

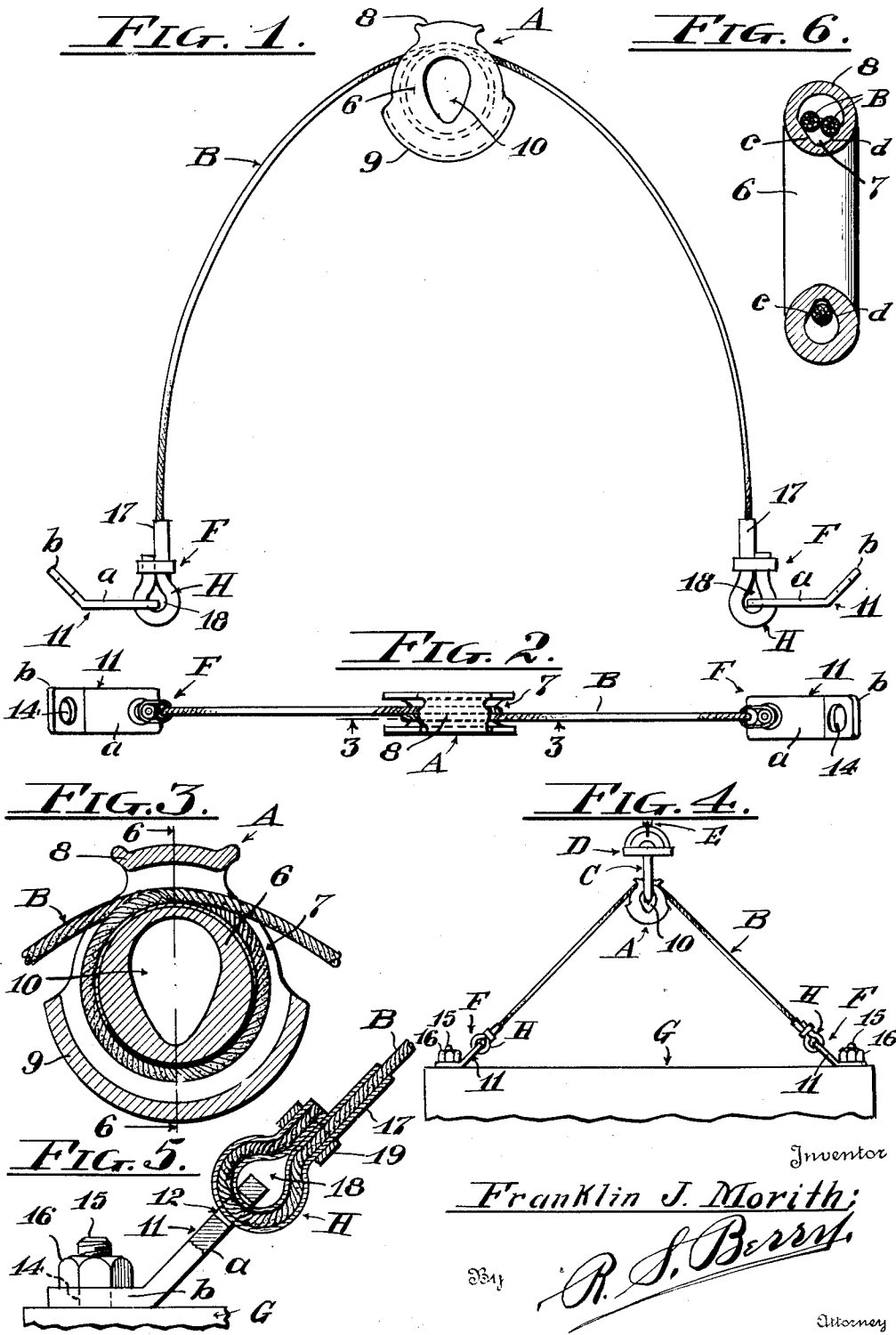
Dec. 2, 1952

F. J. MORITH

2,620,218

LIFT

Filed Nov. 10, 1948



Inventor

Franklin J. Morith;

R. S. Berry

Attorney

UNITED STATES PATENT OFFICE

2,620,218

LIFT

Franklin J. Morith, Bell, Calif.

Application November 10, 1948, Serial No. 59,336

3 Claims. (Cl. 294-78)

1

This invention relates to a lift and has as its primary object the provision of a lift attachment for hoists which is especially applicable for use in lifting heavy bodies such as engine blocks and the like.

