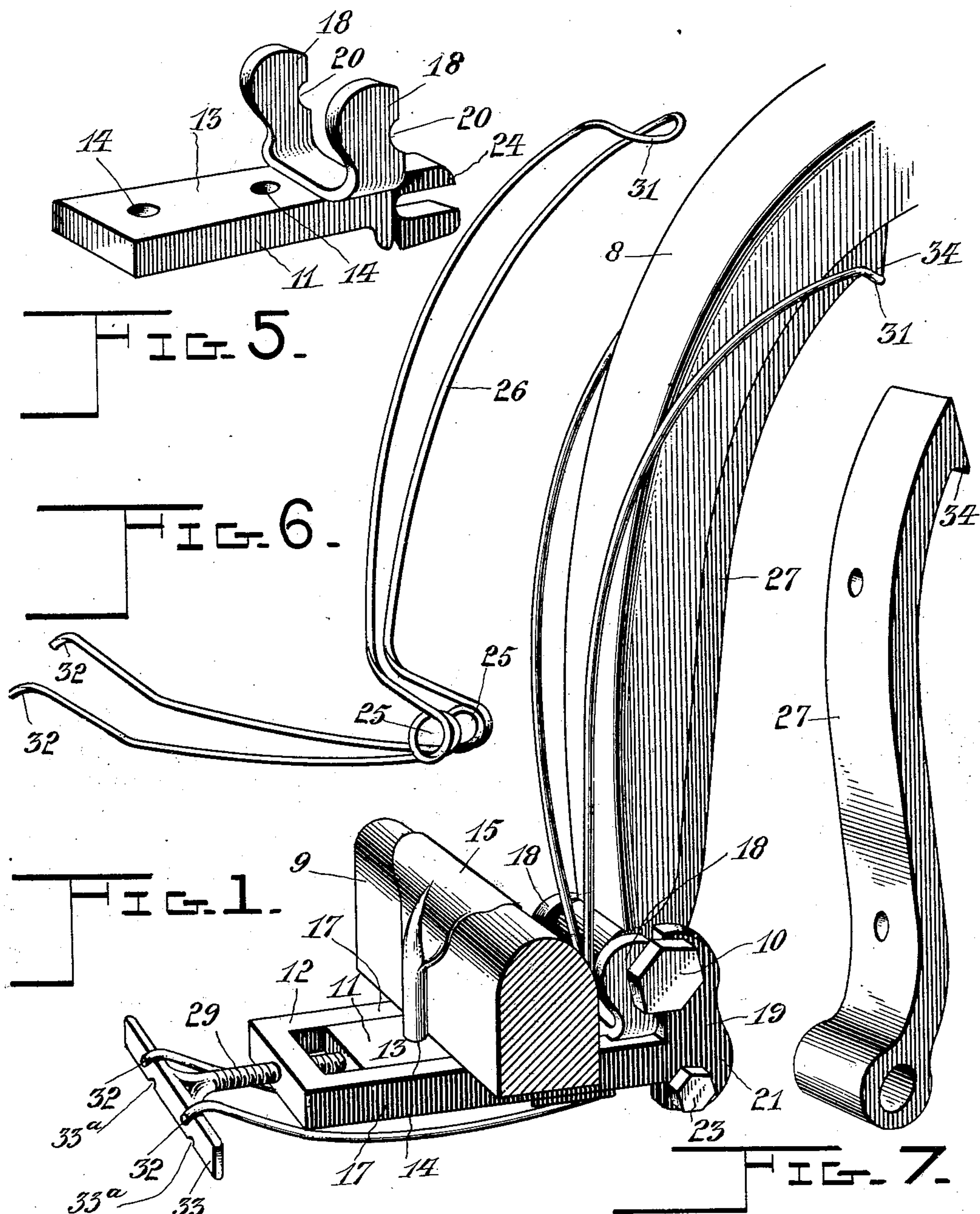


J. B. UREN.
THILL COUPLING.

(Application filed Mar. 24, 1902.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses :

