

No. 624,327.

Patented May 2, 1899.

R. A. HAMMOND.  
SPRING SHACKLE AND OIL DISTRIBUTER.

(Application filed Apr. 5, 1898.)

(No Model.)

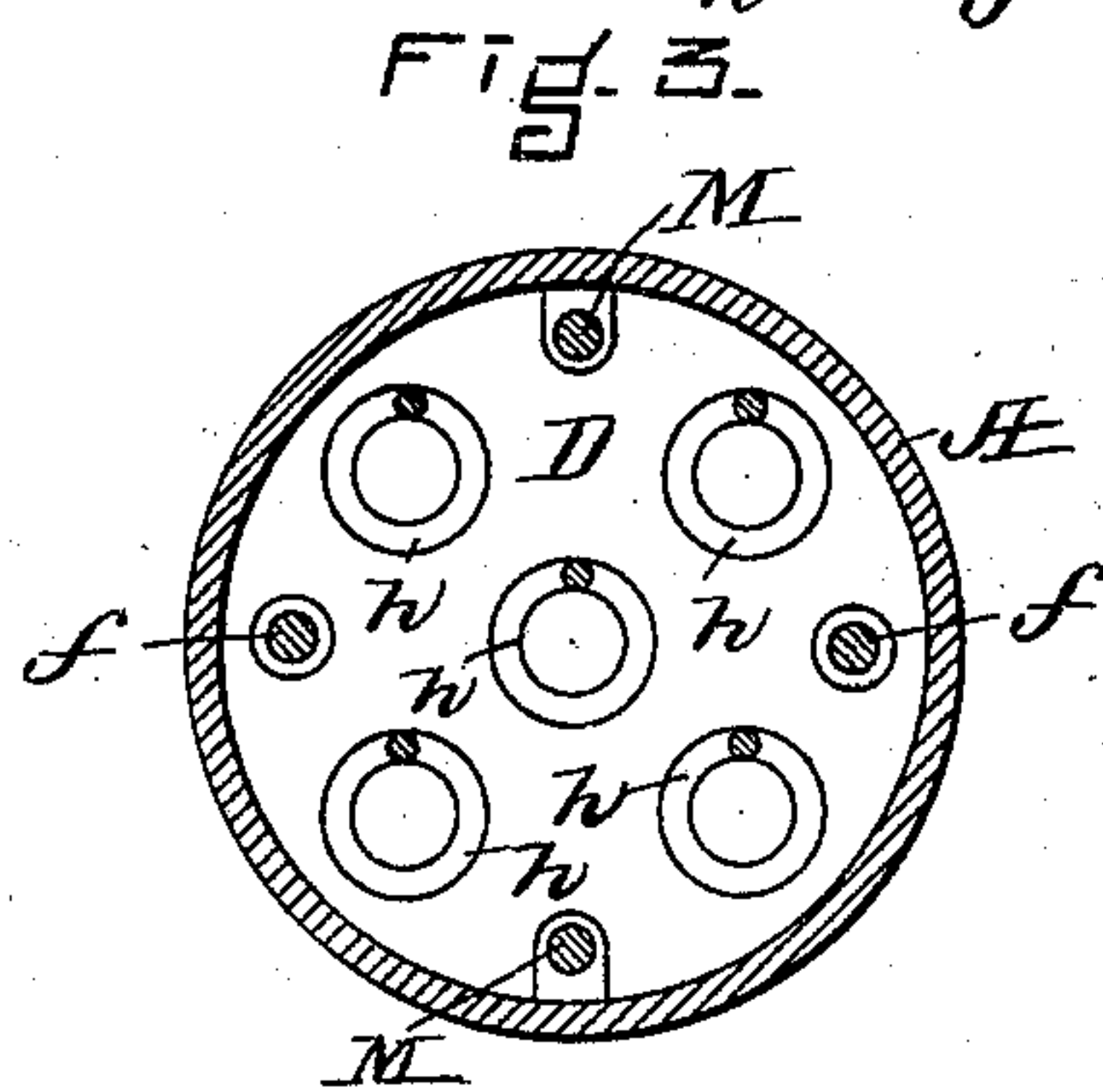
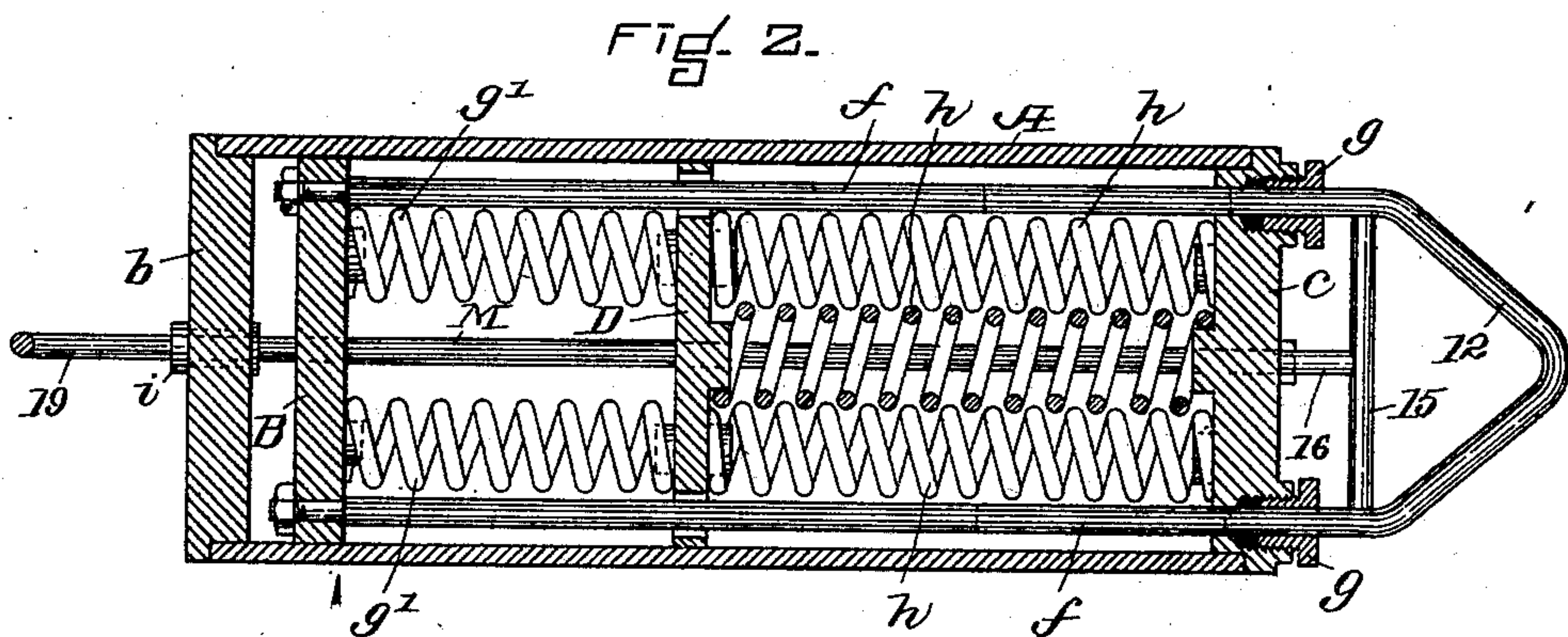
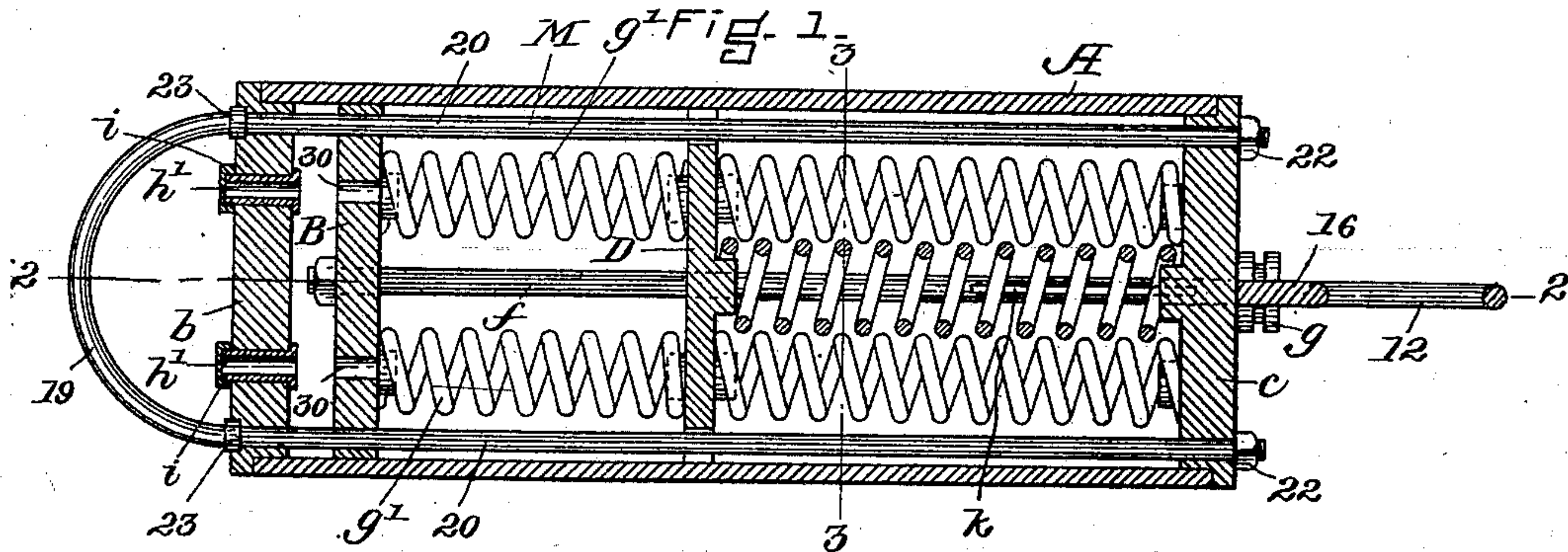


FIG. 4.