Another object is to provide a lift embodying a length of flexible cable adapted to be readily attached to an engine block or the like, and which cable is also equipped with a grip adapted to be supported by the grappling hook of a hoist or the like, in which the grip is so formed as to effect gripping engagement with the cable on a load being imposed on the ends of the cable with a lifting pull imparted to the grip, so as to prevent relative movement of the grip and cable during operation of the lift.

Another object is to provide a one-piece grip thereby eliminating relatively moveable parts therein and thus rendering the grip highly durable and free of members that can get out of order.

With the foregoing objects in view, together with such other objects and advantages as may subsequently appear, the invention resides in the parts and in the combination, construction and arrangement of parts hereinafter described and claimed, and illustrated by way of example in the accompanying drawing, in which:

Fig. 1 is a view of the lift as seen in front elevation;

Fig. 2 is a plan view of same;

Fig. 3 is an enlarged sectional view taken on line 3-3 of Fig. 2;

Fig. 4 is a view in front elevation showing the lift as applied;

Fig. 5 is a detail in section and elevation showing the means for attaching the cable ends to an engine block;

Fig. 6 is a sectional view taken on the line 6-6 of Fig. 3.

Referring to the drawing more specifically A indicates generally a grip which embodies an annulus 6 in the outer periphery of which is formed throughout with a continuous groove 7 and around which is wound the intermediate portion of a cable B which lies in the groove 7; a single coil of the cable completely encircling the annulus 6 with the end portions of the cable passing alongside each other at the upper portion of the annulus and extending tangentially from the latter in opposite directions relative to each other. The groove 7 thus extends throughout 360 degrees of the annulus, and the cable B encircles the annulus for at least 360 degrees, in the groove, thus affording a wedging action

2

between the cable and the side walls of the groove beginning at the point where the cable completes encirclement of the annulus.

As a means for preventing the cable B from becoming disengaged from the annulus 6 and also guard against the fingers of an operator being caught between the coil of the cable and the annulus, guard walls 8 and 9 are formed on the grip connecting the side walls of the groove 7; the guard wall 8 overlying the upper portion of the groove and the guard wall 9 underlying the major part of the lower portion of the groove. The guard walls 8 and 9 are spaced from the bottom of the groove 7 such distance as to afford ample clearance between the inner faces thereof and the cable B whereby the coil of the latter around the annulus 6 may have sufficient slack therein to permit shifting of the grip one way or the other longitudinally of the cable when the cable is free or no load imposed on the ends thereof.

The opening 10 of the annulus is preferably oval in outline with the large portion thereof extended uppermost which affords an increased wall thickness in the annulus below the center thereof which with the material composing the guard wall 9 renders the lower portion of the grip of greater weight than the upper portion thereof so that when suspended it will normally hang with the portion of the annulus crossed by the cable uppermost. The opening of the annulus 10 is designed to receive a hook C carried by a swivel D on the chain or cable E of a hoist or any other connection by which the grip may be suspended.

The ends of the cable B are each fitted with a suitable connector F for attachment to an engine block G or the like, each of which connectors is here shown as comprising an angle link 11 having one end portion *a* thereof formed with an opening 12 which is engaged by a loop H provided on the end of the cable and the other end portion *b* of which is formed with an opening 14 adapted to receive a stud bolt 15 carried on the block G; the bolt 15 being fitted with a nut 16 for clamping the end portion *b* of the link 11 against the block G.

The loop H on the cable B is formed of a length of tubing 17 through which the end portion of the cable B is passed; the tubing being swaged at its ends into tight engagement with the cable and then bent and returned upon itself after being passed through the opening 12 of the link 11 to form an eye 18 through which the end *a* of the link 11 extends. The end portions of the

3

tube 17 are disposed in overlying abutting relation to each other and are tightly secured together by a clamping ring 19. The cable B is thus securely gripped in the tube 17 so as to preclude its being withdrawn therefrom under loads to which the cable B may be subjected and is capable of carrying.

The grip A is formed in one piece of cast metal, such as brass, iron, aluminum, etc. and the cable B is formed of twisted steel wire, while the angle links 11 of the connectors F and tubes 17 are formed of metals capable of withstanding stresses imposed thereon.

