

No. 706,811.

Patented Aug. 12, 1902.

G. H. EVERSON.

MACHINE FOR DRILLING RIVET HOLES IN WHEEL HUBS.

(Application filed July 18, 1901.)

(No Model.)

2 Sheets—Sheet 1.

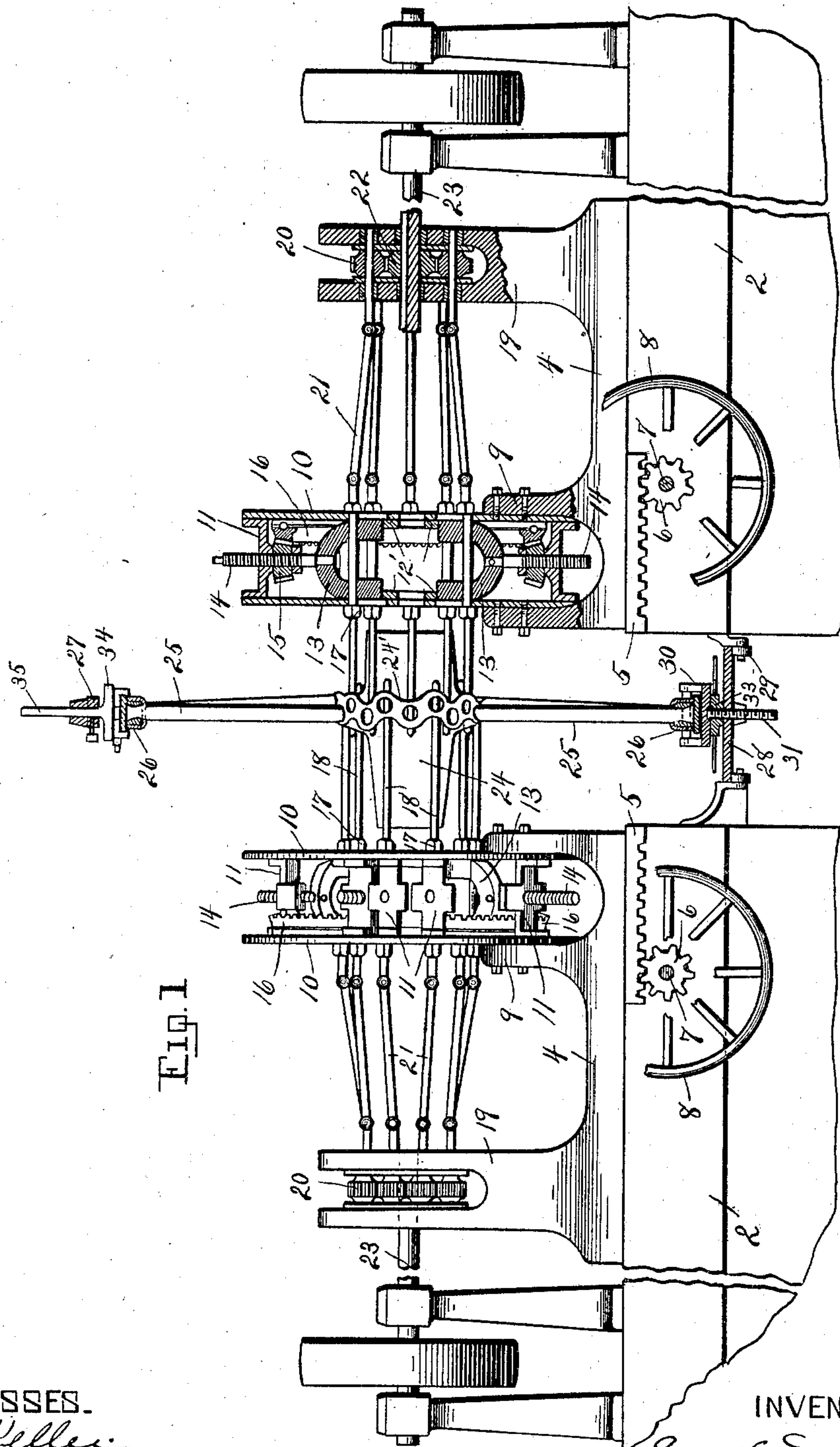


FIG. 1

WITNESSES.

J. R. Keller

K. A. Horn

INVENTOR.

G. H. Everson

Dr. J. A. Kerbit
Atty.

No. 706,811.

Patented Aug. 12, 1902.

G. H. EVERSON.

MACHINE FOR DRILLING RIVET HOLES IN WHEEL HUBS.

(Application filed July 18, 1901.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 2.

