J. CONLEY.

APPARATUS FOR APPLYING CLOSURES TO VESSELS.

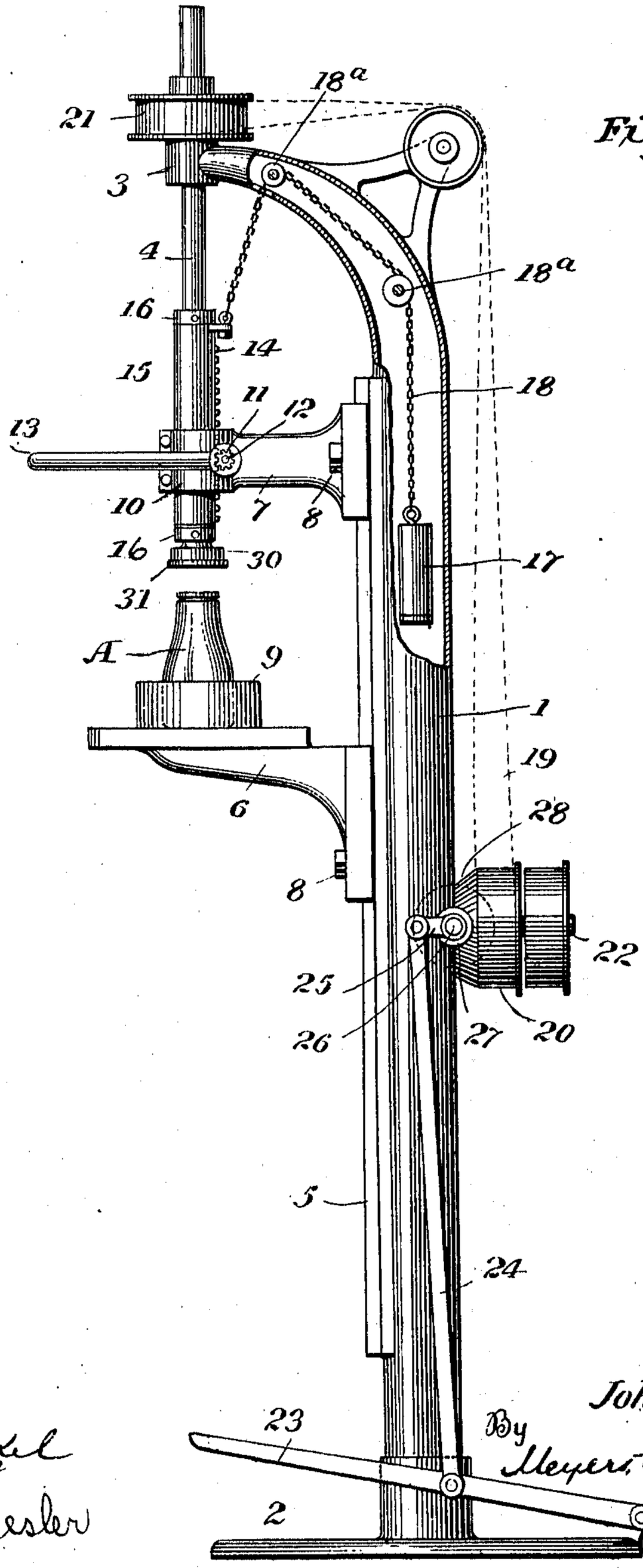
APPLICATION FILED NOV. 2, 1909.

982,797.

Patented Jan. 31, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

J. G. Stinzel

C. H. Fesler

Inventor

John Conley

By Meyer, Burkhardt & Co.

Attorneys

J. CONLEY.

APPARATUS FOR APPLYING CLOSURES TO VESSELS.

APPLICATION FILED NOV. 2, 1909.

982,797.

Patented Jan. 31, 1911.

2 SHEETS—SHEET 2.

Fig. 2.

