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R. WOERNER.
SPILE HOLE FERRULE DRIVER.
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Fig. 1.

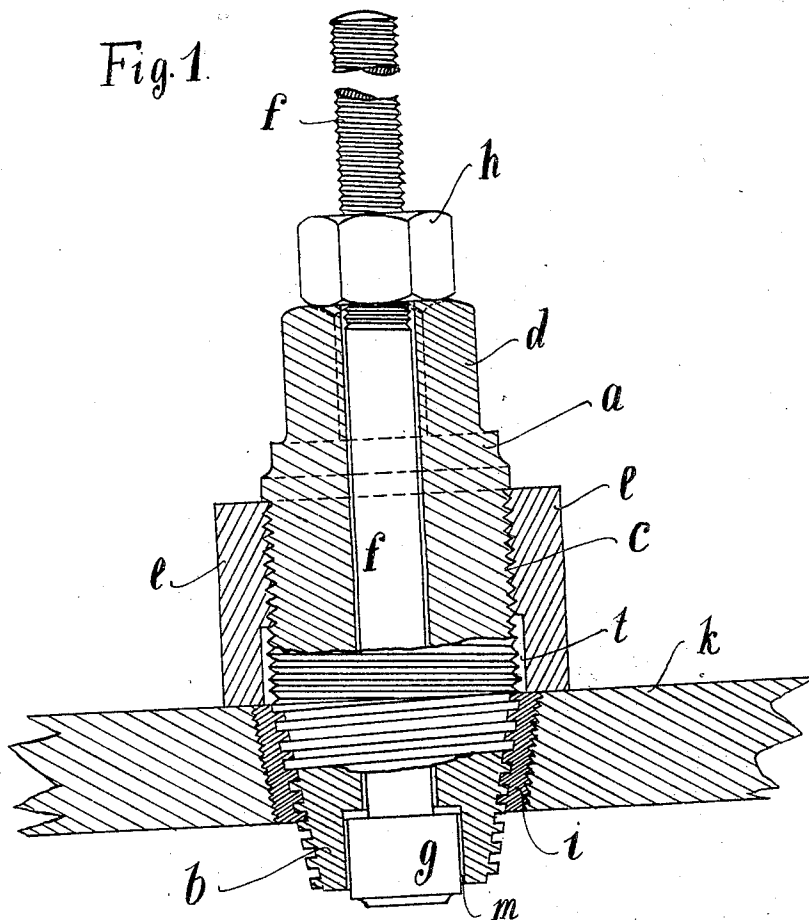
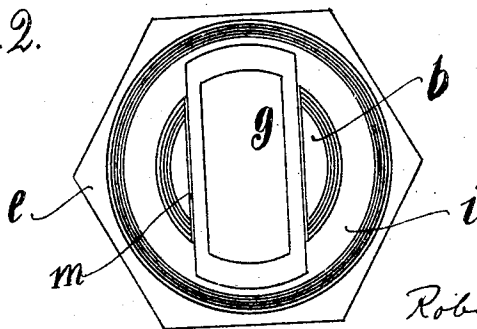


Fig. 2.



Witnesses:
Edmund L. Jewell
J. H. Koch

Inventor
Robert Woerner
by W. E. Schwenborn
attorney

UNITED STATES PATENT OFFICE.

ROBERT WOERNER, OF MANNHEIM, GERMANY.

SPILE-HOLE-FERRULE DRIVER.

No. 836,478.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT WOERNER, a citizen of the Empire of Germany, residing at Mannheim, in the Empire of Germany, have invented a new and useful Spile-Hole-Ferrule Driver, of which the following is a specification.

Prior to this invention tools for driving ferrules into spile-holes and for withdrawing them were adapted to grip the ferrule both on its external side and in its internal screw-thread direct and on its internal side by means of movable jaws actuated by a rack and a pinion. Such tools are liable to become wet, so that their parts will rust and easily get out of order, and also cause wood fibers to be forced into them and block them up. Also another defect has been found—that after having driven a new ferrule into the cask, barrel, or the like the tool on being unscrewed and withdrawn is very apt to loosen the ferrule, and also in case an old ferrule requires to be withdrawn its internal side cannot be gripped by the said tool, and therefore cannot be made use of for withdrawing the ferrule.

My invention relates to a new tool for driving ferrules into spile-holes and for withdrawing them, and has for its object not only to grip the ferrule in its internal screw-thread, but also on its external and internal sides, and at the same time overcome all the objections pointed out above.

I will now proceed to describe my invention with reference to the accompanying drawings, in which—

Figure 1 is a longitudinal section through part of a cask, barrel, or the like, a ferrule and a tool, a part of the latter being shown in elevation; and Fig. 2 is an end view of the ferrule and the tool seen from below in Fig 1.

