rigidly attached to the

underside thereof, and rigidly secured to the underside of the block 112 is a cross bar 113 carrying pivoted to its outer ends feed bar links 114, 115 having bifurcated upper ends into which are seated respectively and pivotally attached to which are bearings 116, 117 which are rigidly attached respectively to the feed bars 118, 119. Adjacent the opposite end of the feed bars 118, 119 similar bearings 120 and 121 are rigidly attached and are similarly pivotally connected to links 122, 123 which are journaled at their lower ends to a cross bar 124 (Figs. 9, 10 and 11) which is rigidly supported on a bracket 125 rigidly attached to the slide bar 103. The links 122 and 123 are interconnected by the tie bar 126, so that the links 122, 123 may be oscillated about their pivotal bearing points simultaneously in a manner to be hereinafter described. Rigidly attached to the bar 124 is an angular limit stop 127 (Fig. 11) and similarly attached is a limit stop 128, said limit stops being spaced apart each from the other to be engaged by the tie bar 126 to thereby limit the oscillation of the said bar and links 122, 123 attached thereto. Interconnected to the said links and tie bar and extending outwardly beyond the links are connecting rod studs 129, 130 to which are pivotally attached respective connecting rods 131, 132, the opposite ends of which are pivotally attached to crank wheels 133, 134 carried by and suitably attached to the power shaft 55 to be rotated therewith (see also Figs. 1 and 2). The position of the feed bar 118 (Fig. 9) is shown in its approximate rearward position, while the position of the feed bar 119 (Fig. 11) is shown after it has passed its forward feeding position and is on its return stroke; but it is to be understood that the parts are so shown for illustrative purposes and that the feed bars 118 and 119 are simultaneously moved in both directions. It will also be noted that in Fig. 9 the feed fingers such as 135, which are adapted to engage respective articles of a series, are above the top of the table 5 and just about to come into feeding position to feed the articles; while the corresponding fingers of the feed bar 119 (Fig. 11) have been retracted below the top of the table 5 and are commencing their rearward stroke to the feed position. This raising and lowering of the feed bars and fingers carried thereby is effected by the construction and arrangement of the parts shown in Fig. 10, in which it will be noted that the free movement permitted the tie bar 126 between the stops 127 and 128 allows the links 122, 123 a certain oscillatory free movement before the respective stops 127 and 128 are engaged by the bar 126 to positively move the linkage mechanism in the respective rearward and forward directions.

Operation

The various parts and combinations are so formed and adjusted in cooperative relationship as to operate in the following manner.

Referring to Fig. 2: the left hand end of the machine is the end at which the feed of the articles is commenced, and the articles are moved lengthwise of the table toward the opposite end of the machine. After the containers have been filled and the tops placed in position, the containers are placed on the table extension 6 in two rows (Fig 1) in respective series alignment with the guide bars 13, 14 and 15, 16. Commencing with the feed bars 118, 119 in the left hand position, the bars are raised up, in the manner previously described, and then commence to move forward, at which time the feed fingers 135 engage successive containers of the respective series to successively advance them step by step until the first container of each series is positioned on its respective raising head 80, which at that time is in its lowered position substantially in the plane of the top of the table 5, and at which time the feed jaws such as 81—82 are open. As soon as the respective containers are placed on said heads, the cam roller 99 (Fig. 6) has reached the lower part of the cam 100 and the jaws are permitted to close thereby firmly holding the container on the head, and the cam 59 and the interconnected mechanism raises the heads upwardly carrying the upper edge of the containers into operative engagement with the spinning dies such as 36 (Fig. 3). During such operation, the spring 73 (Fig. 6) is being compressed so that when the head has reached nearly its upper limit of movement the heads and springs serve to yieldably compress them and progressively feed the upper edge of the containers to the dies, thereby exerting only the necessary force to enable the dies to properly spin or turn over the edge of the material of the containers, until the edges are positioned against the top of the closures in the manner well understood by those skilled in the art. The heads are then lowered, the jaws opened, and on the next feed stroke the articles which have been completed are fed forward from the respective heads toward the discharge end of the table 5 and simultaneously successive containers are fed on to the head and are ready to be operated upon in the manner heretofore described.

