

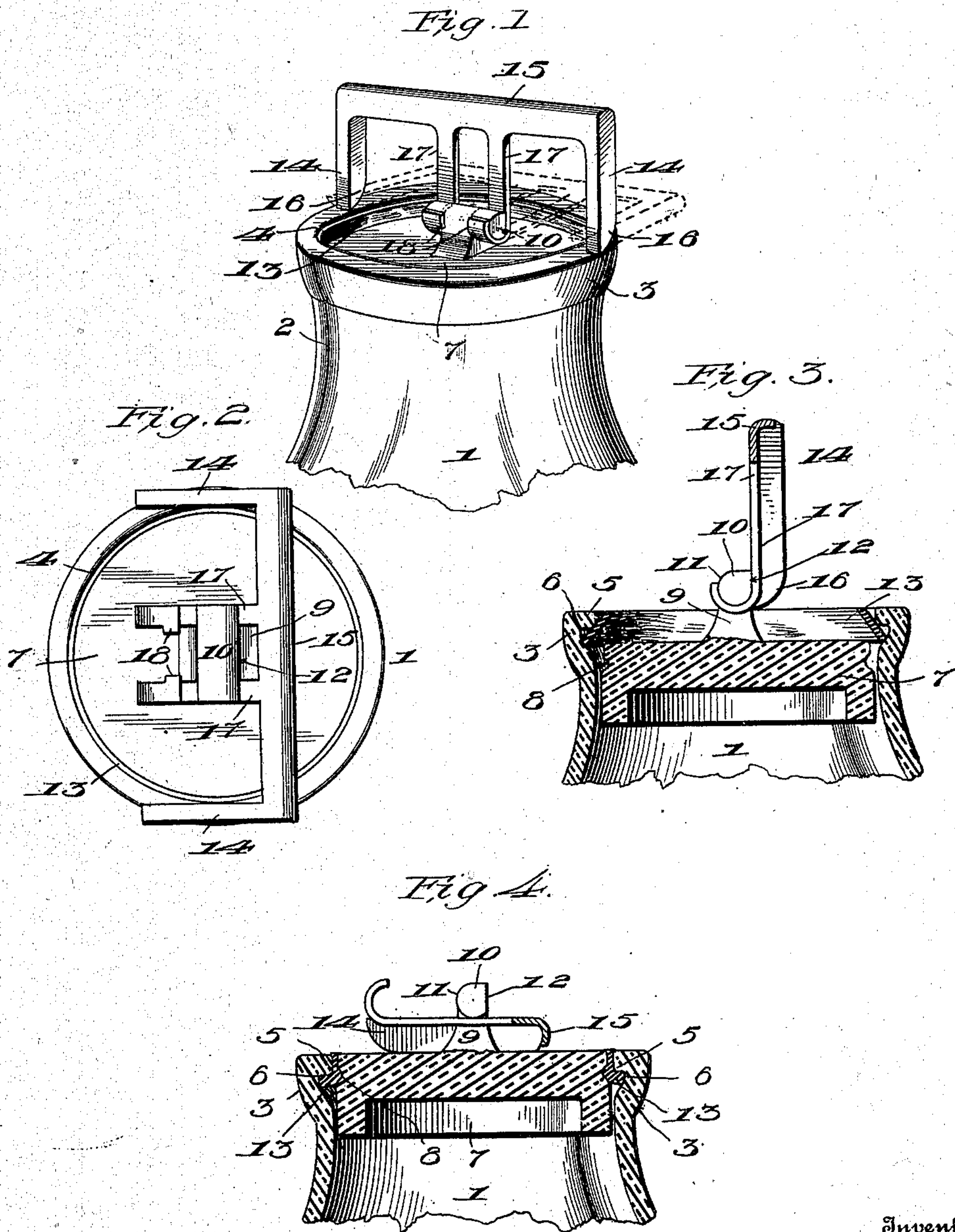
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PATENTED MAR. 17, 1903.

J. W. DAVIS.
JAR CLOSURE.

APPLICATION FILED JAN. 21, 1902.

NO MODEL.



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JAR-CLOSURE.

SPECIFICATION forming part of Letters Patent No. 723,142, dated March 17, 1903.

