W. C. F. ZIMMERMAN.

COUPLING.

APPLICATION FILED APR. 3, 1909.

947,466. Patented Jan. 25, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

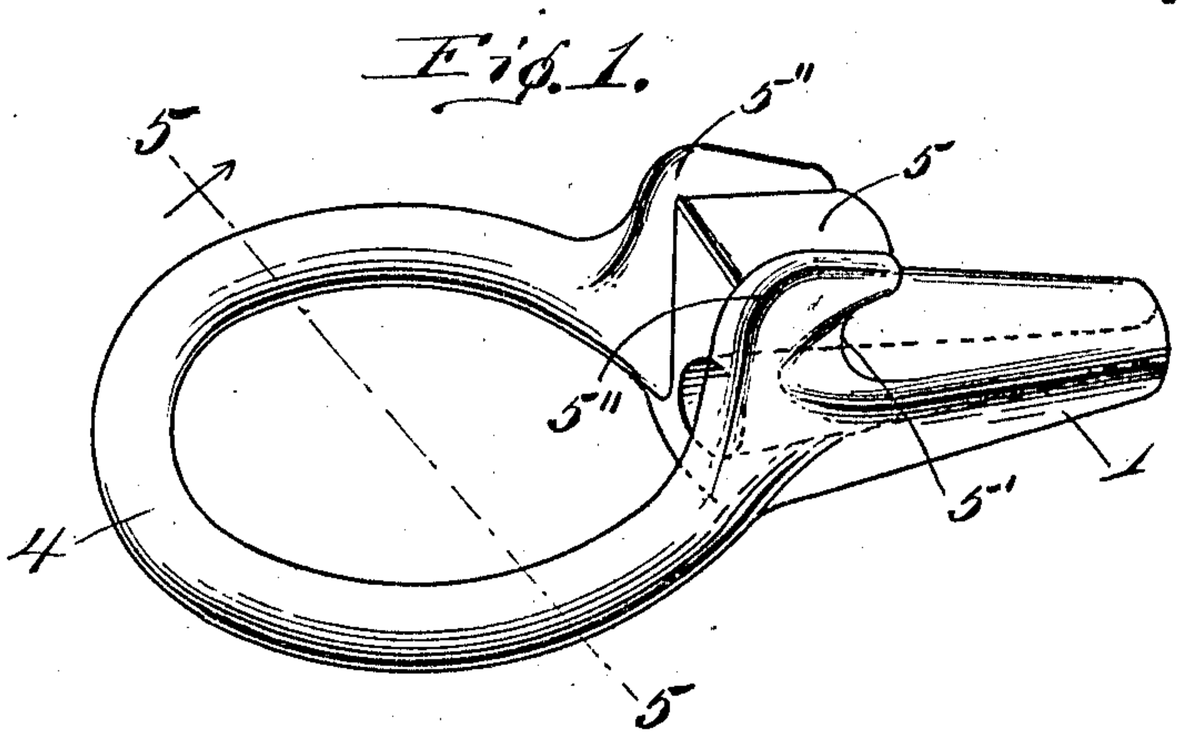


Fig. 2.