John F. Deufferwiel
George W. Colles

James B. Ureiv, Inventor,

By

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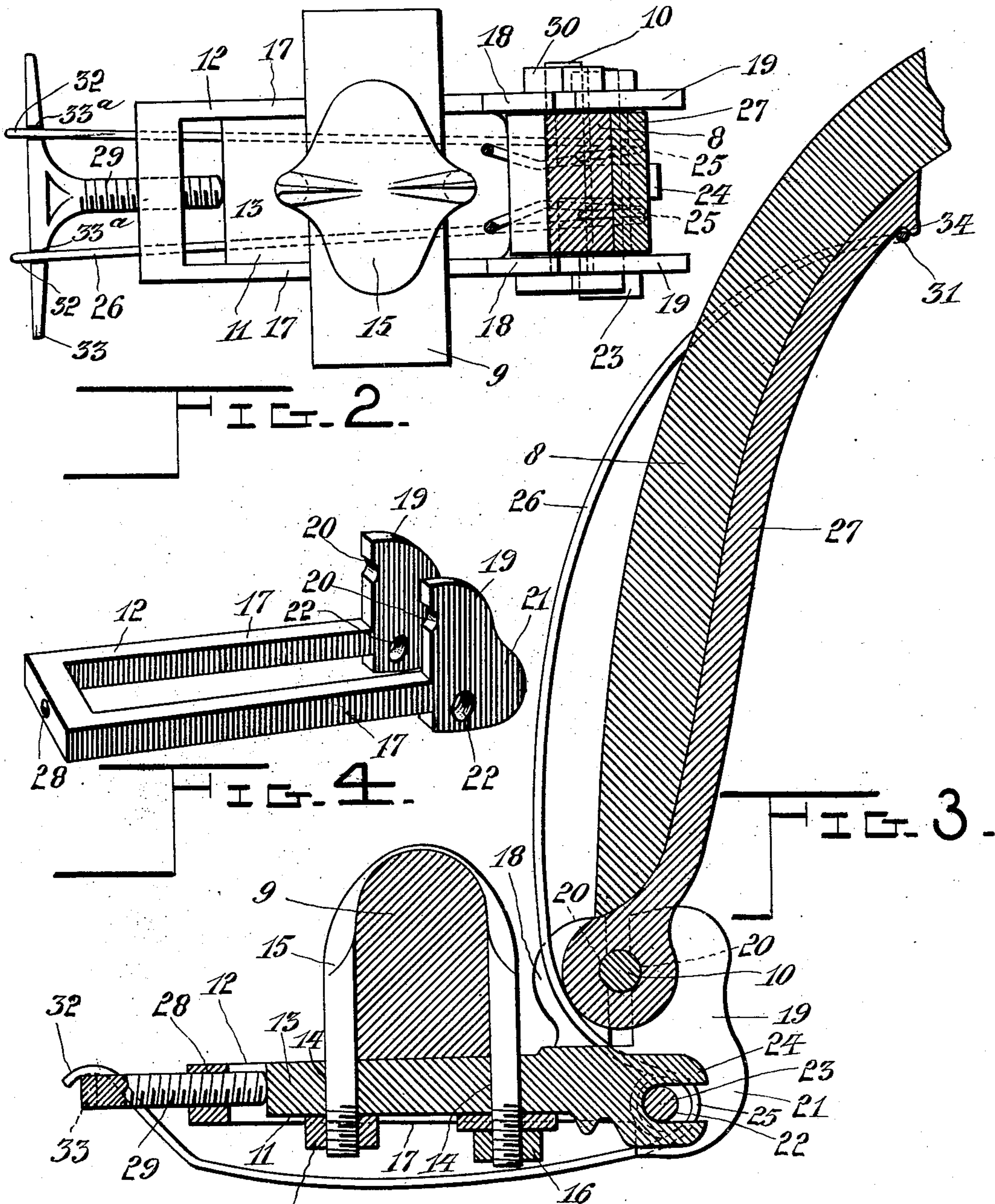
Attorneys

J. B. UREN.
THILL COUPLING.

(Application filed Mar. 24, 1902.)

