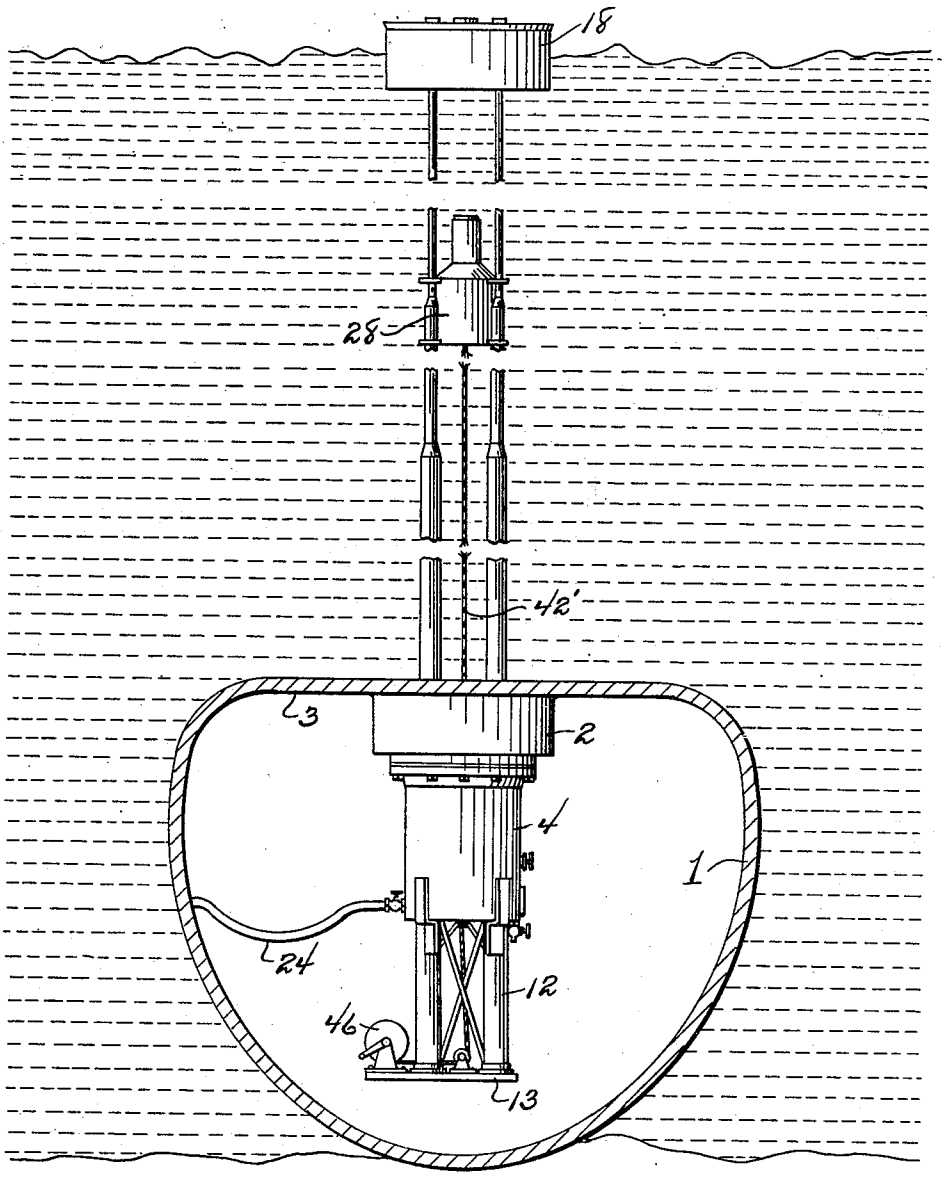
April 28, 1931. J. D. MELMS 1,803,199

RESCUE DEVICE FOR SUBMARINES

Filed Feb. 26, 1930 3 Sheets-Sheet 1

Fig. 1.