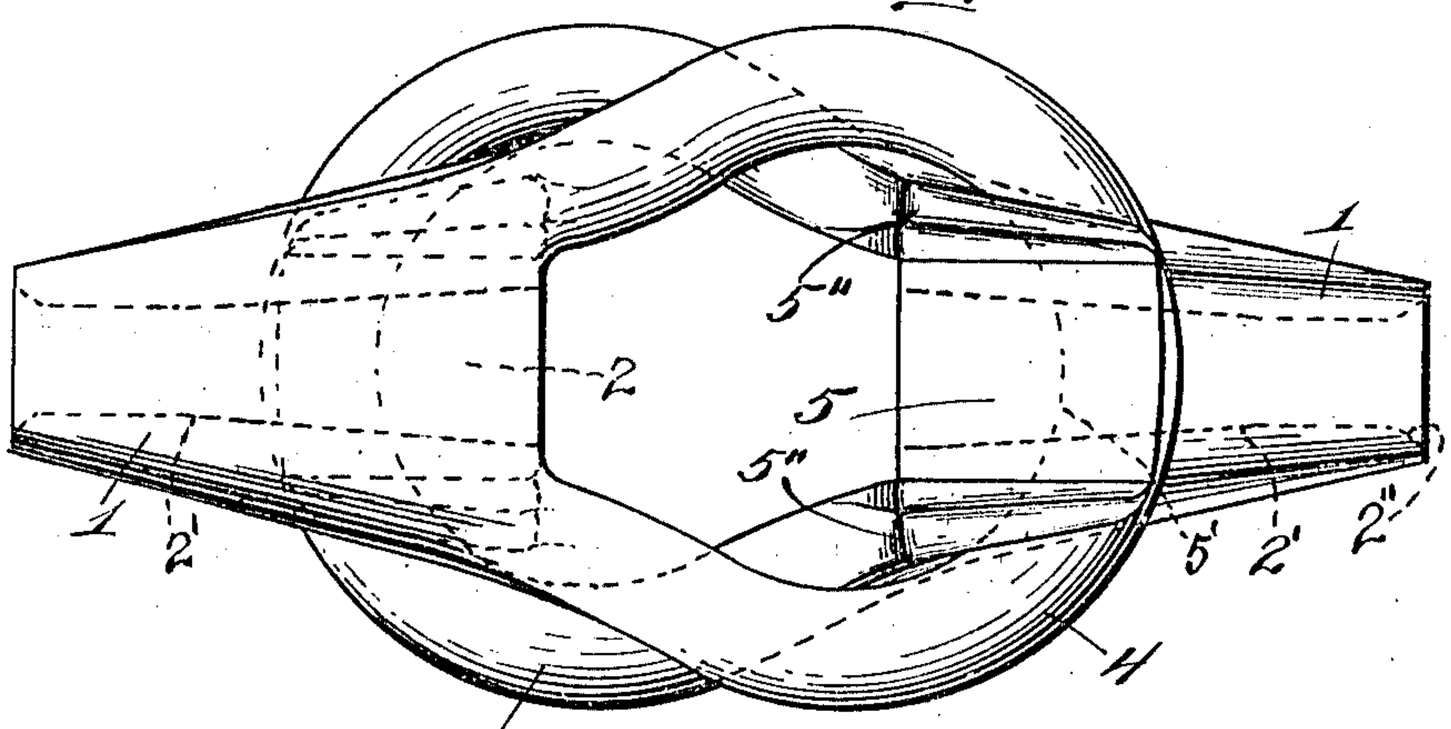
