

T. L. TALIAFERRO.
JAR CLOSING MACHINE.
APPLICATION FILED APR. 18, 1919.

1,407,901.

Patented Feb. 28, 1922.

4 SHEETS—SHEET 1.

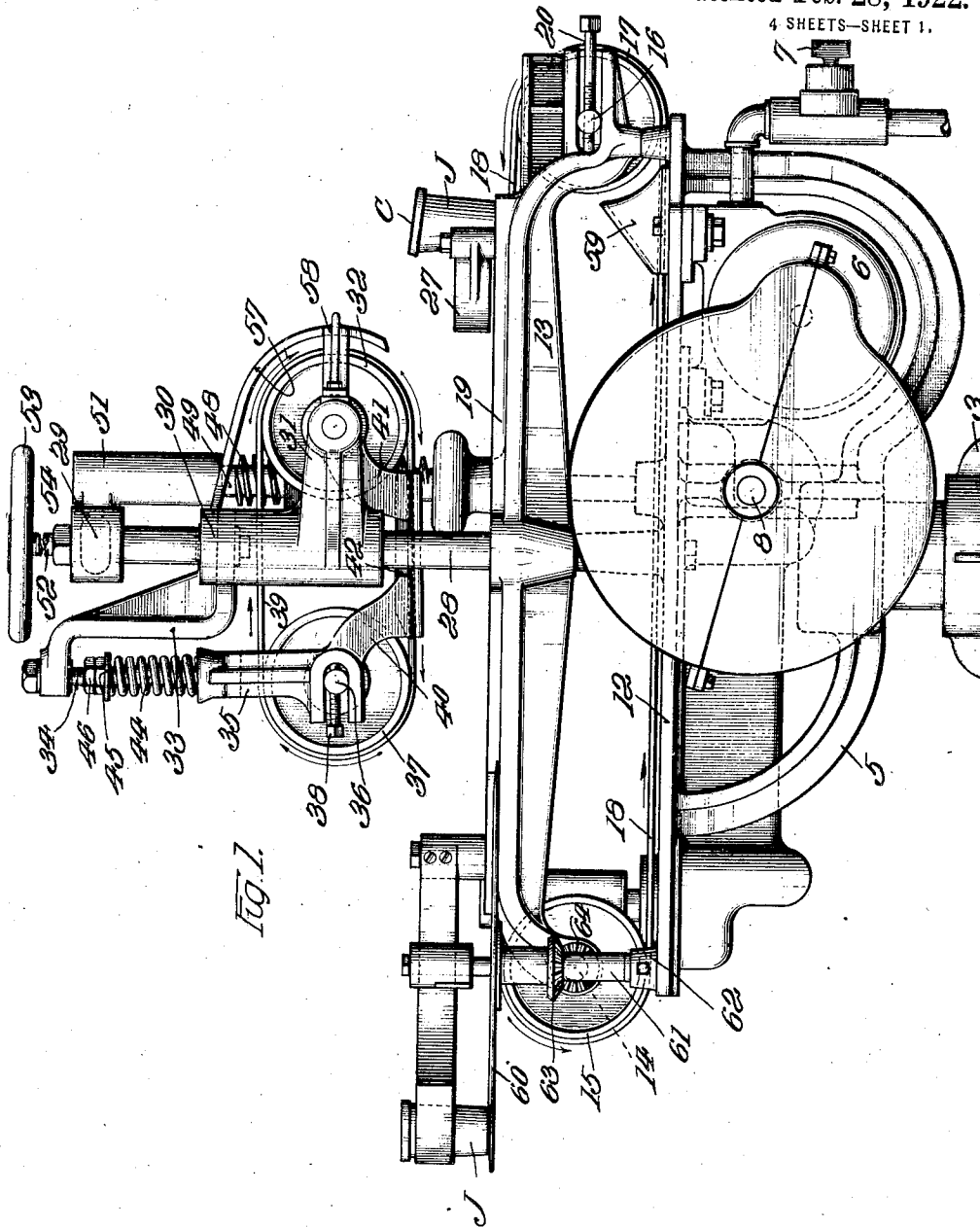


Fig. 1.

