

No. 777,689.

PATENTED DEC. 20, 1904.

V. B. & L. NEAL.
THILL COUPLING.

APPLICATION FILED APR. 7, 1904.

NO MODEL.

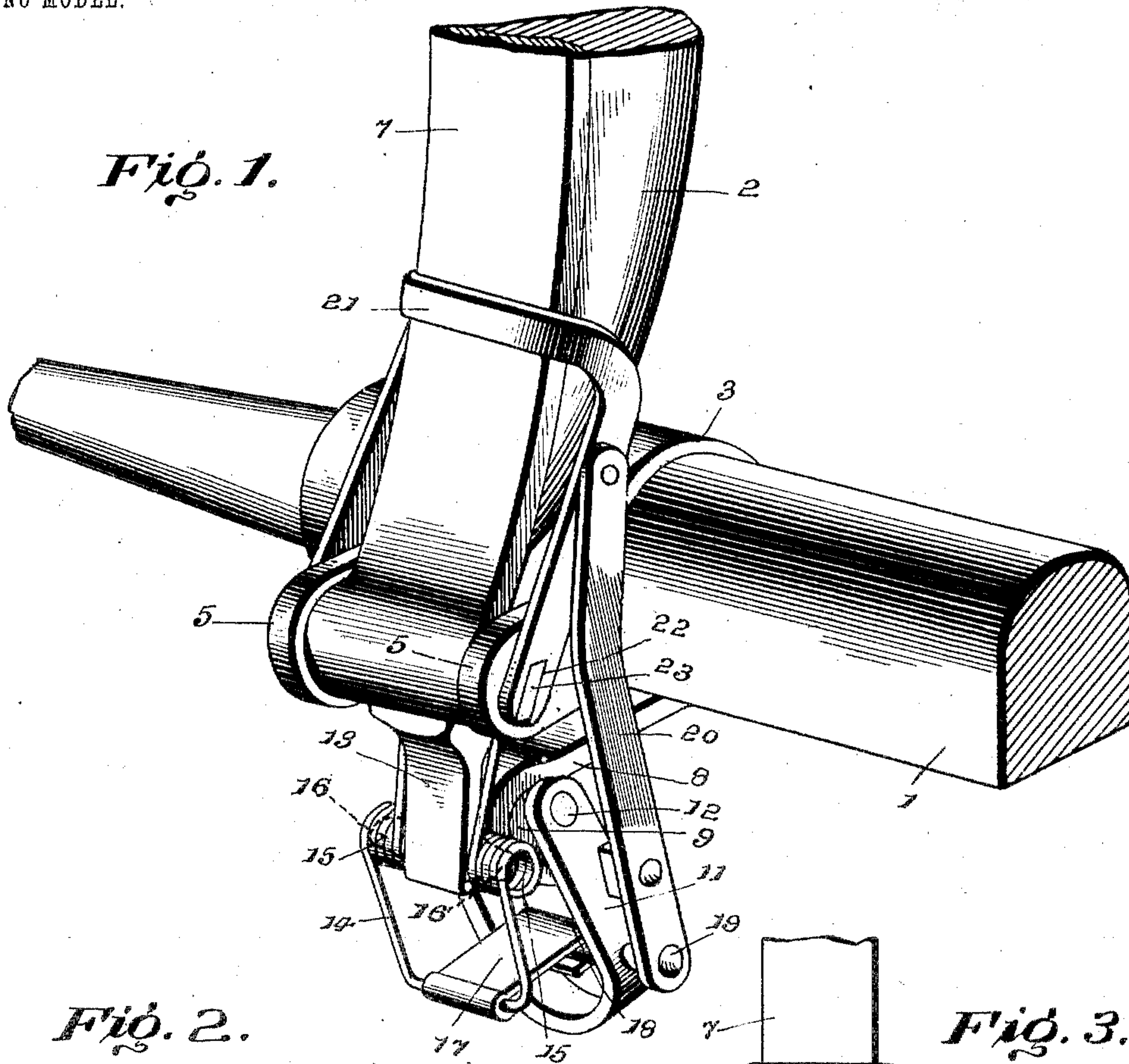


Fig. 2.