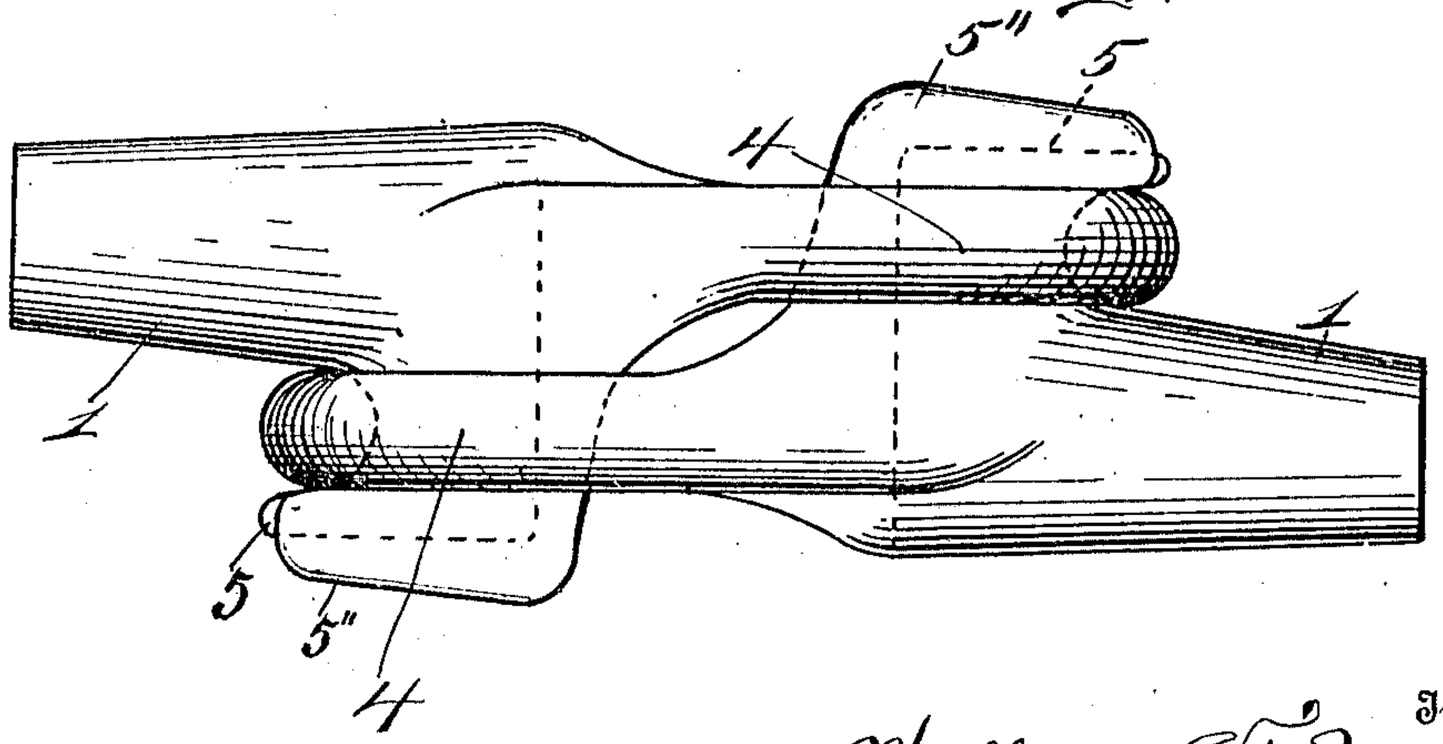


