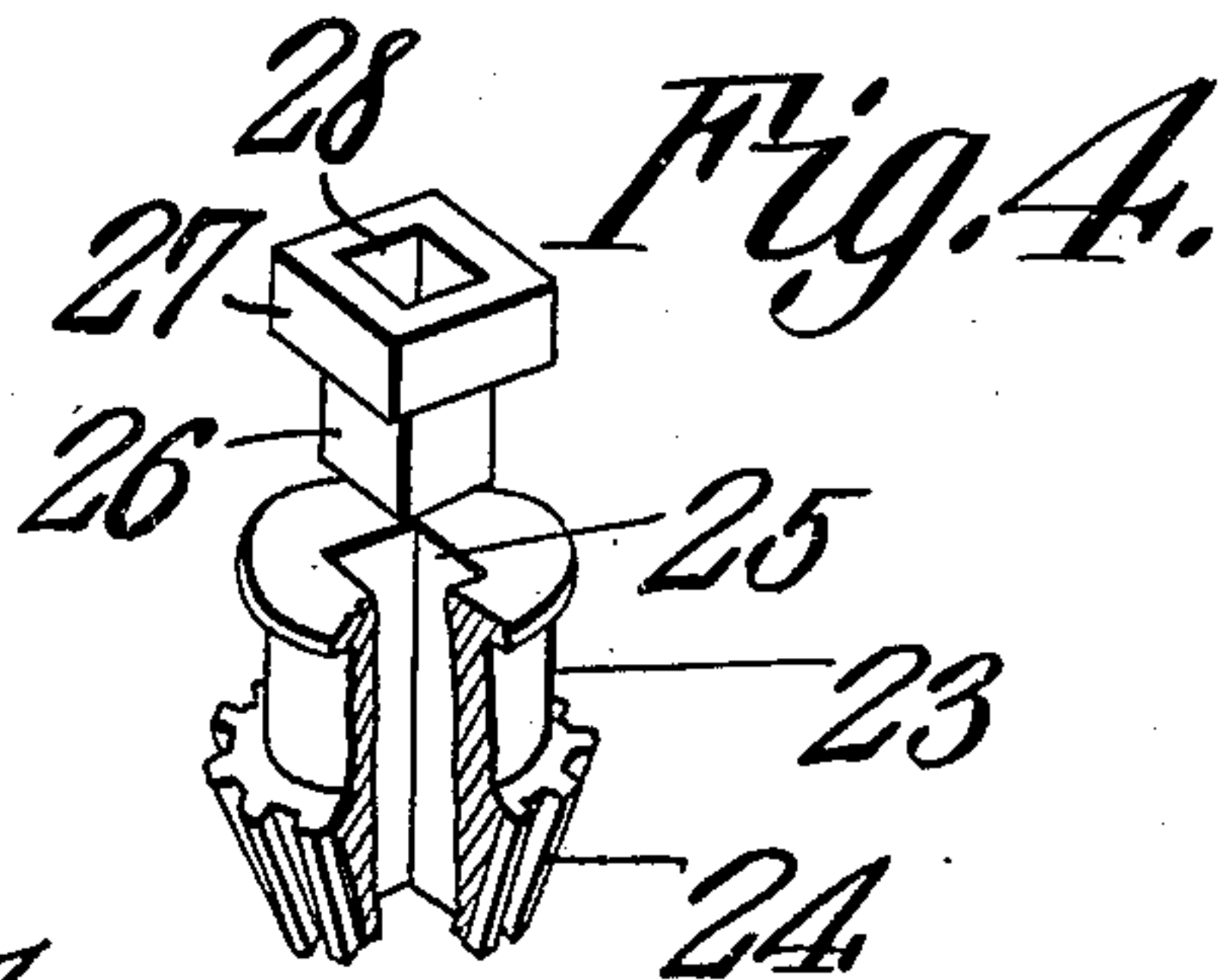
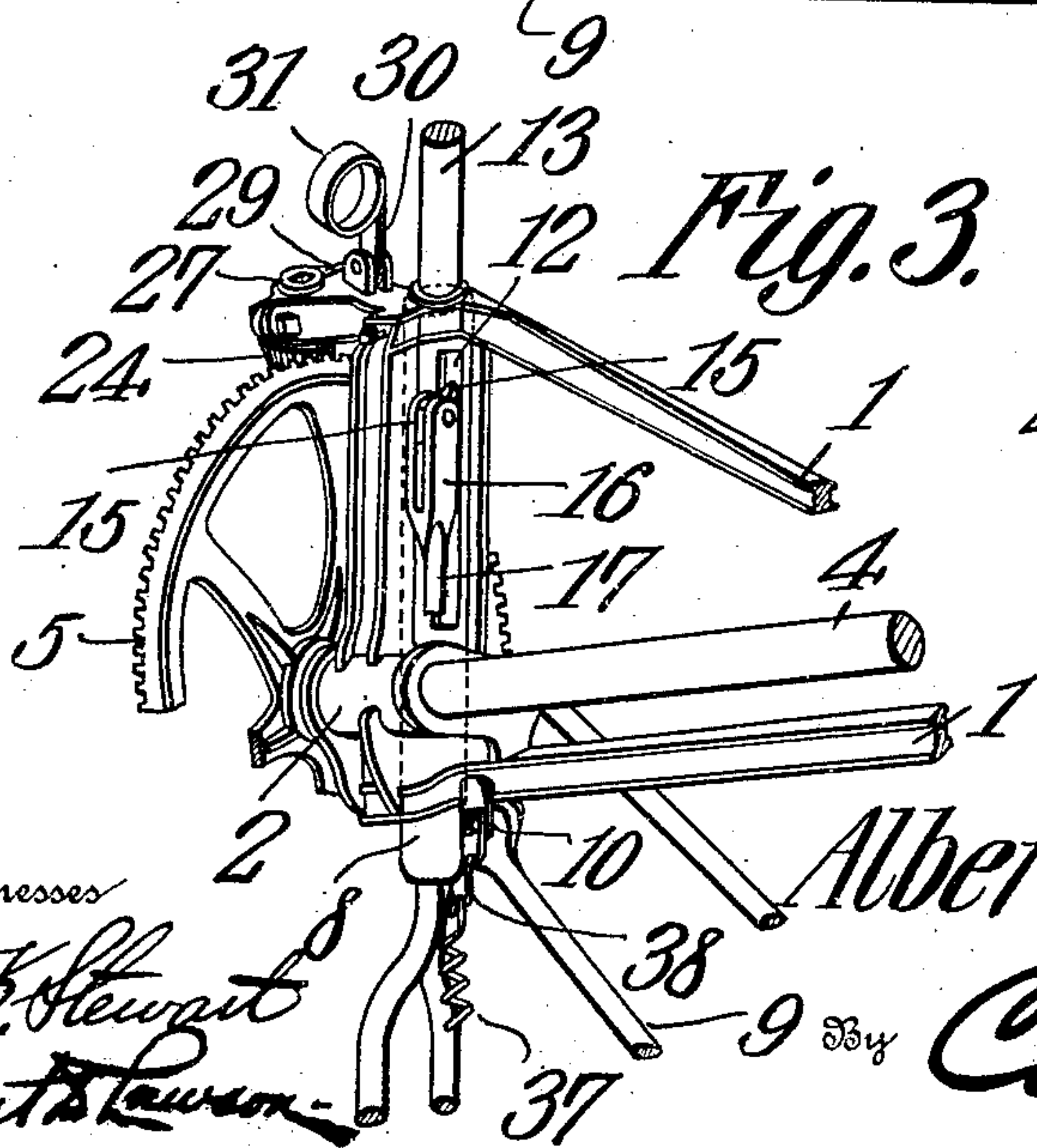