The groove 7 is preferably formed with side walls *c* and *d* which diverge from the bottom of the groove whereby a wedge shape cross section is imparted thereto; the walls *c* and *d* being spaced apart at their inner portions a distance less than the diameter of the cable B so that the cable will abut against the grooves side walls in wedge engagement therewith when drawn taut around the annulus as shown in Fig. 6 thus effecting such frictional engagement with the walls of the groove as to hold the cable and annulus against slipping relative to each other under loads imposed thereon.

In the operation of the invention the connectors F are attached to the engine block G or other body to be lifted by engaging the outer ends *b* thereof to the stud bolts 15 as shown in Fig. 5. The grip A connected to a hoist either before or after attachment of the connectors F to the block G is positioned at any desired point on the cable B by shifting it longitudinally of the latter if need be when the cable is slack and the portion thereof looped around the annulus 6 is loose in the groove 7; this shifting of the grip along the cable being facilitated by reason of the cable having sufficient rigidity or stiffness that its looped or coiled portion encompassing the annulus will be normally loose in the groove 7 thus offering little resistance to movement of the grip along the cable when it is slack.

When the grip is disposed at the desired position on the cable an outward pull is imparted thereto whereby the coiled portion of the cable will be drawn taut around the annulus in gripping engagement therewith.

The load imposed on the cable will exert equal pulls on the lengths thereof leading from the grip thereby drawing the loop of the cable into such tight engagement with the annulus 6 as to then prevent shifting of the grip along the cable irrespective of the length of cable leading from either side of the grip.

It will be seen from the foregoing that the load may be lifted and suspended from the ends of a length of cable with the latter connected to a hoist at any desired point in the length thereof through the grip A; the cable being securely held against slipping relative to the grip A by reason of its being drawn taut and wedged between the inner inclined walls *c-d* of the groove 7 and also by frictional interengagement of the abutting portions of the cable crossing the upper portion of the grip as shown in Fig. 6 and indicated in Fig. 3.

I claim:

1. In a lift embodying a cable, having free ends, means for attaching the ends of the cable to an object to be lifted, and means providing a

4

supporting connection between the cable and a hoist; a one piece annular grip embodied and immovably fixed relative to said supporting connection having a peripheral groove of wedge shaped cross section at the bottom thereof, around which grip said cable is coiled and in which groove said cable will be gripped and held against sliding relative to said grip on opposed pulls being imposed on said grip and the ends of said cable; said groove extending throughout 360 degrees of the grip and said cable encircling the grip in said groove for at least 360 degrees to afford a wedging action between the cable and grip beginning at the point where the cable completes encirclement of the grip.

2. A grip for a lift comprising a one piece annulus formed with a peripheral groove having a bottom portion of wedge shaped cross section, said annulus having a hook receiving opening whereby it may be engaged and suspended by a supporting hook and a wire cable encircling said annulus in said groove adapted to have wedge engagement with the bottom portion of said groove on a pull being imparted to the end portions of the cable in opposition to said grip; said groove extending throughout 360 degrees of the annulus and said cable encircling the annulus for at least 360 degrees in said groove to afford a wedging action between the cable and annulus beginning at the point where the cable completes encirclement of the annulus.

3. A grip for a lift comprising a one piece annulus formed with a peripheral wire receiving groove and having a hook receiving opening whereby it may be engaged and suspended by a supporting hook and held against rotation thereon, a wire cable encircling said annulus in said groove and adapted to be gripped against longitudinal movement therein, load engaging and supporting means on the ends of said cable, the opening in said annulus being oval in outline with the large portion thereof upwardly extended when the grip is in use, separate guard walls overlying the opposed uppermost and lowermost portions of the wire receiving groove; the lower portion of said annulus having greater weight than the upper portion thereof; said groove extending throughout 360 degrees of the annulus and said cable encircling the annulus for at least 360 degrees in said groove to afford a wedging action between the cable and annulus beginning at the point where the cable completes encirclement of the annulus.

FRANKLIN J. MORRIS.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,020,306	Fitch	Nov. 12, 1935
2,356,146	Caldwell	Aug. 22, 1944
2,356,147	Caldwell	Aug. 22, 1944
2,436,247	Bufflop	Feb. 17, 1948
2,463,240	Caldwell	Mar. 1, 1949

FOREIGN PATENTS

Number	Country	Date
48,585	Norway	Oct. 20, 1930