2 Sheets—Sheet 2.

(No Model.)



Witnesses: 16

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UNITED STATES PATENT OFFICE.

JAMES BOTTRELL UREN, OF LILLOOET, CANADA.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 713,180, dated November 11, 1902.

Application filed March 24, 1902. Serial No. 99,596. (No model.)

To all whom it may concern:

Be it known that I, JAMES BOTTRELL UREN, a subject of the King of Great Britain, residing at Lillooet, county of Cariboo, Province of British Columbia, Canada, have invented certain new and useful Improvements in Thill-Couplings; and I do hereby declare that the following is 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.

My invention relates to an improved anti-rattling thill-coupling or device for attaching the thills or shafts of vehicles to the axles thereof; and the object of the invention is to provide such a coupling which will remain tight and prevent the rattling which produces noise and wear in ordinary vehicles.

Another object of the invention is to produce such a coupling which can be adjusted to take up wear of the connecting-pin, and thus positively prevent the rattling.

Still another object of the invention is to produce a thill or shaft supported by a spring which will yieldably take the weight of the same, whereby the latter is supported from the carriage or vehicle when in use, and thus the horse is relieved from the weight thereof, and while not in use the supporting means causes the thills to be turned into upright position, so that they are out of the way and are kept from being broken by objects falling across them, as well as taking up less space in the carriage house or shed where the vehicle may be kept.

Another object of my invention is to produce such a coupling which can be cheaply manufactured and will successfully accomplish all the objects intended for it and one which can be easily operated and will be automatically held in the position to which it is set without necessity of any supervision or danger of the coupling coming loose or the coupling-pin rattling out, as often happens with ordinary couplings.

My invention consists in the peculiar construction and combination of parts herein shown and described, and which will be particularly pointed out in the claims annexed to this specification.

I have illustrated my improved coupling in the accompanying drawings, wherein—

Figure 1 is a perspective view of a coupling, showing a thill and axle attached thereto. Fig. 2 is a plan view of the same, showing the thill and thill-iron in cross-section. Fig. 3 is a longitudinal central section through the thill-coupling, thill-iron, and axletree, the clip being shown in elevation. Fig. 4 is a perspective view of one half of the coupling. Fig. 5 is a similar view of the other half. Fig. 6 is a similar view of the spring, and Fig. 7 is a similar view of the thill-iron.

The same numerals of reference denote like parts in all the figures of the drawings.

The shaft or thill of the vehicle is shown at 8, the axletree at 9, and the connecting bolt or pin at 10, and these are of the ordinary type.

My improvement consists in the intermediate connecting devices, which will now be described. The coupling consists of a pair of interacting halves 11 12, one of which (shown in Fig. 5) is formed in the shape of a block 13, having two vertical holes 14 therein, through which pass the ends of the axletree clip 15, the block 11 being secured to the axle by this clip in connection with the nuts 16 on the lower side thereof. The other half of the coupling is made in U form, having two arms 17, adapted to embrace the sides of the block 13, so that the half 11 slides longitudinally in the half 12 of the coupling. Each coupling carries at its forward end a pair of jaws, (designated as 18 and 19, respectively,) the jaws 18 facing forwardly and formed to oppose the jaws 19, which face backwardly, and each jaw has formed transversely thereof an arcuate recess 20 of somewhat less than semicircular length, these two pairs of jaws being thus adapted to embrace and securely hold the pin 10 in the manner shown in Figs. 1 and 3. The enlarged end 21 of the arms 17, which carry the jaws, is also formed with a depending portion, through which are pierced transverse holes 22 for the purpose of supporting a pin 23, this pin forming a sliding support for the forward end of the half 11, which is formed with a slotted lug 24, adapted to embrace the pin 23, as shown, whereby the half 17 of the coupling is supported in horizontal position; but the pin 23 serves the further function of forming a center for the coiled portion 25 of the spring 26,

which is formed as shown in Fig. 6 and whose function will be hereinafter more fully referred to.