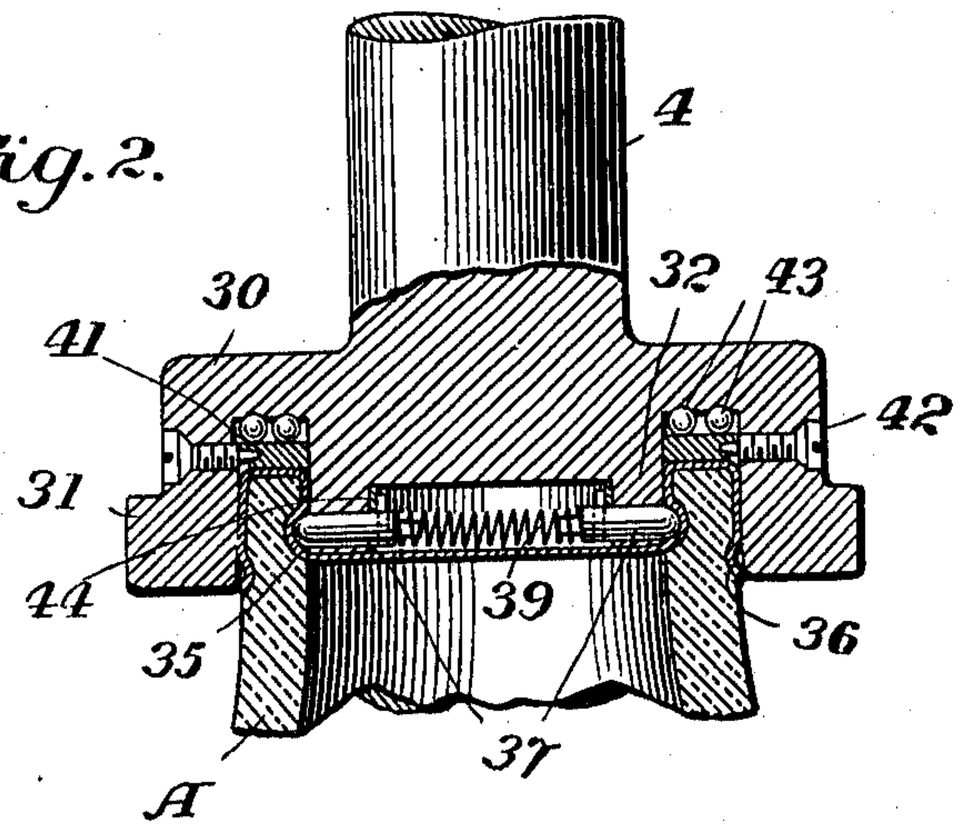


Fig. 3.

