

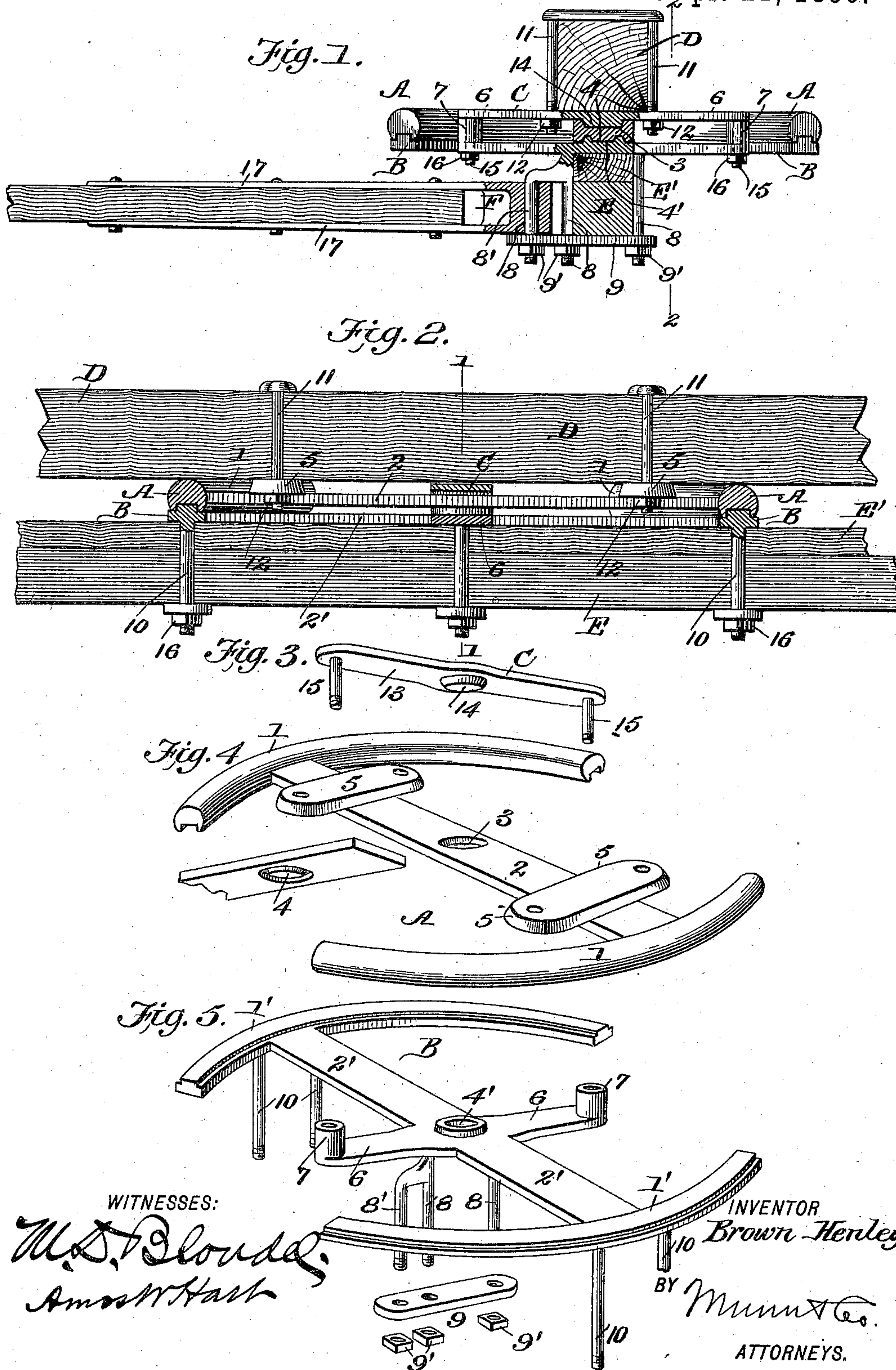
(No Model.)

3 Sheets—Sheet 1.

B. HENLEY.
SWIVEL COUPLING.

No. 558,808.

Patented Apr. 21, 1896.



