(No Model.)

N. SOUTH.

THILL COUPLING.

No. 546,477. Patented Sept. 17, 1895.

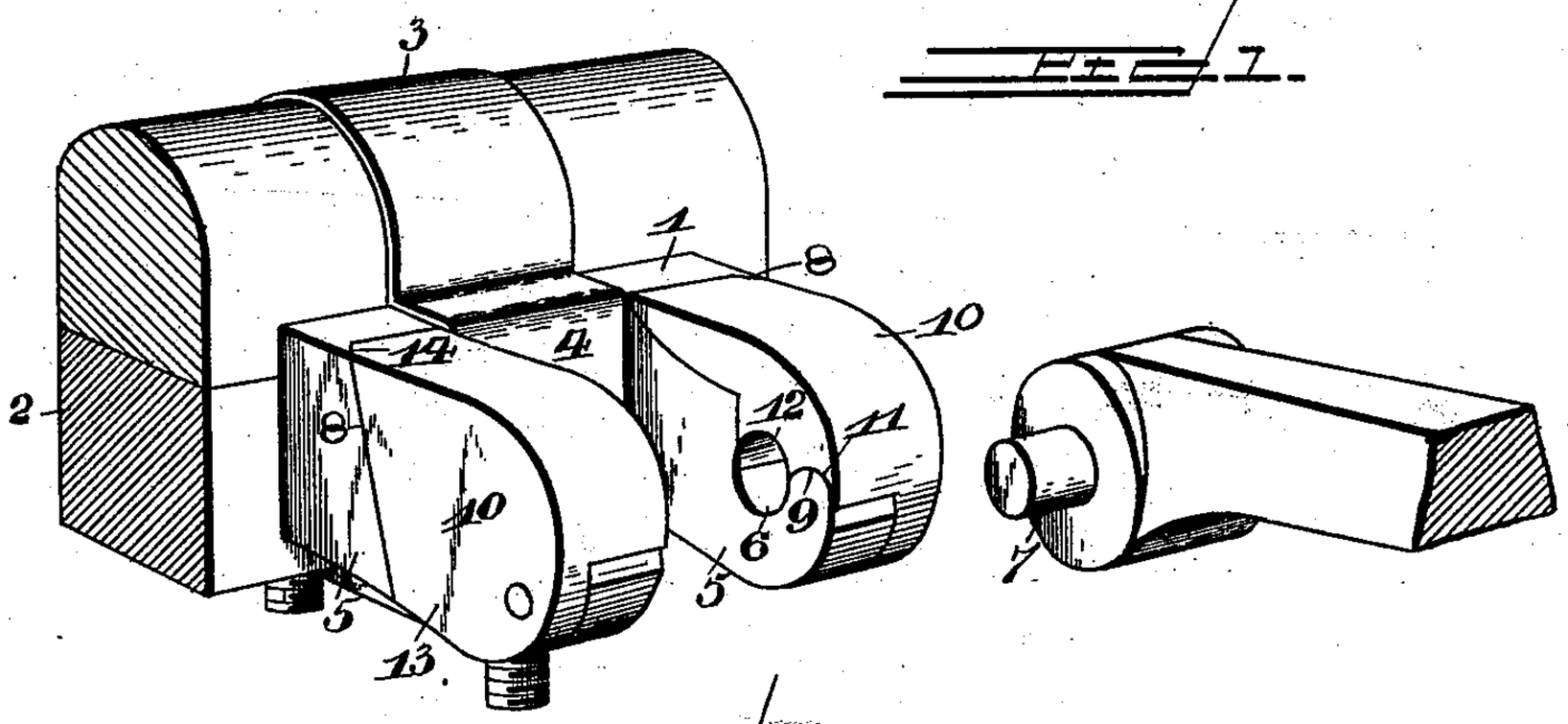


Fig. 1.

Fig. 5.