John D. Melms INVENTOR

BY Victor J. Evans

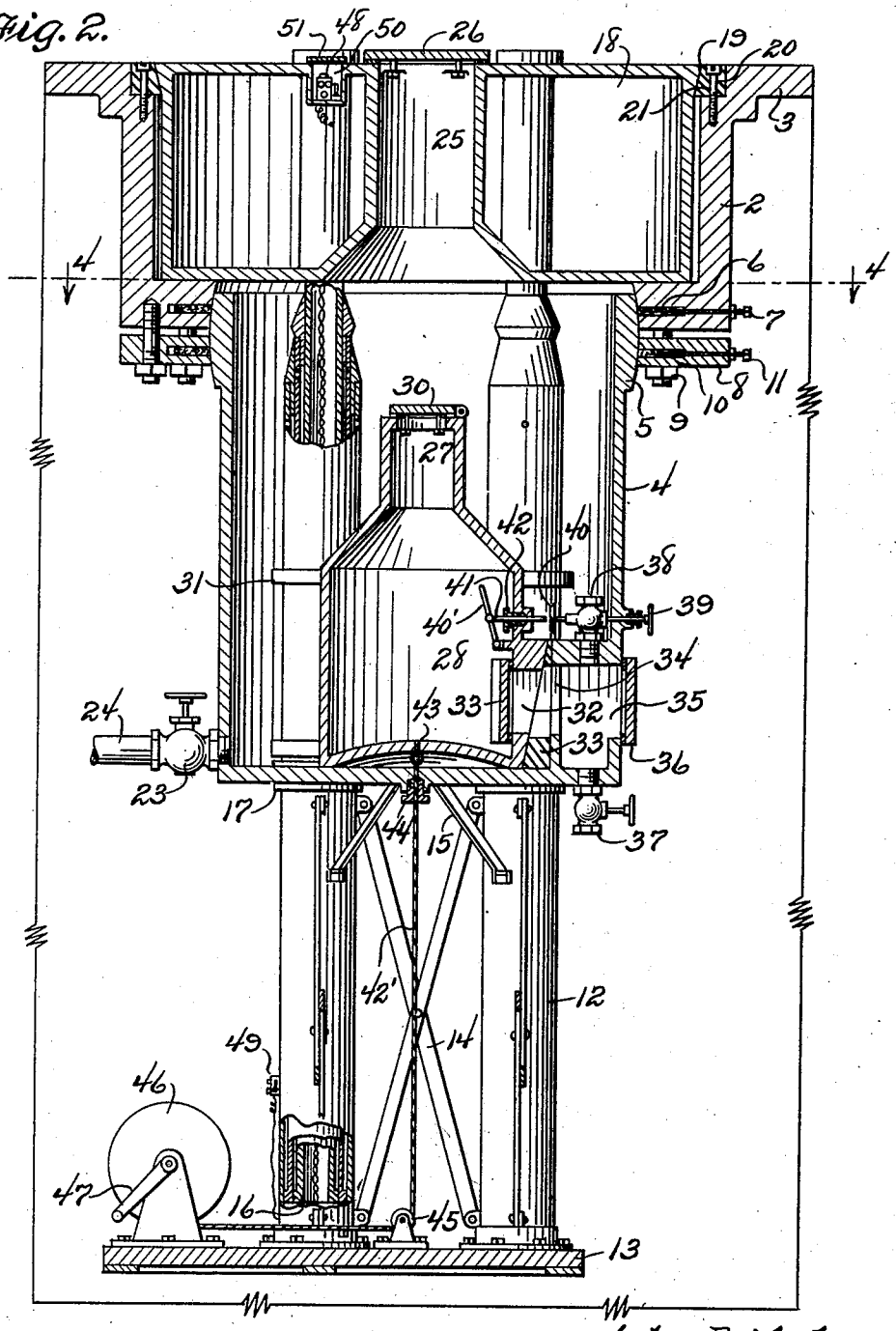
ATTORNEY

April 28, 1931. J. D. MELMS 1,803,199

RESCUE DEVICE FOR SUBMARINES

Filed Feb. 26, 1930 3 Sheets-Sheet 2

Fig. 2.



John D. Melms
INVENTOR

BY Victor J. Evans
ATTORNEY

April 28, 1931. J. D. MELMS 1,803,199

RESCUE DEVICE FOR SUBMARINES

Filed Feb. 26, 1930 3 Sheets-Sheet. 3

Fig. 3.