In order to hold the jaws together, so as to
5 firmly clamp the pin 10 on each side of the
thill-iron 27, the central member of the half
12 is pierced by a threaded aperture 28, in
which is suitably mounted a T-headed set-
10 screw 29, whose inner or forward end abuts
against the rear end of the half 11, and thus
presses it forwardly, and by turning up the
set-screw 29 it will be seen that the two pairs
of jaws 18 19 are pressed together to firmly
15 hold the bolt 10, and this will not only keep
said bolt from rattling in the coupling, but
will prevent the loss of the bolt, which has
been heretofore commonly occasioned by the
rattling loose of the nut 30 upon the end of
20 the bolt 10, so that if necessary such nut may
be dispensed with altogether, as the pin 10
will be held in position without such means.

My improved spring-support for the thill,
which assists in preventing the rattling, is in
the form of a double-armed wire spring, which
25 is looped at 31 in a peculiar form, as shown in
Fig. 6. At an intermediate point of each arm it
is coiled, as shown at 25, and these coils are
mounted upon the pin 23 on each side thereof
and between the two halves 11 and 17, the
30 lug 24 being of reduced width to allow for the
spring, as indicated in Fig. 5, and the ends of
the spring extend rearwardly beneath the
coupling and are each provided with a hook-
finger 32, which is adapted to be hooked over
35 the T-head 33 of the set-screw 29 on each side
thereof and to lie in a shallow notch 33^a, as
shown in Figs. 1 and 2. When in this posi-
tion, the loop 31 of the spring is adapted to
engage the thill-iron and to engage a project-
40 ing snug 34, formed on the extremity of this
iron to catch the loop of the spring, so that
the turning of the thill into horizontal posi-
tion causes the spring 26, or rather the upper
portion thereof between the loop 31 and the
45 coil 25, to be bent, as shown, and thereby the
tension placed on the spring will tend to raise
the thill into vertical position again. The
upper or fore portion of the spring thus serves
the purpose of supporting the thill and at the
50 same time prevents its rattling upon the pin
10; but the tail or end portions of the spring
serve a different function—that is to say, that
of holding the set-screw 29 against turning—
and which it will be seen these ends perfectly
55 fulfil by having the fingers 32 hooked over
the T-head 33 when the latter is in horizontal
position. In order to disengage the T-head
to allow the set-screw to be turned to tighten
the coupling, the fingers 32 are removed by
60 raising them from the notches 33^a and push-
ing them laterally off the head, and thereafter
the screw can be turned and properly tight-
ened up, when the fingers are replaced on the
head in the position shown.

65 While I have shown in the accompanying
drawings the preferred form of my invention,
it will be understood that I do not limit my-

self to the precise form shown, for many of
the details may be changed in form or posi-
tion without affecting the operativeness or 70
utility of my invention, and I therefore re-
serve the right to make such modifications
as are included in the scope of the following
claims.

Having thus described my invention, what 75
I claim as new, and desire to secure by Letters
Patent, is—

1. A thill-coupling comprising a pin adapt-
ed to extend through an aperture in one of
the thill-irons, a pair of halves sliding on one 80
another, a pair of jaws on each half coacting
with the jaws of the opposite half, means for
securing one of said halves to the axletree
of the vehicle, and a set-screw mounted in
one half and abutting against the other half, 85
whereby said jaws may be tightened upon
the pin, each pair of coacting jaws having
its members movable in lateral planes with
respect to each other so as to move past each
other and to have a shear-like action on said 90
pin.

2. A thill-coupling comprising a pin adapt-
ed to pass through an aperture in the thill-
iron, a pair of halves slidable on one another,
a pair of jaws carried by each half and co- 95
acting with the jaws in the opposite half, a
T-headed set-screw mounted in one half and
abutting against the other half whereby to
clamp said jaws upon the said pin, and a
spring having fingers adapted to overlie the 100
head of said set-screw to hold the same
against turning.

