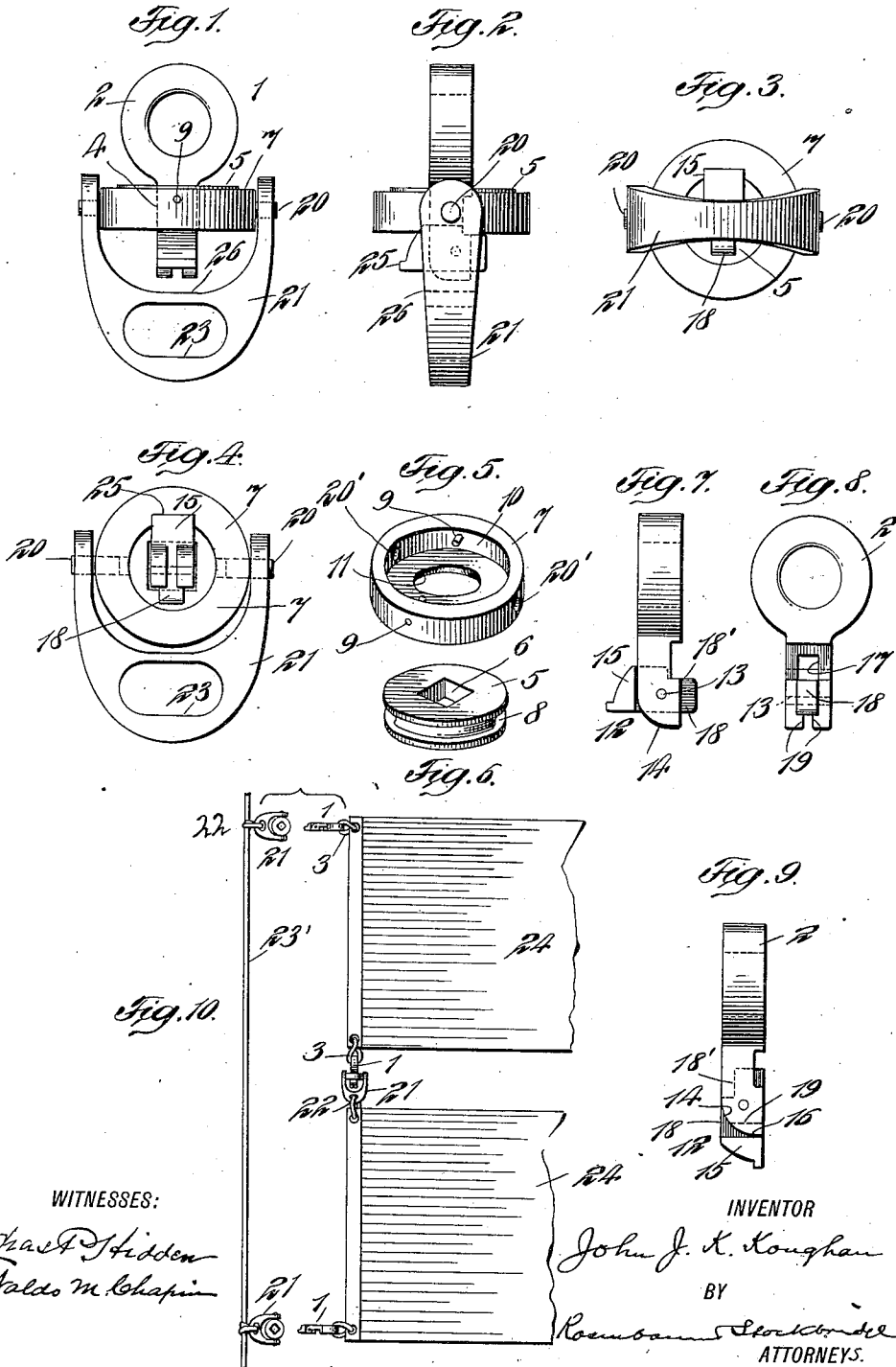


J. J. K. KOUGHAN.
CONNECTING DEVICE.
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1,055,641.

Patented Mar. 11, 1913.



WITNESSES:

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CONNECTING DEVICE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN J. K. KOUGHAN, a citizen of the United States, residing at South Berkeley, in the county of Alameda and State of California, have invented certain new and useful Improvements in Connecting Devices, of which the following is a full, clear, and exact description.