Witnesses:
Robert H. Weir
Arthur W. Carlson

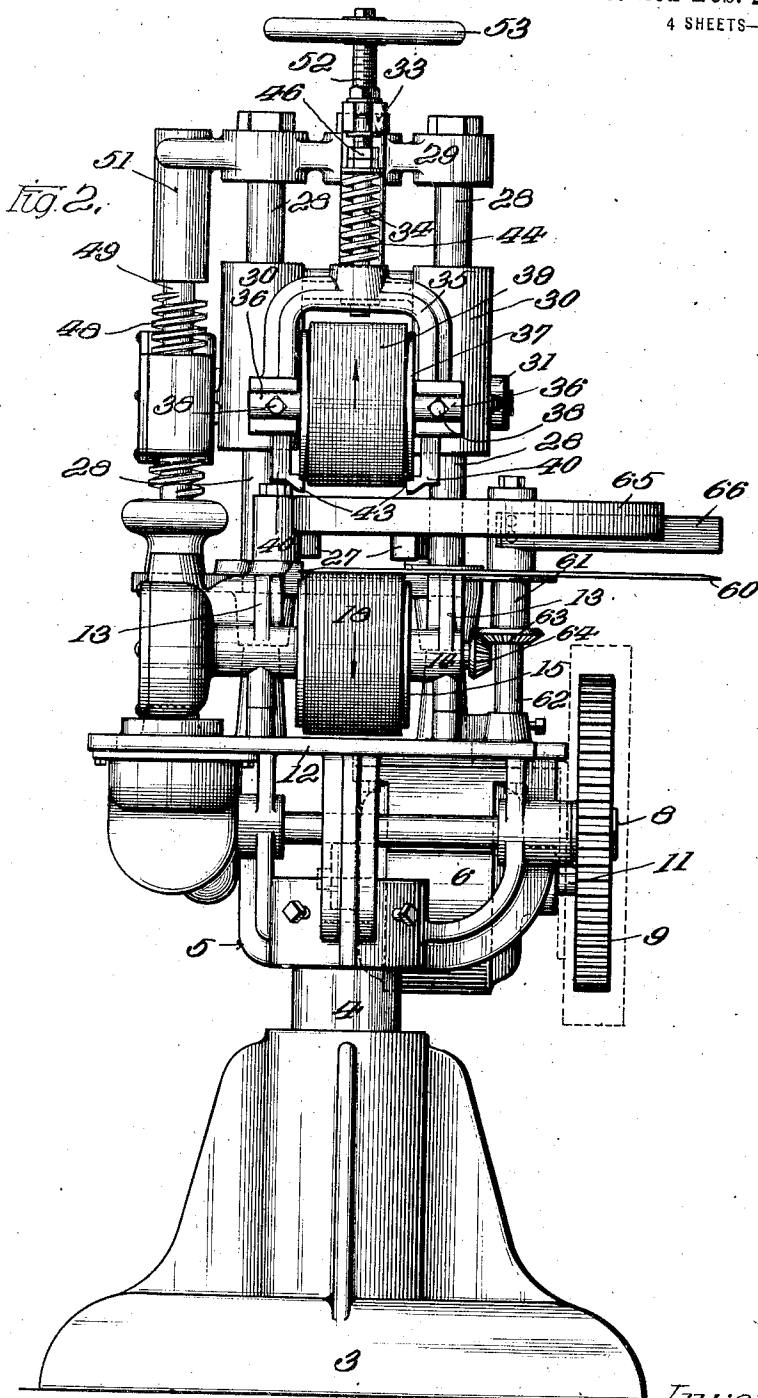
Inventor
Thomas Lucien Taliaferro
By Sturtevant & Mason
Attys:

T. L. TALIAFERRO.
JAR CLOSING MACHINE.
APPLICATION FILED APR. 18, 1919.

1,407,901.

Patented Feb. 28, 1922.

4 SHEETS—SHEET 2.



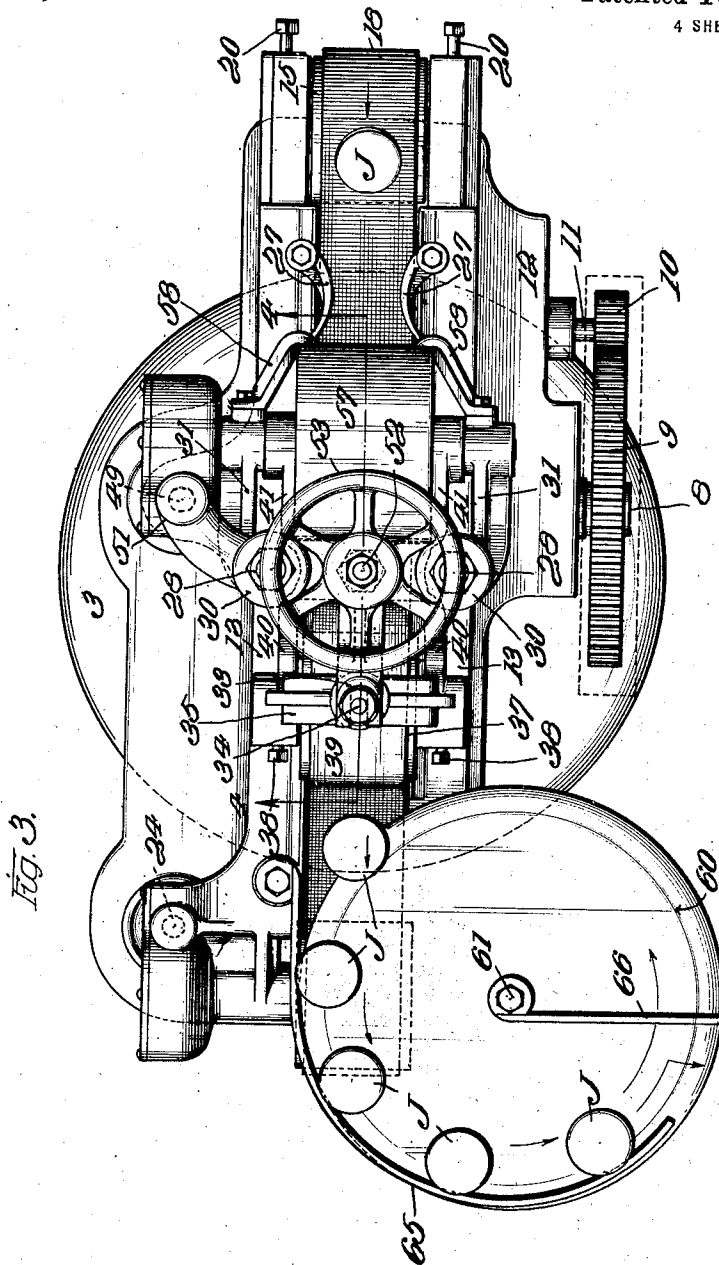
Witnesses:
Robert H. Wein
Arthur W. Carhop

Inventor
Thomas Lucien Taliaferro
By Stewart & Mason
Attys:

T. L. TALIAFERRO.
JAR CLOSING MACHINE.
APPLICATION FILED APR. 18, 1919.

1,407,901.