Application filed January 21, 1902. Serial No. 90,679. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. DAVIS, a citizen of the United States, residing at Palmyra, in the county of Macoupin and State of Illinois, have invented new and useful Improvements in Jar-Closures, of which the following is a specification.

This invention relates to closures for jars and the like, and particularly to means for effectively and conveniently holding a cover or lid firmly in the mouth of a jar.

The primary object of the present device is to facilitate the operation of hermetically sealing a jar through the medium of a particularly-formed cover or lid having a simple engaging or securing device which is economical in its production and reliable in its operation.

A further object of the invention is to provide an organization of devices including a cover or lid and securing means therefor to effectively cooperate with a rubber gasket or elastic ring and which will insure a proper disposition of the said gasket or ring under all conditions when the cover or lid is drawn into sealing engagement with said gasket or ring, and thereby avoid the disadvantage and only partial sealing of a jar now commonly experienced by the use of the ordinary forms of jar-closures.

A further object of the invention is to provide a cover or lid for closing the mouth or outlet of a jar having a diameter less than the jar-neck and cooperating means for elevating the cover or lid into place and in contact with a gasket or other analogous hermetic sealing device.

With these and other objects and advantages in view the invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of the upper portion of a jar, showing the invention applied thereto and the holding and securing device for the cover or lid as open in full lines and partially closed in dotted lines. Fig. 2 is a top plan view of the device shown by Fig. 1, illustrating the holding and securing device for the cover or lid completely closed. Fig. 3 is a transverse vertical section of the parts as shown arranged by Fig. 1.

Fig. 4 is a transverse vertical section of the parts as shown by Fig. 2.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a jar of any suitable form, but preferably that ordinarily employed for canning or preserving purposes, and provided with the usual reduced neck 2 and an upper rim 3, surrounding a mouth 4. The rim 3, as clearly shown by Figs. 3 and 4, is slightly struck outwardly and has an inner horizontally-extending flange 5, forming an under circumferential shoulder 6, the lower inner corner of the flange 5 being rounded or cut away to avoid the formation of a sharp abrading or cutting edge. The cover or lid 7 has a body of substantially the same form as that now commonly employed and in addition is formed with an upper circumferential groove 8 below the plane of the top side thereof. Rising from the center of the top of the cover or lid 7 is an integral lug 9, having upper oppositely-extending trunnions 10, which are curved mainly in the arc of a circle, as at 11, and also provided with flat faces 12. The cover or lid 7 is of less diameter than the interior of the neck 2, so that it will freely move downwardly into and upwardly through the said neck, as clearly indicated by Fig. 3. As in ordinary jar-closures, a rubber or other elastic gasket or ring 13 is employed in connection with the cover or lid to insure the formation of a hermetically sealed joint; but in the present arrangement the said gasket is normally disposed as shown by Fig. 3 and has one edge rested against the inner surface of the rim at a joint below the shoulder 6 and the upper edge flush with the upper plane of said rim. The gasket 13 has a normal frusto-conical shape, and the outer face or side thereof is brought to bear against the lower cut-away corner of the flange 5. In sealing the jar or moving the cover or lid 7 into place the latter is drawn upwardly against the gasket, the cover or lid being primarily let down within the neck to a suitable distance below the said gasket in order to place the latter, as shown. When the cover or lid is drawn upwardly, the gasket has its upper portion pressed closely

against the inner edge of the flange 5, the groove 8 of the cover or lid coming opposite to the inner lower corner of said flange, and the surplus material, which must find freedom in some direction, is forced in under the flange 5 against the shoulder 6, as shown by Fig. 4. It will be seen that an exceptionally close and tight joint is thus produced, which will resist and obstruct any tendency to entrance of air into the jar or escape of the vapors or gases from the interior of the latter. The cover or lid of the jar is adapted to be elevated through the medium of the trunnions 10 and upwardly-projecting lug 9, forming a part thereof, the said lug being of such vertical extent that when the device engaging the trunnions is disposed in a full-open position the cover or lid will be below the gasket 13. In releasing or unsealing the jar the securing device which engages the trunnions 10 is open to permit the cover or lid to be pressed downwardly into the jar-neck. The gasket 13 is then removed, and the cover or lid can be drawn upwardly through the jar-mouth.

