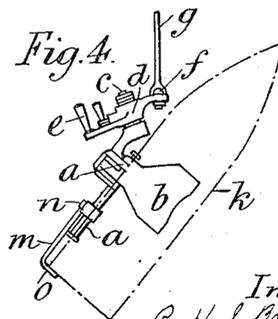
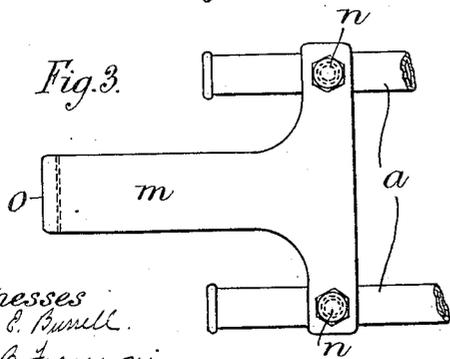
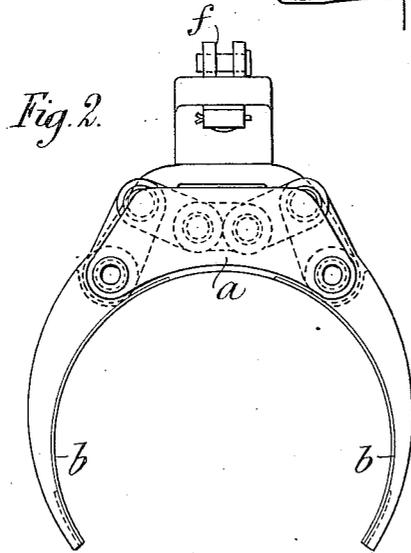
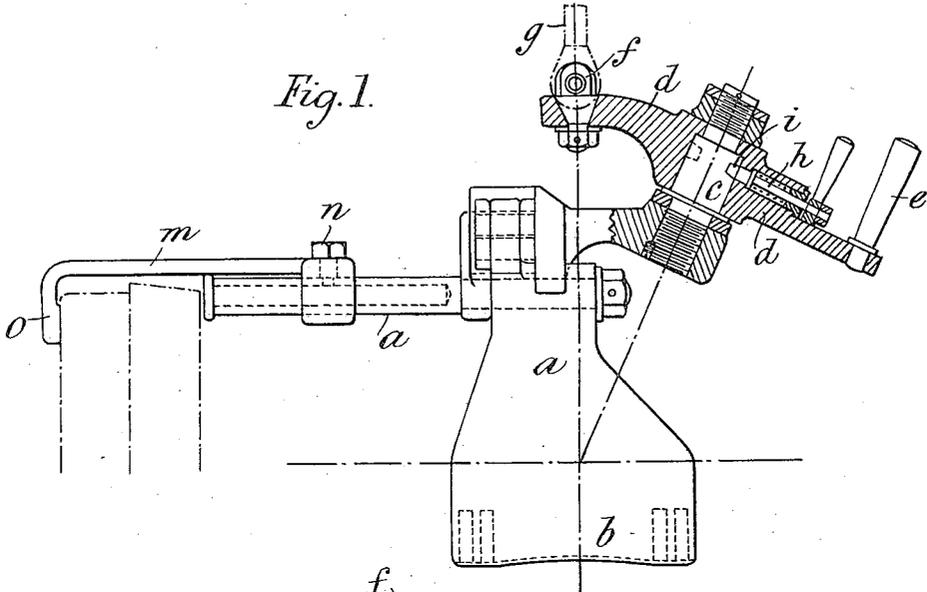


R. H. S. BACON & F. W. H. SHEPHERD.
 GRAB FOR LIFTING PROJECTILES.
 APPLICATION FILED MAY 17, 1912.

1,045,804.

Patented Dec. 3, 1912.



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UNITED STATES PATENT OFFICE.

REGINALD HUGH SPENCER BACON AND FRANK WILLIAM HARDING SHEPHERD, OF
COVENTRY, ENGLAND.

GRAB FOR LIFTING PROJECTILES.

1,045,804.

Specification of Letters Patent.