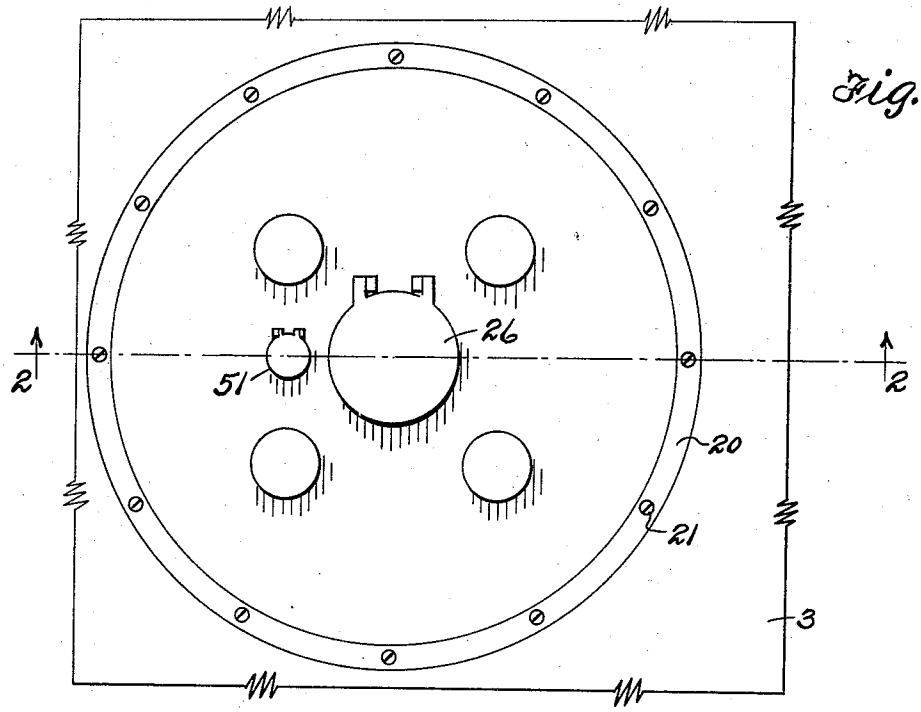
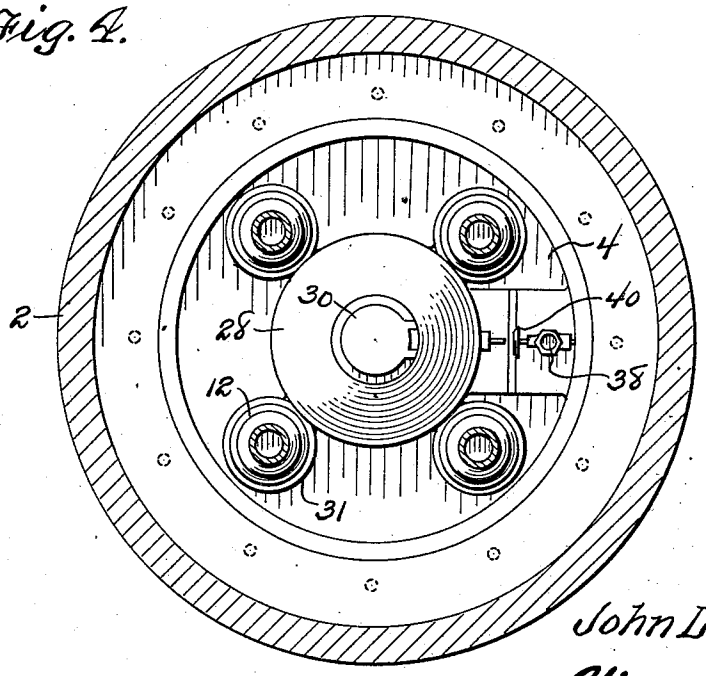


Fig. 4.



John D. Melms
INVENTOR

BY Victor J. Evans
ATTORNEY

Patented Apr. 28, 1931 1,803,199

UNITED STATES PATENT OFFICE

JOHN D. MELMS, OF PORTSMOUTH, VIRGINIA

RESCUE DEVICE FOR SUBMARINES

Application filed February 26, 1930. Serial No. 431,489.

This invention relates to new and useful improvements in a rescue device for submarines and has for its primary object the provision of means whereby the persons confined in a sunken or disabled submarine may easily and quickly escape therefrom to the surface of the water and there be safely picked up by a rescue ship.