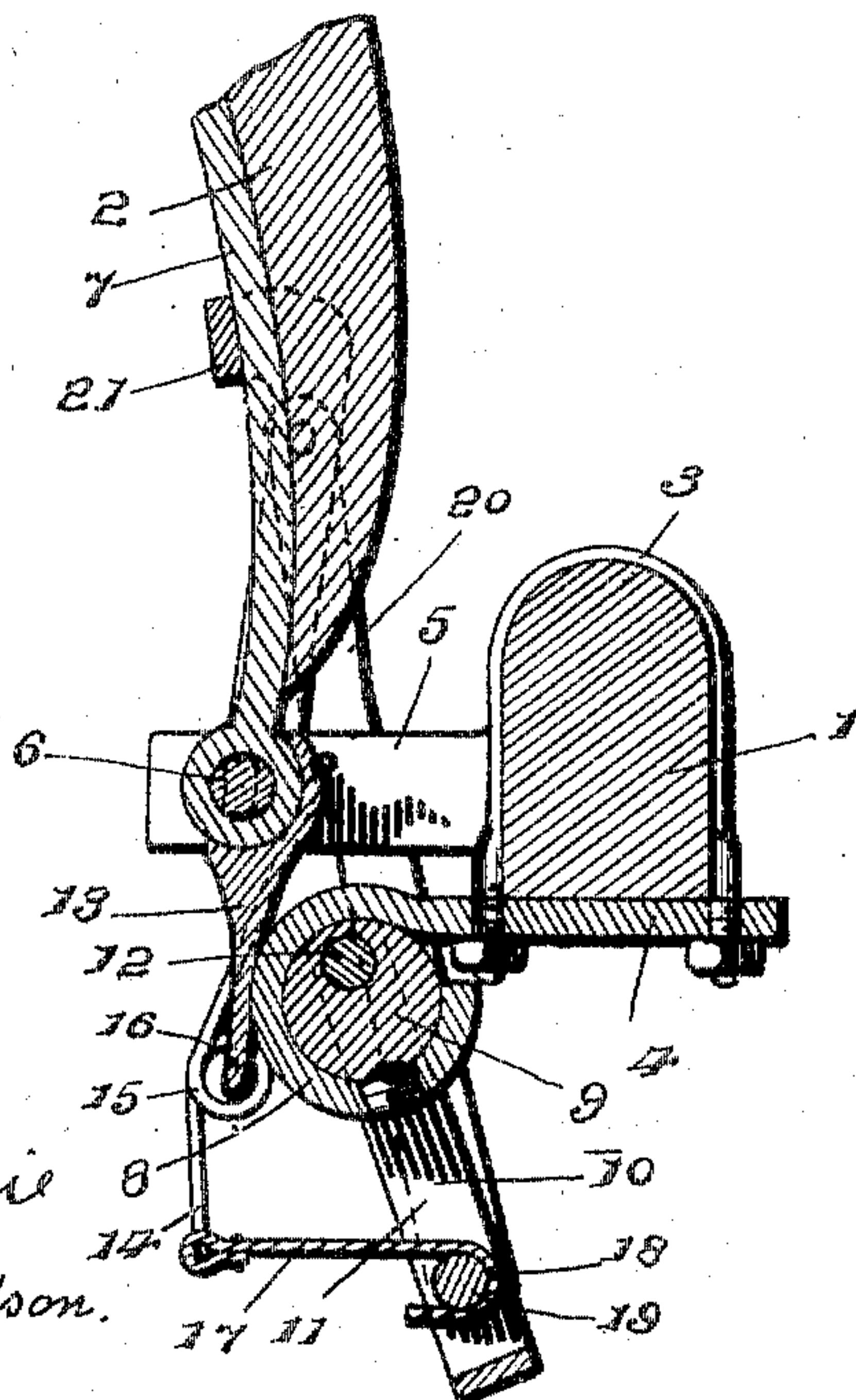
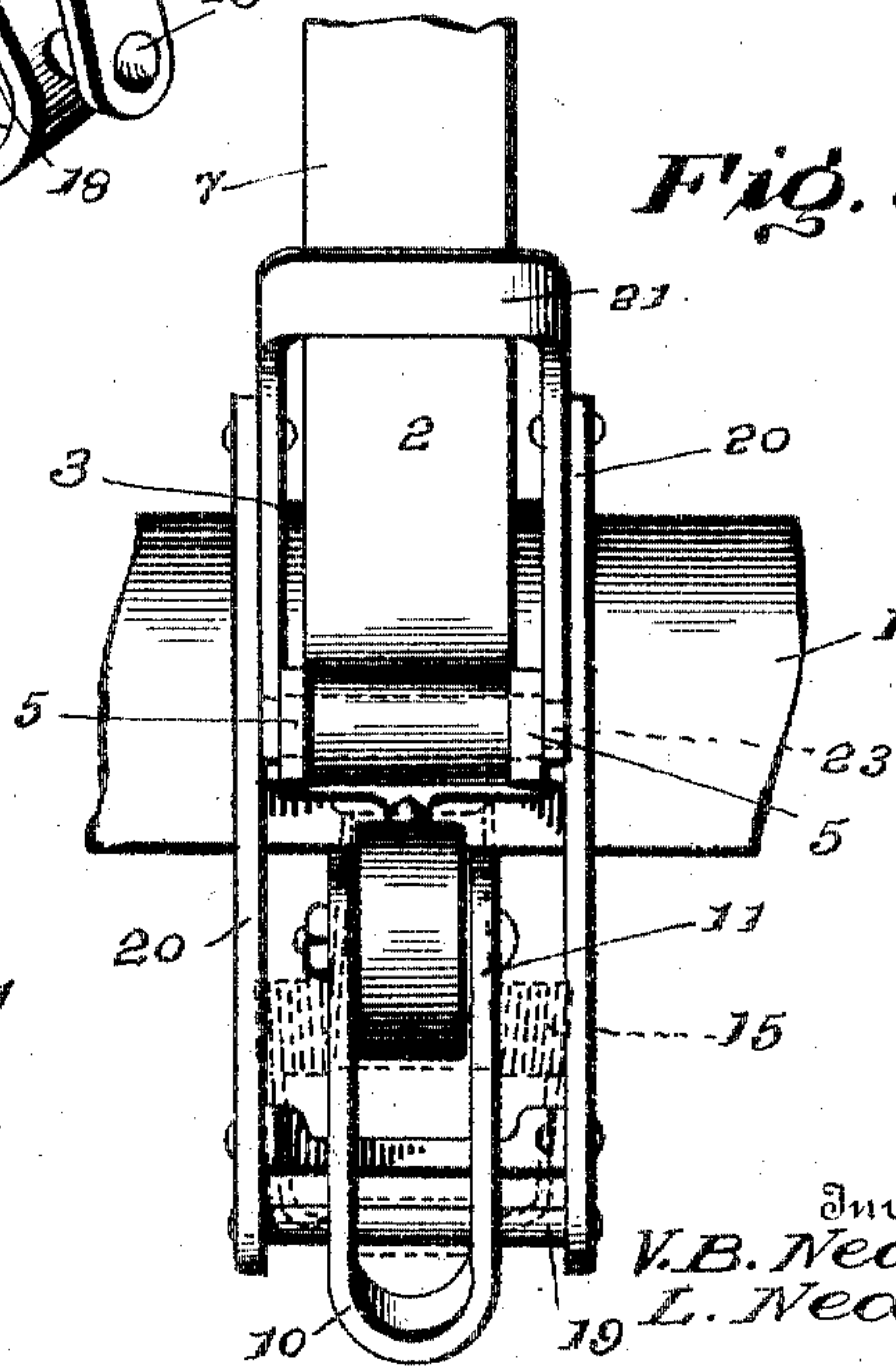


