

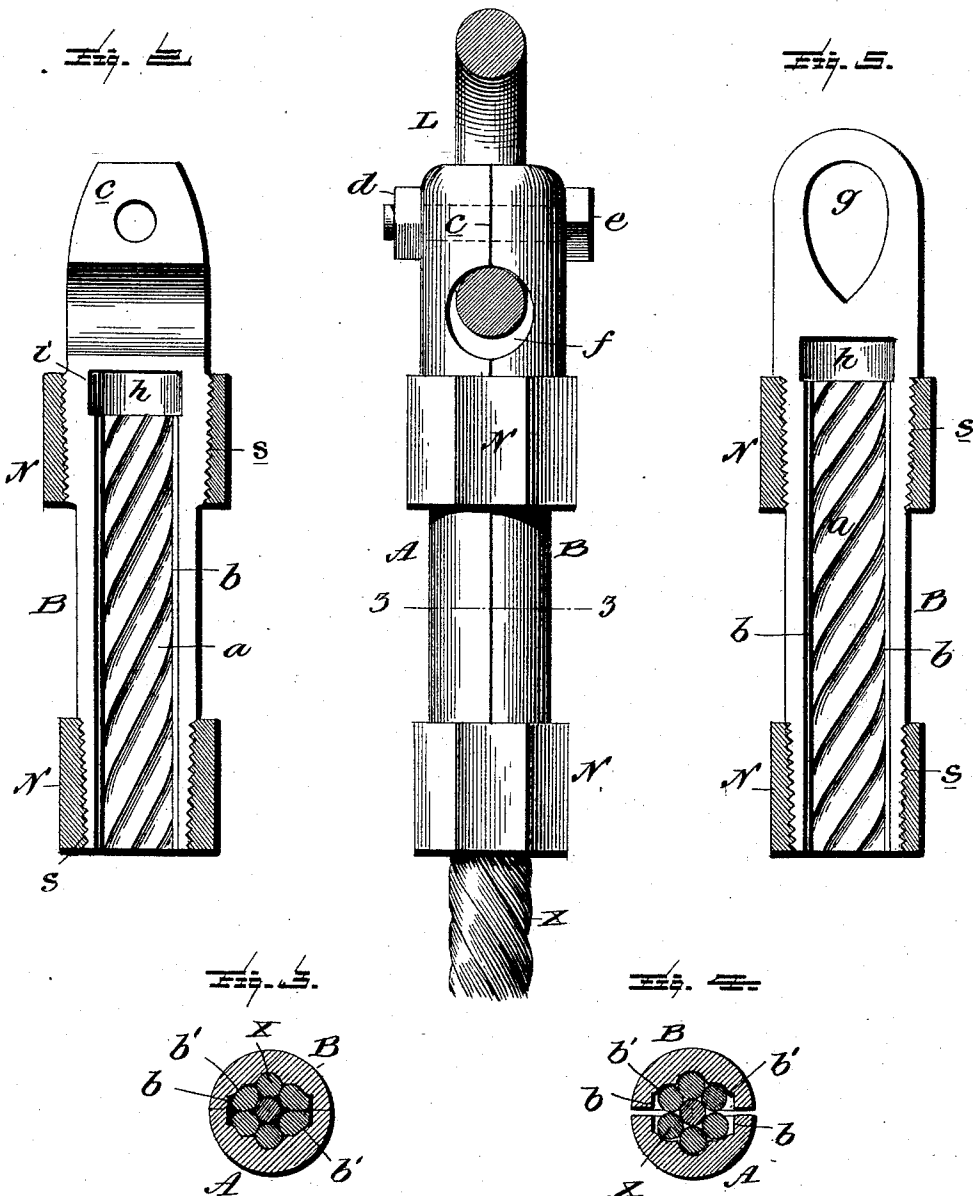
(No Model.)

G. F. ELLIOTT.
CABLE GRIP.

No. 475,684.

Patented May 24, 1892.

Fig. 1.



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE F. ELLIOTT, OF THE UNITED STATES NAVY.

CABLE-GRIP.

SPECIFICATION forming part of Letters Patent No. 475,684, dated May 24, 1892.