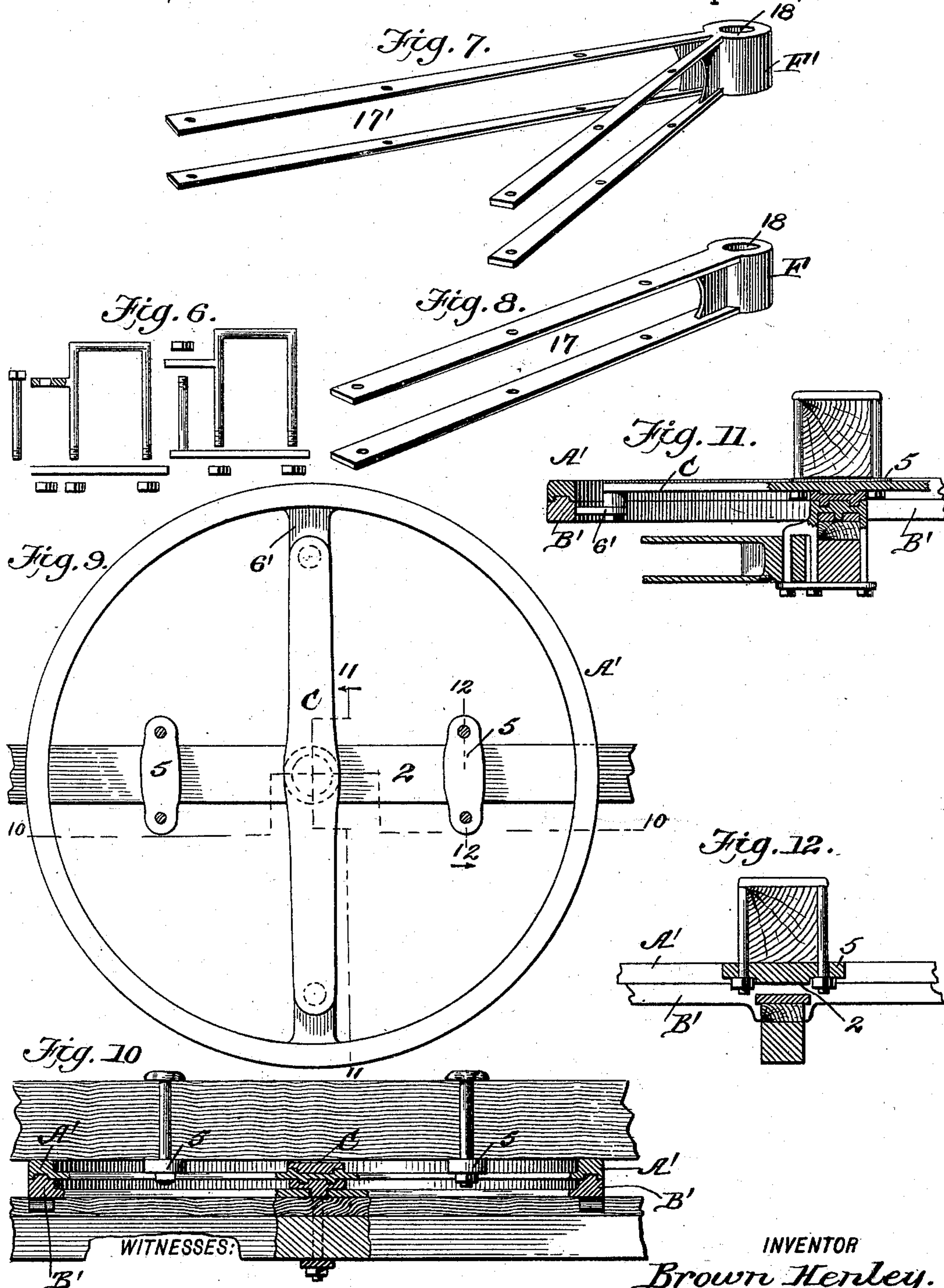
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WITNESSES:
M. D. Blouet,
Amos W. Hart

INVENTOR
Brown Henley.
BY *Munn & Co.*
ATTORNEYS.