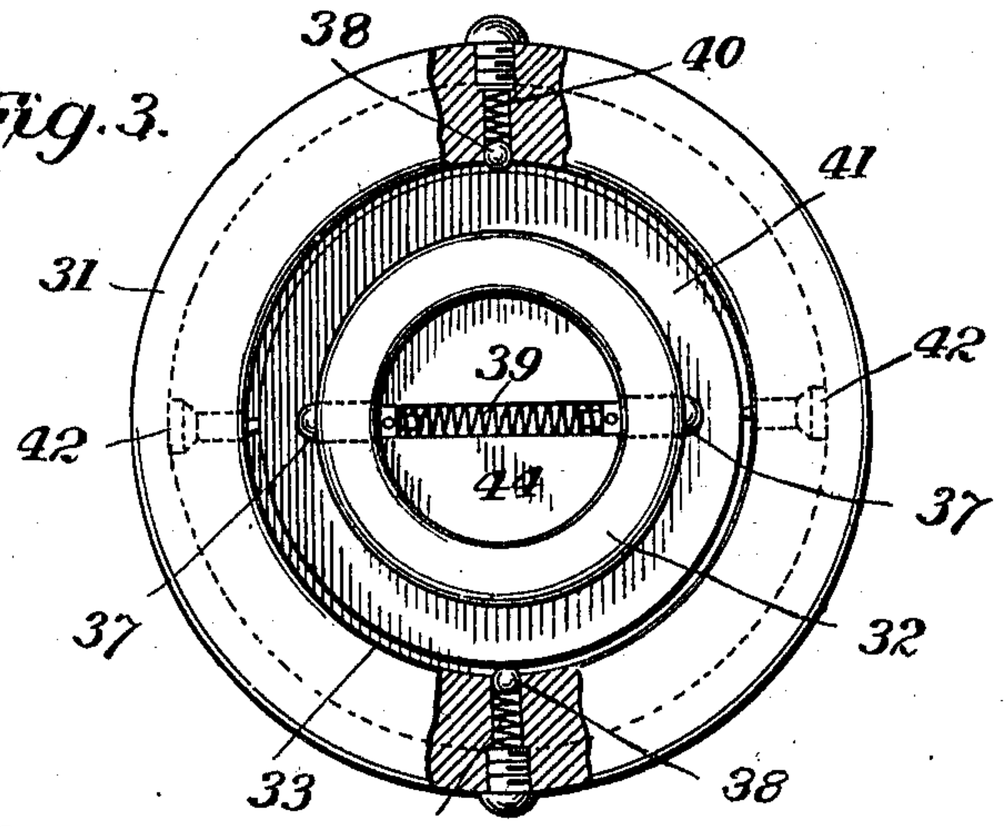


Fig. 4.

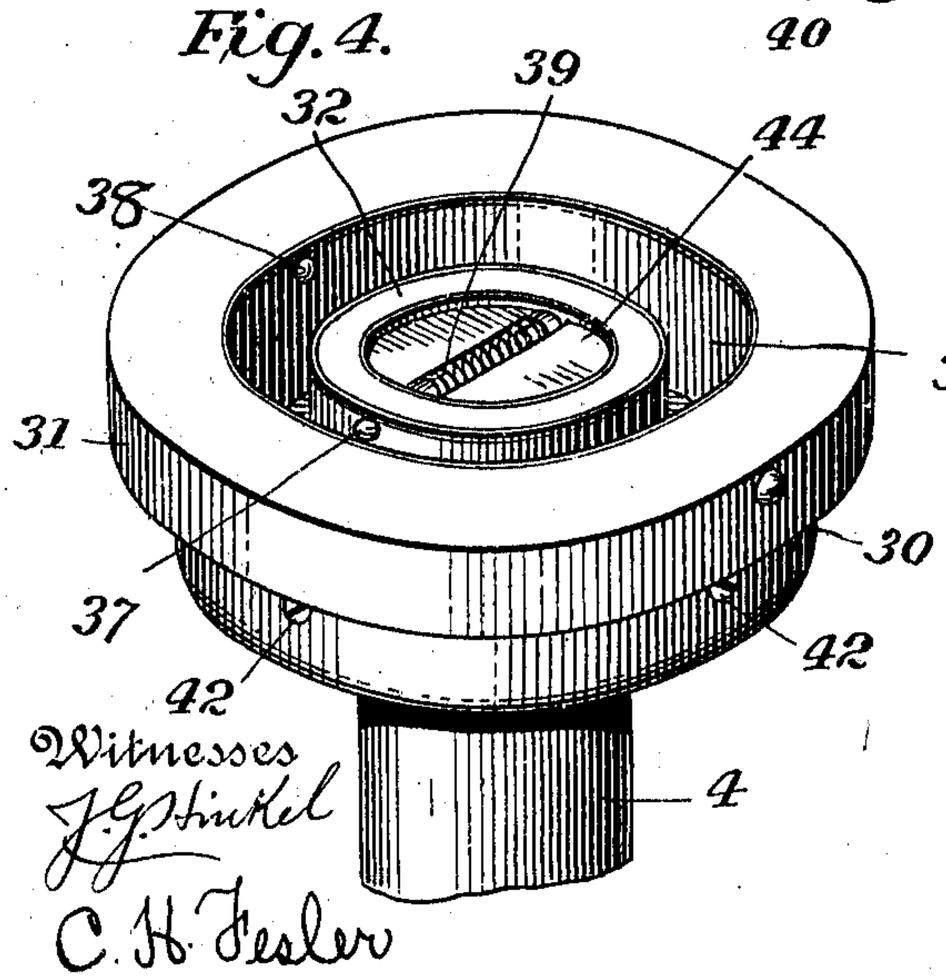
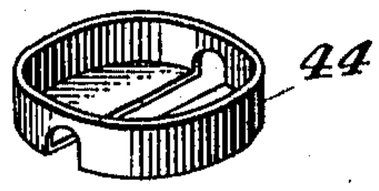


Fig. 5.