Patented Feb. 28, 1922.
4 SHEETS—SHEET 3.



Witnesses:
Robert F. Foeir
Arthur W. Carlock

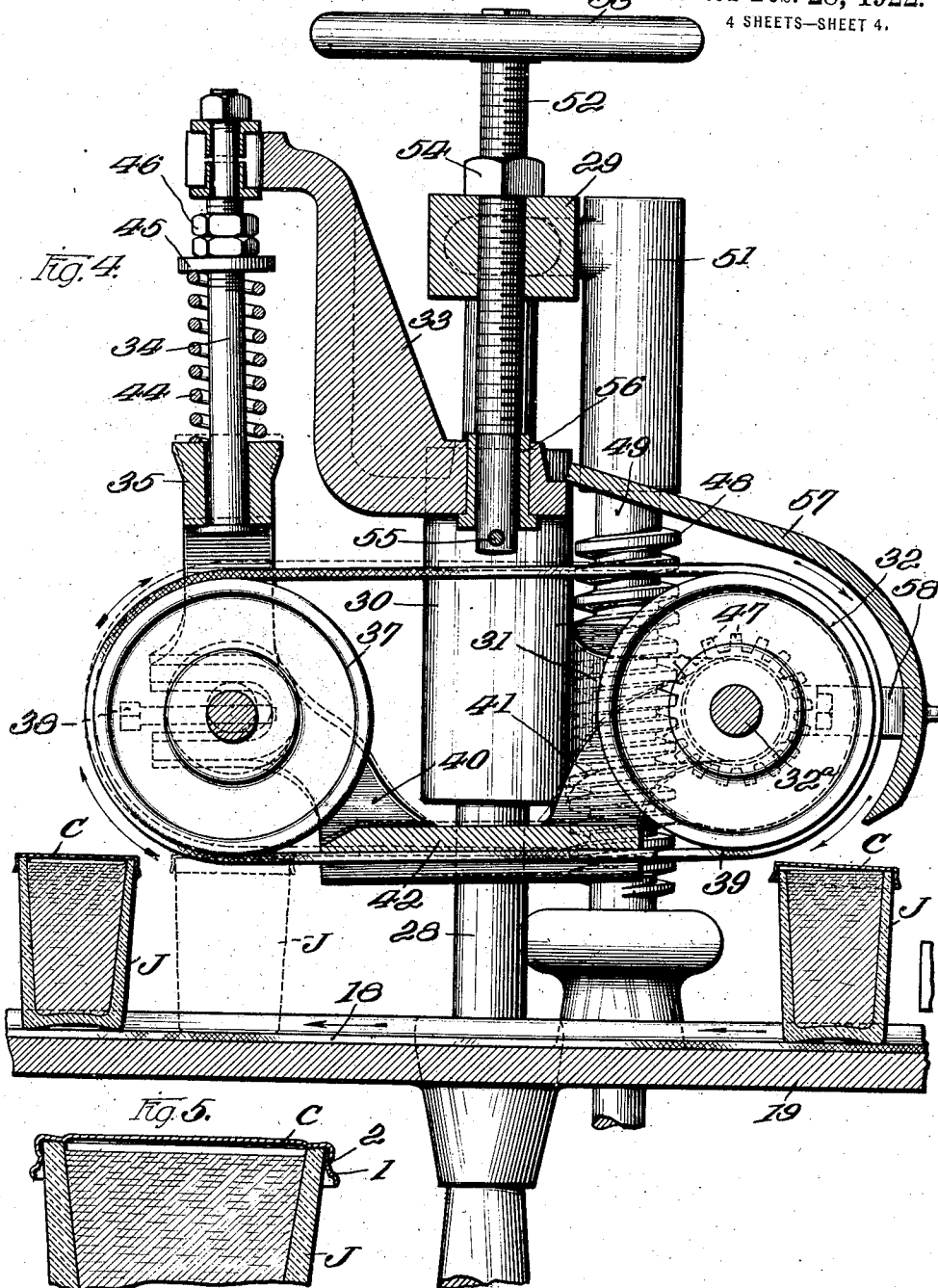
Inventor
Thomas Lucien Taliaferro
By Stewart Mason
Attys

T. L. TALIAFERRO.
JAR CLOSING MACHINE.
APPLICATION FILED APR. 18, 1919.

1,407,901.

Patented Feb. 28, 1922.

4 SHEETS—SHEET 4.



witnesses
Robert F. Wein
Arthur W. Carlson

Inventor
Thomas Lucien Taliaferro
By Hinkley & Mason
Attys.