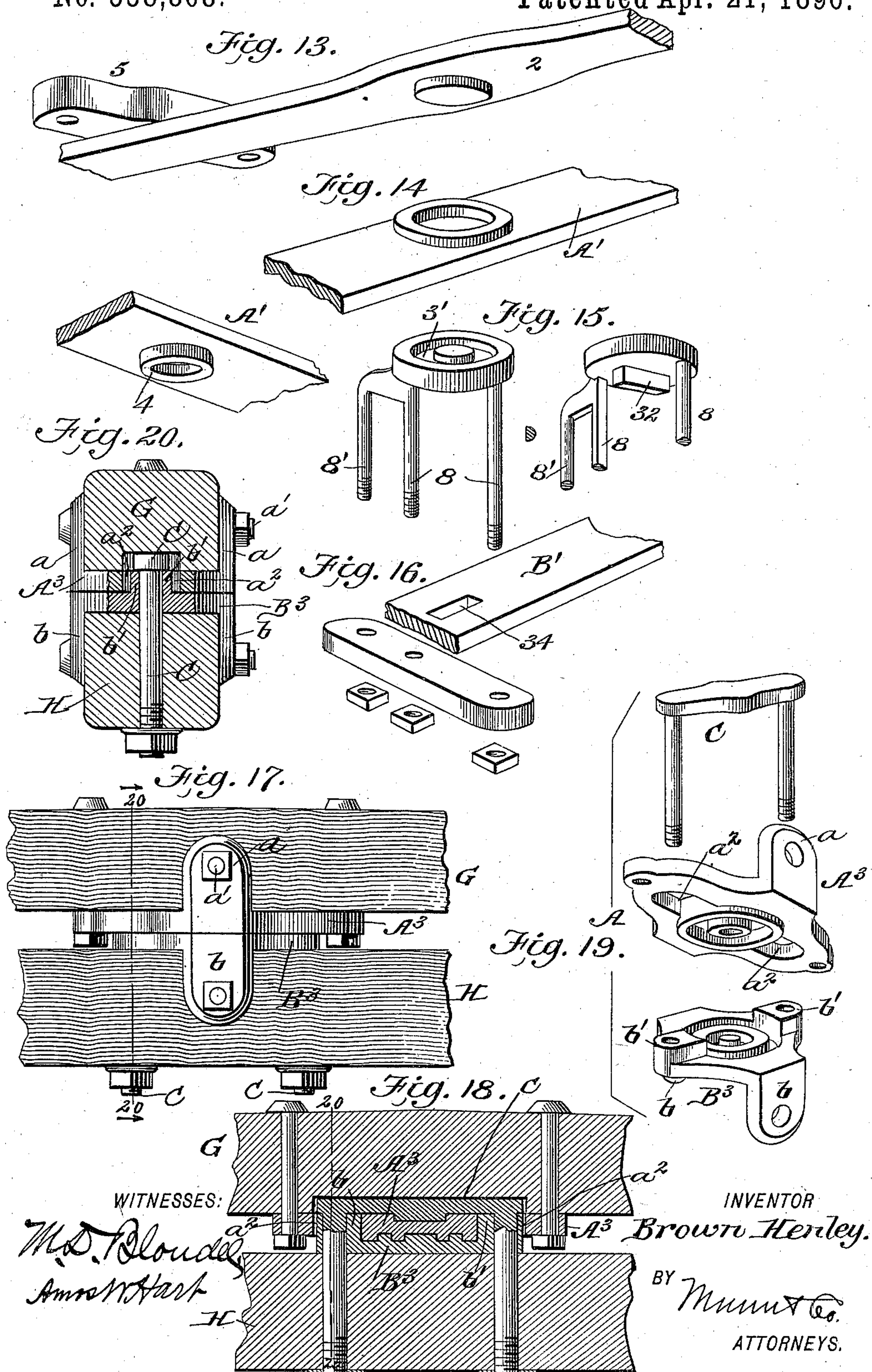
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Patented Apr. 21, 1896.



UNITED STATES PATENT OFFICE.

BROWN HENLEY, OF HILLSVILLE, PENNSYLVANIA.

SWIVEL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 558,808, dated April 21, 1896.

Application filed May 4, 1895. Serial No. 548,091. (No model.)

To all whom it may concern:

Be it known that I, BROWN HENLEY, of Hillsville, in the county of Lawrence and State of Pennsylvania, have invented a new and Improved Swivel-Coupling, of which the following is a specification.

Letters Patent No. 540,162 have been granted to me for a swivel or pivot coupling adapted for connecting two parts that require to rotate on each other. My present invention is an improvement in the same line; but it is particularly intended and adapted for use as a fifth-wheel for vehicles, and also as a coupling for singletrees.