To adjust the machine for different size containers the dies are interchanged, the supporting bracket 19 is adjusted vertically by means of rotating the hand wheel 31 (Figs. 1 and 3), predetermined setting of these parts being facilitated by means of the indicia means 32—33, and the proper setting being fixed in locked position by means of the pin 34; and the guide rails 13, 14, 15 and 16 are adjusted in the proper lateral and vertical positions by means of the thumb screws such as 17.

Having thus described my invention with particularity with reference to its preferred form, it will be obvious to those skilled in the art, after understanding my invention, that other changes and modifications may be made therein without departing from the spirit and scope of my invention, and I aim in the appended claims to cover such changes and modifications as are within the scope of the invention.

What I claim is:

1. In a device for sealing paper containers the combination of, a sealing die, a stationary container support, a reciprocable container support, means for causing relative rotation between said die and said reciprocable support, means for causing reciprocal movement of said support, and means for successively advancing a series of containers along said stationary support to position respective containers of said series over said reciprocable support and into operative alignment with said die, said successive advances being in timed relation with said reciprocal movement so as to alternate therewith.

2. In a device for sealing paper containers the

combination of, a sealing die, a stationary container support, a reciprocable container support, means for causing relative rotation between said die and said reciprocal support, means for causing reciprocal movement of said support, means for successively advancing a series of containers along said stationary support to position respective containers of said series over said reciprocable support and into operative alignment with said die, said successive advances being in timed relation with said reciprocal movement so as to alternate therewith, and means for successively holding respective containers individually against rotation during the sealing operation.

3. In a device for sealing paper containers the combination of, a rotatable sealing die, a reciprocating head for supporting a container in axial alignment with said die, and means for successively intermittently feeding a series of containers to position respectively successive containers of said series on said head, said reciprocation and said intermittent feed being adapted to operate in alternate timed relation.

4. In a device for sealing paper containers the combination of, a rotatable sealing die, a reciprocating head for supporting a container in axial alignment with said die, means carried by said head and reciprocable therewith for holding said container thereon, and means for successively intermittently feeding a series of containers to position respectively successive containers of said series on said head, said reciprocation and said intermittent feed being adapted to operate in alternate timed relation.

5. In a device for sealing paper containers the combination of, a table, a rotatable sealing die above said table, a head positioned in an opening in said table for supporting a container in axial alignment with said die, means for successively intermittently feeding a series of containers along said table to position respectively successive containers of said series on said head and means for raising said head to move said respective containers into operative sealing engagement with said die, said reciprocation and said intermittent feed being adapted to operate in alternate timed relation.

6. In a device for sealing paper containers the combination of, a table, a rotatable sealing die above said table, a head positioned in an opening in said table for supporting a container in axial alignment with said die, means for successively intermittently feeding a series of containers along said table to position respectively successive containers of said series on said head, means for raising said head to move said respective containers into operative sealing engagement with said die, said reciprocation and said intermittent feed being adapted to operate in alternate timed relation, and means carried by said head and operable in timed relation to its raising to hold said container against rotation during the sealing operation.

7. In a device for sealing paper containers the combination of, a table, a rotatable sealing die above said table, a head positioned in an opening in said table for supporting a container in axial alignment with said die, means for successively intermittently feeding a series of containers along said table to position respectively successive containers of said series on said head, means for raising said head to move said respective containers into operative sealing engagement with said die, said reciprocation and said intermittent feed being adapted to operate in alternate timed relation, gripping jaws carried by said head for holding said respective containers against rotation, and adjustable guide means to position said respective containers between said jaws in operative position therewith.

8. In a device of the character described the combination of, a table for supporting a plurality of containers, a sealing die above said table, a head in cooperative relationship with said table and reciprocable to raise respectively successive containers into operative position relative to said die, and feeding means for advancing said containers to said head, said feeding means being movable in respective directions normal to the axis of reciprocation of said head and parallel to the axis of said die.

