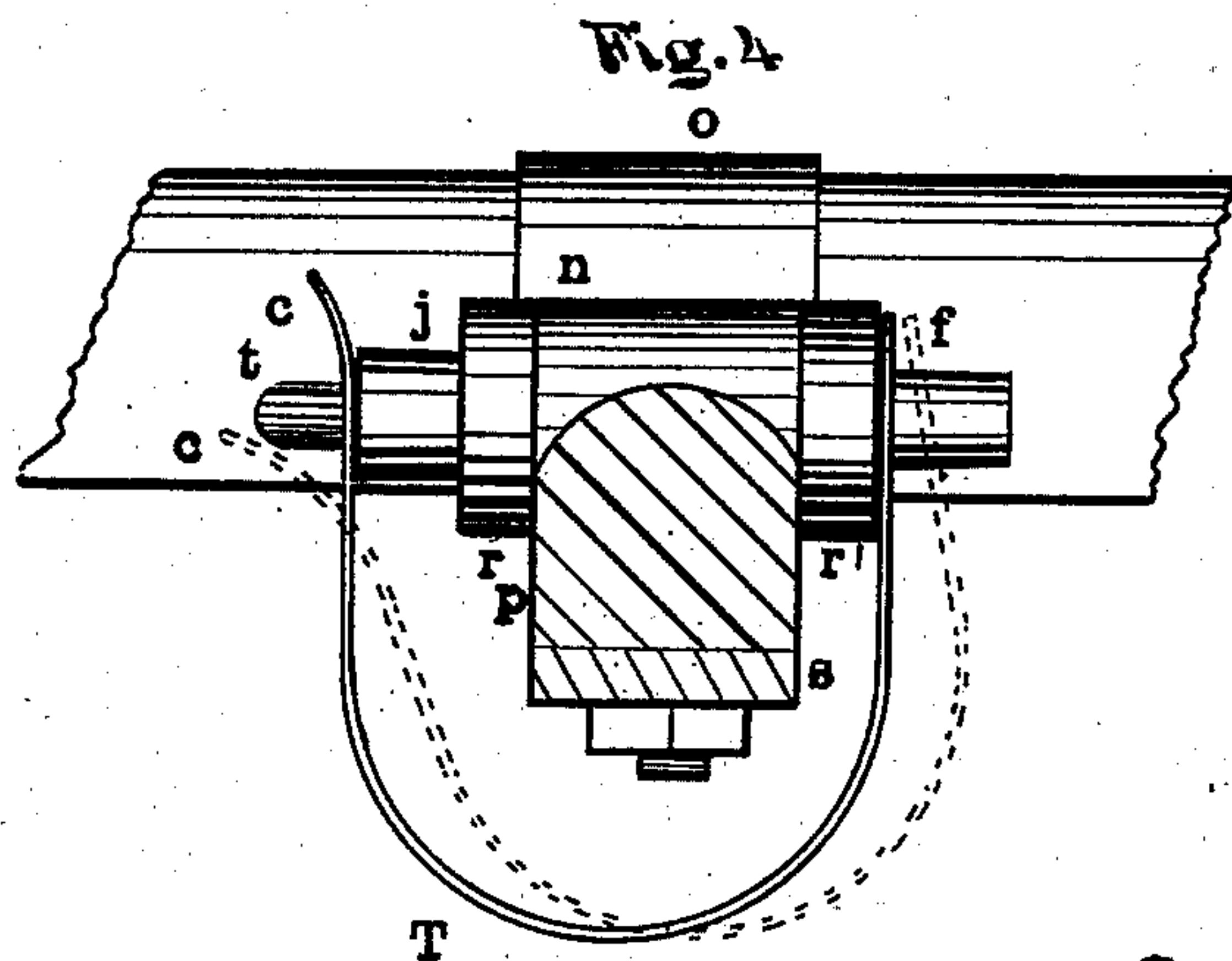