Fig. 3.



Witnesses

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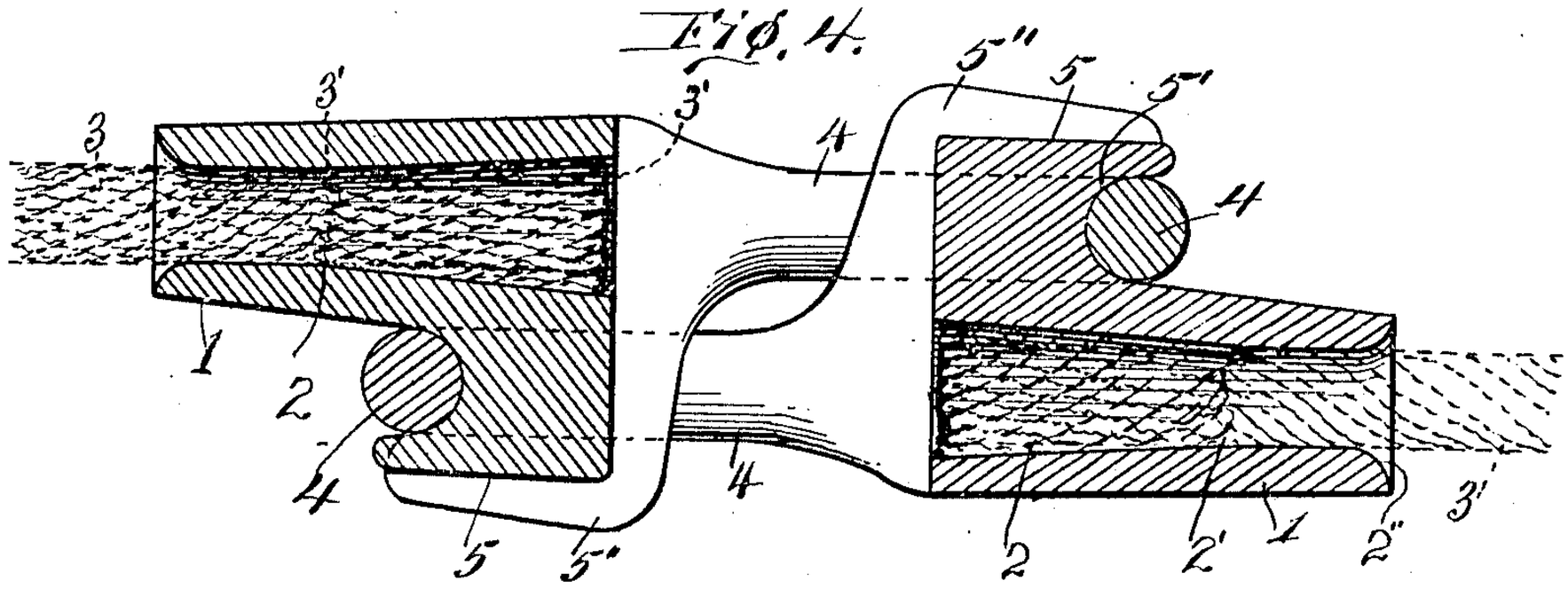
2 SHEETS—SHEET 2.