The construction and arrangement of parts are as hereinafter set forth, reference being had to the accompanying drawings, three sheets, in which—

Figure 1 is a vertical section of a fifth-wheel embodying my invention, the same being on line 1 1 of Fig. 2. Fig. 2 is a vertical section on line 2 2 of Fig. 1. Fig. 3 is a perspective view of the main clip which connects the rotatable parts of the coupling. Fig. 4 is a perspective view of the rotatable upper part of the fifth-wheel. Fig. 5 is a perspective view of the rotatable lower or under part of the same. Fig. 6, Sheet 2, is a perspective view of a modified construction of a detachable swivel-clip used for securing the under part of the fifth-wheel to the axle. Fig. 7 is a perspective view of a bifurcated swivel-piece for connecting a double reach with the fifth-wheel. Fig. 8 is a perspective view of a swivel-piece for connecting a single reach with the fifth-wheel. Fig. 9 is a plan view of a modified form of fifth-wheel. Fig. 10 is a vertical section on line 10 10 of Fig. 9. Fig. 11 is a vertical section on line 11 11 of Fig. 9. Fig. 12 is a section on line 12 12 of Fig. 10. Figs. 13 to 16, inclusive, are enlarged perspective views of detached portions of the coupling. Fig. 17 is a front view of my invention applied as a singletree-coupling. Fig. 18 is a central longitudinal section of the singletree-coupling. Fig. 19 includes perspective views of the three main parts of the singletree-coupling detached. Fig. 20 is a transverse section on the line 20 20 of Figs. 17 and 18.

I will first describe the construction and operation of the coupling and connections shown

in Figs. 1 to 8, inclusive. The couplings shown in said figures is a fifth-wheel for vehicles and is formed of three main parts—namely, an upper or socket part A, Fig. 4, and a lower or tenon part B, Fig. 5, which fit together, as shown in Figs. 1 and 2, and are adapted to rotate on each other, and a clip or tie C, Fig. 4, that secures said parts A B together. The part A consists, mainly, of two half-circles 1 1, arranged oppositely, and a connecting diametrical cross-bar 2, which is provided centrally with an integral socket 3 and pivot 4 on its respective upper and under sides, and also with two sets of bosses and lateral perforated lugs 5 5, which are arranged between the center 3 and half-circles 1 1.

The lower or tenon half B, Fig. 5, of the coupling has also two opposite half-circles 1' 1' and a diametrical cross-bar 2', which is provided centrally with a socket 4'. The said bar has two central arms 6, that diverge oppositely and are provided with perforated bosses 7 at their outer ends. From the lower central side of said bar 2' depend three arms or shanks. (Marked 8, 8, and 8'.) These, together with the plate 9 and nuts 9', Fig. 5, constitute a clip, which in view of one of its functions (hereinafter stated) and to distinguish it from the part C, Fig. 3, is termed the "swivel-clip." Two parallel screw-shanks 10, Fig. 5, are sidewise pendent from each half-circle 1', as shown, and constitute an axle-clip of an ordinary kind.

When the parts A B are fitted together, as shown in Fig. 12, the half-circles 1' 1' of part A and the pivot 4 of the latter enter socket 4' of part B. Thus the two parts are adapted to rotate freely on each other and constitute a light yet strong body for a fifth-wheel.

The upper part A, Figs. 1 and 2, is secured to a bolster D by means of clips 11, whose parallel screw-threaded shanks pass through the holes in lugs 5 5 of cross-bar 2 and are fastened by nuts 12.

The lower part B of the fifth-wheel is secured to the axle E and its bolster E', Figs. 1 and 2, by means of the swivel-clips 8 8' and clips 10, their plates and nuts forming parts of the same.

The main clip C, Fig. 3, secures the two parts A B of the fifth-wheel together and yet

permits them to turn on each other. It consists of a flat bar 13, having a central pivot 14 on its under side, and two parallel shanks 15. The said pivot 14 fits in the socket 3 of the upper part A, and its shanks 15 pass through the bosses 7 7 on the ends of the arms 6 of part B, being secured by nuts 16, as shown. The said bosses 7 project vertically far enough to support the bar 13 of clip C, so that its pivot 8 cannot be drawn down too tightly into the socket 3.

The reach of the vehicle may be single or double. When single its forward end is secured by screw-bolts between the parallel arms 17, Fig. 8, of the swivel-piece F, and when double the two parts are similarly secured between the two divergent sets of arms, Fig. 7, of the bifurcated swivel-piece F'. The rear shank 8' of the swivel axle-clip before described passes through the eye 18 of either swivel-piece F or F', as shown in Figs. 1 and 11, and thus the front and rear axles are connected strongly and yet simply. To prevent rattling due to wear between these parts 8' and 17, I propose to employ a washer of any suitable elastic material.