Fig. 3.



Witnesses

For Inve.
W. N. Woodson.

Inventors

V. B. Neal
L. Neal

By

R. A. Lacey, Attorney

UNITED STATES PATENT OFFICE.

VAN B. NEAL AND LUCIAN NEAL, OF DESOTO, OHIO.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 777,689, dated December 20, 1904.

Application filed April 7, 1904. Serial No. 202,038.

To all whom it may concern:

Be it known that we, VAN B. NEAL and LUCIAN NEAL, citizens of the United States, residing at Desoto, in the county of Brown and State of Ohio, have invented certain new and useful Improvements in Thill-Couplings, of which the following is a specification.

This invention relates to an improved form of coupling device for securing shafts to buggies or like vehicles, and the improvements embody specially-devised combined means for preventing rattling of the thill and for supporting the shafts upon the axle, the parts being so assembled and mounted as to admit of ready detachment and attachment of the thill from the vehicle-axle.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view, parts broken away, showing the application of my invention. Fig. 2 is a vertical sectional view bringing out more clearly the relative arrangement of parts. Fig. 3 is a front elevation, the thill removed.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the numeral 1 indicates the axle, and 2 a thill or shaft mounted upon said axle. The thill 2 is attached to the axle by means of the clip 3, which is of substantially the same type as are now in common use in shaft-couplings. The clip 3 embraces the axle and is secured thereto by a yoke-plate 4, secured upon the under side of the axle. Projected from the body of the clip are integral journal-lugs 5, which are provided with bearings receiving a pivot-pin 6. The thill is provided with the thill-iron 7, hav-

ing the journal-opening receiving the pivot-pin 6, the thill being mounted upon this member. The yoke-plate 4 is of a peculiar form, being provided at one end with an integral journal member 8.