Another object of this invention is the provision of means controlled from the inside of the submarine whereby a life-saving device containing a person may be released and guided to the surface of the water so that the persons escaping from the submarine will reach the surface of the water safely and with a minimum amount of discomfort.

A further object of this invention is the provision of means whereby the life-saving device may be easily and quickly returned to the submarine to receive the next person to be rescued and then released again to ascend to the surface of the water.

A still further object of this invention is the provision of a rescue device for submarines of the above stated character, which shall be simple, durable and efficient, and which may be manufactured and sold at a comparatively low cost.

With these and other objects in view as will become more apparent as the description proceeds, the invention consists in certain novel features of construction, combination and arrangement of parts as will be hereinafter more fully described and claimed.

For a complete understanding of my invention reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a side elevation partly in section illustrating a rescue device for submarines constructed in accordance with my invention and in the act of conveying a person from a sunken submarine to the surface of the water.

Figure 2 is a vertical sectional view illustrating the same.

Figure 3 is a top plan view of the device, and

Figure 4 is a sectional view taken on the line 4—4 Figure 2.

Referring in detail to the drawings, the numeral 1 indicates a submarine of any well known construction and to which my invention is applied and the submarine has an opening in its top wall in which is positioned a housing 2 provided at its upper end with an attaching flange 3 adapted to be bolted or otherwise secured to the deck of a submarine so that the housing 2 depends downwardly within the submarine. The bottom wall of the housing 2 is provided with a circular opening, the walls of which are ground and curved to form the female portion of a joint. A cylinder 4 having its upper end fully open is mounted in the opening in the bottom wall of the casing 2 and has formed thereon a shoulder 5 which is ground and curved to conform to the contour of the walls of the opening and thereby form the male portion of a ball joint which will permit the chamber 4 to swing relatively to the housing 2 and still support the chamber 4 to the housing 2. The bottom wall of the housing adjacent the opening is provided with angular grooves in which are positioned packing elements 6 adapted to be forced in engagement with the shoulder 4 by stub bolts 7. A removable flange 8 surrounds the lower portion of the shoulder 5 and is detachably secured to the casing 2 by bolts and nuts 9 cooperating with the bottom wall of the casing in forming the female portion of the ball joint which establishes connection between the chamber 4 and the casing or housing 2. The flange 8 is provided with an annular groove in which is positioned a packing gland 10 adapted to be forced against the shoulder 5 by a set bolt 11, thus it will be seen that a leak-proof connection is established between the casing 2 and the chamber 4. Tubular members 12 are secured to the bottom of the chamber 4 and extend therethrough and depend below said chamber 4 and support a platform 13 which is spaced from the bottom of the submarine 1 as clearly shown in Figure 1. The tubular members 12 are strengthened by diagonally arranged braces 14 and braces 15 which are secured to the tubular members adjacent their upper ends and to the bottom wall of the chamber 4. A plurality of tubular and tele-

scopic standards or guides 16 are mounted in the tubular members 12 and are adapted to extend upwardly through the chamber 4 by way of packing glands 17 and the inner telescopic standard or guides 16 have secured to their upper ends a float 18 normally resting in the housing or casing 2 and which has formed about its upper edge a flange 19 having tapered walls to engage tapered walls formed on a packing gland 20 removably secured within an annular groove 21 formed in the upper end of the casing or housing 2. When the float 18 is positioned within the casing or housing 2 the air is partially displaced from said casing 2 and chamber 4 creating a partial vacuum that co-operates with the weight of the float in retaining the float normally in the casing or housing 2 and flush with the surface of the deck of the submarine. A valve 23 is connected to the lower end of the chamber 4 and to a pipe or hose 24 which extends through the wall of the submarine 1 for the purpose of admitting water to the chamber 4 when the valve 23 is open.

