To all whom it may concern:

Be it known that I, BENJAMIN F. McCREAARY, a citizen of the United States, and
a resident of the city of New York, Jamaica,
5 borough of Queens, in the county of Queens
and State of New York, have invented a
new and Improved Means for Carrying
Life-Lines, of which the following is a full,
clear, and exact description.

10 The invention relates to life line saving
apparatus used for carrying a life line from
shore to ship or vice versa, or to a high
building or other structure.

The object of the invention is to provide
a new and improved means for carrying
life lines, arranged to insure a proper un-
coiling of a very long life line while the pro-
jectile is caused to travel a great distance.

Another object of the invention is to pre-
vent the projectile from tumbling over dur-
ing its flight and to prevent the life line
from becoming disentangled from the pro-
jectile by destruction of that portion of the
life line subjected to the burning of the
charge.

In order to accomplish the desired result
use is made of a projectile and a life line
coiled within the projectile and formed of
a series of coils arranged one in front of the
other, the terminal of the outer convolution
of one coil being connected with the begin-
ing end of the inner convolution of the
next following coil, so that when the pro-
jectile is fired the life line uncoils through-
out its length from within the several coils,
thus insuring the uncoiling of the life line
during the flight of the projectile.

A practical embodiment of the invention
is represented in the accompanying draw-
ings forming a part of this specification, in
which similar characters of reference indi-
cate corresponding parts in all the views.

Figure 1 is a sectional side elevation of
the projectile with the casing containing the
life line; Fig. 2 is an inverted plan view of
the projectile; Fig. 3 is a side elevation of the casing containing the
life line; Fig. 4 is an enlarged sectional side
view of the projectile with the life line
position therein; Fig. 5 is a cross section
of the same on the line 5—5 of Fig. 4; and
Fig. 6 is an inner face view of the closing
block for the base of the projectile.

The projectile A shown in Fig. 1 is adapt-
ed to be fired out of a gun or mortar B by
the use of a suitable explosive. The projec-
tile A consists of a tubular body A' to the
forward end of which is riveted or other-
wise secured a head A" by the use of screws A' or other fasten-
ing means. Into the tubular body A' fits a
casing C containing a life line D having its
forward end D' attached to the head A" as
plainly indicated in Fig. 4, the said forward
end passing through an opening C' in the
forward end of the casing C and through an
outwardly-extending opening A'" formed in
the head A", the terminal D" of the end D'
being formed into a knot extending in a
recess A" formed in the outer face of the
head A". The life line D consists of a series
of coils D' arranged one in front of the other
within the casing C, and each coil D' has
its convolutions arranged in such a manner
that the beginning end D" of each coil is at
the inner rear convolution, and the terminal
D" of each coil is at the outermost forward
convolution, and this terminal D" of one
coil is connected with the beginning end D'
of the next following coil. By the arrange-
ment described the life line uncoils from
the inside of each coil, that is, the coil D'
at the base end of the projectile uncoils first
when the projectile is fired and then the
next coil uncoils, and so on until the pro-
jectile reaches its destination, it being how-
ever, expressly understood that the life line
uncoils in each coil from the inside thereof
thus preventing the convolutions of the
coils from becoming entangled at the same
time insuring easy uncoiling of the life line,
thus permitting firing the projectile a great
distance with a comparatively small charge.

It will also be noticed that by the arrange-
ment described a very long life line can be
used.

The beginning end D" of the coil D'
at the base end of the projectile extends
through an opening C" formed in the plate
C" for closing the casing C after the life
line is coiled therein as described. The
beginning end D" of the coil D is in the base
end of the projectile is connected with a wire
cord E extending through a central opening
A" formed in the base A" of the projectile
A, and this wire cord E extends along a
groove or slot A" arranged lengthwise in
the peripheral face of the body A and in a
portion of the head A". The outer terminal
of the wire cord E is attached to a fixed
part which may be a part of the gun or
mortar B. It is understood that when the projectile is fired the life line readily uncoils as the wire cord E is held fixed.

A cap F is used for closing the aperture A', the cap having a groove F' at its inner face for the passage of the wire cord E, as will be readily understood by reference to Figs. 1 and 6. The cap F fits loosely into the aperture A' and when the projectile is fired the wire cord E in straightening out exerts a pull on the cap F and thus dislodges the same from the base A' so that the life line can readily run out of the opening A' during the flight of the projectile.