Fig. 4.



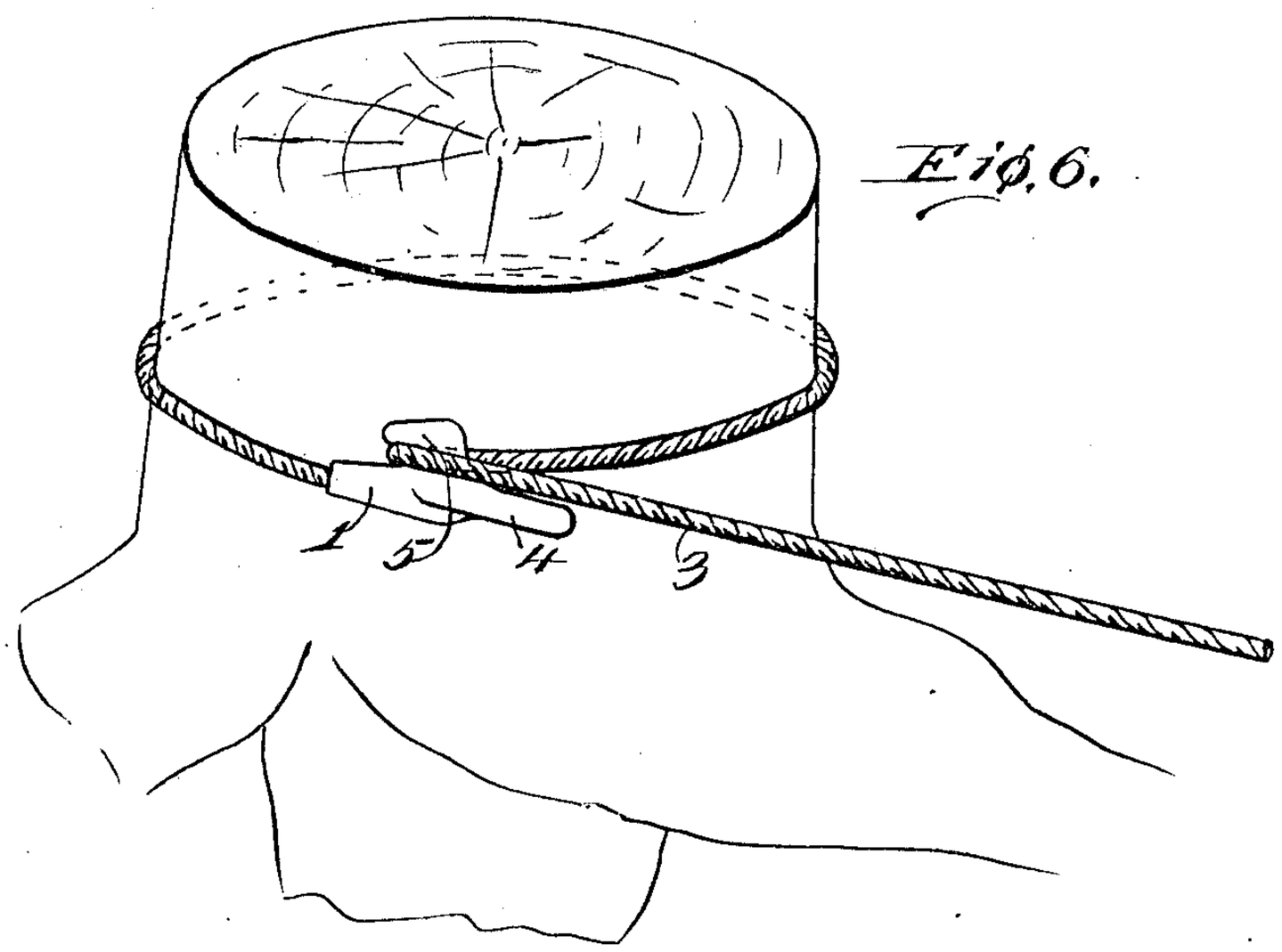


Fig. 6.

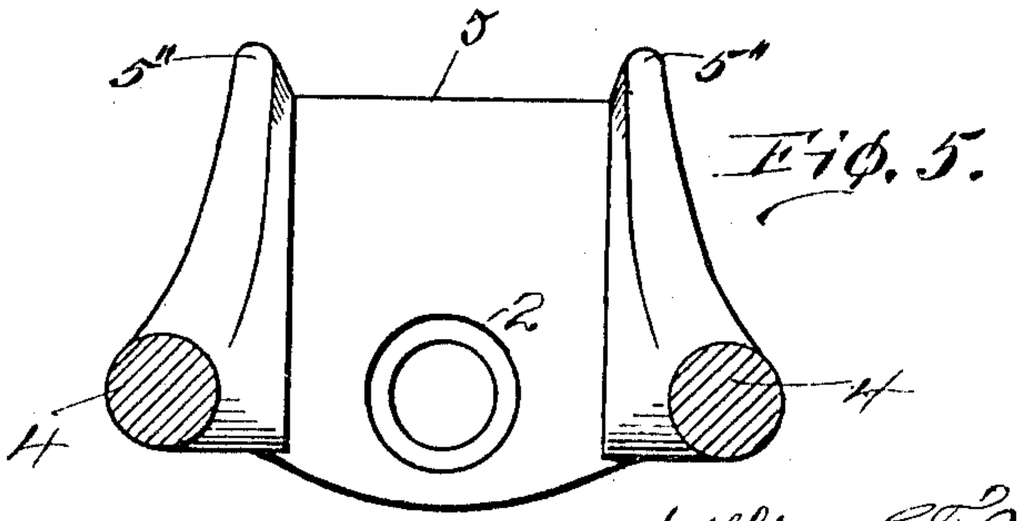


Fig. 5.

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UNITED STATES PATENT OFFICE.

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COUPLING.

947,466. Specification of Letters Patent. Patented Jan. 25, 1910.

Application filed April 3, 1909. Serial No. 487,791.

To all whom it may concern:

Be it known that I, WILLIAM C. F. ZIMMERMAN, a citizen of the United States, residing at Lone Tree, in the county of Johnson and State of Iowa, have invented certain new and useful Improvements in Couplings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in cable couplings and particularly to such as are especially adapted for stump pulling apparatus.

The object in view is the production of a "universal" coupling, that is a coupling made up of duplicate members either of which is adapted to couple with any other like member.

