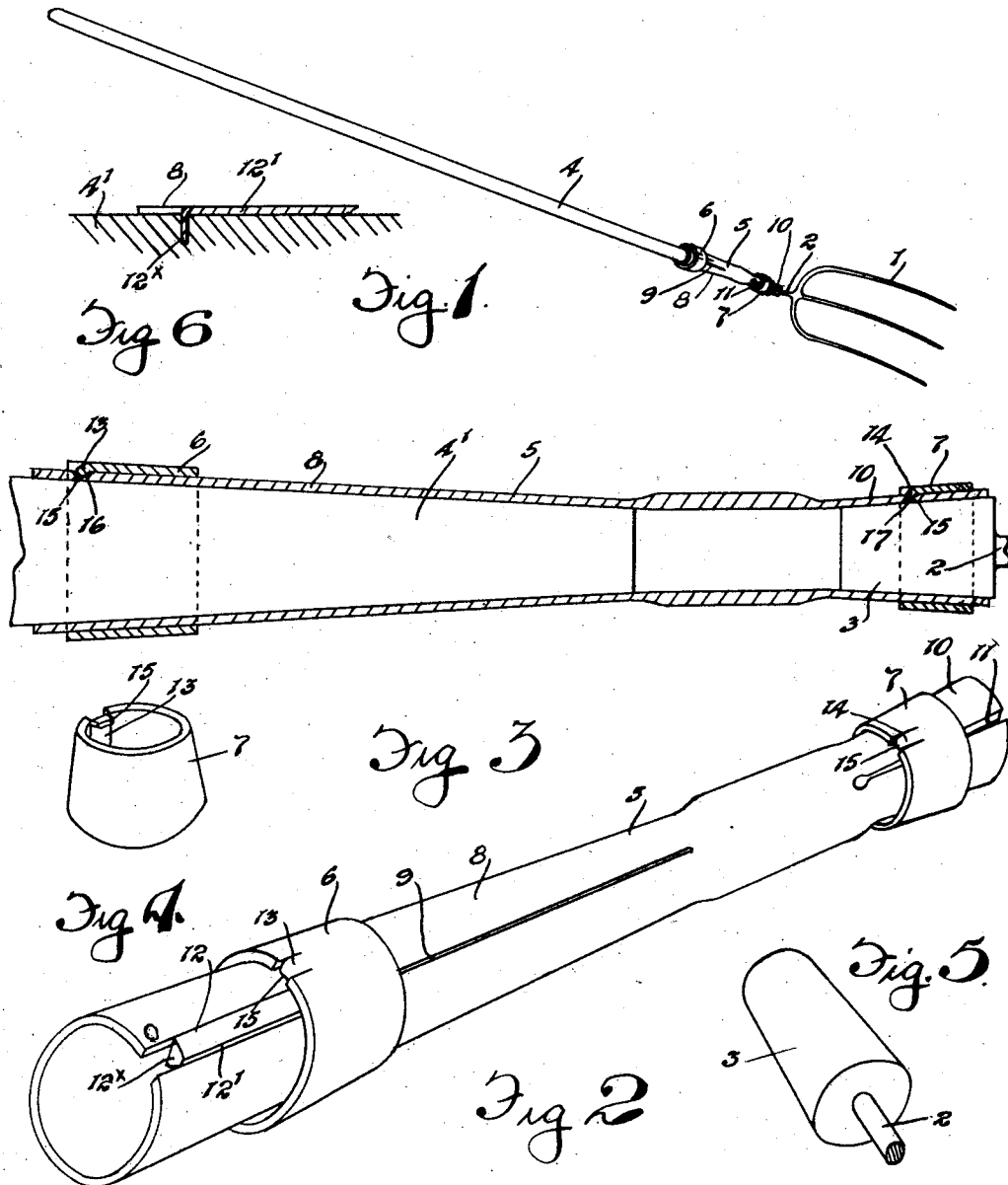


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DETACHABLE FERRULE.
APPLICATION FILED DEC. 4, 1916.

1,265,113.

Patented May 7, 1918.



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DETACHABLE FERRULE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, HEINRICH W. REIMER, of the village of Steinbach, and JOHN L. PENNER, of the city of Winnipeg, in the Province of Manitoba, Canada, have jointly invented certain new and useful Improvements in Detachable Ferrules, of which the following is the specification.

The invention relates to improvements in detachable ferrules and the object of the invention is to provide a detachable connection for fastening tools to their handles, such connection being constructed so that it is not only strong and serviceable but positively when set and arranged so that it can be easily released.

With the above object in view the invention consists essentially in a tubular sleeve forming sockets having the ends thereof oppositely tapered and split and provided with surface indents and one socket provided with a catch, a pair of tapered collars slidably mounted on the sleeve and provided each with a catch and a tool having a shank terminating in a tapering plug like head insertible within one of the sleeve sockets, the parts being arranged and constructed as hereinafter more particularly described and later pointed out in the appended claims, reference being had to the accompanying drawing in which:—

Figure 1 represents a perspective view of the tool having our invention applied thereon.

Fig. 2 represents an enlarged detailed perspective view of the sleeve detached from the tool and the collars on the sleeve and drawn back from the ends thereof.

Fig. 3 represents a longitudinal sectional view through the sleeve, the section passing centrally through the catches of the collars.

Fig. 4 represents a perspective view of one of the collars.

Fig. 5 represents a perspective view of the plug like head of the tool shank.

Fig. 6 represents a longitudinal sectional view through a portion of the large end of the sleeve showing the catch thereof.