WITNESSES.

A. D. Grover.  
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# UNITED STATES PATENT OFFICE.

ROBERT A. HAMMOND, OF SANDWICH, MASSACHUSETTS, ASSIGNOR OF  
ONE-HALF TO GEORGE T. McLAUGHLIN, OF SAME PLACE.

## SPRING-SHACKLE AND OIL-DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 624,327, dated May 2, 1899.

Application filed April 5, 1898. Serial No. 676,580. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT A. HAMMOND, a citizen of the United States, residing at Sandwich, in the county of Barnstable and State of Massachusetts, have invented an Improved Combined Spring-Shackle and Oil-Distributor for Attachment to Anchor-Cables and Towing-Hawsers of Vessels, of which the following is a specification.

My invention has for its object to improve the construction of combined spring-shackles and oil-distributers for attachment to anchor-cables and towing-hawsers of vessels, and it also has for its object to provide a shackle which shall be simpler, stronger, and more effective in use, and capable of being attached directly to the ring of an anchor without the interposition of an auxiliary shackle, as has hitherto been necessary.

To this end my invention consists in certain novel features and details of construction, as hereinafter fully described, and specifically pointed out in the claim.

In the accompanying drawings, Figure 1 is a longitudinal section of my improved spring-shackle and oil-distributor. Fig. 2 is a longitudinal section on the line 2 2 of Fig. 1. Fig. 3 is a transverse section on the line 3 3 of Fig. 1. Fig. 4 is a perspective view of a portion of one of the draft-rods, showing the oil-carrying slot in the same.

Referring to the drawings, A represents a cylindrical casing preferably composed of steel and provided with removable heads *b c*, fitted to its opposite ends, as shown in Figs. 1 and 2.

Within the casing A is placed a heavy metallic disk or piston B, to which are secured by means of nuts 10 the two portions of a doubled steel draft-rod *f*, which slides through stuffing-boxes *g g* in the head *c*, the doubled portion 12 of said rod outside said head forming a means for the attachment of this end of the shackle to the cable, hawser, or other object. The outer ends of the two portions of the rod *f* are kept in parallelism under strain by means of a tie-bar 15, welded thereto, said tie-bar being provided with a projection 16,

which when the strain is relieved contacts with the cylinder-head *c* and serves as a stop to prevent the tie-bar from coming into contact with and injuring the glands of the stuffing-boxes *g*.

Within the casing A, about midway between the disk B and the head *c*, is placed a loose disk D, provided with apertures for the passage of the two portions of the rod *f*, on which it is free to slide.

M represents a steel draft-rod bent double to form a loop 19 and two branches or portions 20, which pass longitudinally through the head *b*, disks B and D, and the head *c*, being securely fastened to the latter by means of nuts 22, screwed onto their ends outside said head *c*, as shown in Fig. 1. The outer ends of the holes in the head *b* through which the two portions of the rod M pass are enlarged or countersunk, forming recesses for the reception of collars 23 on said rod, which are tightly drawn into said recesses, against the shoulders thereof, when the nuts 22 are screwed up, thus tightly closing the holes and preventing the passage of water therethrough into the cylinder.

When the shackle is to be attached to an anchor, it is merely necessary to remove the nuts 22 and withdraw the looped rod M from the casing A and pass one end directly through the ring of the anchor, so that it will lie within the loop 19, and then pass the two ends of said rod through the casing and again secure them in place by means of the nuts 22. By the employment of this removable doubled steel rod passed directly through the anchor-ring itself no auxiliary small shackle or connecting device is required, which additional shackle forms an element of danger on account of its liability of breaking under heavy strain. Furthermore, the doubled steel rod passing entirely through the casing and secured by nuts, as described, is entirely free from liability of breakage and renders the shackle perfectly safe under the heaviest strain to which it would ever be subjected and shortens the connection between the anchor and chain, thereby rendering it easy to



reach the anchor when taking it to the "cat-head" in rough weather, advantages which will be appreciated by all seafaring men.