Witnesses
J. G. Stinkel
C. H. Fesler

Inventor
John Conley
By Meyers, Buchman & Rea
Attorneys

UNITED STATES PATENT OFFICE.

JOHN CONLEY, OF NEW YORK, N. Y., ASSIGNOR TO CONLEY FOIL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

APPARATUS FOR APPLYING CLOSURES TO VESSELS.

982,797. Specification of Letters Patent. **Patented Jan. 31, 1911.**

Application filed November 2, 1909. Serial No. 525,972.

To all whom it may concern:

Be it known that I, JOHN CONLEY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Apparatus for Applying Closures to Vessels, of which the following is a specification.

This invention relates to improvements in apparatus for applying caps or closures of ductile material to vessels.

In a co-pending application for Letters Patent I disclose and claim a tin-foil cap or closure for vessels and a vessel so closed. The invention herein set forth is particularly designed for the application of such closures to such vessels, but the invention is not to be understood as restricted to such use.

The object of the invention is to provide an apparatus for speedily applying caps or closures of ductile material to vessels, and to do this without liability of injury to the closure when the latter is formed of thin film-like tin-foil, as set forth in my aforesaid co-pending application.

The invention resides in the features hereinafter described and illustrated in the accompanying drawing.

That which is claimed as new is set forth in the claims following the description.

In the drawing, illustrating the invention, Figure 1 is an elevation of the apparatus. Fig. 2 is a sectional view of the closure-applying tool, illustrating the operation of the same. Fig. 3 a plan view of the tool, Fig. 4 a perspective view thereof, Fig. 5 a perspective of the spring-guard or protector.

In said drawing the reference numeral 1, designates a hollow standard, supported by a base 2, and provided with a bearing 3, for a rotary spindle 4.

5 designates a strip secured to or formed with the standard for the convenient attachment of brackets 6 and 7, which may be attached in any desired position thereto by means of bolts 8 or in other manner within the skill and judgment of the mechanic. The bracket 6 is provided with a socket or cup 9 to receive and support the vessel A while the cap or closure is being applied thereto, and the bracket 7 is provided with a bearing 10 for the spindle 4, and means for supporting and moving the cap or closure-applying tool into and from operative relation thereto. The brackets may be adjusted to and secured at the desired distance from each other, dependent upon the proportions of the parts and the depth of the vessel to be closed. The means for supporting and moving the cap or closure applying tool consists of a rack-gear 11 on a shaft 12 carried by the bracket 7 and provided with an operating handle 13, which gear 11 meshes with a rack 14 provided on a sleeve 15 surrounding the spindle 4 to which said tool is connected. The spindle 4 and sleeve 15 are so connected that they reciprocate together, but the spindle may rotate within the sleeve. This connection may be in any of the suitable ways known to skilled mechanics. As shown in the drawing it is by means of collars 16 secured to the spindle, with which the ends of the sleeve engage.

To facilitate the described manipulation of the tool, the latter and its supporting means may be counterpoised, as by a weight 17, arranged in the standard 1 and connected to the sleeve 15 by a chain, or the like, 18.

18ª designates guides for the chain.

Rotation is imparted to spindle 4 and to the cap or closure applying tool carried thereby, by a belt 19 trained over pulleys 20, 21, on stud 22 and spindle 4, respectively. The pulley 20 may be a double one as shown, so that, where automatic power is available, it may be driven therefrom by a belt. The pulley may also be driven manually by a treadle 23, through the medium of a pitman 24 connected to a crank 25 secured to the axle 26 of a bevel gear 27 in mesh with a bevel-gear 28 with which pulley 20 is provided.