By the arrangement described the burning charge is not liable to injure the life line as the same is protected from the burning charge by the cap F, and the wire cord E is not liable to be injured by the said burning charge owing to its being formed of metal.

When the projectile is fired out of the mortar or gun B it is not liable to tumble over during its flight as the pull on the life line is from the base end of the projectile. The life line can be readily filled into the casing C by the manufacturer, and the filled casing can be readily placed in position in the tubular body of the projectile and the end D' of the life line fastened to the head A', as above explained.

In practice the projectiles are made in two or more different lengths to accommodate longer or shorter life lines, thus enabling the savers to select a projectile according to the distance to be traversed by the projectile.

It will be noticed that by the arrangement described projectiles with solid shot and loose life lines are entirely dispensed with and life savers can readily use the projectile in a mortar.

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

1. In means for carrying life lines, a projectile, a life line coiled within the projectile and formed of a series of coils one in front of the other, the terminal of the outer convolution of one coil being connected with the beginning end of the inner convolution of the next following coil, the projectile having an aperture base for the passage of the life line, and a cap fitting loosely in the aperture in the base and having a groove at its inner face for engagement by the life line.

2. In means for carrying life lines, a projectile having a tubular body, a casing fitting into the said tubular body, a life line coiled within the said casing and having its forward end anchored to the projectile, an apertured base plate for the rear end of the casing, and an apertured base plug removably secured to the rear end of the tubular body and engaging the base plate of the casing, the rear end of said life line extending through the apertures in said base plate and base plug.

3. In means for carrying life lines, a projectile having a recess leading out through its base, a casing fitting into the said recess, a life line coiled within the said casing and having its forward end attached to the projectile, the said life line being formed of a series of coils one in front of the other, the terminal of the outer convolution of one coil being connected with the beginning end of the inner convolution of the next following coil, an apertured plate for closing the base end of the casing, and an apertured base plug removably secured to the base of the projectile, the life line extending through the said apertures in said plate and plug.

4. In means for carrying life lines, a projectile having a centrally apertured removable base, and a life line coiled within the projectile and having its forward end anchored to the projectile and having its rear end extending through the apertured base of the projectile, the life line being formed of a series of coils arranged one alongside the other, the terminal of the outer convolution of one coil being connected with the beginning end of the inner convolution of the next following coil, a wire cord connected with the beginning end of the coil in the base end of the projectile, and a closure for the aperture in the base of the projectile, and having a groove for the passage of the wire cord.

5. In means for carrying life lines, a projectile, and a life line coiled within the projectile and having its forward end anchored to the projectile, a wire cord connected with the rear end of the life line in the base end of the projectile, the base of the projectile having an opening through which the wire cord extends, the said projectile having a lengthwise extending groove in its peripheral face, the said wire cord extending along the said groove and having its outer end secured to a fixed support, and a cap for closing the opening in the base of the projectile, the cap fitting loosely in said opening and having a groove at its inner face for the passage of the said wire cord.

6. In means for carrying life lines, a projectile having a tubular body, a head attached to the forward end of the said body, and an apertured plug removably attached to the rear end of the said body, a casing fitting into the said cylindrical body, a life line coiled within the said casing and having its forward end attached to the said head and its rear end extending through the said apertured plug, the said life line being formed of a series of coils one in front of the other, the terminal of the outer convolution of one coil being connected with the beginning end of the inner convolution of the next following coil, and a cap fitting loosely in the ap...
erture of said plug and having a groove for the passage of the life line.

7. In means for carrying life lines, a projectile having a tubular body, a head attached to the forward end of the said body and an apertured base plug removably attached to the rear end of the said body, a casing fitting into the said cylindrical body, a life line coiled within the said casing and having its forward end attached to the said head, the said life line being formed of a series of coils one in front of the other, the terminal of the outer convolution of one coil being connected with the beginning end of the inner convolution of the next following coil, an apertured base plate for the said casing, a grooved cap for closing the aperture in the said base plug, and a wire cord attached to the beginning end of the coil in the base end of the casing, the said wire cord extending through the said base plate and the cap groove and the said projectile having a lengthwise extending groove in its peripheral face and the said wire cord extending along the said groove.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BENJAMIN F. McCREARY.

Witnesses:

JACOB A. BEAUJON,

JOHN A. WALKER.