Between the disks B and D are arranged a series of spiral springs  $g'$ , and between the disk D and the head  $c$  are placed a series of stiffer springs  $h$ , said two series of springs being compressed in succession when a sufficient strain is put upon the cable or hawser to which the shackle is attached, which causes the disk B to be drawn toward the head  $c$ , the strain on the cable or hawser being thus relieved and all liability avoided of its parting under a heavy strain produced by a sudden shock or by the lurch of a vessel in a heavy sea when at anchor or while being towed. The number of springs  $g'$  or  $h$  in each series may be varied as desired to produce more or less tension, according to the conditions under which the shackle is to be used. It is obvious that a single spiral spring may be used with good results; but I prefer to employ two series of springs separated from each other by a disk, as shown, and adapted to be brought into action in succession, as they afford a yielding resistance to any strain, however great, which might be put upon the shackle in a severe storm.

The interior of the cylindrical casing A forms a large chamber or reservoir for containing oil, which may be introduced through either one of a pair of short tubes  $h'$   $h'$ , extending through the head  $b$ , outside of which they are provided with a removable screw-cap  $i$ . One of these tubes  $h'$  serves as a vent for the escape of the air while the cylinder is being filled through the other tube, and either tube may serve as an outlet through which the cylinder may be emptied when required of any water or oil contained therein. Each of the two portions of the draft-rod  $f$  is provided at its rear end with a slot  $k$ , extending entirely through it, as shown in Fig. 4, which will contain a quantity of oil, which as the rod is drawn out against the resistance of the springs is carried through the stuffing-box  $g$  and discharged by the pressure of the water outside the head  $c$  into the sea, when it will distribute itself over the surface of the water, and thus prevent the breakage of heavy seas over the vessel in a well-known manner. As the rod  $f$  is drawn back its slots  $k$  will carry back water into the casing, which will cause the oil to rise to the upper portion of the draft-rod  $f$  when the shackle lies in a horizontal position, as will generally be the case when attached to an anchor, and consequently one portion or the other of the draft-rod, according to position of the shackle, will always take oil out of the casing as long as any remains therein.

The disk or piston B is provided with one or more apertures 30, through which the oil may pass into the end of the cylinder when said piston is moved by the draft-rod  $f$  toward the head  $c$  against the resistance of the springs,

the oil passing freely back in the opposite direction through said apertures when the piston is returned to its normal position by the action of the springs. If, however, the diameter of the piston is made sufficiently less than that of the bore of the cylinder, the apertures 30 may be dispensed with. The openings in the disk D for the passage of the rods  $f$  and M are also enlarged for a similar purpose.

It is obvious that no discharge of oil will be required under a slight compression only of the springs when a vessel is at anchor or being towed and the sea is comparatively calm. Hence the oil-slots  $k$  are so arranged that the ends of the same which are nearest to the head  $c$  will not be carried through the stuffing-boxes until the springs have been compressed to some little extent by a strong draft or pull upon the cable or hawser, and as the strain is increased and the doubled draft-rod is pulled out still farther the slots will be drawn through the stuffing-boxes and the discharge of oil increased in proportion to the distance to which the rod  $f$  is pulled out by the strain to which the shackle is subjected. The slots may, however, be arranged to discharge the oil under any desired degree of compression of the springs, and as soon as the force of the draft is reduced the two portions of the rod  $f$  will be drawn back by the springs, bringing the slots  $k$  again within the oil-reservoir, when they will act as before to discharge the oil when the rod is again drawn out by the strain upon the cable or hawser connected therewith.

The head  $c$  is held in place upon the end of the casing A by the nuts 22, screwed onto the ends of the draft-rod M, which project through said head, and the head  $b$  is held against the opposite end of the casing by the collars 23 of said rod M when drawn up tightly against said head by the nuts 22. Consequently the operation of taking the shackle apart for the purpose of changing the springs or attaching it to an anchor is rendered exceedingly simple, so that it can be done on board a vessel without the employment of skilled labor.

What I claim as my invention, and desire to secure by Letters Patent, is—

A spring connecting-shackle for anchor-cables, towing-hawsers, &c., comprising a cylindrical casing having removable heads or ends, said casing forming a chamber or reservoir for containing oil, a disk or piston movable within said casing, one or more springs placed within the oil-chamber between the piston and the opposite head of the casing, a doubled draft-rod secured to said disk or piston and sliding through one of the heads of the casing, outside of which it forms a means for attachment to a cable or hawser, and a draft-rod bent double to form a loop outside the opposite head of the casing and having its two branches or portions extend-



ing through said casing and secured outside  
the other head of the same by means of nuts,  
whereby it is made removable to enable it to  
be looped into and directly attached to the  
5 ring of an anchor without an intermediate  
shackle or connecting device, substantially  
as described.

Witness my hand this 29th day of March,  
A. D. 1898.

ROBERT A. HAMMOND.

In presence of—

P. E. TESCHEMACHER,  
LOUISE A. CHACE.