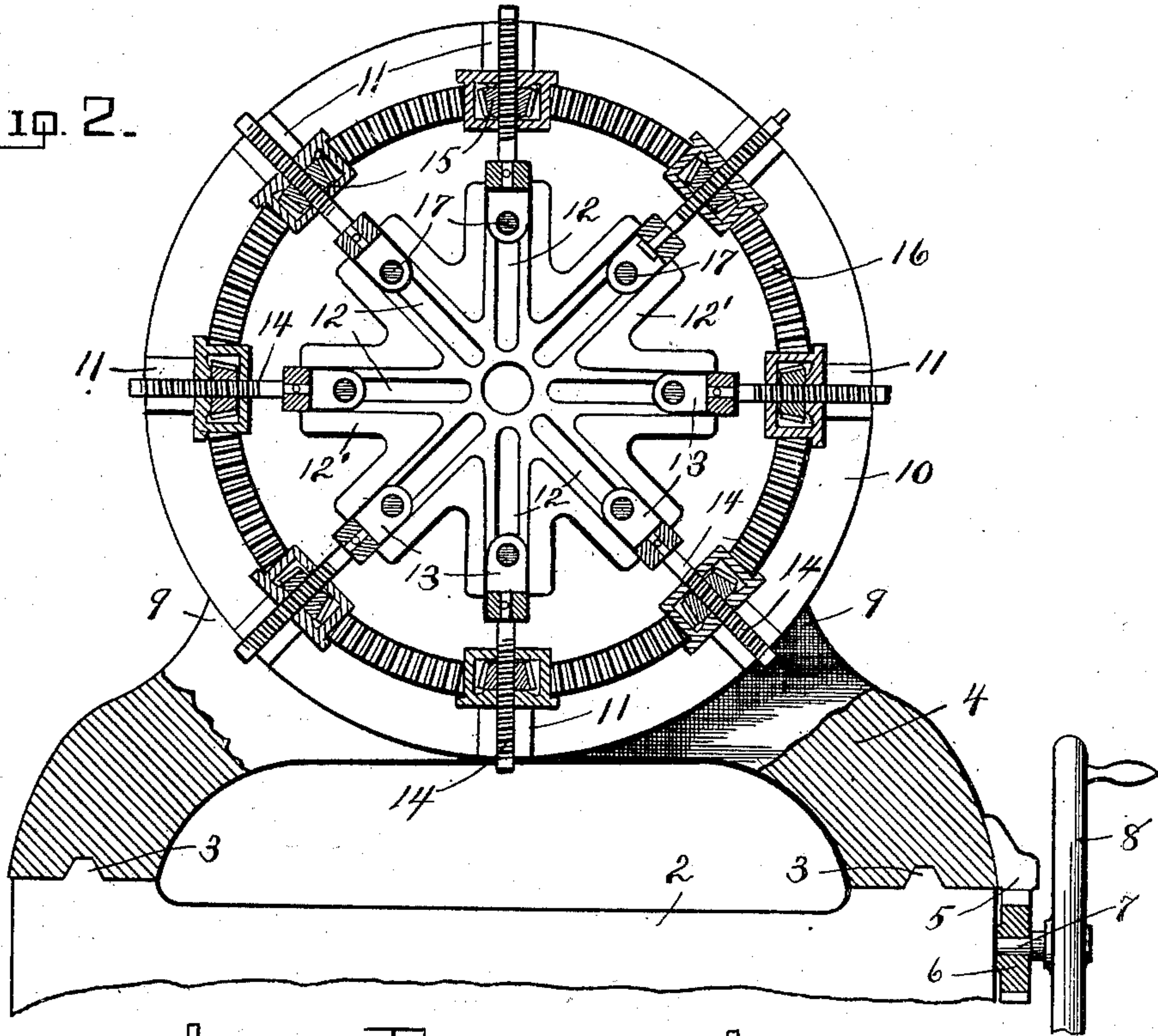
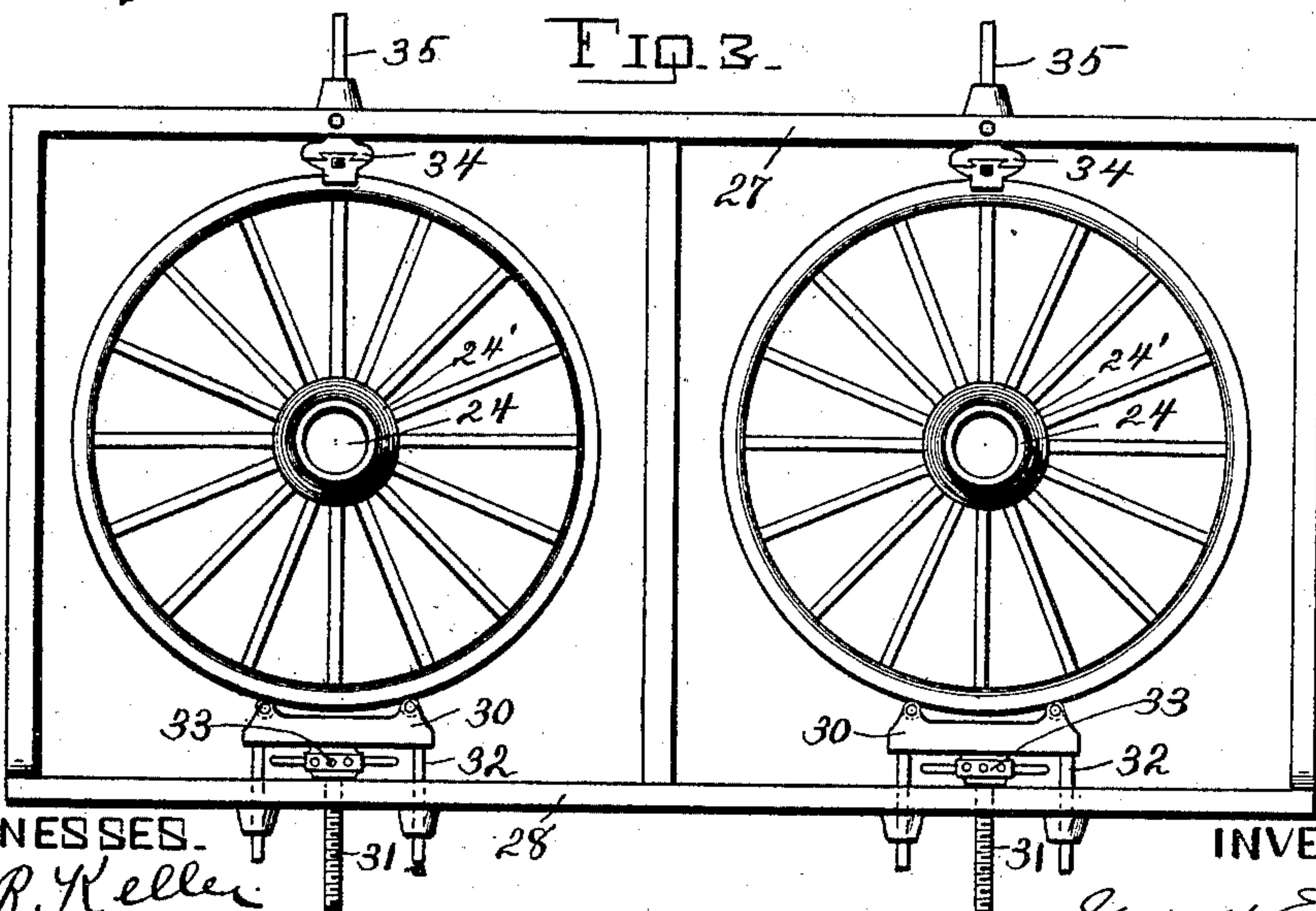