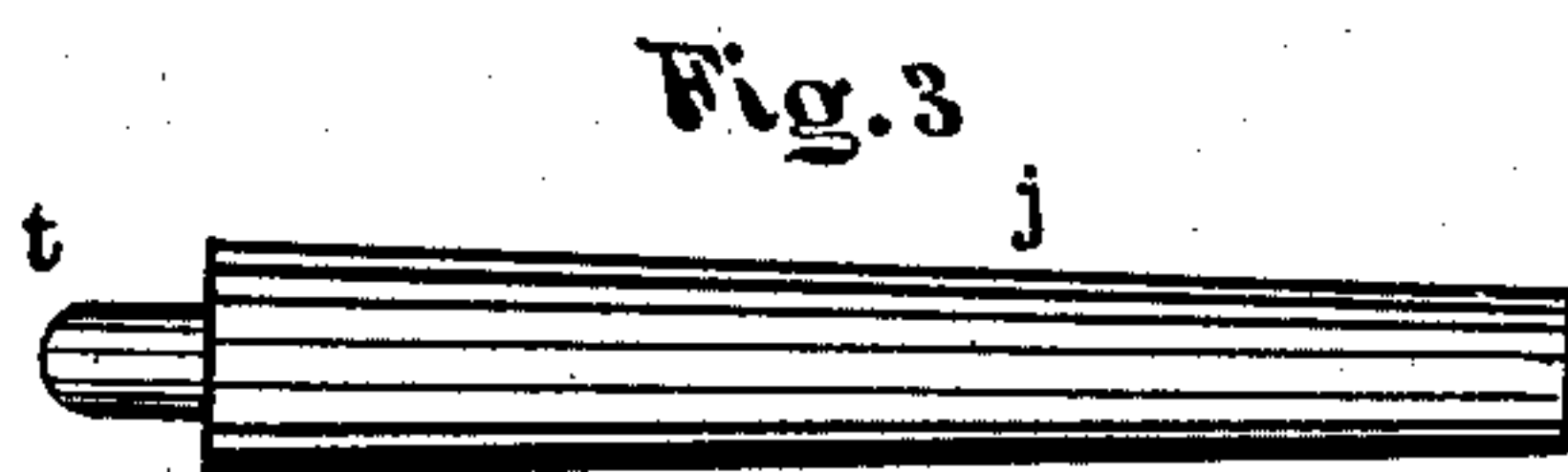
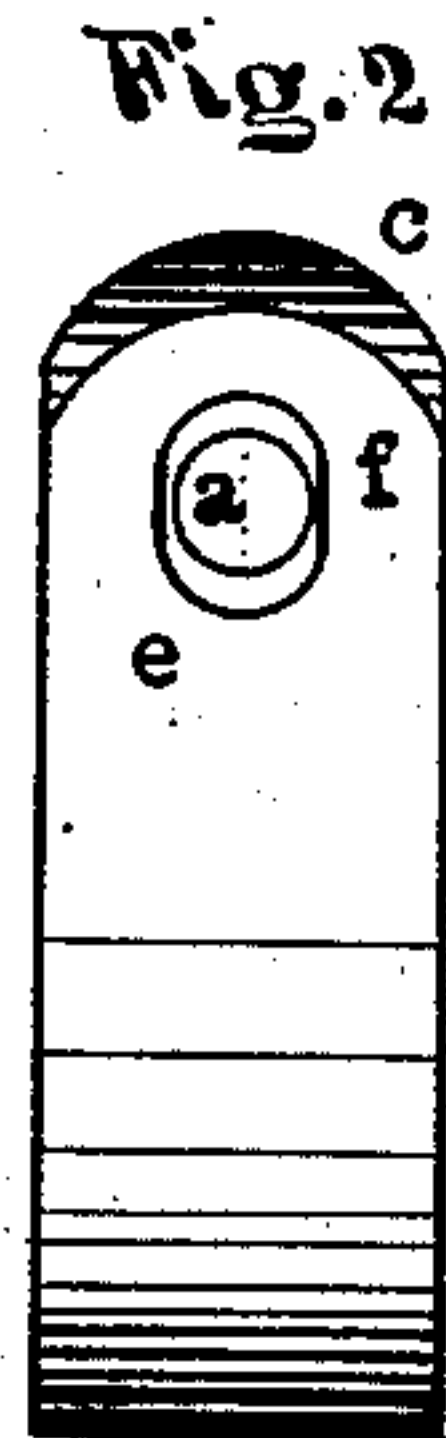