Application filed September 16, 1891. Serial No. 405,840. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. ELLIOTT, an officer of the United States Marine Corps, at present stationed at the Brooklyn navy-yard, in the State of New York, have invented a new and useful Improvement in Cable-Grips, of which the following is a specification.

My invention relates to that kind of cable-grip which is intended to grip the end of a wire rope or cable. It is a two-part grip, each of its parts being provided with an interior surface formed to match the conformation of the strands of the cable with which it is designed to be brought into contact and having at or near each of its edges an interior longitudinal recess, which bounds the matching surface. Each part of the two parts is preferably semicircular in cross-section. Its grooved surface, which matches the cable, is less than a semicircle, and the longitudinal recesses along the edges of the grooved surface occupy the remainder of the semicircle. When the two semicircular parts of the grip are applied to the cable and are pressed or drawn together, so that their edges abut or meet, the grooved surfaces of said parts fit upon the strands of the cable opposite which they come, while the cable itself is by the compression a little flattened, and a portion of it on each side is forced into and fills the longitudinal recesses which bound the grooved surfaces. A grip of this kind will hold the end of a cable with the utmost tightness, so that it can neither pull out from nor turn in the grip. The lateral longitudinal recesses, above referred to, on each edge of the grooved surfaces are important agents in assuring this result. They permit the compression of the cable from the circular to an elliptical or slightly-flattened form and they provide clearance spaces or pockets, into which the cable when thus compressed can expand or spread laterally. Moreover, they permit the two semicircular parts of the grip to be readily formed either by casting or by drop-forging as well. A two-part semicircular grip having corresponding grooves to fit the cable-strands of the end to which the grip is applied has long been a desideratum, but heretofore it has been impracticable to get such a grip, inas-

much as in forming the semicircular mold the latter would be broken in the attempt to lift the pattern therefrom; but by making the grooved surface less than a semicircle in extent and by providing the longitudinal recesses along its edges this difficulty is entirely obviated. The two parts of the grip can be cast without difficulty, and they can also be produced with equal ease by drop-forging as well.

While, as I have above intimated, the two parts of my grip may each be less than a full semicircle, yet I prefer to make them each a semicircle, or at any rate so near thereto that when closed and properly compressed upon the end of the cable their applied edges will meet or nearly meet. In this way I practically prevent that portion of the cable which is gripped from being affected by water, grease, or acid. This end of the cable is first covered with red lead before being gripped, and when the two parts of the grip are closed upon the end of the cable thus prepared all the joints practically will be sealed. Another advantage flowing from this construction is that it is easier to insure correspondence of the external screw-threads cut or formed upon each part of the grip with the nuts by which the parts are drawn together.

I am aware that a multiple-part cable-grip in which the gripping-surfaces of the parts conform in shape to the surface of the cable opposite which they come is not new, broadly speaking; but in such as I have knowledge of there have in practice been as many parts or separate clamping-pieces as there have been external strands in the cable—that is to say, for a cable having six external strands around a central core or strand the grip would have six separate parts or jaws, and so on. Such a grip, however, is liable to become distorted under twisting strains particularly—a thing which is practically impossible with my grip—which when set up and in working condition is virtually a solid undivided cylinder. Moreover, neither in a grip of the particular kind in question nor in any other cable-grip of which I have knowledge are the parts formed with a lateral recess in them along each edge of the embracing or grasping surface.

To enable those skilled in the art to make and use my invention, I now proceed to describe it more particularly by reference to the accompanying drawings, in which—

5 Figure 1 is a side elevation of the complete grip adjusted upon a cable and provided with a link or other usual connection. Fig. 2 is a section of Fig. 1—that is to say, in the plane of the joint between the two parts of the grip. From this figure the cable and link are omitted. Fig. 3 is a cross-section on line 3 3, Fig. 1. Fig. 4 is a cross-section similar in a general way to Fig. 3, but representing the parts as they appear after the parts of the grip have been placed and adjusted upon the cable, but before they have been drawn together by the clamping or binding nuts. Fig. 5 is an inner face view of one of the two sections of a modified form of grip.