The rear part 8' of the swivel-clip may be made independent of and detachable from the body of the clip, as shown in Fig. 6. In that case the body of the clip will be provided with lateral perforated lugs or ears to receive the detachable shank, and the latter may be secured by a nut or spring-pin. The shank and clip-plate may also be made integral, as shown.

In the modification shown in Figs. 9 to 16, inclusive, the circles A' B' (see Fig. 9) of the fifth-wheel are made continuous instead of being interrupted or broken, but the cross-bar 2 of the upper part B' is provided with perforated lugs 5, as before, while the lower B' is provided with perforated ears or arms 6', Fig. 11, that extend inward from opposite sides of the circle. These lugs 6' take the place of the arms 6 (forming lateral extensions of the cross-bar 2 of part A) before described and receive the shanks of the clip C, which secures the parts A' B' together. Another change consists in the connection between said parts and the swivel-clip 8 8', the latter being made separate and detachable, Figs. 11 and 15, from the circle part B', and also provided with a socket 3' in its head and an oblong projection 3² on its under side. The shanks 8 8' of this form of swivel-clip embrace the cross-bar 2 of circle part B', and the projection 3² enters a corresponding aperture, Fig. 16, or socket 3⁴ in said cross-bar, so that the parts may turn on each other. The socket 3' in the head of clip receives the pivot 4 of part A'. It will be seen that the construction and arrangement of the clip enable the clips 10 of part B (shown in Fig. 5) to be dispensed with; but at the point where they are located I propose to provide parallel pendent lugs, Fig. 10, that embrace the sides

of the axle and bolster and serve to brace and strengthen the connection of parts.

In Figs. 17 to 20, inclusive, I show a modification of the invention, which serves as a singletree-coupling, A³ being the upper part and B³ the under part of the same and C the clip. The parts A³ and B³ have corresponding central tenon and socket portions to adapt them to turn on each other. The upper part A³ has vertical side lugs *a*, which are perforate to receive wood-screws or cross-bolts *a'* for securing it to the singletree G; but other screw-bolts may also be used for this purpose, the same passing up through holes in the ends of the part A³. The lower part B³ has similar vertical perforated lugs *b* to receive a cross-bolt for securing it to the cross-bar H of the vehicle-shafts. The body of the upper part A³ has openings *a*², Figs. 18 and 19, to receive bosses *b'* of the part B³, and said openings are enlarged laterally to permit sufficient movement—*i. e.*, oscillation—of the singletree on the shaft cross-bar H.

When the clip C is applied, its bar lies, Fig. 18, in a recess in the under side of the singletree and its tenon enters the socket in top of part A³, while its shanks pass through the openings *a*² in the latter, then through the bosses *b'* of the under part B, and then through the shaft cross-bar H.

What I claim is—

1. In a swivel-coupling of the character described, the combination with upper and lower parts adapted to fit together and rotate on each other, of a clip which connects said parts and allows due rotary movement of the same, the said clip having a bar that bears centrally on one of said parts, and shanks which rigidly connect it with the other part, substantially as shown and described.

2. In a swivel-coupling of the character described, the combination with two parts adapted to fit together and rotate on each other, the upper one having a socket in the upper side of its central portion, and the other part having perforated arms or extensions, of a clip composed of a bar having a central pivot and parallel shanks, on one side, the rotatable parts being connected as shown and described whereby the pivot of the clip enters the said socket and the shanks pass through the ends of said arms, as specified.

3. In a swivel-coupling of the character described, the combination with a vehicle-axle and upper bolster, of a coupling composed of an upper part having a central socket and perforated bosses or lugs arranged laterally therefrom, a lower part having a central rotatable connection with said upper part and perforated arms, and a clip connecting said parts, its top portion or bar having a pivot that rests in said socket and being made of less thickness than the projection of said bosses, as shown and described.

4. The combination, of the reach swivel-piece having an eye as specified with the

swivel-clip having a rear shank that passes through said eye, and the two rotatable parts of the fifth-wheel, and means for securing said parts together, substantially as shown
5 and described.

5. As an improved article of manufacture, the under part of a fifth-wheel having a swivel-clip formed of two shanks for securing it to the axle, and a rear shank for connecting with a reach, as shown and described.
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6. In a swivel-coupling of the character described, the upper rotatable part of the coupling having perforated ears, and clips whose parallel arms pass through said ears for securing the coupling to the vehicle-bolster, as
15 shown and described.

BROWN HENLEY.

Witnesses:

SOLON C. KEMON,
CHAS. A. PETTIT.