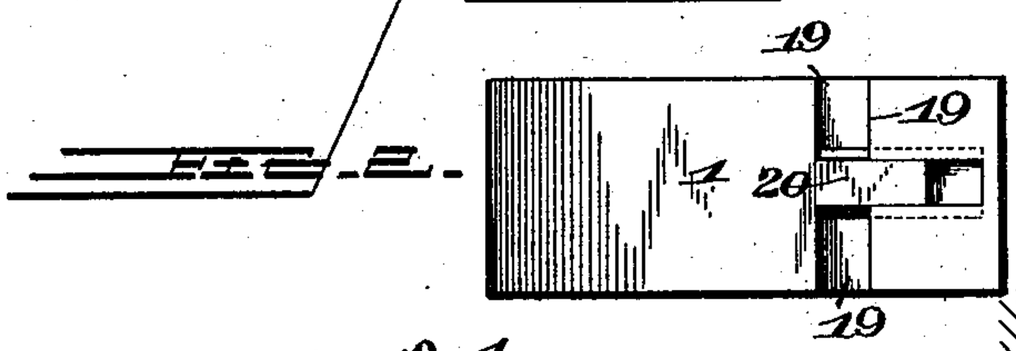
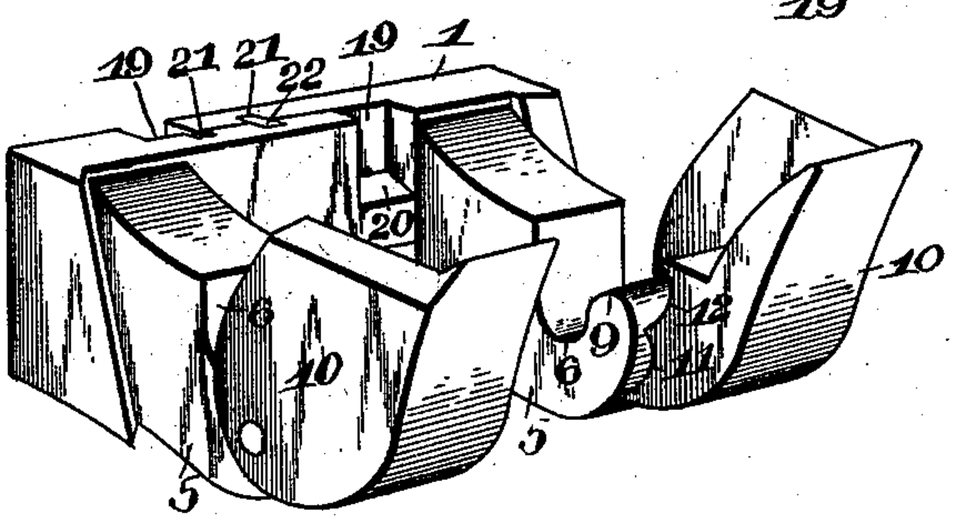
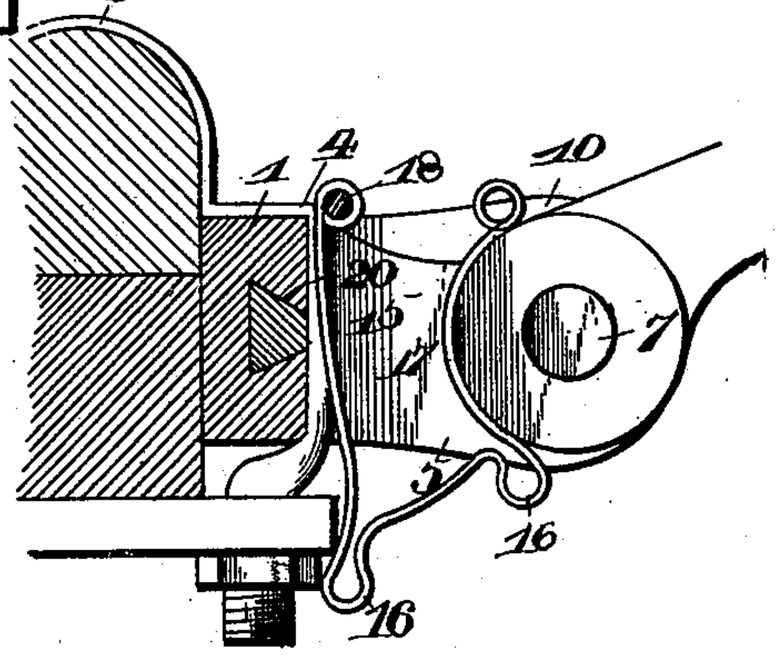


Fig. 2.

Fig. 3.