20 The two parts or sections A B of the grip may be formed by casting or by drop-forging, as above stated. Each part is a counterpart of the other, so that a description of one will answer for both.

25 Each grip-section is preferably of the dimensions of a semicircle, or thereabout, in cross-section. About one-third of its inner surface midway between its two longitudinal edges is cast or otherwise formed with grooves which match and fit upon the strands of the cable X, this surface being represented at *a*, and beyond this surface at each edge a longitudinal recess *b* is formed in the inner surface of the section to bound the surface *a*. 30 The edges or shoulders of these recesses next to the surface *a* are preferably rounded, as seen at *b'*, this being to prevent what would otherwise be a sharp edge from biting upon the cable and preventing it from spreading freely laterally into the recesses *b* when the two grip-sections are drawn together. The two parts or sections of the grip when adjusted upon the cable are drawn together by tapering nuts N, and they are accordingly provided upon their exterior with correspondingly-tapering screw-threaded seats *s s* for these nuts.

In the preferred embodiment of my invention the extreme rear end or base *c* of each section is formed with a flat face, which when the grip is adjusted on the cable meets or abuts against the corresponding flat face of the base *c* of the other section, the two being held solidly together by a bolt and nut *d e*, and between this portion of the grip and the adjoining nut N the two sections are so formed that when they are put together an eye *f* will be provided for reception of a link L or ring, hook, or other device for coupling the grip with any part to which it is to be connected. In lieu of this construction, however, a fastening—such as the bolt and nut *d e*—may be dispensed with and the rear ends of the two sections may each be formed with an eye *g*, as shown for one of the sections in Fig. 5.

These eyes coincide or register when the two parts of the grip are put together, and through the compound eye thus formed can be passed the link, hook, or other coupling device.

At the rear end of the cable-receiving opening in the two-part grip is an annular chamber *h*, which is slightly larger—say one-sixteenth inch larger—in diameter than the grip-opening referred to. If a wire rope is not served at the end, its strands will unlay or fly apart for a foot or two and the end can never be exactly relaid or brought to its original form. The serving which binds the end and which usually consists of wire or strong thread is therefore practically indispensable. As this serving (shown at *i*) increases the thickness of the extreme end of the cable, it becomes necessary to provide for its accommodation, and for this purpose the chamber *h* is intended.

The two parts of the grip are of such dimensions and proportions that when adjusted and fitted upon the end of the cable and before being clamped home thereon their adjoining edges will be about one-sixteenth of an inch apart. The parts in this position are shown in Fig. 4. Then by screwing the nuts home the two parts will gradually be drawn together until their edges meet. The cable by this operation will by compression be changed from circular to elliptical or slightly flattened form and will be caused to spread laterally into the recesses *b*. The parts in this condition are represented in Fig. 3.

Having now described my invention and the best way now known to me of carrying the same into effect, what I claim herein as new, and desire to secure by Letters Patent, is—

1. A two-part cable-grip having its two parts or sections formed each with a grasping-surface to fit upon the part of the cable with which it is brought into contact, and a longitudinal recess along each outer edge of said grasping-surface, substantially as hereinbefore set forth.

2. The two-part cable-grip consisting of the two substantially semicircular sections A B, provided each with an interior grasping-surface *a*, bounded by longitudinal recesses *b*, external tapering screw-threaded seats *s* to receive taper binding-nuts N, having bases *c*, with flat abutting faces held together by a bolt and nut or the like and formed so that when put together they will provide an eye *f*, substantially as and for the purpose hereinbefore set forth.

3. A two-part cable-grip the sections of which are each provided along each edge with an internal recess *b*, which bounds the grasping-surface of the section, substantially as hereinbefore set forth.

4. A two-part cable-grip provided with grasping-surfaces to fit upon the part of the cable with which they are brought in contact

and with a rear enlargement or chamber *h* to receive the served end of the cable, substantially as set forth.

5 5. A two-part cable-grip having sections provided each along each edge with an internal recess *b*, which bounds the grasping-surface of the sections, and having the rear enlargement or chamber *h* for receiving the

served end of the cable, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE F. ELLIOTT.

Witnesses:

J. W. AMBERMAN,
JAS. B. TROUSDALE.