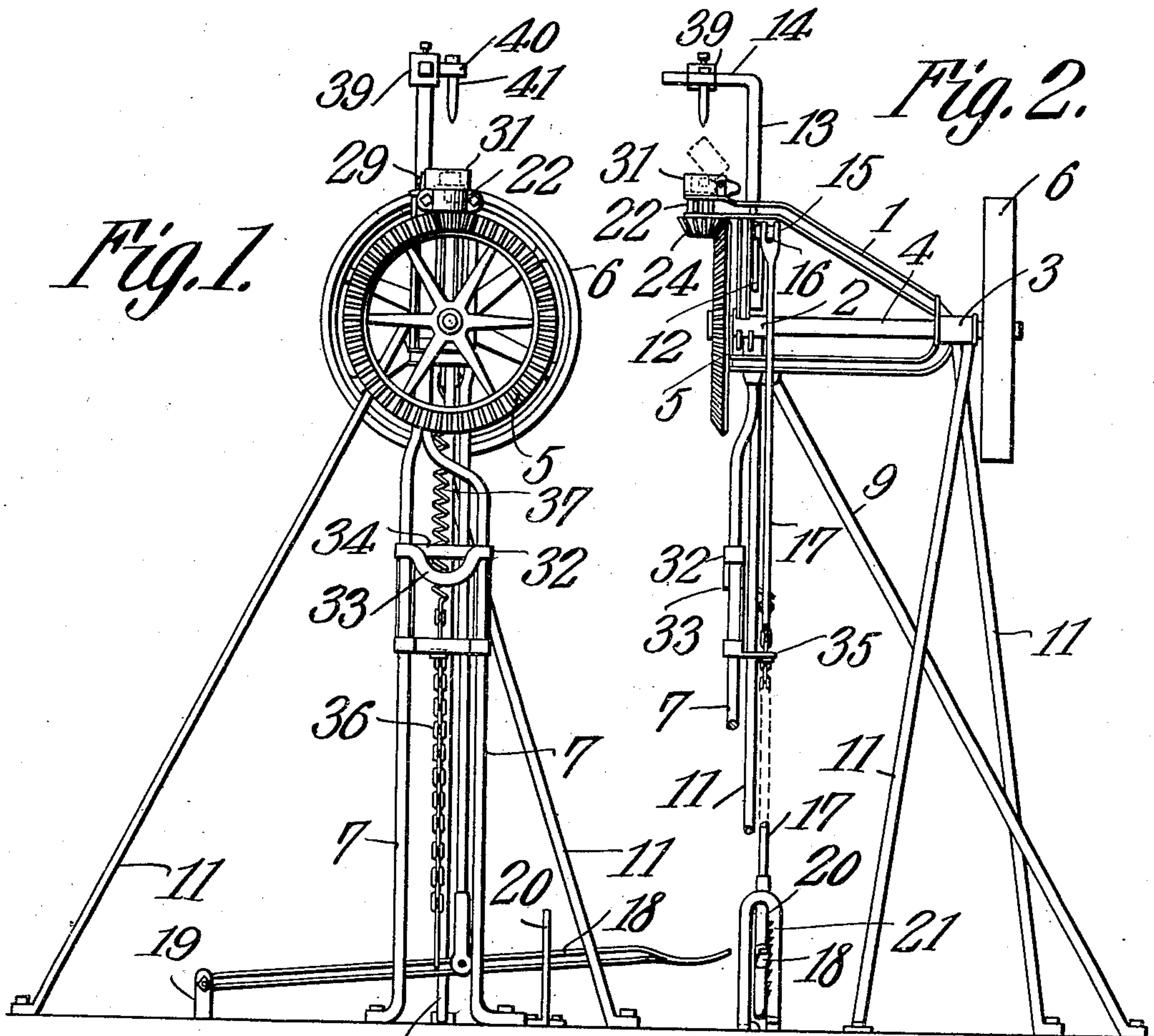