A further object in view is the provision of coupling means for cables free from clevises or coupling pins.

With these and further objects in view, as in part will hereinafter be set forth and in part become obvious, the invention comprises certain novel constructions, combinations and arrangements of parts as hereinafter disclosed and claimed.

In the accompanying drawing:—Figure 1 is a perspective view of one member of a coupling embodying the features of the present invention. Fig. 2 is a top plan view of the complete coupling. Fig. 3 is an edge view thereof. Fig. 4 is a longitudinal vertical central section therethrough. Fig. 5 is a transverse vertical section taken on the plane indicated by line 5—5 of Fig. 1 and looking in the direction indicated by the arrow. Fig. 6 is a detail view illustrating a valuable utility of one coupling member.

It has been common particularly in the stump pulling art to provide coupling ends for cables having either the form of a hook or an eye or a clevis, but such couplings have always required the use of some form of coupling pin frequently affording a source of annoyances by becoming broken, bent or lost, and in these old types of couplings the coupling member at one end of a piece of cable is male while at the other end the member is female, so that only the male and female could be conveniently coupled, and if circumstances arose making it desirable to unite two like coupling members such union is found either difficult or impossible, only the unlike or male and female members being adapted to couple with facility. All these difficulties I propose to overcome by the provision of a coupling member which is complete in itself and universal in its action so that it will couple with any duplicate coupling member.

In carrying out a practical embodiment of the present invention, I propose to utilize a structure, such for instance as is illustrated in the accompanying drawings, in which—

1 indicates a cable receiving sleeve, which is preferably formed with a forwardly flaring bore 2, that is to say bore 2 tapers from its forward end to approximately the point indicated at 2′, from whence it may be straight for a portion of its length, and then near the rear end the bore again flares and is formed with a rounded annular edge 2″ or bell mouth, instead of the otherwise sharp annular corner. The bell mouth 2 is rounded outwardly, that is longitudinally of the bore, and is annular transversely of the bore. The cable 3, which is usually of metal strands, has its end extended into the bore 2, and the several strands are spread and independently bent or folded back upon themselves, after the manner indicated in dotted lines at 3′ in Fig. 4, the space between the ends of the strands being filled with lead or other suitable filling. Thus a very strong connection is made between the end of the cable 3 and the sleeve of the coupling member. When cable 3 is passed about a small stump, the cable must often extend at an abrupt angle to the longitudinal axis of sleeve 1, and the rounded portion of shoulder 2″ then serves as a smooth bearing, and obviates cutting or parting of the cable as would be liable to result from the use of a square corner or abrupt end to bore 2. Also in handling the cable the bell mouth 2″ prevents cutting or wear upon the cable, such as would be caused by an annular corner. Bell mouth 2″ also facilitates the insertion of the cable end into bore 2 in the first instance when connecting a cable and coupling member.

Extending forwardly from the sleeve 1 is a coupling eye or loop 4, and extending up-

wardly and rearwardly from the front end of the sleeve 1 is a coupling hook 5, the hook 5 rising at the point of the terminal portions or juncture of the loop or eye 4 with the sleeve 1. Hook 5 is formed with a rearwardly opening, longitudinally parti-circular, transversely concave recess 5′ adapted to receive a cable or other engaging means, and also shaped and dimensioned to snugly receive the loop or eye of a duplicate coupling member, the loop or eye 4 being preferably cylindrical, that is circular in cross section, and thus corresponding to the shape of the cable 3. The hook 5 may be of various shapes, but is of the size adapted to readily enter the loop or eye of a duplicate coupling member, and the main portion of the hook 5 may be strengthened if desired by strengthening beads or ribs 5″ which rise from the terminals of the loop 4 at the opposite edges of the hook 5 and extend rearwardly along the hook to the rear end thereof.

In operation, the coupling will consist of two coupling members, and as each will be an exact duplicate of the other, the same description and reference numerals apply equally to both.