This invention relates to connecting devices, and more particularly to a novel appliance for connecting signal flags together and to the halyards which are used to support such flags.

My invention has for one of its objects the provision of means whereby signal flags, and the like, may be more expeditiously connected one to the other, or to suitable supporting means for the same; said means further facilitating the disentanglement and untwisting of such articles by the mere action of air currents thereagainst, after they have been elevated into position. In practice it is found that frequently considerable delay is occasioned in running up signals owing to the fact that the flags twist more or less with respect to each other, or become snarled, so that the signals are not clearly readable; this twisting action occurring principally when said flags are being hoisted and often necessitating their being lowered, untwisted and again hoisted. The formation of knots in the connecting cords, or like securing means, also consumes considerable time, so that the provision of some efficient connecting appliance of the type in question has today become almost a necessity.

The objects of my invention above referred to, and others, will be hereinafter set forth and more particularly pointed out in the appended claims.

In the drawings which form a part hereof and in which like reference characters designate like parts throughout the several views: Figure 1 is a front elevation of one form of my improved connecting device, the parts being shown in assembled relationship. Fig. 2 is a side elevation of the same. Fig. 3 is a bottom view. Fig. 4 is a view from below, the yoke-shaped element being swiveled into a position where the locking element is accessible. Fig. 5 is a perspective detail of the socket frame. Fig. 6 is a

perspective detail of the socket. Fig. 7 is a side elevation of the stud member with its attached locking element. Fig. 8 is a rear elevation of the same. Fig. 9 is a side elevation of said stud member with the locking element disposed in position for insertion into the socket. Fig. 10 is a view showing two flags fastened together by my novel connecting device, and a section of a halyard disposed adjacent thereto, ready for the flags to be coupled to said section.

Referring to Fig. 1 it will be seen that two members are provided which are respectively adapted to be connected to the articles to be coupled together. The upper of these elements, broadly designated 1, comprises an eye 2 which may be permanently attached to an article by wire 3, or the like, as shown in Fig. 10. A stud 4 depends from the eye 2 and is adapted for insertion into a socket 5; the stud and the socket aperture therefor being both, preferably, square in section. The socket 5 is preferably mounted in a socket frame 7 in such manner as to be freely rotatable therein; the socket in the exemplification shown being substantially disk-shaped and having a groove 8 therearound for the reception of pins 9, in the walls of the frame 7; said pins projecting into the frame recess 10 which receives the socket. The frame has also a centrally located opening 11 therein through which the stud 4 may be inserted into the socket. Mounted upon the outer extremity of stud 4 is a locking part or element broadly designated 12. I prefer to pivotally connect this locking element to the lower extremity of the stud as at 13; the nose of the stud being rounded on one side as at 14 to permit of free rotation of the locking element about its pivotal axis through an angle of substantially 90°. Laterally directed lugs 15, carried by the element 12, are adapted for engagement with one side of the stud, as shown in Fig. 7, to limit clockwise rotation of the locking element, as viewed in said figure, the same lugs correspondingly engaging the tip of the nose of the stud and limiting movement in the other direction, as shown in Fig. 9. The stud is preferably slotted as at 17 for the reception of the body of this locking element, and I also prefer to

provide inwardly directed lips 19 at the extremity of the stud which serve to relieve the strain upon the pivotal pin 13.

The socket frame 7 is preferably mounted upon trunnions 20, which are journaled in the respective arms of a yoke-shaped member, designated 21; the trunnion pins being driven into holes 20' in the frame 7, after the parts have been assembled. The yoke 21 is adapted to be correspondingly attached or secured to a flag, halyard, or other article to be connected, as by means of wire or cord 22, in corresponding fashion to the element 1; being apertured as at 23 for the reception of such cords or wires.