The float 18 has a centrally arranged passage 25 normally closed at its upper end by a removable hatch 26 and the lower end of the passage 25 is flared to enlarge the passage and to receive the restricted end 27 of a rescue or life-saving device 28 when the latter has ascended to the surface of the water and the float 18 riding upon the surface of the water and which will be hereinafter more fully described. The rescue device 28 comprises a housing 29 having its upper portion reduced to form the restricted passage 27 and which is closed by a removable hatch 30. The housing 29 has formed thereon guide members 31 adapted to encircle the guides or standards 16 as clearly shown in Figure 2 for the purpose of guiding the vertical movement of the rescue device 28. The housing 29 adjacent its lower end is provided with a door-way 32 closed by a door 33 located within the housing 29 and the door-way 32 has an inclined face adapted to engage the inclined face of a packing element 33 when the rescue device 28 is in its lowermost position and the packing element 33 is secured about the entrance 34 of a vestibule or chamber 35 formed in the lower portion of the chamber 4 and which is closed by a door 36 and the latter establishes communication between the interior of the submarine 1 and the vestibule or chamber 35. The chamber or vestibule 35 is provided with a bleeding valve 37 disposed in the bottom wall of the chamber 4 and a similar bleeding valve 38 is located in the upper end of the chamber or vestibule 35 and in communication with the interior of the chamber 4. The bleeding valve 38 is provided with controls 39 and 40, the latter being located in the chamber 4 while the former is located exteriorly of the chamber 4 and within the submarine 1. The bleeding valve 38 is of any well known construction wherein the inward movement of the control element 39 or 40 will open the valve and when released will assume a valve-closing position. A lever 41 is pivotally mounted in the casing or housing 29 above the door 33 and is pivotally connected to a plunger 40′ operable through a packing gland 42′ and adapted to engage the control element 40 when the lever 41 is swung in one direction to open the valve 38 from the interior of the casing or housing 29.

A cable 42 has one end secured to the bottom wall of the casing or housing 29 by a fastening element 43 and extends through the bottom wall of the chamber 4 by way of the packing gland 44 and passes over a guide roller 45 located on the platform 13 and then is wound upon a drum 46 which is also located upon the platform 13 and is provided with a suitable operating means 47 for rotating the drum to wind the cable thereon.

In operation when the submarine 1 is submerged and disabled, a person to be rescued enters the rescue chamber 28 by opening the doors 36 and 33 and said doors are then closed and a person remaining in the submarine 1 opens the valve 23 admitting water to the chamber 4 which forces the float 18 outwardly of its seat in the housing or casing 2 and the latter ascends to the surface of the water as shown in Figure 1 drawing upwardly at the same time the telescopic section of the standard or guides 16 and the rescue device 28 being of a buoyant nature will travel upwardly in the guide or standard 16 until it is received in the passage 25 of the float 18. The person in the rescue device 28 open the hatches 30 and 26 to permit of escape outwardly onto the float 18. It is to be understood that when the reduced end 27 arrives in the passage 25 that it is sufficiently spaced away from the hatch 26 that will permit of the hatch 30 to be first opened and then the hatch 26. After the person arrives on the float 18 he may then telephone to the persons in the submarine that they may draw down the rescue device 28 by operating the drum 46. It of course being understood that the hatches 26 and 30 are first closed before the rescue device starts on its downward trip. Telephones 48 and 49 are provided, while the telephone 48 is located in a suitable chamber 50 within the float 18 and normally closed by hatch 51 while the telephone 49 is located in the submarine 1 and upon one of the tubular members or standards 12. The telephones are electrically connected in the usual manner by conductors passed through the telescopic standards or guides 16. When the rescue device 28 reaches its lowermost position in the receptacle 4, a leak-proof connection is established between the door-way 32 and the door-way 34 of the vestibule 35 and the vestibule 35 is then bled

of the water contained therein by opening the valve 37 permitting the water to flow into the submarine 1. To permit of the second person to escape from the submarine 1 the valve 37 is closed and the person enters the rescue device 28 by opening the doors 36 and 33 and then closes the doors and operates the lever 41 which opens the valve 38 admitting water from the chamber 4 into the vestibule and thereby breaking the partial vacuum which has been sufficient to retain the rescue device 28 in its lowermost position and the latter then ascends up the standards or guides 16 to the float 18 where the person escapes onto the float by opening the hatches 30 and 26. This method of operation is carried out until each and every person in the submarine has successfully escaped to the float where they may remain until rescued by a ship.