9. In a device of the character described the combination of, a table for supporting a plurality of containers, a sealing die above said table, a head in cooperative relationship with said table and reciprocable to raise respectively successive containers into operative position relative to said die, and feeding means for advancing said containers to said head, said feeding means being recessed in said table and said head and being relatively movable to respective positions above and below the surfaces of said table and said head.

10. In a device for sealing paper containers the combination of, a feed table, an upright rigidly attached to and extending above said table, a sealing die adjustably supported on said upright and positioned over said table, a reciprocating head in axial alignment with said die, and means for successively intermittently feeding and guiding a series of containers along said table to position respectively successive containers of said series on said head, said reciprocation and said intermittent feed being adapted to operate in alternate timed relation.

11. In a device for sealing paper containers wherein a wax-like substance is used in conjunction with the edge of the container operated upon, the combination of, a rotatable sealing die, means for heating said die sufficiently to melt said wax-like substance, an annular guard surrounding said die to collect particles of said substance thrown off from said die and container.

12. In a device of the character described the combination of, a feed table, an upright extending upwardly beyond the surface of said table, a cantilever bracket vertically adjustably mounted on said upright and extending over said table, a plurality of rotatable sealing dies and electrical motor means for driving the same carried by said bracket, whereby said dies and motive means therefor may be simultaneously adjusted vertically, a plurality of vertically reciprocating heads in respective axial alignment with said dies, and means for successively feeding containers along said table to said heads in timed relation to the reciprocation thereof.

13. In a device of the character described the combination of, a feed table, a sealing die positioned above said table, a vertically reciprocable head in axial alignment with said die and movable upwardly from substantially the plane of the top surface of said table for raising receptacles to said die, means for respectively engaging a plurality of articles to be fed simultaneously into individually successive positions over said reciprocable head, a feed link one end of which is in driving engagement with said feed means, a pivotal bearing for said other end about which said link is adapted to be

oscillated, means for slidably supporting said bearing, a connecting rod pivoted at one end to said link intermediate the ends of said link for oscillating said link about its bearing pivot, driving means for said connecting rod, and limit stop means carried by said slidable bearing to limit the oscillation of said link and to effect a positive drive of said feed means.

14. In a device of the character described the combination of, a sealing die to which articles are to be vertically fed, a vertically reciprocable head for feeding articles successively to said die a support along which a plurality of articles are to be fed to said head, means for respectively engaging and simultaneously feeding said articles, a feed link one end of which is pivotally attached to said feed means, a pivotal bearing for said other end about which said link is adapted to be oscillated, means for slidably supporting said bearing, said link and said feed member, a connecting rod pivoted at one end to said link intermediate the ends of said link for oscillating said link about its bearing pivot, driving means for said connecting rod, and limit stop means carried by said slidable bearing to limit the oscillation of said link and to effect a positive drive of said feed means, said stop means being so adjusted and cooperatively associated with said link and bearing therefor as to permit sufficient oscillation of said link to effect the respective raising and lowering of said feed means to engage and disengage said articles.

15. In apparatus of the character described the combination of, a sealing die for operating on articles, a head for raising and lowering an article to be operated upon to said die, means for raising and lowering said head, gripping means carried by and movable with said head to hold said article thereon and adapted to be moved to an open position and a closed position respectively, resilient means for normally placing said gripping means in one of said positions, and means for placing said gripping means in the other of said positions, said last means operating in timed relation with the raising and lowering of said head.

16. In apparatus of the character described the combination of, a spinning die, a head for positioning a receptacle in operative relation with said die, resilient means for raising said head whereby said receptacle will be yieldably held in operative engagement with said die and will be resiliently continuously fed to said die, and means for lowering said head.

17. In an apparatus of the character described the combination of, a feed table, feeding means operating in a groove in said table, a rotatable sealing die suspended above the surface of said table, a reciprocable head positioned within an opening of said table in operable alignment with said die and adapted to be raised above the surface of said table, clamping means carried by said head for holding articles operated upon, and mechanism for operating said feeding means and reciprocable head and clamping means, said mechanism being positioned below the surface of said table.

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