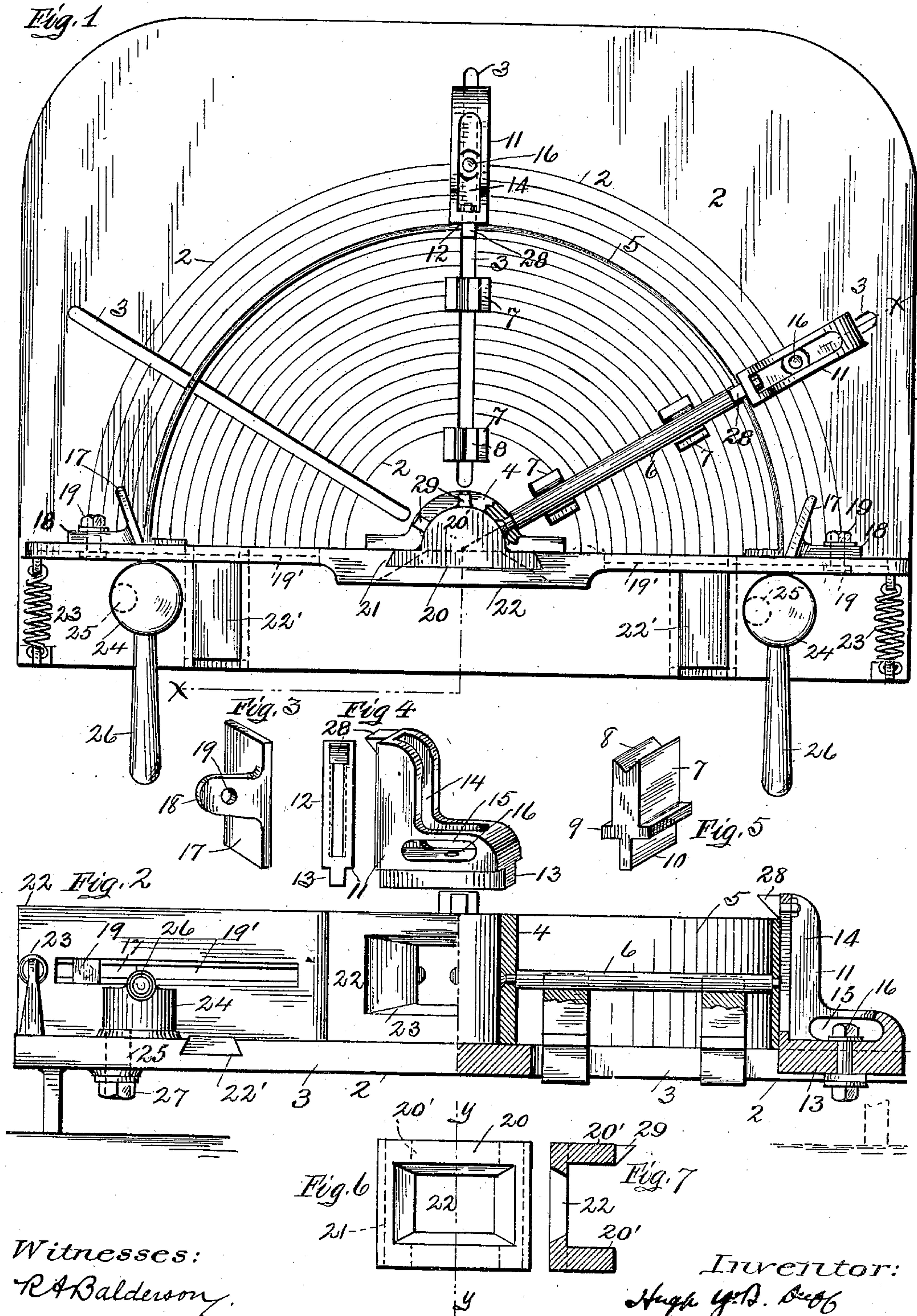


No. 828,391.

PATENTED AUG. 14, 1906.

H. Y. B. DUFF.  
ASSEMBLING DEVICE.  
APPLICATION FILED JUNE 24, 1905.



Witnesses:  
R. A. Balderson,  
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by Barker & Dymmes  
his attys.



# UNITED STATES PATENT OFFICE.

HUGH Y. B. DUFF, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO JOHN T. DUFF, OF PITTSBURG, PENNSYLVANIA, AND ONE-HALF TO JOSEPH McNAUGHER, OF ALLEGHENY, PENNSYLVANIA.

## ASSEMBLING DEVICE.

No. 828,391.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed June 24, 1905. Serial No. 266,698.

*To all whom it may concern:*

Be it known that I, HUGH Y. B. DUFF, of Pittsburgh, Allegheny county, Pennsylvania, have invented a new and useful Assembling Device, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of my improved apparatus. Fig. 2 is a cross-section on the irregular line X X of Fig. 1. Fig. 3 is a perspective view of the end guides. Fig. 4 shows two views of the intermediate holder for the frame. Fig. 5 is a perspective view of one of the supporting-guides for the spokes. Fig. 6 is a front elevation of the hub-plates, and Fig. 7 is a cross-section on the line Y Y of Fig. 6.

My invention relates to the assembling of the rim and hub portions of pulleys, wheels, &c., and is designed to provide an improved apparatus of this character which will hold the parts firmly in the correct position and to allow the riveting of the spokes while the parts are so held. It is also designed to provide an apparatus which may be adjusted for different sizes of pulleys and for different widths of rims.

In the drawings, 2 represents a horizontal base-plate having a series of half-circles marked thereon corresponding to the different diameters of pulleys or wheels to be assembled. In this base-plate are a series of radial slots 3, which may be of any desired number and of which I have shown three. These slots extend downwardly in radial lines from the axial center of the concentric half-circles.