UNITED STATES PATENT OFFICE.

THOMAS LUCIEN TALIAFERRO, OF CHICAGO, ILLINOIS, ASSIGNOR TO PHOENIX-HERMETIC COMPANY, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

JAR-CLOSING MACHINE.

1,407,901.

Specification of Letters Patent. Patented Feb. 28, 1922.

Application filed April 18, 1919. Serial No. 291,059.

To all whom it may concern:

Be it known that I, THOMAS LUCIEN TALIAFERRO, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Jar-Closing Machines, of which the following is a description, reference being had to the accompanying drawing and to the figures of reference marked thereon.

The invention relates to new and useful improvements in jar closing machines, and more particularly to a machine for closing a jar, wherein the cover is held seated thereon by the frictional grip of the cover flange against a wall of the jar.

An object of the invention is to provide a jar closing machine wherein the jars may be delivered to the closing machine in untimed relation to each other and the covers on the jars seated thereon as the jars pass through the machine.

A further object of the invention is to provide a machine of the above character, wherein a plurality of jars may be simultaneously operated upon, said jars being in untimed relation to each other as the covers are seated on the jars.

A still further object of the invention is to provide a machine of the above character, wherein the jar is traveling continuously while the cover is being seated thereon.

A still further object of the invention is to provide a machine of the above character, wherein the cover is seated progressively on the jar and by a yielding means, whereby jars of slightly varying heights may pass one after the other and at the same time through said machine.

A still further object of the invention is to provide a jar closing machine which may be quickly adjusted for varying the capacity of the machine as to the height of the jars.

These and other objects will in part be obvious and will in part be hereinafter more fully disclosed.

In the drawings which show by way of illustration one embodiment of the invention—

Figure 1 is a side view of a jar closing machine embodying my improvements;

Figure 2 is an end view of the same, as viewed from the delivery end of the machine;

Figure 3 is a plan view of the machine;

Figure 4 is a longitudinal sectional view centrally through the machine on the line 4—4 of Figure 3;

Figure 5 is an enlarged sectional view through a jar having a cover seated thereon.

The invention consists broadly in a jar closing machine which is provided with means for conveying the jars one after another through the machine, the jars entering the machine with the caps loosely placed thereon and leaving the machine with the caps or covers seated on the jars and held on the jars through the frictional grip of the flange of the cover against the side wall of the jar. Co-operating with the means which moves the jars through the machine is a cover seating mechanism which progressively forces the cover on to the jar while the jar is traveling, and this cover seating mechanism is so constructed as to operate upon the jars in untimed relation and also to operate upon a plurality of jars at the same time. As illustrated, this cover seating mechanism includes an endless belt which runs across a pressure plate and the endless belt and pressure plate are supported so that the cover will be engaged thereby and gradually and progressively forced on to the jar as the jar is conveyed underneath the seating mechanism of a traveling means moving in timing with said seating mechanism. This endless belt and pressure plate backing up the same are mounted so that they are capable of yielding at the point of maximum pressure upon the cover, so that said seating mechanism may yield rather than to crush the jar as jars of slightly varying heights pass through the machine. The seating mechanism as a whole is also mounted so that it may be adjusted to accommodate jars of different heights where the variation is considerable.

The invention will possibly be made more clear by a brief reference to the drawings which show one specific embodiment of the invention.

In Figure 5 of the drawings, I have shown a jar at J which is closed by a cover, indicated at C. The cover is formed with a downwardly extending flange 1 which is provided, as herein shown, with an inwardly projecting bead 2. The diameter of the bead 2 is slightly less than the extreme outer diameter of the jar, so that when the cover is forced downwardly on to the jar, said

bead will snap by the extreme upper edge of the jar and will frictionally grip the wall of the jar, thereby holding the cover firmly seated on the jar. As shown in the drawings, the wall of the jar may be slightly tapered to assist in the holding of the cover seated thereon.

Of course, it is understood that other forms of jars and covers may be seated on my improved closing machine, and I have shown in detail one form of closure and jar merely to aid in the understanding of the closing machine.

The closing machine is provided with a supporting base 3, from which rises a standard 4. Mounted on the standard 4 is a supporting frame 5. This supporting frame 5 carries a motor 6 for propelling the machine, and said motor is controlled by a suitable hand switch 7. Mounted in the frame 5 is a main shaft 8, which is provided with a gear wheel 9 meshing with a gear wheel 10 on the main shaft 11 of the motor. All the parts of the machine are driven from the main shaft 8, and it will be understood, of course, that, in place of the motor, any other operating means may be used for driving the main shaft.

The frame 5 is provided with a laterally extended supporting plate 12. At each side of the plate 12 are supporting brackets 13—13, which are mounted upon and carried by said plate 12. Mounted in fixed bearings in the brackets 13 is a shaft 14, carrying a belt wheel 15. Mounted in adjustable bearings 16, at the other end of the brackets 13, is a shaft carrying a belt wheel 17. Running over the belt wheels 15 and 17 is an endless belt 18. Mounted on the brackets 13—13 is a supporting table 19 and the belt 18 runs over this table 19, whereby the table forms a rigid surface in the rear of the belt. The bearings 16 are adjusted by means of screws 20, and by turning these screws the belt wheel 17 may be shifted so as to put the endless belt under tension. The main shaft 8 is provided with a bevel gear at the opposite end from the gear wheel 9, and this bevel gear meshes with a suitable bevel gear carried by a shaft extending parallel with the direction of travel of the endless belt 18 and mounted in suitable bearings on the frame 5. The shaft is in turn provided with a gear wheel meshing with a gear wheel on a vertical shaft 24, and the vertical shaft 24 carries a worm gear which meshes with a gear wheel carried by the shaft 14, on which the belt wheel 15 is mounted. Thus the endless belt receives movement from the main shaft 8.

