

G. H. CROSBY & C. H. JONES.
BLASTING TUBE.
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1,065,664.

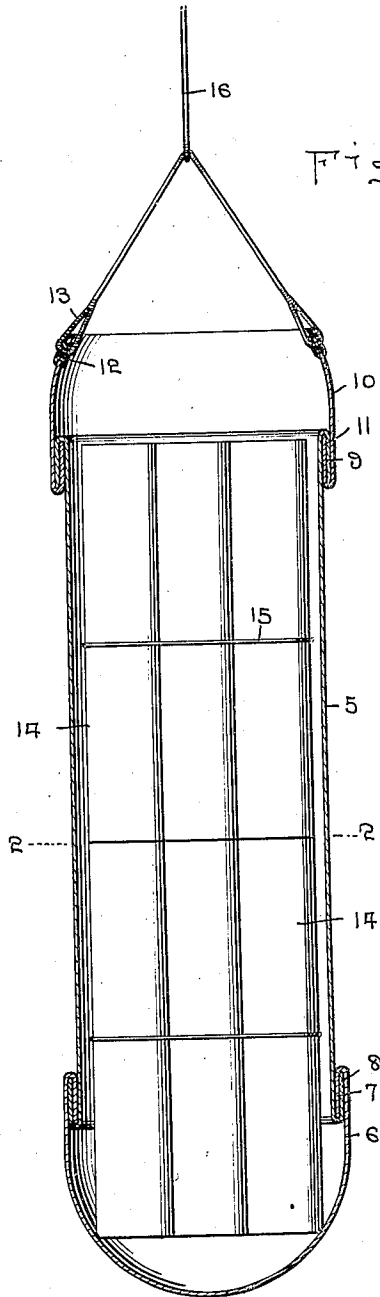


Fig. 1.

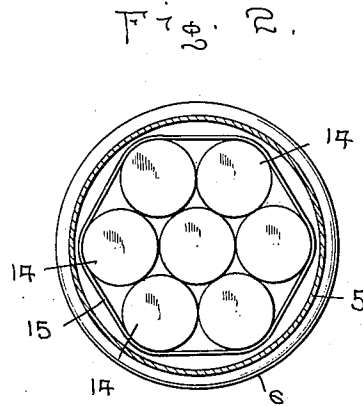


Fig. 2.

WITNESSES:

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GEORGE H. CROSBY AND CHARLES H. JONES, OF DULUTH, MINNESOTA.

BLASTING-TUBE.

1,065,664.

Specification of Letters Patent.

Patented June 24, 1913.

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To all whom it may concern:

Be it known that we, GEORGE H. CROSBY and CHARLES H. JONES, citizens of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Blasting-Tubes; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to receptacles, and it more particularly relates to an improved receptacle or blasting tube.

An object of the invention is to provide a container or receptacle of this character in which one or more blasting cartridges or charges of explosives, such as dynamite, nitro-glycerin, giant powder, etc., may be inserted, incased and lowered into a drilled hole or other cavity, preparatory to blasting.

Another object of the invention is to provide a device of this character which will thoroughly protect the charge of explosive material from moisture.

Another object is to provide a device of this character which is of minimum weight, consistent with sufficient strength and thorough efficiency.

Another object of the invention is to minimize the cost of manufacture of articles of this character.

Another object is to provide a container of this character which may be folded, and thereby reduced into minimum space, for convenience in transportation.

Another object is to provide for protecting the paper wall of the container from abrasion while being lowered through a drilled hole.

A still further object is to provide for guarding the lowering element, to protect the same from abrasion and consequent breakage.

Other objects and advantages may be recited hereinafter and in the claims.

In the accompanying drawings, which supplement this specification, Figure 1 is a vertical sectional view through one of our improved blasting tubes and containing a number of blasting cartridges, and Fig. 2 is a horizontal sectional view taken on the line 2-2 of Fig. 1.