4 indicates the half of the hub, and 5 the half portion of the frame of the pulley.

6 indicates one of the spokes, which is provided with reduced end portions to be riveted within suitable holes punched or formed in the rim or hub. Each of these spokes rests upon the intermediate supporting-guides 7, one of which is shown in Fig. 5. As shown in this figure, the guide is provided with an upper groove or recess 8 to receive the spoke, and with lower shoulders 9, which rest upon the bed-plate, the guide having a tailpiece 10, which fits neatly within the slot 3, within which it may be slid along to the desired point.

I have shown two of these guides for each spoke, though the number may be varied as desired.

The rim portion 5 is held in place by the jaws 11, having inner slotted faces 12 and tail portions 13, which fit within the radial slots 3 outside the rim. The jaw is recessed, as shown at 14, to allow riveting through the slot 12, and its base portion is provided with one or more side slots 15, through which the securing-nut or the securing-bolt 16 may be adjusted to clamp the jaw in place.

The ends of the rim are guided and held in place by the end gages 17, having the bracket 18 secured to a sliding cross-bar by bolts 19. Each of the bolts 19 extends through a horizontal slot 19' in a sliding bar, so that the gages may be adjusted toward and from the axial center to provide for pulleys of different sizes.

At the center of the sliding bar a removable hub-plate 20 is held in a dovetail connection 21, as shown in Fig. 1, this hub-plate having upper and lower boss portions 20', which are curved to fit the inner concave face of the hub portion 4. The plate 20 is cut out at its center, as shown at 22, and the sliding plate is correspondingly cut out to register therewith, so that the holes in the hub portion are accessible through these holes for riveting the inner ends of the spokes. The sliding plate is guided in its movement by dovetail guides 22' in the base-plate and is normally drawn back by springs 23, secured to its ends. The plate is forced against the hub and ends of the half-rim by eccentrics 24, mounted on short shafts 25 and actuated by handles 26. 27 is the eccentric-shaft, which extends down through the bed-plate.

In order to hold the rim and hub portions down in their proper position on the bed-plate, I preferably provide the angular lugs 28 and 29 on the adjustable jaws 11 and adjustable plate 20. These angular lugs slide within suitable slots and may be adjustably held by nuts. The angular faces of these lugs extend over the top of the rim and hub portions and hold them in place on the bed-plate. The adjustment of the lugs provides for different widths of rims.

In the use of the apparatus the sliding



plate is withdrawn by means of the springs, the spokes, the rim, and hub are inserted, and the handles 26 are then actuated to force the sliding plate against the hub and the ends of the rim. In this operation the gages 17 center the ends of the rim, while the bosses 20' center the hub. In each case the different clamping devices and guides are adjusted to their proper position before the pulley parts are dropped into place. The position of these different parts will of course vary according to the size of the pulley being made and according to the width of the rim of the hub. The plate 20 is changed for different widths of hubs, while the other parts are adjusted to suit these widths. After the sliding bar has been forced up to place the ends of the spokes are riveted within the holes in the hub and rim by suitable tools extending through the jaws and the hub-plate. The sliding plate is then withdrawn, and the half-pulley is then withdrawn, the apparatus then being ready for the parts of the next half-pulley.

The advantages of my invention result from the simplicity of the apparatus, its adaptability for different sizes and widths of pulleys, and the assembling and securing the parts together.

Many changes may be made in the form and arrangement of the several parts without departing from my invention.

I claim—

1. An assembling device for pulleys, wheels, &c., comprising holding devices for the rim-section of the pulley or wheel, a clamping-plate therefor, spoke-supports, and a holder for an arc-shaped hub-section, said holder being carried by the clamping-plate and being open to give free access to a spoke-riveting tool; substantially as described.

2. An assembling device for tools, wheels, &c., having a sliding clamping-plate for the ends of the rim-section, and a holder for an arc-shaped hub-section removably carried by the clamping-plate; substantially as described.

3. An assembling device for pulleys, wheels,

&c., having a plate shaped to fit against the ends of the half-rim, and a removable hub-plate interfitting therewith; substantially as described.

4. An assembling device for pulleys, wheels, &c., having a movable clamping-plate, means for forcing the same against the ends of the rim, and a removable hub-plate secured thereto, having an opening giving access to the inner ends of the spokes; substantially as described.

5. An assembling device for pulleys, wheels, &c., having a removable clamping-plate and adjustable gages thereon for the ends of the half-rim; substantially as described.

6. In an assembling device for pulleys, wheels, &c., an endwise-movable clamping-plate, guides therefor, a hub-plate secured to the clamping-plate, eccentrics for forcing the clamping-plate against the ends of the rim, and springs for withdrawing said plate; substantially as described.

7. An assembling device for pulleys, wheels, &c., having rim-holding devices, provided with vertical adjustable holding-down lugs; substantially as described.

8. An assembling device for pulleys, wheels, &c., having radial slots, removable spoke-supports in said slots, and radial adjustable jaws also adjustably mounted in said slots; substantially as described.

9. An assembling device for pulleys, wheels, &c., having a removable clamping-plate and hub-plate thereon, means for forcing the clamping-plate against the ends of the half-pulley and hub-gages on the clamping-plate for the ends of the half-rim, and a base-plate having radial slots provided with adjustable jaws, said jaws and said hub-plate being open to give access to the ends of the spokes; substantially as described.

In testimony whereof I have hereunto set my hand.

HUGH Y. B. DUFF.

Witnesses:

GEO. B. BLEMING,  
H. M. CORWIN.