The jars which are to have their covers seated thereon are delivered from any suitable means, one at a time, on to the endless belt 18, and by the travel of the belt are carried through the machine. Mounted on

the brackets 13—13 are adjustable guides 27—27, which serve to center the jar on the belt. The jars may be placed one at a time by hand, if desired. In the placing of the jars on the belt, or in the delivering of the jars to the belt, no particular timing of the jars is necessary as the machine is equipped with a closing means which will operate upon the jars in untimed relation to each other.

Extending upwardly from the plate 12 and the brackets 13 are vertically arranged rods 28—28. These rods are connected at their upper end by a cross head 29. Mounted to slide freely on each rod is a sleeve 30, and these sleeves 30 are provided with projecting arms 31, in which is mounted a belt wheel 32. The sleeves 30—30 are also connected by a bracket 33 which carries a downwardly extending rod 34, which is connected at its lower end to a yoke 35. This yoke 35 is provided with adjustable bearings 36—36, in which a belt wheel 37 is journaled. The bearings 36 are adjusted by screws 38. Passing over the belt wheels 32 and 37 is an endless belt 39. The yoke 35 is provided with depending brackets 40. Journaled on the shaft carrying the belt wheel 32 are arms 41 and these arms 41 and the brackets 40 carry a pressure plate 42, which is directly above the lower run of the endless belt 39 and forms a rigid yielding mounting surface in the rear of said belt. The pressure plate 42 at its sides extends downwardly slightly below the belt, as indicated at 43, Figure 2, which serves as a guiding means for the cover and jar as it passes through the machine.

Surrounding the depending rod 34 is a spring 44. The rod 34 extends loosely through the yoke 35. The spring 44 surrounds this rod and bears its lower end against the yoke while its upper end bears against a washer 45, which in turn bears against nuts 46. The spring normally tends to force the yoke downwardly and the extreme lower position of the yoke is determined by the headed end of the rod 34. By adjusting the nuts 46 the tension of the spring may be varied within certain limits. It will be noted that the yoke swings freely about the shaft carrying the belt wheel 32, the spring forcing the yoke to the lower limit of its swinging movement. When the parts are adjusted, the belt wheel 37 is slightly nearer the table 19 than the belt wheel 32, so that a jar resting on the endless belt 18 and carried through the machine in the direction of the arrows in the figures of the drawings, will enter underneath the belt wheel 32, and the cover resting lightly on the jar will not be gripped or engaged by the belt 39 until the jar is well underneath said belt 39. This belt 39 runs against the lower face of the pressure plate 42, which

inclines downwardly toward the delivery end of the machine in the same manner as the belt 39. Therefore, as the jar passes along underneath this pressure plate, the cover will be engaged by the belt 39, which is backed up by the pressure plate and will be gradually and progressively forced on to the jar. As soon as the cover is completely seated on the jar, then the spring 44 will yield and allow the jar to pass out from underneath the closing mechanism, which consists of the traveling belt 39, the supporting parts therefor, and the pressure plate 42.

It will be readily seen that if the jars vary slightly in height, the spring 44 will yield to take care of this slight variation in the jar without crushing the jar. It will also be seen that the force exerted in seating the cover on the jar is determined by the tension of the spring 44 which may be readily adjusted.

The endless belt 39 is driven by a gear wheel 47, which gear wheel is fixed to the shaft 32^a carrying the belt wheel 32. This gear wheel 47 meshes with a worm gear 48, carried by the shaft 49. The shaft 49 in turn carries a bevel gear, which meshes with the bevel gear on the main shaft 8. The upper end of the shaft 49 is journaled in a bearing 51 fixed to the cross head 29. Mounted in the cross head 29 is a threaded shaft 52, which is provided with a hand wheel 53, whereby the shaft may be readily rotated. A lock nut 54 is also provided for holding the shaft in adjusted positions. This shaft at its lower end extends through the bracket 33 and a pin 55, passing through the lower end of the shaft 52 and bearing against a hardened sleeve 56, supports the entire closing mechanism—that is, the traveling belt 39 and the parts which support the same. The bracket 33 is connected to the sleeves 30 and by turning the shaft 52, these sleeves 30 may be moved up and down on the supporting rods 28, and thus the closing head shifted vertically relative to the supporting table 19. When the parts are properly adjusted, then the lock nut 54 may be turned down against the cross head 29 and will hold the parts in this position. Through this shaft 52 and the adjustment brought about thereby, the machine may be readily set for jars of different heights. When the closing mechanism is adjusted, the gear 47 will turn and run up or down on the gear 48, depending upon whether the closing mechanism is raised or lowered.