In these drawings in which similar refer-

ence characters correspond with similar parts throughout the several views, the body of the blasting tube constitutes a cylindrical tube 5, formed from paper or other flexible and fibrous material. This tube 5 is treated with waterproofing material, of any ordinary or preferred kind, so as to render the tube 5 impervious to water or other liquid or dampness. The bottom 6 of the tube or container is formed from sheet metal, such as terne plate, brass, iron or steel. This bottom member is preferably hemispherical, so that no abrupt corners or edges are present to engage with projections on the wall of the cavity into which the cartridge is to be lowered.

We may secure the members 5 and 6 together in any suitable way, but, we preferably form the upper edge of the bottom member 6 into an inwardly and downwardly turned flange 7, and between this flange and the adjacent upper wall of the bottom member is inserted the lower edge of the tube 5, said lower edge is turned up and clamped between said wall and said flange, as shown at 8. The upper edge of the tube may be turned outwardly and downwardly so as to form a flange 9, which is clamped between the wall of a metal band or rim 10 and a flange 11 which is turned inwardly and upwardly at the lower edge of the member 10. The member or rim 10 is formed from any suitable kind or grade of sheet metal, and constitutes a support for holding the member 5 in open or cylindrical form, and it also constitutes a guard or shield for protecting the member 5 from abrasion. The upper edge of the rim 10 is preferably curved inward, or reduced in diameter, so as to present a rounded surface to the wall of the cavity or drilled hole, and thereby avoid being engaged with the wall, in case it becomes necessary to remove the tube or container after it has been lowered into said cavity.

Adjacent to the upper edge of the rim 10 is a pair of diametrically opposed eyelets 12, through which a sling 13, preferably of wire, may be inserted. The eyelets 12 are seated within the reduced portion of the rim 10, so that the sling 13 is protected from abrasion, by means of the lower portion of the rim, which is of greater diameter, so that the sling is out of the path of protrusions which may be present on the wall of the cavity.

In operation, we may form a number of cartridges 14 into bundles, and we may use a string or rubber band 15 for securing the bundles, and we may insert one or more of
5 such bundles into the blasting tube, or we may place one or more cartridges or charges of blasting material within the blasting tube in any desirable way. Having so placed
10 them, we may fill the top of the tube or container with any suitable material for excluding liquid or moisture as paraffin or the like, and we therefore deem it unnecessary to make any showing of this in the drawings, whereupon, a string, wire or cable 16
15 may be secured to the sling 13, and the blasting tube is then lowered into the cavity or drilled hole.

It will be seen that we have provided a device of this character which is fully capable of attaining the foregoing object, in
20 a thoroughly practical and efficient manner.

We do not limit our invention to the exact details of construction, combination and
25 arrangement of parts, as herewith illustrated and described, as our invention may only be limited by a reasonable interpretation of the claims.

We claim:

30 1. In a receptacle for lowering blasting cartridges into a drilled hole, a cylindrical tube of fibrous material, a metal cup secured

to said cylindrical tube and a tubular metal element secured to the top of said tube and having a sling secured thereto, said tube being impervious to water, and said tube being joined water-tightly with the metal cup and tubular metal element. 35

2. In a receptacle for lowering blasting material into a hole, a tube of fibrous waterproofed material, a substantially hemispherical bottom member of sheet metal secured with a water-tight joint to said tube, and a tubular metal rim secured to the top of said tube, and being provided with means
40 for securing a suspending element. 45

3. In a receptacle for lowering explosives into a hole, a hollow cylinder of waterproof fibrous material, a cup-shaped metal bottom of greater diameter than said cylinder secured to the latter by a water-tight joint and a tubular metal rim of greater diameter than said cylinder and being provided with means for securing a lowering element thereto. 50 55

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEORGE H. CROSBY.
CHARLES H. JONES.

Witnesses:

CHAS. S. SLACK,
A. J. McLENNAN.