The device for holding and securing the cover or lid 7 in the present instance comprises end legs 14, connected by a right-angular cross member 15, the said legs having curved or cam faces 16 to engage and serve as fulcrums on the upper surface of the rim and flange 5. At a central point the member 15 has a pair of arms 17, extending therefrom in parallel relation and spaced apart from each other, the inner edges of the arms being a distance apart equal to the thickness of the lug 9. The free extremities of the arms 17 are curved to conform to the contour of the trunnions 10, with which they engage. The ends of the curved extremities of the arms have inwardly-extending guards 18, which increase the width of the arms to such an extent as to cause the guards to engage the lug 9 and the trunnions 10 at opposite sides inward from the plane of the opposite ends of the said lug to thereby prevent the said arms 17 from pulling out of engagement with the lug and trunnions and adapt the device which is used for securing the cover or lid to serve also as means for holding the latter in the preliminary operation of positioning said lid or cover previous to disposing the gasket 13 in place above the same or to hold said cover or lid in the opening operation in a suspended condition until the gasket is removed. In the two operations just set forth the cover or lid will be suspended a proper distance below the top surface of the rim and flange 5, and this is accomplished by proportioning the legs 14 as to length relatively to the length of the arms 17 to arrive at the result sought.

It will be understood that in connecting the trunnions with the arms the said trunnions will be turned in a direction lengthwise of the slot or space between the arms 17, and afterward the cover or lid will be given

a quarter-turn to seat the trunnions in the curved extremities of the arms. The flat faces 12 of the trunnions also serve an important function in that they bear against the straight sides of the arms 17 and prevent the cover or lid from swinging, and thus assist in accurately inserting and drawing the cover or lid into place by preventing swinging movement of said cover or lid.

After the jar has been filled with heated preserves or other material to be canned the cover or lid is let down into the neck 2, as shown by Fig. 3, and held until the gasket is placed in its proper position. It will be understood that the heated preserves or other material in the jar will cause the latter to materially expand, and the holding and securing device for the cover or lid is so proportioned that it cannot be fully applied to finally lock the cover or lid in place until the jar is cooled and contracted. Therefore after the preserves or other material in heated condition are placed in the jar as set forth and the cover or lid and gasket arranged as shown the cover or lid is drawn upwardly by pressing downwardly on the member 15 to thereby cause the faces 16 of the legs 14 to turn on the upper side of the rim 3 and flange 5 and draw the cover or lid upwardly against the gasket. When the legs have been fully depressed, as shown by dotted lines in Fig. 1, the jar and its contents are allowed to remain until they become cool and contraction of the jar ensues. The holding and securing device is then pushed inwardly over the top of the jar, and the arms 17 ride in close contact under the trunnions 10, and the tension established between the trunnions and the arms, as well as the legs 14, and the upper side of the rim and flange force the cover or lid upwardly into the position shown by Fig. 4. By this means a safe and reliable securement results, and the jar becomes hermetically sealed. At any time desired the jar may be readily opened by pulling outwardly on the securing device and depressing the cover or lid, as before set forth.

It is proposed to construct the securing device or clamp of suitable sheet metal struck up from a blank, and thereby capable of being manufactured at a very small cost and in a rapid manner by dies.

The improved device may be varied in size, shape, and proportions, as well as in the minor details of construction, without departing from the principle of the invention.

Having thus described the invention, what is claimed as new is—

1. In a jar-closure, the combination with a jar and cover therefor, of a rotatable and slidable securing and holding device adapted to suspend the said cover within a jar-neck and also to draw it upwardly and secure it in sealing position.

2. In a jar-closure, the combination with a jar-neck, of a cover therefor having an upwardly-extending device and a rotatable and

slidable holding and securing device having arms to movably engage a portion of said upwardly-extending device and members to bear on the upper edge of the jar-neck.

3. In a jar-closure, the combination with a jar-neck, of a cover having an upwardly-extending device with trunnions, a gasket normally disposed in the neck above the cover, and a securing and holding device having arms to movably engage the trunnions and legs to bear upon the upper edge of the rim of the neck.

4. The combination with a jar-cover having a central lug with trunnions laterally projecting therefrom, of a securing and holding device comprising a pair of arms spaced apart from each other with curved extremities having inwardly-extending terminal guards and legs to bear upon a portion of the jar.

5. The combination with a jar and a cover having lateral projections, of a securing and holding device provided with a pair of arms spaced apart from each other and having curved extremities to engage the projections and legs to movably bear on opposite portions of the jar.