As a means for preventing the operator from being caught by the closing mechanism, when the machine is fed by hand, I have provided a shield or guard at 57, which is mounted on brackets 58, carried by the arms 31. Also, as a means of preventing the operator from being caught through

carelessness, by the belt 18, I have provided a shield 59 which is secured to the plate 12.

At the delivery end of the machine there is a rotating disk 60, which passes over the endless conveyor 18 and receives the closed jars as they are delivered one at a time on to the disk. This disk is mounted on a shaft 61 which is mounted in turn freely in a bearing 62, carried by the frame of the machine, and the shaft 61 is provided with a gear wheel 63 which meshes with a gear wheel 64 on the end of the shaft 14. Through this means the disk 60 is positively rotated. A guide rail 65 serves to direct the jars and a stripper rail 66 forces the jars off from the disk on to any suitable means, or the jars may be picked off by hand from the disk and crated.

From the above description, it will be apparent that I have provided a jar closing machine, wherein the closing mechanism is of a character such as will operate simultaneously upon a plurality of jars and will also operate upon jars in untimed relation to each other—that is, jars which are received promiscuously, without any particular spacing of the jars, for the reason that the endless belt 39 is progressively and continuously presenting the same character of pressing surface, so that no particular timing of the jar relative to the travel of this closing surface is necessary. The jar with the cover resting lightly thereon is conveyed through the machine by the belt 18. It passes freely under the belt wheel 32 and is soon engaged by the belt 39, and then the jar is gripped between the two belts, the lower one being backed up by the table 19 and the upper one backed up by the pressure plate 42. Inasmuch as the belt 39 inclines relative to the lower belt 18, this gripping pressure between the two belts will progressively increase as the jar travels, and, therefore, the cover will be gradually forced downwardly on to the jar until it is completely seated thereon. When it is completely seated then the belt wheel 37 will yield through the action of the spring 44 and allow the jar to pass from underneath the head without crushing the jar. The jar following is operated upon in substantially the same way and the mere fact that the preceding jar is being gripped firmly and the cover seated will not prevent the forcing down of the cover of the following jar and a final seating of that jar after the first jar has left the machine.

It will also be noted that not only will the jars be operated upon in untimed relation to each other, but several jars may be operated upon simultaneously, the covers being in various stages of being seated, the jar cover being finally seated before the jar leaves the closing head. It will also be noted that the jars are seated without in-

interrupting the movement thereof, which is of great value in closing jars, or the like, having liquid contents as the starting or stopping of the jars is likely to spill the contents. By the continuous even movement of the jars, however, which occurs in my improved machine, there is no liability of spilling the contents of the jars.

While I have described my invention as particularly adapted for seating the covers on jars which are made of glass, or the like, it is obvious, of course, that the machine is equally adapted for closing metal containers, or any other type of container, wherein the cover is seated in or on the container by a frictional gripping, so that all that is necessary to seat the cover is to press the cover downwardly on to the container.

It will be noted that the jars travel through the machine in a right line and the pressure belt which forces the covers on to the jars is inclined downwardly toward the delivery end of the machine. It is obvious that the supporting table may be inclined upwardly toward the delivery end of the machine, and the pressure belt located so as to move in a horizontal plane. The essential feature consists in the arrangement whereby the two belts are closer together at their delivery end than at the receiving end thereof. While I have shown a pressure plate backing up the belt 39, which forces the covers on to the jars, it will be understood that the belt itself may be constructed so as to have sufficient rigidity to force the covers on to the jars and the pressure plate dispensed with, if desired.

It is obvious that minor changes in the details of construction and in the arrangement of parts may be made without departing from the spirit of the invention as set forth in the appended claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:

1. A jar closing machine including in combination, two traveling endless belts, rigid members in rear of the respective adjacent portions of said belts, means for driving said belts, means for supporting one of said belts whereby the same is inclined toward the other belt from its receiving to the delivery end thereof, and means for yieldingly supporting the delivery end of one of said belts and the rigid member associated therewith, said inclined belt being of considerable shorter length than the other belt.

2. A jar closing machine including in combination means for supporting and carrying the jars through the machine in a straight line path of movement, an endless traveling belt disposed above said jar carrying means and inclined downwardly from the receiving to the delivering end thereof, a pressure

member in rear of the lower portion of said belt and cooperating with the belt in forcing the covers on to the jars, means for yieldingly supporting said pressure member and the delivery end of said belt whereby said belt and pressure member may yield to accommodate jars of slightly different heights.

3. A jar closing machine including in combination means for supporting and carrying the jars through the machine in a straight line path of movement, an endless traveling belt disposed above said jar carrying means and inclined downwardly from the receiving to the delivering end thereof, a pressure member in rear of the lower portion of said belt and cooperating with the belt in forcing the covers on to the jars, means for yieldingly supporting said pressure member and the delivery end of said belt whereby said belt and pressure member may yield to accommodate jars of slightly different heights, and means for bodily raising and lowering said inclined traveling belt and pressure member associated therewith.

4. A jar closing machine including in combination, a horizontally traveling endless belt, a rigid support over which the belt travels, means for driving said belt, a belt disposed above said first named belt and inclining downwardly slightly from its receiving to the delivery end thereof, a pressure member in rear of the lower strand of said last-named belt, and means for yieldingly supporting the delivery end of the last-named belt and the pressure member associated therewith.