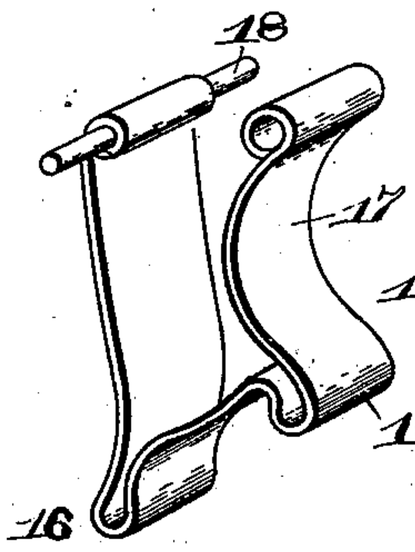


Fig. 4.

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UNITED STATES PATENT OFFICE.

NEWELL SOUTH, OF HUMPHREY, NEBRASKA.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 546,477, dated September 17, 1895.

Application filed July 27, 1895. Serial No. 557,364. (No model.)

To all whom it may concern:

Be it known that I, NEWELL SOUTH, a citizen of the United States, residing at Humphrey, in the county of Platte and State of Nebraska, have invented a new and useful Thill-Coupling, of which the following is a specification.

This invention relates to an improvement in thill-couplings; and it has for its object to simplify and improve devices of this character, with a view to facilitating the change from a pole to shafts, or vice versa.

The invention also has for its object to provide means for overcoming all noise and rattling between the thill-irons and the coupling members.

Other objects and advantages of the invention will appear in the course of the subjoined description.

With the above objects in view the invention consists in an improved thill-coupling embodying certain novel features and details of construction and arrangement of parts whereby advantages in point of simplicity, durability, and ease of manipulation are attained, as hereinafter fully set forth, illustrated in the drawings, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the improved thill-coupling constructed after the manner of this invention with the thill-iron detached and slightly removed therefrom. Fig. 2 is a perspective view of the coupling with the pivoted members thrown open and the sections of the transverse portions adjusted to their extended position. Fig. 3 is a vertical longitudinal section through the complete device with the parts all in operative position. Fig. 4 is a detail perspective view of the locking and antirattling-spring. Fig. 5 is a rear elevation of the coupling, showing the manner in which the two sections of the main or transverse portion of the coupling interlock.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the drawings, 1 designates the main body or thill member of the device, which is fixedly secured to the front face of the axle 2 by means of the usual axle-clip 3, the latter, however, being given a forward offset, as shown at 4, adapting it to embrace the body of the member 1 and hold the same snugly against the axle.

5 designates a pair of forwardly-projecting arms, which are formed integrally with the member 1 and extend in parallel relation to each other. The arms 5 are spaced a sufficient distance apart to receive between them the rear end of one of the thill-irons of the pole or shafts, and said arms are formed with U-shaped sockets 6 in their upper faces, said sockets being horizontally aligned and opening upwardly, adapting them to receive the transverse pin or bolt 7 of the thill-iron referred to. Each of the arms 5 is partially cut away or recessed upon its outer face, as shown, and formed with an inclined or dovetailed retaining edge 8, which is adapted to engage the swinging edge of a pivoted guard member, hereinafter described, and each arm is also formed in advance of the U-shaped socket 6 with a rounded nose 9, the purpose of which will appear.

10 designates a pair of pivoted members which are hinged to the forward extremities of the parallel arms 5, as indicated. Each of said pivoted members is formed with a curved socket or recess 11, which registers with the rounded nose 9 of the arm 5, and such pivoted member is further provided with a downwardly-projecting lug portion, which rests within the U-shaped socket 6 of the arm 5 and is formed with a curved or semicircular recess overlying the socket 6, as indicated at 12. These recesses or sockets together form a cylindrical socket for the laterally-projecting end of the pin 7 of the thill-iron, the outer end of said socket being closed by means of a depending flange 13, formed integrally with said pivoted guard member and extending downwardly upon the outside of its respective arm 5, so as to fill the cut-away portion thereof above described. The rear edge of said flange is inclined or chamfered off, as indicated at 14, in such manner as to pass behind and interlock with the inclined or dovetailed edge 8 of the arm 5 above described. By means of this construction each pivoted guard member,

when in closed position, will be effectually held against lateral movement, thus adding materially to the strength and practical value of the device as a whole.