In the drawing like characters of reference indicate corresponding parts in the several figures.

In the present instance we have shown our ferrule as securing a hay fork of the ordinary type to a handle but while such a tool has been shown it is to be understood that

our invention is not restricted in any way to forks alone as it can be utilized to equal advantage in a great variety of other tools as will readily be appreciated.

1 represents a tool, in the present instance a fork, provided with a centrally located extending shank 2 which terminates in a conical plug like fastening head 3.

4 represents a handle of the usual form which has the forward end 4' thereof tapered in the ordinary way. The tool is detachably connected to the handle by the appliance now described which embodies as its principal parts, a sleeve 5 and a pair of oppositely tapered jam collars 6 and 7.

The sleeve 5 has one end thereof formed into an outwardly flaring or tapering socket 8 which is adapted to receive the tapering end of the handle and is provided with a side slit 9 throughout its length and the other end formed into a somewhat shorter outwardly flaring or tapering socket 10 which is also supplied with a side slit 11, the latter socket being adapted to receive the plug like head 3.

Between the sockets the body of the sleeve is strengthened by giving it increased thickness.

On the socket 8 we mount the tapering collar 6 and on the socket 10 the tapering collar 7. These collars are designed so that when the parts are assembled and the collars are struck toward the ends of the sleeve they will jam or close in the sockets on the handle and on the head 3, respectively, and by so doing effect, through frictional contact, the effective holding of the head and handle end in the sockets.

It will be readily seen that if these parts be properly designed an intense pressure can be brought on the sockets by striking the collars outwardly endwise such as by a hammer. This will produce a great jamming action of the sockets on the head and the tapering end of the handle.

As the head is metal and the socket receiving the head is also metal, we rely entirely on the frictional resistance between the engaging metal parts to hold the tool in the socket.

In connection with the handle however, where there is only the friction of the metal on the wood, we have considered it advisable as an additional precaution to provide the larger socket with a catch 12 which catch

is formed by cutting the metal of the socket lengthwise adjacent the slit to provide a tongue 12' fitted at the free end with an intumed prong 12*.

5 When the handle is to be inserted within the socket, the tongue is pulled out to initially clear the prong from the handle and afterward and prior to tightening up the sleeve 6 the prong is struck into the wood of
10 the handle taking a position such as shown in Fig. 6.

With such an arrangement it will be seen that it is practically impossible for the handle to draw out of the socket when the
15 tool is in use and after the sleeve 6 has been tightened up.

In order to prevent either one or other of the collars from working loose once they have been set we have supplied each of them
20 with a spring catch indicated at 13 and 14 formed by slitting the sleeves with parallel cuts and then inturning as indicated at 15 the free ends of the slit pieces to provide catches which are adapted to initially ride
25 on the surface of the sockets when the collars are being tightened up and to finally take their position in indentures or depressions 16 and 17 formed on the outer surfaces of the sockets.

30 Although we have shown several catches we wish it to be understood that the details of these are not essential and further that they could be entirely dispensed with if desired as we believe the jammed collars will
35 effectively prevent the escape of either the handle or the head from the sockets when the tool is in use.

Obviously when one wishes to remove either the tool or handle he has simply to
40 knock back the collars to release the sockets which will spring open owing to the slits in the sides thereof.

An important feature in connection with this appliance is that when once the tool is
45 fastened it is properly centered in respect to the handle. Such is not so in the ordinary case where a prong like shank is driven into the end of the handle. In this instance it will be readily seen that unless the prong
50 is truly centered on the longitudinal axis of the handle the tool will not have a true position.

What we claim as our invention is:

1. The combination with a tool provided
55 with a tapering fastening head with the larger end thereof toward the tool and a

handle having a tapering end, of a sleeve having the ends thereof formed into tapering sockets flaring outwardly toward the ends of the sleeve and provided with side
60 slits and adapted to receive the tapering head and the tapering handle end, a catch formed as part of the socket receiving the handle and adapted to be driven into the handle and a pair of tapering jam collars
65 slidably mounted on the sockets and adapted when moved endwise of the sleeve to jam the sockets on the contained head and handle end.

2. The combination with a tool provided 70 with a tapering fastening head with the larger end thereof toward the tool and a handle having a tapering end, of a sleeve having the ends thereof formed into tapering sockets flaring outwardly toward the ends of the sleeve and provided with side slits and adapted to receive the tapering head and the tapering handle end, a catch formed as part of the socket receiving the handle and adapted to be driven into the handle, a pair of tapering jam collars slidably mounted on the sockets and adapted when moved endwise of the sleeve to jam the sockets on the contained head and handle end and spring catches formed as part of the collars and engageable with indentations in the sockets in the limiting jammed positions of the collars. 85

3. In combination, a sleeve having the ends thereof formed into tapering sockets flaring outwardly toward the ends of the sleeve and having the sides of the sockets split lengthwise of the sleeve, a pair of tapering jam collars mounted on the sockets and adapted when moved endwise of the sleeve to compress the sockets and catches on said
95 collars.

4. In combination a sleeve having the ends thereof formed into tapering sockets flaring outwardly toward the ends of the sleeve and having the sides of the sockets slit lengthwise of the sleeve, a pair of tapering jam collars mounted on the sockets, adapted when moved endwise of the sleeve to compress the sockets, and catches on said collars comprising intumed integral tongues. 100

Signed at Winnipeg, this 10 day of November 1916.

HEINRICH W. REIMER.
JOHN L. PENNER.

In the presence of—
G. S. ROXBROUGH,
K. B. WAKEFIELD.