A shaft 9 is mounted in the journal member 8 of the yoke-plate 4, and eccentrically mounted upon this shaft 9 is an actuating-lever 10. The actuating-lever 10 is of approximately U form, and the end portions of the spaced arms 11 of this lever embrace the shaft 9, being secured to the shaft by an eccentrically-mounted journal-pin 12.

The antirattling device utilized consists of the friction-plate 13, the upper portion of which is received between the journaled portion of the thill-iron 7 and the journal member 8 of the yoke-plate 4. The friction-plate 13 is held into positive frictional contact with the thill-iron by means of a spring 14 and having spring-coils 15 intermediate the ends thereof. The friction-plate 13 is provided with laterally-extending lugs 16, which are received by the spring-coils 15, thereby fixing the spring to the plate 13 in an obvious manner. The upper end portion of the spring 13 bears against the rear side of the friction-plate 13 and the lower end portion of the spring is connected by means of a connecting member or hook-plate 17 with the actuating-lever 11. The hook-plate 17 is permanently attached at one end to the lower end of the spring 14, the other end of the said hook-plate being provided with a hook 18, adapted to engage a cross-bar 19, secured to the spaced arms 11 of the actuating-lever 10. The ends of the cross-bars 19 constitute journal means upon which bars 20 are pivotally mounted, and these last-mentioned bars 20 constitute spaced connecting members which connect the actuating-lever 10 with the shaft-support 21. The shaft-support 21 comprises a U-shaped bar, which is pivotally mounted upon the pivot-pin 6, which also constitutes the pivot member upon which the thill 2 is mounted. The pivoted shaft-supporting member 21 engages the under side of the thill, and the lower ends of the said member which are spaced from each other are provided with longitudinal slots 22, receiving

extended end portions 23 of the pivot-pin 6. It will thus be seen that the shaft-support 21 is detachably mounted upon the pivot-pin 6, and since the lower end portions of the member 21 engage the ends of the pivot-pin 6 the latter is effectually prevented from displacement from the clip 3.

The coöperation of the parts is as follows: The spring 14 normally holds the thill from rattling in its bearings by positively holding the friction-plate 13 in engagement therewith. The tendency of the spring 14 is to pull the actuating-lever 10 forward; but the forward movement of this lever is limited by means of a stop-bar 24, which connects the lower end portions of the connecting-bars 20. The actuating-lever 10 under the influence of the spring 14 and through the connecting member 20 forces the thill-supporting member 21 hard against the thill 2, and thus tends to force the thills upwardly under normal conditions. When the thills are pulled downwardly and adjacent the body of the draft-animal, the tension of the spring 14 is increased, preventing all likelihood of rattling. The thills when moved into an upright position are firmly held in such position by the said spring 14, which latter, in its coöperation with the anti-rattling devices, performs a dual function.

In order to provide for adjustment of the tension of the spring 14, spacing-plates 25 may be interposed between the yoke-plate 4 and the axle 1 in securing such yoke-plate to the clip 3, and by so doing the point of pivotal support of the actuating-lever relative to the pivot-pin 6 may be adjusted, and this effects the necessary adjustment of the tension of the part 14. An exact or minute adjustment of the tension of the spring 14 may be had by revolution of the shaft 9 to throw the eccentrically-mounted pin 12 toward or from the pivot-pin 6, and the position of the shaft is fixed by an adjusting member in the form of a set-screw 26, which latter is carried by the journal member of the yoke-plate 4.

The parts are adapted to be quickly taken apart, so as to admit of removal of the thill whenever desired, and to accomplish the above it is but necessary to unhook the plate 17 and remove the antirattling device 13, after which the supporting member 21 may be detached from the pivot-pin 6, and this pin may then be removed to displace the thill from the clip 3.