5. A jar closing machine including in combination, a horizontally traveling endless belt, a rigid support over which the belt travels, means for driving said belt, a belt disposed above said first named belt and inclining downwardly slightly from its receiving to the delivery end thereof, a pressure member in rear of the lower strand of said last-named belt, means for yieldingly supporting the delivery end of the last-named belt and the pressure member associated therewith, means for positively driving said upper belt, and means for bodily raising and lowering said belt without disturbing the driving connection therefor.

6. A jar closing machine including in combination, a horizontally traveling endless belt, a rigid support over which the belt travels, means for driving said belt, a belt disposed above said first named belt and inclining downwardly slightly from its receiving to the delivery end thereof, a pressure member in rear of the lower strand of said last-named belt, means for yieldingly supporting the delivery end of the last-named belt and the pressure member associated therewith, guiding members associated with said horizontal belt for locating the jars centrally thereof, and means associated with

said horizontally traveling belt for removing the glass jars therefrom.

7. A jar closing machine including in combination, means for supporting and carrying the jars through the machine in a straight line path of movement, a pair of spaced belt wheels located above said support, an endless belt running over said wheels, means for yieldingly supporting the belt wheel at the delivery end of the belt and at a point nearer the support than the other belt wheel, and a pressure member associated with said belt and supported so as to shift with said yieldingly mounted belt wheel.

8. A jar closing machine including in combination, means for supporting and carrying the jars through the machine in a straight line path of movement, a supporting frame, spaced rods projecting upwardly from said frame at each side of said jar supporting and carrying means, sleeves mounted on said rods, a bracket carried by said sleeves and having bearings, a horizontal shaft supported in said bearings, a belt wheel mounted on said shaft, means for driving said shaft, a yoke carried by said bracket, a belt wheel mounted in the yoke, an endless belt running over said belt wheels, a pressure plate in rear of the lower strand of the belt and operating in connection with the belt for forcing the covers on the jars, arms pivoted to the shaft carrying the first-named belt wheel and rigidly connected with said pressure plate, means for supporting the pressure plate from the yoke, and yielding means for supporting the yoke and the pressure plate.

9. A jar closing machine including in combination, means for supporting and carrying the jars through the machine in a straight line path of movement, a supporting frame, spaced rods projecting upwardly from said frame at each side of said jar supporting and carrying means, sleeves mounted on said rods, a bracket carried by said sleeves and having bearings, a horizontal shaft supported in said bearings, a belt wheel mounted on said shaft, means for driving said shaft, a yoke carried by said bracket, a belt wheel mounted in the yoke, an endless belt running over said belt wheels, a pressure plate in the rear of the lower strand of the belt and operating in connection with the belt for forcing the covers on the jars, arms pivoted to the shaft carrying the first-named belt wheel and rigidly connected with said pressure plate, means for supporting the pressure plate from the yoke, a rod connected to said bracket and extending through the yoke, said rod having a head thereon, a spring on the rod bearing against the yoke and yieldingly forcing said yoke toward the support and against a limiting head on the rod, and means for varying the tension on said spring.

10. A jar closing machine including in

combination, means for supporting and carrying the jars through the machine in a straight line path of movement, a supporting frame, spaced rods projecting upwardly from said frame at each side of said jar supporting and carrying means, sleeves mounted on said rods, a bracket carried by said sleeves and having bearings, a horizontal shaft supported in said bearings, a belt wheel mounted on said shaft, means for driving said shaft, a yoke carried by said bracket, a belt wheel mounted in the yoke, an endless belt running over said belt wheels, a pressure plate in rear of the lower strand of the belt and operating in connection with the belt for forcing the covers on the jars, arms pivoted to the shaft carrying the first-named belt wheel and rigidly connected with said pressure plate, means for supporting the pressure plate from the yoke, yielding means for supporting the yoke and the pressure plate, and means for bodily raising and lowering the sleeves.

11. A jar closing machine including in combination, means for supporting and carrying the jars through the machine, in a straight line path of movement, a supporting frame, spaced rods projecting upwardly from said frame at each side of said jar supporting and carrying means, sleeves mounted on said rod, a bracket carried by said sleeves and having bearings, a horizontal shaft supported in said bearings, a belt wheel mounted on said shaft, means for driving said shaft, a yoke carried by said bracket, a belt wheel mounted in the yoke, an endless belt running over said belt wheels, a pressure plate in rear of the lower strand of the belt and operating in connection with the belt for forcing the covers on the jars, arms pivoted to the shaft carrying the first-named belt wheel and rigidly connected with said pressure plate, means for supporting the pressure plate from the yoke, a rod connected to said bracket and extending through the yoke, said rod having a head thereon, a spring on the rod bearing against the yoke and yieldingly forcing said yoke toward the support and against the limiting head on the rod, means for varying the tension on the spring, and means for bodily raising and lowering the sleeves.