The operation of the device is substantially as follows: A plurality of the elements 21, for example, may be secured, in any suitable manner, at spaced intervals along a halyard 23'. An element 1 is correspondingly secured to one corner of a signal flag 24. It is obvious, of course, that the other corner upon the same end of this flag may be provided with either an element 21 or an element 1, so long as the corner of the adjacent flag be provided with an element of the opposite type, if the flags are to be directly connected together. In this instance the lower corner of the upper flag has been provided with a stud element 1, and the upper corner of the lower flag is correspondingly provided with a socketed element 21. In order to couple the respective elements and thereby the flags together, the locking member or element 12, carried by the stud, is turned into alinement with said stud as shown in Fig. 9. When so disposed both the stud and its locking part are readily insertible into the socket aperture 6. In order to be able to turn the locking element into the position with respect to the stud in which it is shown in Figs. 7 and 8, however, it is necessary to rotate the yoke 21 with respect to its socket frame 7, into approximately the position shown in Fig. 4. The locking element may then be readily rotated into its operative position, and when so disposed the stud can no longer be withdrawn from the socket. It may here be noted that the body 18 of this element is preferably notched as at 18' to allow the upper side thereof to enter the aperture 11 of the frame 7; the hole 11 preferably having an outwardly flaring wall, as indicated in Fig. 5.

When the frame and the yoke have been moved with respect to each other into the positions shown in Figs. 1 and 2, which it may be here noted is the normal or determined position which these parts will assume when the device is placed under tension, the locking part can no longer inadvertently, or otherwise, be turned into unlocking position, since the nose 25 thereof will encounter the edge 26 of the inner wall of the yoke. The element 1, however, is

free to rotate about its longitudinal axis, which axis is also preferably coincident with the axis of rotation of the socket; and a limited amount of swiveling movement may also occur between the socket frame 7 and the yoke 21 without permitting the locking element to become, either inadvertently or purposely, moved into its unlocking position. As a further precaution against inadvertent displacement of the locking element from any cause whatsoever, there should be more or less friction between said element and the stud within which it is mounted; but in practice the tension to which the device is subjected when in operation serves to maintain the respective elements in the positions shown in Fig. 1.

It will be observed also that this locking element is normally non-deformable, by which is meant that there is no necessity for deforming it in order to separate the parts of the device in the manner aforesaid.

Having described my invention, I claim:

1. A connecting device comprising a socket member and a stud member, said members each being adapted for attachment to the respective articles to be connected, said stud member having a part adapted to enter said socket member, and a locking element pivotally connected to said part and also adapted to enter said socket member, said locking element being revoluble about its pivotal axis into locking engagement with said socket member after being inserted into the latter.

2. A connecting device comprising a socket member and a stud member, said members each being adapted for attachment to the respective articles to be connected, said stud member having a part adapted to enter said socket member and a locking element carried by said part and also adapted to enter said socket member said socket member comprising two structures pivotally connected together, said locking element being movable into its unlocking position, when the said members are in locked relationship, only when one of said structures has been turned laterally with respect to the other of said structures.

3. A connecting device, adapted to be placed under tension, which comprises a socket member and a stud member, said members each being adapted for attachment to the respective articles to be connected, said stud member having a part adapted to enter said socket member and a locking element pivotally connected to said stud and also adapted to enter said socket member, said socket member comprising two connected structures relatively movable with respect to each other, said locking element being movable about its pivotal axis into its unlocking position, when the said members are in operative engagement, only

when one of said structures has been moved, relative to said other structure, into a position different from that which it tends to assume when the device is placed in tension.

5 4. A connecting device comprising two elements each adapted for attachment to the respective articles to be connected, a socket and also a socket frame attached to one of said elements, said socket having a rotary
10 connection with said socket frame, the latter being also movable with respect to said last mentioned element, said other element having a stud adapted to enter said socket, and means for locking said stud in said
15 socket.

5. A connecting device comprising two elements each adapted for attachment to the respective articles to be connected, a socket and also a socket frame attached to one of
20 said elements, said socket having a rotary connection with said socket frame, the latter being also rotarily connected to said last mentioned element, said other element hav-

ing a stud adapted to enter said socket, and means for locking said stud in said socket. 25

6. A connecting device comprising two elements each adapted for attachment to the respective articles to be connected, a socket and socket frame attached to one of said elements, said socket having a rotary con- 30 nection with said socket frame the latter being also rotarily connected to said last mentioned element, the axis of rotation of said socket with respect to said frame being different from the axis of rotation of said 35 frame with respect to the element to which it is connected, said other element having a stud adapted to enter said socket, and means for locking said stud in said socket.

In witness whereof, I subscribe my signature, 40
in the presence of two witnesses.

JOHN J. K. KOUGHAN.

Witnesses:

O. K. GRAU,
J. W. COOK.