A coupling member is secured to each end of a section of cable, and if that section of cable is to be coupled with a similar section, the coupling member of one end of one cable is simply placed over the coupling member of the other end of the other cable, and the hook 5 of each coupling member is passed through and into engagement with the eye or loop of the other coupling member as indicated in Figs. 2, 3, and 4. No coupling pin or other auxiliary securing means is required, and the cables are firmly retained in the coupled condition until detached by having the coupling members moved independently in opposite directions, that is in a direction for causing the sleeves 1 of the coupling members to approach each other, and then being moved bodily laterally for separating the respective hooks from the corresponding loops The coupling action of course is a converse movement to this, and consists first in inserting the hooks in the loops and then drawing the loops into the recess 5′ of the hooks.

It is of course frequently desirable to hitch a portion of a cable to one of its own coupling members, as indicated in Fig. 6, and to do so only requires cable 3 to be passed about hook 5 within recess 5′, and the parts will be firmly held while kept taut.

It is to be noted that in positioning the parts as seen in Fig. 6, and also in adjusting, transporting, and otherwise positioning cable 3, loop 4 offers an excellent hand hold or grip.

What I claim is:—

1. A cable coupling member, comprising cable engaging means, an eye and a hook extending therefrom, the hook and eye being positioned and dimensioned for enabling the hook to be engaged by the eye of a duplicate coupling member, and the eye to be engaged by the hook of said member.

2. A cable coupling member, comprising an eye and a hook connected therewith, and positioned and dimensioned relative thereto for readily detachably engaging the eye of a duplicate coupling member.

3. In combination, duplicate coupling members each comprising an eye, and a hook each hook being dimensioned and positioned for detachably engaging the eye of the other member.

4. In combination, duplicate coupling members each comprising an eye, and a projection extending at an angle thereto, and dimensioned, and adapted to project through the eye of the other member for detachably connecting the members together.

5. A coupling member, comprising an eye having a longitudinal parti-circular, transversely circular portion, and a hook extending from said eye and of less dimensions transversely than the cross-sectional area of the opening in the eye, said hook having a recess longitudinally parti-circular and transversely concave, and adapted to receive the eye of a duplicate coupling.

6. A coupling member, comprising a cable engaging portion, an eye extending forwardly therefrom, and a hook projecting laterally from said cable engaging portion, and of less transverse dimension than the cross-sectional area of the space inclosed by the eye.

7. A cable coupling, comprising a cable receiving sleeve, an eye extending from said sleeve, and a hook having its main body portion extending substantially at right angles to the planes of the eye, and dimensioned to removably extend through and engage the eye of a duplicate coupling member.

8. A cable coupling member, comprising a cable receiving sleeve, an eye projecting forwardly therefrom, a hook extending bodily substantially at right angles to the planes of the eye, and strengthening ribs extending from the eye upwardly and along the sides of the hook, said hook with its strengthening ribs being dimensioned to removably pass through and engage the eye of a duplicate coupling member.

9. A coupling member, comprising an eye, and a hook projecting bodily at an angle to the eye and facing in an opposite direction from the extent of the eye away from the hook, said hook being dimensioned to removably pass through and engage the eye of a duplicate coupling member.

10. A cable coupling, comprising a cable receiving sleeve, an eye projecting therefrom away from the terminus of the cable, a hook disposed with its hook portion extending to-

ward the cable, the hook being dimensioned to pass through and detachably engage the eye of a duplicate coupling member.

11. In a cable coupling, the combination of coupling members detachably lapping each other, and each comprising a hook, and a loop extending therefrom about the hook of the other coupling.

12. A cable coupling member comprising an eye, a cable engaging means, and a hook dimensioned and positioned for extending into and engaging the corresponding eye of a like coupling member, the said hook being adapted to be engaged by a cable, the eye being positioned for offering a convenient hand hold when the hook is engaged by a cable.

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

WILLIAM C. F. ZIMMERMAN.

Witnesses:
ROSY E. BULECHEK,
GRACE LORING.