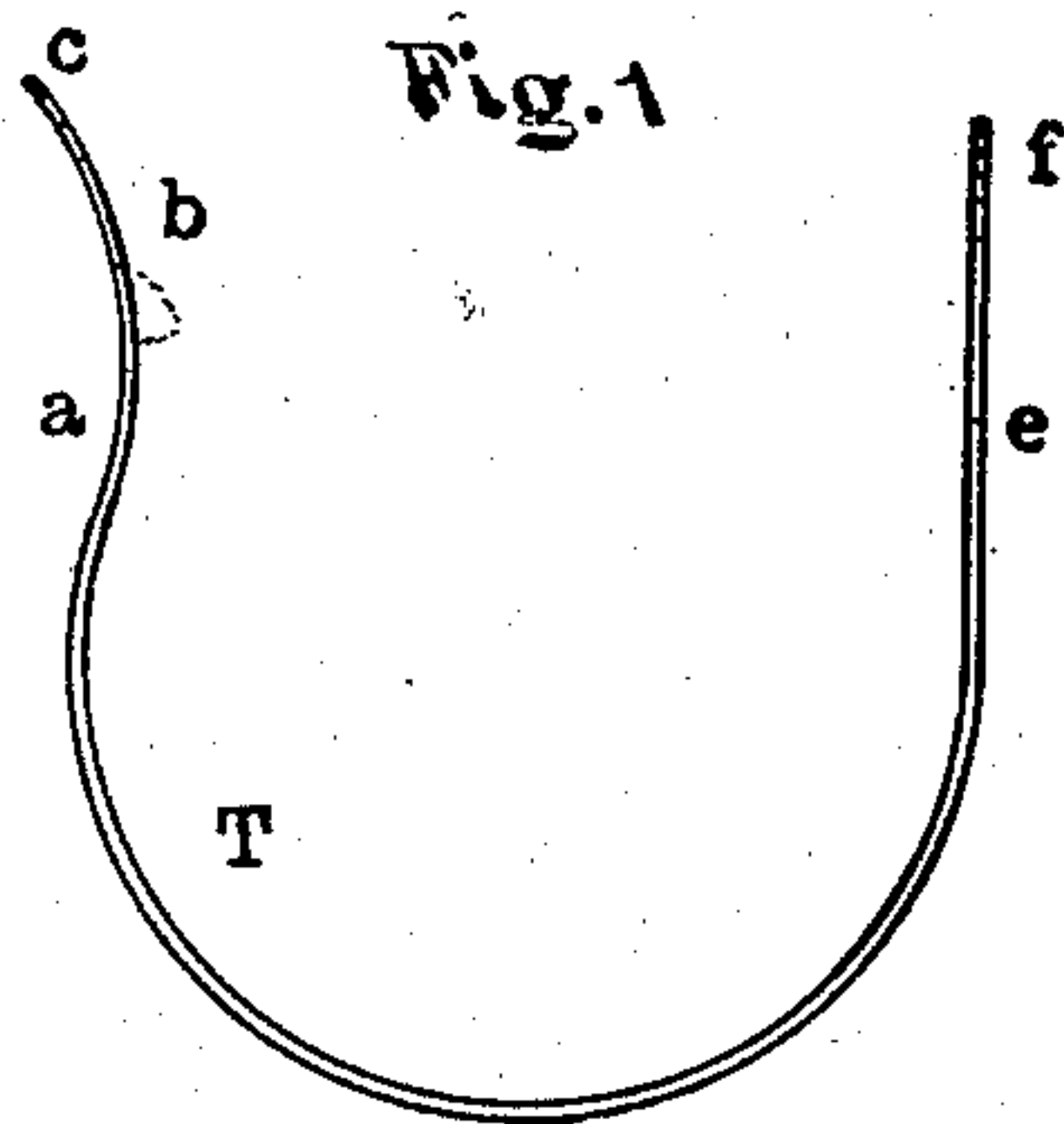