Having thus described the invention, what is claimed as new is—

1. In a thill-coupling, the combination of an axle, journal members projected from the axle, a pivot-pin mounted in said journal members, a thill mounted upon the pivot-pin, a friction-plate engaging the thill, a spring holding the said friction-plate in engagement with the thill, a pivoted shaft-supporting member, an actuating-lever, connecting means between the actuating-lever and the shaft-supporting member, and connecting means be-

tween the actuating-lever and the spring aforesaid.

2. In a thill-coupling, the combination of an axle, journal members projected from the axle, a pivot-pin mounted in said journal members, a thill mounted upon the pivot-pin, a friction-plate engaging the thill, a spring holding the said friction-plate in engagement with the thill, a pivoted shaft-supporting member, an eccentrically-mounted actuating-lever, connecting means between the actuating-lever and the shaft-supporting member, and connecting means between the actuating-lever and the spring aforesaid.

3. In a thill-coupling, the combination of an axle, journal members projected from the axle, a pivot-pin mounted in said journal members, a thill mounted upon the pivot-pin, a friction-plate engaging the thill, a spring holding the said friction-plate in engagement with the thill, a pivoted shaft-supporting member, an adjustably-mounted actuating-lever, connecting means between the actuating-lever and the shaft-supporting member, and connecting means between the actuating-lever and the spring aforesaid.

4. In a thill-coupling, the combination of an axle, a clip secured to the axle, journal members projected from the clip, a yoke-plate securing the clip to the axle, a thill pivoted to the journal members of the clip, an actuating-lever pivoted to the yoke-plate aforesaid, a friction-plate engaging the thill aforesaid, a movable shaft-supporting member, connecting means between the shaft-supporting member and the actuating-lever, and other connecting means between the actuating-lever and the spring.

5. In a thill-coupling, the combination of an axle, a clip, a yoke-plate securing the clip to the axle, journal members projected from the clip, a thill pivoted to the journal members, a pivoted shaft-supporting member engaging the thill, an actuating-lever pivotally mounted upon the yoke-plate aforesaid, a spring antirattling device engaging the thill, connecting means between the shaft-supporting member and the actuating-lever, and other connecting means between the actuating-lever and the spring antirattling device.

6. In a thill-coupling, the combination of an axle, a clip secured to the axle, journal members projected from the clip, a shaft journaled to said members, a pivoted shaft-supporting member engaging the shaft, an actuating-lever connecting means between the actuating-lever and the shaft-supporting member, and spring means coöperating with the actuating-lever aforesaid.

7. In a thill-coupling, the combination of an axle, a clip secured to the axle, journal members projected from the clip, a shaft journaled to said members, a pivoted shaft-supporting member engaging the shaft, an adjustably-mounted actuating-lever, connecting

means between the actuating-lever and the shaft-supporting member, and spring means coöperating with the actuating-lever aforesaid.

5 8. In a thill-coupling, the combination of an axle, a clip secured to the axle, journal members projected from the clip, a pivot-pin mounted in said journal members, a thill jour-
10 naled upon said pivot-pin, a shaft-supporting member pivoted to the said journal-pin and engaging the thill, an actuating-lever pivoted to the axle, connecting means between the ac-
15 tuating-lever and the shaft member, and spring means coöperating with the actuating-lever to hold the shaft-supporting member in engage-
ment with the shaft.

9. In a thill-coupling, the combination of an axle, a clip secured to the axle, journal members projected from the clip, a pivot-pin
20 mounted in said journal members, a thill jour- naled upon said pivot-pin, a shaft-supporting member detachably pivoted to the pivot-pin, an actuating-lever pivoted to the axle, connecting means between the actuating-lever

and the shaft-supporting member, and spring 25 means coöperating with the actuating-lever.

10. In a thill-coupling, the combination of an axle, a clip, a yoke-plate securing the clip to the axle and provided with a journal mem- 30 ber, a shaft mounted in said journal member, an actuating-lever eccentrically mounted upon said shaft, journal-lugs projected from the clip, a pivot-pin mounted in said journal mem-
35 bers, a thill pivoted to the pivot-pin, a detach- able shaft-supporting member pivoted to the pivot-pin, bars connecting the actuating-lever and the shaft-supporting bar, a friction-plate engaging the thill, a spring normally holding the friction-plate in engagement with the thill,
40 and a hook-plate connecting the said spring with the actuating-lever.

In testimony whereof we affix our signatures in presence of two witnesses.

VAN B. NEAL. [L. S.]
LUCIAN NEAL. [L. S.]

Witnesses:

HALLIE M. BROOKS,
CHAS. GATTS.