15 designates a leaf-spring which is interposed between the rear end of the thill-iron and the axle-clip or the main body of the coupling device. This spring is bent upon itself centrally in such manner as to form a pair of loops or scrolls 16, the forward one of which is adapted to bear beneath the thill-iron and the rear one against the forward edge of the perforated plate or cross-bar striding the lower ends of the axle-clip, as shown. These loops serve to widen the base or central portion of the spring, so that it cannot of itself readily escape, and at the same time serve to assist in the removal of the spring by projecting beneath the lower face of the coupling into a position adapting said spring to be thrust upward by the pressure thereon of the attendant's finger. The forward terminal of this spring is given a substantially semicircular bend, adapting it to embrace snugly the rear end of the thill-iron, as indicated at 17, and the rear terminal of the spring is looped to engage a transverse pin 18, which projects at its opposite ends beyond the side edges of the spring and rests upon the rear ends of the pivoted guard members in such manner as to lock the same and prevent their being accidentally thrown upward to release the thill-iron.

The main body or transverse portion of the coupling is made in two parts, which are rabbeted, as indicated at 18, so that such parts will overlap, as shown in Fig. 2. In addition to this each of said parts is provided with a laterally-projecting dovetailed tongue 20, which enters a corresponding dovetailed socket in the end portion of the other opposite part. This construction provides for sliding the two parts of the main or transverse body portion of the coupling upon each other for adjusting the distance between the forwardly-extending arms 5, with a view to accommodating different-sized thill-irons, which, it will be understood, vary in width. The inner faces of the two parts forming the main body or transverse portion of the coupling are formed with vertically-disposed grooves 21, and in adjusting the arms 5 to suit any particular thill-iron the parts are moved so as to bring the groove 21 of one part opposite to a groove in the other part, whereupon a tapering or wedge-shaped key 22 is driven into the vertical perforation formed by said grooves, thus locking the parts against relative movement, while transverse movement is rendered impossible by reason of the dovetailed sliding connection of the parts, as will be readily understood.

From the foregoing description it will be apparent that a very simple, durable, and efficient thill-coupling is obtained in which provision is made for the easy insertion and removal of the thill-iron and for accommodating different sizes of thill-irons and wherein one and the same spring is utilized for locking the pivoted guard members against accidental displacement and for absorbing all vibration and rattling of the thill-iron and other parts.

It will be apparent that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The herein described thill coupling comprising two forwardly projecting parallel arms having U-shaped sockets formed in their upper faces and cut away or recessed upon their outer opposite faces in such manner as to form dove-tailed locking edges, and two pivoted guard members hinged to the forward ends of said arms and adapted to engage and retain the thill iron pin or bolt in place, said guard members being provided with the integral depending flanges for closing the outer ends of the U-shaped sockets referred to, and having their rear swinging edges beveled or chamfered off to engage behind and interlock with said dove-tailed edges, substantially in the manner and for the purpose described.

2. The herein described thill coupling, comprising a pair of forwardly projecting parallel arms having U-shaped sockets in their upper faces and formed with rounded forward extremities, and a pair of pivoted guard members hinged to the forward ends of said arms and each provided with a depending lug portion having a curved or semi-circular recess adapted to enter the U-shaped depression in the coupling arm and to engage with the pin or bolt of the thill iron, said guard members being also provided each with a depending flange adapted to swing downward and close the outer end of such U-shaped socket in the coupling arm, substantially as and for the purpose described.

3. In a thill coupling, the main coupling member provided with a forwardly extending pair of parallel arms, a thill iron having its pin or bolt arranged within horizontally aligning sockets in said arms, and a pair of pivoted guard members hinged to said arms and adapted to embrace and engage said pin or bolt, in combination with a locking spring the same being folded centrally upon itself, one terminal thereof being curved or formed in such manner as to engage with and press forwardly against the rear end of the thill iron, and the other terminal of said spring having connected therewith a transverse pin resting at its opposite ends upon the pivoted guard members for preventing the accidental

upward movement of said members, substantially as set forth.

4. In a thill coupling, a pair of forwardly extending arms provided at their rear ends with overlapping transverse portions having a dove-tailed sliding connection with each other, and provided upon their contiguous inner faces with vertically extending grooves which are adapted to register with each other and receive a key, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

NEWELL SOUTH.

Witnesses:
THOMAS K. OTTIS,
A. L. HALE.