W. HARDER.  
Thill-Coupling.

No. 225,011.

Patented Mar. 2, 1880.



Witnesses;

Staldman  
P. H. Brown

Inventor;

William Harder  
By his atty Allen Webster

# UNITED STATES PATENT OFFICE.

WILLIAM HARDER, OF PITTSFIELD, MASSACHUSETTS, ASSIGNOR TO  
EUGENE HARDING, OF SAME PLACE.

## THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 225,011, dated March 2, 1880.

Application filed November 7, 1879.

*To all whom it may concern:*

Be it known that I, WILLIAM HARDER, of  
Pittsfield, in the county of Berkshire and State  
of Massachusetts, have invented certain new  
5 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,  
10 reference being had to the accompanying  
drawings, and to letters of reference marked  
thereon, which form a part of this specification.

This invention relates to thill-couplings of  
that class provided with elastic means for hold-  
15 ing the coupling-pin in position.

Heretofore the coupling-pin has been held  
in position by means of a U-shaped spring-  
shackle formed with a hole near each end to  
take upon the pointed ends of the coupling-  
20 pin projecting outside of the clips; also, a  
headed coupling-pin has been held in position  
by means of a flat spring with turned-up ends,  
one end of said spring resting against the  
head of the coupling-pin and the other up-  
25 turned end passed over the pointed end of  
the coupling-pin and resting against the clip.  
Thill-couplings of these constructions are ob-  
jectionable for the reasons that a pin of uni-  
form diameter throughout is employed, and  
30 whenever the holding-spring yields the thill  
will rattle.

The main object of my improvement is to  
make an anti-rattler thill-coupling of this  
class, and one that will take up the wear au-  
35 tomatically.

The improvement therefore consists in the  
combination, with parts constituting the main  
part of a thill-coupling, of the tapering pin  
having a projecting end and U-shaped elastic  
40 spring, as will be hereinafter more fully set  
forth.

In the accompanying drawings, in which  
similar letters of reference indicate like parts,  
Figure 1 is a side view of the spring. Fig. 2  
45 is a view of the same as seen from the side T.  
Fig. 3 is a side view of the pin, and Fig. 4 is  
a view of the device as applied to a carriage-  
coupling.

There are very many places in which a coup-  
50 ling is needed which, while being simple and  
easy to use, will automatically take up the  
wear of the parts and prevent the disagreea-  
ble rattling which is found in most couplings  
made.

The drawings represent my device as ar- 55  
ranged to be used on a carriage.

In Fig. 4 a part of an axle is shown with the  
ordinary part of a carriage-coupling attached,  
the parts  $r r'$  forming a socket, into which the  
piece or tongue  $n$  fits. A section of a thill is 60  
shown bolted to the usual projecting piece  
from the tongue  $n$ . The tapering pin  $j$  passes  
through the pieces  $r$ ,  $r'$ , and  $n$ , as shown in the  
drawings. The end  $f$  of the spring  $T$  passes  
over the smaller end of the pin and bears 65  
against the piece  $r'$ , while the other end,  $c$ , of  
the spring bears against the other end of the  
pin, thus forcing the pin in the direction of the  
end  $f$ .

I employ a tapering pin for the reason that 70  
it will take up the wear, keep the parts to-  
gether tightly, and effectually do away with  
the rattling.

The hole in the end  $f$  of the spring is made  
large enough to allow the tipping of the spring 75  
requisite to get it in place.

The position of the spring while being placed  
on the pin is shown in dotted lines in Fig. 4.  
In this position a slight pressure will force  
the spring in place. On the end of the pin I 80  
make the projection  $t$ , over which the end  $C$   
of the spring passes.

This particular manner of holding the spring  
in place I do not confine myself to, as other  
arrangements may be made. For instance, a 85  
projection may be formed on the spring, as  
shown in dotted lines at  $b$ , Fig. 1, and a re-  
cess made in the end of the pin to receive the  
same.

Having therefore described my invention, 90  
what I claim as new, and desire to secure by  
Letters Patent, is—

In a thill-coupling of the class described, the  
combination of a tapering pin formed at its  
larger end with a projection,  $t$ , and the U- 95  
shaped spring, one end of which is passed over  
the smaller end of the tapering pin and the  
other end passed over the projection of the  
larger end of the tapering pin, whereby wear  
is taken up automatically and rattling pre- 100  
vented, substantially as described.

In testimony that I claim the foregoing I  
have hereunto set my hand this 27th day of  
October, 1879.

WILLIAM HARDER.

Witnesses:

WILLIAM T. FILLEY,  
EUGENE HARDER.