3. A thill-coupling comprising a pin adapt-
ed to pass through an aperture in the thill-
iron, a pair of halves slidable on one another, 105
one half consisting of a block having for-
wardly-facing jaws and means for securing
it to the axletree of a vehicle, and the other
said half being formed in U shape with back-
wardly-facing jaws on the ends of the limbs, 110
and a set-screw mounted in the central mem-
ber of said last-mentioned half, and abutting
against the rear end of the first-mentioned
half, whereby to draw the jaws together and
clamp them upon the pin. 115

4. A thill-coupling comprising a set-screw,
a pin adapted to pass through an aperture in
the thill-iron, a pair of halves slidable on one
another, one half consisting of a block hav-
ing forwardly-facing jaws and means for se- 120
curing it to the axletree of a vehicle, and the
other said half being formed in U shape with
backwardly-facing jaws on the ends of the
limbs, a set-screw mounted in the central
member of said last-mentioned half and abut- 125
ting against the rear end of the first-men-
tioned half whereby to draw the jaws together
and clamp them upon the pin, a T-head car-
ried on the set-screw, and a spring having
fingers adapted to overlie said T-head and 130
hold the screw in position.

5. A combination thill-coupling and shaft-
support comprising a thill-iron having an ap-
erture and a snug formed upon its upper end,

a pin passing through said aperture, a pair of interacting halves, jaws carried by each half opposing and coacting with the jaws of the opposite half, a second pin carried by one of
 5 said halves transversely thereon, the other half having a slot engaging said pin, means for securing one of said halves to the axle, a set-screw mounted in one of said halves and abutting against the opposite half to clamp
 10 said jaws upon the connecting-pin, a T-head formed on said set-screw, and a loop-spring having a coil intermediate thereof embracing said second pin and a loop engaging the snug formed on the thill-iron.

15 6. A combination thill-coupling and shaft-support comprising a thill-iron having an aperture and a snug formed upon its upper end, a pin passing through said aperture, a pair of interacting halves, jaws carried by each half
 20 opposing and coacting with the jaws of the opposite half, a second pin carried by one of said halves transversely thereon, the other half having a slot engaging said pin, means for securing one of said halves to the axle, a
 25 set-screw mounted in one of said halves and abutting against the opposite half to clamp said jaws upon the connecting-pin, a T-head formed on said set-screw, and a loop-spring having a coil intermediate thereof embracing
 30 said second pin and a loop engaging the snug formed on the thill-iron and rearwardly-extending fingers overlying said T-head.

7. A combination thill-coupling and shaft-support comprising a thill-iron having an ap-
 35 erture and a snug formed upon its upper end,

a pin passing through said aperture, a pair of interacting halves, jaws carried by each half opposing and coacting with the jaws of the opposite half, a second pin carried by one of
 40 said halves transversely thereon, the other half having a slot engaging said pin, means for securing one of said halves to the axle, a set-screw mounted in one of said halves and abutting against the opposite half to clamp
 45 said jaws upon the connecting-pin, a notched T-head formed on said set-screw, and a loop-spring having a coil intermediate thereof embracing said second pin and a loop engaging the snug formed on the thill-iron and rear-
 50 wardly-extending fingers overlying said T-head and lying in the notches thereof.

8. A thill-coupling comprising a pin adapted to extend through an aperture in one of the thill-irons, a pair of halves sliding on one
 55 another, a pair of jaws on each half coacting with the jaws of the opposite half, said jaws on one half being within the jaws of the other and adapted to slide laterally across the same, means for securing one of said halves to the
 60 axletree of the vehicle, and means extending between the two halves to cause one half to slide forcibly on the other, whereby to force the jaws together upon the pin.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JAMES BOTTRELL UREN.

Witnesses:

W. G. DUGUID,

P. P. McCALLUM.