Fig. 3.



WITNESSES.

J. R. Keller
H. A. Horn

INVENTOR.

G. H. Everson,
By J. H. Vashit
Atty.

UNITED STATES PATENT OFFICE.

GEORGE H. EVERSON, OF PITTSBURG, PENNSYLVANIA.

MACHINE FOR DRILLING RIVET-HOLES IN WHEEL-HUBS.

SPECIFICATION forming part of Letters Patent No. 706,811, dated August 12, 1902.

Application filed July 18, 1901. Serial No. 68,804. (No model)

To all whom it may concern:

Be it known that I, GEORGE H. EVERSON, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Drilling Rivet-Holes in Wheel-Hubs, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to machines for drilling rivet-holes in metallic hubs, and has particular reference to a machine adapted for use in the manufacture of the improved wheel shown in my application for Letters Patent
15 filed April 19, 1901, Serial No. 56,575.

The primary object of the invention is to provide a multiple drilling-machine which may be readily adjusted for operating on hubs of different sizes and with which all of the
20 rivet-holes are drilled by a single operation.

A further object is to provide a double machine wherein the alternate drills operate and are fed in reverse directions, whereby the hub being operated upon is held by the drills
25 themselves, working in opposing relation, against lateral displacement.

Still a further object is to provide improved adjustable mechanism for sustaining wheels of different sizes.