Similar letters of reference refer to similar parts throughout both the views.

i denotes a ferrule driven into a cask *k*, barrel, or the like, or about to be withdrawn therefrom. It is provided with the usual fine external conical screw-thread and with an internal conical square screw-thread. The tool consists of a body *a*, a nut *e*, a tightening-bolt *f*, and a nut *h*. The lower part of the body *a* is made to taper and is provided with a square screw-thread *b*, which can engage into that of the ferrule *i*. The middle part of the body *a* is provided with an external fine screw-thread *c*. Preferably the internal and external screw-threads of the fer-

rule *i*, and in accordance with this also the conical screw-thread *b* of the body *a*, are made right-handed; but the screw-thread *c* on middle section of body *a* is made left-handed. The upper part *d* of the body *a* is made square or hexagonal, so that it may be seized and turned by a screw-key. The nut *e* is adapted to bear on the external side of the ferrule *i*, and has, preferably, a part of its internal screw-thread cut away at *t*. The body *a* is longitudinally bored and has a cross-channel *m* in its lower end face. The bolt *f* is made of a convenient length and engages in the bore of the body *a*. Its head *g* is made very long and can engage in the said cross-channel *m*. It is adapted to bear on the internal side of the ferrule *i* without extending beyond the same. The cross-channel *m* is preferably made so deep that the head *g* will in all cases bear on the internal side of the ferrule *i* no matter whether the length of the latter varies. The bolt *f* is provided with a screw-thread, which is made left-handed, the same as the screw-thread *c* and in opposition to the right-hand screw-thread *b*. The nut *h* is adapted to bear on the body *a*.

The tool is operated as follows: For driving a ferrule *i* into a spile-hole it is screwed home on the conical screw-thread *b* of the body *a*. Then the nut *e* is screwed home downward, so that it bears against the external side of the ferrule *i*. Afterward the bolt *f* is introduced into the bore of the body *a*, and at last its head *g* is inserted in the cross-channel *m* and the bolt *f* is tightened by screwing home the nut *h*, so that its head *g* bears on the internal side of the ferrule *i*. Now the ferrule *i* can be driven into the spile-hole of the cask *k*, barrel, or the like in the usual manner by means of a screw-key put on the square or hexagonal part *d* of the body *a*. It will be noted that the more power is to be spent on driving the tool the better will the latter grip the ferrule *i*, since its conical screw-thread *b* will engage deeper into that of the ferrule *i*. After the ferrule *i* has been driven in the nut *h* is unscrewed to loosen the bolt *g*, and it will be noted that the more power is required for unscrewing the nut *h* the more will the ferrule *i* be driven in, since the respective screw-key is turned in the same direction in which the ferrule *i* is driven. The nut *h* is shifted upward for a convenient length, so that the head *g* cannot exert any more pressure upon the internal side of the ferrule *i*. Then the large nut *e* is unscrewed,

the screw-key acting in the same direction in which the ferrule *i* is driven, so that the latter can on no account get loose. When the large nut *e* has been sufficiently loosened, the key is applied to the square or hexagonal part *d* of the body *a* and is turned in the same direction for unscrewing the body *a* from the ferrule *i*, which latter remains secure in the cask *k*, barrel, or the like. At last the tool is turned through an angle, so as to withdraw the inclined head *g* through the aperture of the ferrule *i*. For withdrawing an old ferrule *i* it is obvious that first the head *g* requires to be inclined and to be in this position introduced into the cask *k*, barrel, or the like through the aperture of the ferrule *i*. Afterward the body *a* is screwed into the ferrule *i* and is tightened therein by means of the key on the square or hexagonal part *d*. Next the nut *e* is screwed home. Thereupon the bolt *f* is withdrawn, so that its head *g* bears on the internal side of the ferrule *i*, and at last the nut *h* is screwed home. Now the key is applied to the part *d* for unscrewing the ferrule *i*. It will be seen that the more power is required for turning the tool the more will the nut *e* be tightened, since the key is turned in the same direction as that key which screws home the nut *e*. Thus the tool is prevented from getting off the ferrule *i*. On the contrary, it will be enabled to unscrew the ferrule *i* forcibly.

It is immaterial whether for driving or withdrawing a ferrule the small nut *h* be first screwed home or unscrewed, respectively, or the large nut *e*.

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

1. In a splice-hole-ferrule driver, the combination with a body longitudinally bored and provided on the one end with a tapering screw-thread to fit in that of a ferrule, on its

middle section, with an opposite screw-thread to that of the ferrule and on the other end with several faces for the appliance of a screw-key, of a nut engaging the middle screw-threaded section of said body and adapted to bear on the external side of the ferrule, a bolt movable in the bore of said body and provided with an opposite screw-thread to that of the ferrule and with a head, which can be introduced or withdrawn in an inclined position through the ferrule and is adapted to bear on the internal side of the latter, and a nut engaging the screw-thread of said bolt and adapted to bear on said body.

2. In a splice-hole-ferrule driver, the combination with a body longitudinally bored and provided in the one end face with a cross-channel, on the adjoining end part with a tapering screw-thread to fit in that of a ferrule, on its middle section with an opposite screw-thread to that of the ferrule and on the other end with several faces for the appliance of a screw-key, of a nut engaging the middle screw-threaded section of said body and adapted to bear on the external side of the ferrule, a bolt movable in the bore of said body and provided with an opposite screw-thread to that of the ferrule and with a head, which engages in the cross-channel of said body and can be introduced or withdrawn in an inclined position through the ferrule and is adapted to bear on the internal side of the latter, and a nut engaging the screw-thread of said bolt and adapted to bear on said body.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT WOERNER.

Witnesses:

N. C. SCHLEMMER,
JOS. H. LEUTE.