When the float 18 is on the surface of the water and if the latter should be rocked, the ball joint between the casing 2 and the chamber 4 will permit the chamber 4 to swing with the float to compensate for any differences in movement between the float and the sunken submarine.

While I have shown and described the preferred embodiment of my invention, it will be understood that minor changes in construction, combination and arrangement of parts may be made without departing from the spirit and scope of the invention as claimed.

Having thus described my invention what I claim is:

1. A device of the character set forth comprising a rescue chamber carried by a submarine, means associated with the chamber and carried by the submarine and releasable therefrom to ascend to the surface of the water, and means for releasing said chamber to permit it to be guided to the surface of the water by said first means.

2. A device of the character set forth comprising a float detachably secured to a submarine, a guide means between the float and the submarine, and a rescue device movable in said guide means from the submarine to the float.

3. A device of the character set forth comprising a housing secured to a submarine, a float in said housing, guide means carried by said float and adapted to establish a guide between the float and the submarine when the former is at the surface of the water and the latter at the bottom, and a rescue device operable in said means between the submarine and the float.

4. A device of the character set forth comprising a casing secured in the deck of a submarine, a float in said casing, a chamber carried by said casing and in communication therewith, telescopic means between the chamber and the float and adapted to permit the float to ascend to the surface of the water when the submarine is sunk, a rescue device operable in said means and adapted to travel from the chamber to the float and from the latter back to the former, and means for actuating and controlling the rescue device.

5. A device of the character set forth comprising a casing secured in the deck of a submarine, a float mounted in said casing and removable therefrom, a leaf-proof connection between the float and the casing, a chamber carried by the casing and in communication therewith, telescopic guide means between the chamber and the float, a rescue device slidably mounted on the guide means, means for establishing communication between the rescue device and the exterior of the chamber, means for admitting water to the chamber for forcing the float to the surface of the water when the submarine is sunk and to cause the rescue device to ascend to the float with a person therein, and means for retrieving the rescue device to the casing from the interior of the submarine.

6. A device of the character set forth comprising a casing secured in the deck of a submarine, a float removably mounted in said casing and having a passageway therethrough, a hatch for closing said passageway, a chamber carried by said casing and in communication therewith, telescopic guides connecting the chamber with the float, a rescue chamber slidable on said guides, a removable hatch for said rescue chamber, a vestibule formed in said first named chamber, a door for closing the vestibule, said rescue chamber having a doorway in communication with the vestibule, a door for closing said last named doorway and carried by the rescue chamber, means for admitting water to the first named chamber, means for bleeding the vestibule and means connected to the rescue chamber for retrieving the same to the submarine after ascending to the surface of the water and preceded by the float.

7. A device of the character set forth comprising a casing secured to a submarine, a float movably mounted in said casing, a chamber movably supported by the casing and in communication therewith, telescopic guides between said chamber and the float, a movable chamber located in the first chamber and slidable on said guides and having doorways, hatches for closing said doorways, said float having a passage, a hatch for closing said passage, a vestibule formed in the first named chamber and adapted to communicate with one of the doorways, a door for closing said vestibule, bleeding valves for said vestibule and one of said valves in communication with the interior of the submarine and the other valve in communication with the interior of the first named chamber, an operating means carried by the rescue chamber and operable from the interior thereof to actuate one of

the bleeding valves, means for admitting water from the exterior of the submarine to the interior of the chamber to force the float to the surface of the water and force the rescue chamber to said float when at the surface of the water, and means for retrieving the rescue chamber to the first named chamber and within the submarine.

8. A device of the character set forth comprising a casing secured to a submarine, a float carried by said casing, a chamber carried by casing, telescopic guides between the float and the chamber, a rescue device slidable on said guides, means for permitting entrance of a person from the submarine to the rescue device, means for admitting water to the chamber from the exterior of the submarine, a platform carried by the chamber, an operating drum on said platform, and a cable wound on said drum and connected to the rescue device.

9. A device of the character set forth comprising a casing secured to a submarine, a float in said casing, a chamber carried by said casing and in communication therewith, telescopic guides between the float and the chamber, a rescue device mounted on said guides, means for forcing the float and rescue device to the surface of the water when the submarine is sunk and telephone means between the float and the submarine.

In testimony whereof I affix my signature.

JOHN D. MELMS.