As thus far described, the mechanism affords a suitable and preferred means for supporting, manipulating and operating the cap or closure applying tool, but the invention claimed resides in the tool and is therefore not restricted to the mechanism hereinbefore described and shown in the drawing.

Referring now to Figs. 2 to 5 of the drawing, the tool shown which is particularly designed to apply closures of the kind and form set forth in my aforesaid application for patent, consists of a head 30 hav-

ing spaced-apart concentric flanges 31, 32, in the pocket 33 between which the cap or closure 34 is received when the tool is at work. If the vessel to be closed is, as shown, provided at its mouth portion with interior and exterior annular grooves 35, 36, into which the walls of the ductile cap or closure are to be spun or crimped to secure the closure to the vessel, spinners or crimpers 37, 38, are yieldingly arranged in each flange 31, 32, and the rounded active ends thereof normally project into the pocket 33. Preferably these spinners or crimpers are arranged in diametrically opposite pairs in each flange, the pair in one flange being located substantially at right angles to the pair in the other.

In the event the vessel has only an exterior groove 36 the pair of spinners 37 may be omitted, and if it have only an interior groove the spinners 38 may be omitted. If the vessel has interior and exterior grooves arranged in different planes, as shown, the interior and exterior spinners will, as illustrated, be arranged in correspondingly different planes. Where the cap or closure does not have the depressed central portion within the bottle mouth the inner concentric flange 32 may be omitted.

The spinners are normally projected into the space 33 by springs 39, 40, which yield, allowing the mouth rim of the vessel and the closure applied thereto to pass into the space 33 when the tool is moved into operative position. The spring 39 may be held from bending or bulging by a guard 44, as shown.

At the bottom of the space 33 is a free bearing-ring 41, that is to say, a bearing-ring that, when the tool is in action affixing a closure to a vessel, does not rotate with the head and flanges of the tool, but bears against the closure at the rim of the mouth of the vessel, holding the closure stationary, preventing it from moving or rotating while the affixing operation is taking place, thus insuring a neat, close, smooth application and affixing of the closure to the vessel, and without danger of distorting or injuring the closure, a very essential consideration when the latter is of thin film-like tinfoil. This free or loose bearing-ring may be held in place in any suitable way, as by means of screws 42, and ball bearings 43 may be interposed between the ring and the tool head.

In operation upon a cap or closure of the kind shown, the cap or closure is placed over the mouth of the vessel, the tool is moved to active position by the means described, or by other suitable means, the spinners or crimpers yielding to permit the bottle mouth and the closure to pass into the space between the spinner or crimper-carrying flanges, the walls of the flanges laying the walls of the closure smoothly against the inner and outer walls of the vessel-mouth, the free bearing-ring firmly engaging the cap or closure at the rim of the vessel mouth, holding it against movement, whereupon the tool is caused to rotate and the spinners or crimpers spin or crimp the ductile walls of the cap or closure into the annular grooves of the vessel mouth, effecting a close hugging connection of the closure to the walls of the vessel mouth, and securing the same in the grooves aforesaid.

Having thus described the invention, what I claim is:—

1. A tool for applying closing caps to vessels, comprising a head having separated annular flanges, a free bearing-ring at the base of and between said flanges, and radially arranged yielding spinners or crimpers carried by one of said flanges, and normally projecting into the space between said flanges.

2. A tool for applying closing caps to vessels, comprising a head having annular flanges separated by a continuous annular pocket, and radially arranged yielding spinners or crimpers carried by the flanges and the free ends of which normally project into the space between said flanges.

3. A tool for applying closing caps to vessels, comprising a head having separated annular flanges, radially arranged yielding spinners or crimpers carried by the flanges and normally projecting into the space between said flanges, and a free bearing-ring at the base of and between said flanges.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN CONLEY.

Witnesses:
JOHN A. TREANOR,
JOHN S. CLUNE.