6. A securing and holding device for a jar-cover comprising a pair of arms with curved extremities and terminal inwardly-extending guards to engage a portion of the cover and opposite end legs with curved faces, and a jar having a neck with a rim on which the said legs are adapted to bear.

7. The combination with a jar and a cover, the latter having projecting devices, of a securing and holding attachment provided with arms to engage the projecting devices and opposite end bearing members to rotatably and slidably engage opposite portions of the jar.

8. The combination with the neck of a receptacle having a removable packing-ring carried solely by the same, of a closure-plug to be inserted into the neck prior to the insertion of the ring and capable of being drawn outwardly into frictional engagement therewith, and means bearing in opposite directions against the closure-plug and the receptacle to maintain an outward pressure upon the plug and bind the packing-ring between the neck of the jar and the peripheral edge of the plug.

9. The combination with the neck of a receptacle, of a closure-plug to be inserted within the neck, means carried solely by and insertible into the neck after the insertion of the plug to prevent the latter from being withdrawn from the neck, and means bearing in opposite directions against the receptacle and the plug to place an outward pressure upon the latter and cause the binding of the means for preventing displacement of the plug between the latter and the neck of the receptacle.

10. The combination with the neck of a receptacle having a marginal groove or seat formed therein, of a closure-plug to be inserted into the neck beyond the groove or

seat, a packing-ring carried solely by, projected outwardly from and adapted to be inserted into the groove or seat after the insertion of the closure-plug, and means bearing in opposite directions against the plug and the mouth of the receptacle to force the former outwardly and bind the projected portion of the ring between the periphery of the plug and the upper edge of the groove or seat.

11. The combination with the neck of a receptacle, having an annular seat formed in the neck thereof, of a closure-plug to be inserted into the neck beyond the seat, a packing-ring carried solely by and projected outwardly from the seat and adapted to be put in place after the insertion of the plug, and a bridge-clamp to straddle a portion of the plug with its opposite ends bearing upon the mouth of the receptacle and having connecting means with the plug to maintain an outward pressure thereon and bind the projected portion of the packing-ring between the periphery of the plug and the upper edge of the groove or seat.

12. The combination with the neck of a receptacle having an annular groove formed therein, of a closure-plug to be inserted into the neck beyond the groove and provided with a handle having an overhanging shoulder, a packing-ring which is carried solely by and projected outwardly from the groove or seat and adapted to be inserted therein after the insertion of the plug, and a bridge-clamp to span a portion of the plug with its opposite ends resting upon the mouth of the receptacle, and its intermediate portion forced into frictional engagement with the under side of the shoulder of the handle to place an outward pressure upon the plug and thereby bind the projected portion of the packing-ring between the periphery of the plug and the upper edge of the groove or seat.

13. The combination with the neck of a receptacle, a closure-plug to be inserted therein, and removable means for establishing an air-tight connection between the plug and the neck of the receptacle and also to prevent withdrawal of the plug, of means to bear in opposite directions against the receptacle and the plug to place an outward pressure upon the latter and hold the same in engagement with the means for establishing an air-tight connection between the plug and the neck of the receptacle.

14. The combination with the neck of a receptacle, a closure-plug to be inserted into the neck thereof, and means to establish an air-tight connection between the plug and the neck to prevent outward displacement of the plug, of a bridge-clamp to straddle the plug with its opposite ends bearing upon the mouth of the receptacle and having a connection with the plug to maintain an outward pressure thereon and hold the same in engagement with the means for establishing an air-tight connection between the plug and the neck.

15. The combination with the neck of a re-

ceptacle, of a closure-plug to be inserted into
the same and provided with a handle having
an overhanging shoulder, means to establish
an air-tight connection between the plug and
5 the neck and to prevent outward displacement
of the plug, and a bridge-clamp to span a por-
tion of the plug with its opposite ends resting
upon the mouth of the receptacle and its in-
termediate portion forced into frictional en-
10 gagement with the under side of the shoulder
of the handle, to place an outward pressure

on the plug and thereby hold the same in en-
gagement with the means for establishing an
air-tight connection between the plug and the
neck.

In testimony whereof I affix my signature
in presence of two witnesses.

JOHN W. DAVIS.

Witnesses:

B. F. FUNK,
GEORGE M. BOND.