Patented Dec. 3, 1912.

Application filed May 17, 1912. Serial No. 698,034.

To all whom it may concern:

Be it known that we, REGINALD HUGH SPENCER BACON and FRANK WILLIAM HARDING SHEPHERD, subjects of the King of Great Britain, both residing at the Coventry Ordnance Works, Coventry, England, have invented new and useful Grabs for Lifting Projectiles, of which the following is a specification.

The object of this invention is to provide an improved grab which can be placed on and can grip a projectile lying with its axis horizontal but can then be so adjusted that the projectile can be tilted up and lifted through a small hole.

The accompanying drawing illustrates our invention.

Figure 1 is a side view of the grab partly in section, Fig. 2 is an end view and Fig. 3 is a part plan while Fig. 4 shows the grab with a projectile in the tilted position.

a is the body of the grab which carries jaws *b* in such a way that they can grip the projectile in any usual and well known manner.

Secured to the body is a pin *c* inclined to the vertical, on which pin is pivoted an arm *d* provided at one end with a handle *e* and at the other with a swivel *f* to which the hoisting rope *g* is attached. The arm is preferably provided with a spring bolt *h* adapted to engage recesses *i* in the pin *c* and so to lock the parts either in the position of Fig. 1 or in that of Fig. 4.

The jaws *b* are so placed on a projectile *k* that the axes of the rope *g* and of the pin *c* intersect at the center of gravity of the projectile *k*. To facilitate such placing of the jaws on the projectile and to assist in supporting the projectile in the tilted position we provide a tail piece *m* which can be adjustably secured by means of clamping screws *n* on rearward extensions of the body *a* so as to suit different lengths of projectile; the end of this piece *m* has on it a finger *o*.

The grab is lowered on to the projectile to be lifted so that the finger *o* touches the base of the projectile; the jaws are closed upon the projectile which is then lifted with its axis horizontal, the parts being in the position shown in Fig. 1; the bolt *h* is then withdrawn and the arm is by means of the handle *e* turned around tilting the projectile and bringing the parts into the position

shown in Fig. 4 so that the projectile while still in the grab can be raised through a hole in the deck or in the floor of the gun house which hole may be of smaller size than would be required if the projectile remained with its axis horizontal during the whole time of raising.

We claim:—

1. In a grab, the combination of jaws adapted to be placed upon a projectile lying with its axis vertical, a body carrying the jaws, a pin carried by the body and inclined to the vertical, an arm turning upon the pin, and a swivel connecting the arm to the hoisting rope.

2. In the grab, the combination with the body and jaws of a pin carried by the body and inclined to the vertical, an arm turning upon the pin, a swivel connecting the arm to the hoisting rope, and means for locking the arm to the pin in either of two positions.

3. In a grab, the combination of jaws adapted to be placed upon a projectile lying with its axis vertical, a body carrying the jaws, a pin carried by the body and inclined to the vertical, and an arm turning upon the pin and having at one end a swivel connecting the arm to the hoisting rope and at the other end a handle.

4. In a grab, the combination with the body and jaws of a pin carried by the body and inclined to the vertical, an arm turning upon the pin and having at one end a swivel connecting the arm to the hoisting rope and at the other end a handle, and means for locking the arm to the pin in either of two positions.

5. In a grab, the combination with the body and jaws of a pin carried by the body and inclined to the vertical, an arm turning upon the pin, a swivel connecting the arm to the hoisting rope, and a finger carried by the body and adapted to bear against the base of the projectile.

6. In a grab, the combination with the body and jaws of a pin carried by the body and inclined to the vertical, an arm turning upon the pin, a swivel connecting the arm to the hoisting rope, a finger adapted to bear against the base of the projectile, and means for adjustably securing the finger to the body.

7. In a grab, the combination with the

body and jaws of a pin carried by the body and inclined to the vertical, an arm turning upon the pin and having at one end a swivel connecting the arm to the hoisting rope and
5 at the other end a handle, means for locking the arm to the pin in either of two positions, a finger adapted to bear against the

base of the projectile, and means for adjustably securing the finger to the body.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