30 The invention consists in the novel features of construction and in the combination and arrangement of parts hereinafter fully described and claimed, and illustrated by the accompanying drawings, wherein—

35 Figure 1 is a view, partly in elevation and partly in vertical section, of a machine constructed in accordance with my invention. Fig. 2 is a vertical cross-sectional view on line 2 2 of Fig. 1. Fig. 3 is an elevation of
40 the wheel-holding mechanism.

As the machine is double, with both portions thereof identical in construction for the purpose of drilling adjacent holes simultaneously in opposite directions, the following description applies to either portion of the machine.
45

Referring to the drawings, 2 represents the bed-plate, having the longitudinal ways 3, upon which is adapted to travel the carriage
50 4. For feeding the carriage longitudinally a rack 5 is secured to the under side thereof,

and meshing therewith is pinion 6 on feed-shaft 7, the latter carrying hand-actuating wheel 8, or instead thereof any other desired form of feed mechanism may be employed. 55
Rising from the forward end of carriage 4 are the separated supports 9, and secured therein are the separated circular frames 10, which are united at their peripheries by heads 11. Frames 10 are radially slotted at 12 and 60
formed on their inner faces and adjacent these slots with guideways 12'. Movable radially in these guideways are the yoke-shaped heads 13, each of which is secured to the inner end of a screw-shaft 14, which projects through 65
head 11 and through a beveled pinion 15, rotatable within said head. The several pinions 15 are connected by the large gear-wheel 16, whereby in adjusting one of shafts 14 all of the shafts are similarly operated and ad- 70
justed. Journaled in heads 13 are chucks 17 of drills 18, and by means of the mechanism just described the diameter of the circle of drills may be increased or diminished, as required. 75

At the rear end of carriage 4 is the vertical bifurcated post 19, and journaled therein is a circular series of pinions 20, from which project the flexible shafts 21, which connect with the several drill-chucks 17. All of pinions 80
20 mesh with the centrally-arranged gear 22, having an elongated spline connection with the fixed drive-shafts 23, whereby carriage 4 may be adjusted longitudinally of the drive-shaft without affecting the operation of the 85
mechanism. The flexible shafts 21 permit the drill-chucks to be adjusted radially, as described, without affecting their operation.

Prior to drilling the rivet-holes with my improved mechanism the wheel, including its 90
hub 24, spokes 25, and rim 26, is fully assembled, and the wheel is secured within one portion of a double upright frame 27. This frame is movable transversely of the machine, with its base 28 resting on rollers 29, project- 95
ing from adjacent ends of beds 2. The wheel is placed in upright position in a cradle 30, provided on its under side with a screw 31 and vertical guides 32, and operating on this screw to raise or lower the cradle for holding 100
the wheel in the desired elevation is feed wheel or nut 33. A clamp 34, having stem

35, is vertically adjustable in the upper portion of frame 27 for engaging and confining the upper portion of the wheel. With the frame 27 double, as described, one wheel may
5 be operated upon while a wheel previously operated upon is being removed and a fresh one inserted, thereby keeping the machine in practically continuous operation.

With the several adjustments above described the wheel may be positioned and its
10 hub accurately centered in the machine with great facility, and when in proper position the opposing sets of drills are set in motion and operated to drill adjacent rivet-holes 36 in
15 opposite directions in the continuous peripheral flange 24' of hub 24, which contains the spoke-sockets. With the spokes in position the latter are drilled at the same time, so that when the wheel is removed from the ma-
20 chine it is all ready to receive the rivets which confine the spokes in the hub. As adjacent drills operate in opposing relation, it is only necessary to provide a vertical support for the wheel, as the drills by their own action
25 serve to hold the wheel against lateral displacement. With the drills radially adjustable, as described, and with the wheel-holding mechanism capable of expansion and contraction it will be apparent that the machine

may be readily adjusted for operating on 30 wheels of various sizes.

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

1. In a drilling-machine, the combination 35 of separated parallel side members formed on adjacent faces with corresponding radial guideways and radial slots, heads slidable in the guideways, drill-actuating shafts extending through said radial slots and journaled 40 in said heads, shaft-actuating means, and means for radially adjusting said heads, substantially as shown and described.

2. In a drilling-machine, the combination 45 of drilling mechanism, an upright work-holding frame, wheel-supporting cradle 30, screw 31 and guides 32 depending from the cradle into the lower portion of the frame, means for vertically adjusting said screw, and an ad-
50 justable wheel-clamping device in the upper portion of the frame, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE H. EVERSON.

Witnesses:

J. M. NESBIT,
J. R. KELLER.