12. A jar closing machine including in combination, means for supporting and carrying the jars through the machine in a straight line path of movement, a supporting frame, spaced rods projecting upwardly from said frame at each side of said jar supporting and carrying means, sleeves mounted on said rod, a bracket carried by said sleeves and having bearings, a horizontal shaft supported in said bearings, a belt wheel mounted on said shaft, means for driving said shaft, a yoke carried by said bracket, a belt wheel mounted in the yoke, an endless belt running

over said belt wheels, a pressure plate in rear of the lower strand of the belt and operating in connection with the belt for forcing the covers on the jars, arms pivoted to the shaft carrying the first-named belt wheel and rigidly connected with said pressure plate, means for supporting the pressure plate from the yoke, a rod connected to said bracket and extending through the yoke, said rod having a head thereon, a spring on the rod bearing against the yoke and yieldingly forcing said yoke toward the support and against the limiting head on the rod, means for varying the tension on said spring, means for bodily raising and lowering the sleeves, guiding members for directing the jars centrally of the traveling support therefor, and means for removing the glass jars from said traveling support.

13. A jar closing machine including in combination, a supporting frame, spaced belt wheels rigidly attached to the frame, a belt running over said belt wheels, a supporting table beneath the upper strand of said belt, spaced rods carried by the frame and located at opposite sides of said belt, a sleeve on each rod, projecting arms carried by the sleeves, a shaft journaled in said projecting arms, a belt wheel carried by said shaft, a vertical shaft connected to said belt wheel, means for driving the vertical shaft and the belt wheels mounted on the frame, a yoke, a bracket carried by the sleeves and yielding means carried by the bracket for supporting said yoke, a belt wheel mounted on said yoke and adjustable toward and from the belt wheel carried by the sleeves, brackets carried by the yoke, arms pivoted on said shaft carrying the first-mentioned belt wheel, and a pressure plate carried by the arms and brackets and located in rear of the lower strand of the upper belt and cooperating therewith to force the covers on the jars, said belt and pressure plate at the lower face thereof being inclined downwardly toward the delivering end thereof, and means for bodily raising and lowering the sleeves.

14. A jar closing machine including in combination, a supporting frame, spaced belt wheels rigidly attached to the frame, a belt running over said belt wheels, a supporting table beneath the upper strand of said belt, spaced rods carried by the frame and located at opposite sides of said belt, a sleeve on each rod, projecting arms carried by the sleeves, a shaft journaled in said projecting arms, a belt wheel carried by said shaft, a vertical shaft connected to said belt wheel, means for driving the vertical shaft and the belt wheels mounted on the frame, a yoke, a bracket carried by the sleeves and yielding means carried by the bracket for supporting said yoke, a belt wheel mounted on said yoke and adjustable toward and

from the belt wheel carried by the sleeves, brackets carried by the yoke, arms pivoted on said shaft carrying the first-mentioned belt wheel, and a pressure plate carried by the arms and brackets and located in rear of the lower strand of the upper belt and cooperating therewith to force the covers on the jars, said belt and pressure plate at the lower face thereof being inclined downwardly toward the delivering end thereof, means for bodily raising and lowering the sleeves, said yielding support for the yoke including a rod fixed to the bracket and projecting through said yoke and having a head at its lower end, a spring encircling said rod and bearing against the yoke, and adjustable nuts threaded on the rod for varying the tension of the spring.

15. A jar closing machine including in combination, means for receiving jars at random having covers resting lightly thereon and for feeding the same at random continuously through the machine, and means cooperating therewith for engaging the jar cover for applying a yielding increasing pressure throughout the entire area of said cover as the jar travels for seating the cover on the jar.

16. A jar closing machine including in combination, means for receiving jars at random having covers resting lightly thereon and for feeding the same at random continuously through the machine, and means cooperating therewith for engaging simultaneously the covers of a plurality of jars for applying a yielding increasing pressure throughout the entire area of said covers as the jars travel for seating the covers on the jars.

17. A jar closing machine including in combination, traveling members adapted to engage therebetween glass jars arranged at random having covers resting lightly thereon, means cooperating with one of said members for exerting a yielding increasing pressure on the cover simultaneously throughout the entire area thereof for seating the cover on a jar as the jar is conveyed by said member.

18. A jar closing machine including in combination, a traveling member having a surface adapted to receive at random and to convey glass jars having covers resting lightly thereon, means cooperating with said traveling member for engaging the cover as the jar travels for exerting a yielding increasing pressure on the cover throughout the entire area of the cover for seating the cover on the jar as it is conveyed by said traveling surface.

19. A jar closing machine including in combination, a rigidly supported traveling member having a surface for receiving at random glass jars having covers resting lightly thereon for conveying the jars

through the machine, a traveling endless belt arranged in spaced relation to the traveling member and adapted to engage the covers, a yielding means operating upon said
5 endless belt for exerting a yielding pressure on said cover simultaneously throughout its entire area, said means being constructed and arranged so that the pressure of said belt increases as said jar progresses
10 through the machine until said cover is firmly attached to the jar.

20. A jar closing machine including in combination, a rigidly supported traveling belt for receiving at random glass jars having
15 ing covers resting lightly thereon and for

conveying the same through the machine, a traveling endless belt arranged in spaced relation to said traveling surface and above the jar and adapted to engage the covers, and means operating through said endless
20 belt engaging the covers for exerting a yielding pressure on the covers simultaneously throughout their entire area, said means being constructed and arranged so that the pressure of said belt increases as
25 the jar progresses through the machine until the cover is firmly attached to the jar.

In testimony whereof, I affix my signature.

THOMAS LUCIEN TALIAFERRO.