A. H. McCUTCHAN.
BOLTING MACHINE.
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908,486.

Patented Jan. 5, 1909.



Witnesses

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ALBERT H. McCUTCHAN, OF HELENA, OKLAHOMA.

BOLTING-MACHINE.

No. 908,486.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALBERT H. McCUTCHAN, a citizen of the United States, residing at Helena, in the county of Alfalfa and State of Oklahoma, have invented a new and useful Bolting-Machine, of which the following is a specification.

This invention relates to machines for applying or removing nuts from the tire bolts of carriage wheels and the like.

The object of the invention is to provide means whereby the wheel after once being positioned upon the machine, can be shifted into operative relation with a wrench without the necessity of removing the wheel until after all of the nuts have been either placed in or removed from position upon the bolts.

A further object is to provide means under the control of the operator whereby the wheel can be quickly adjusted with the nut thereof in engagement with the wrench.

A further object is to provide means whereby the bolts within the wheel can be held against longitudinal displacement while the nuts are being applied thereto or removed therefrom.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a side elevation of the machine. Fig. 2 is a front elevation thereof. Fig. 3 is a perspective view of a portion of the machine. Fig. 4 is a detail view of the wrench and its gear, said gear being shown partly in section.

Referring to the figures by characters of reference, 1 designates the head of the machine, the same being preferably in the form of a skeleton frame constructed of cast metal and having bearings 2 and 3 in which is journaled a shaft 4 provided at one end with a large gear 5 and at its other end with a pulley 6 or other means for receiving power from a suitable source.

Extending upward to the bearing 2 and at one side thereof are standards 7 which extend parallel for the greater portion of their lengths and merge close to the bearing 2 into a tubular guide 8 which extends past and is formed with or secured to the bearing 2. A lateral inclined brace 9 is secured between

ears 10 extending downward from the head close to the tube 8 and this brace is suitably fastened to the base on which the machine is mounted. Standards 11 are also secured to or formed with the bearing 3 and are suitably fastened to the base. The tube 8 is slotted longitudinally as indicated at 12 and slidably mounted within this tube is a rod 13 having an arm 14 extending at right angles from its upper end. This rod has a connecting arm 15 extending therefrom and mounted to travel within the slot 12 and to this arm is pivotally connected the forked end 16 of a rod 17 which extends downward and is pivotally attached to a foot lever 18 which is fulcrumed at one end upon an upstanding ear 19 while its other end projects from the machine and is located at a point where it can be conveniently reached by the foot of the operator. A guide loop 20 straddles lever 18 and is provided with teeth such as indicated at 21 for locking the lever against upward movement after it has been pushed downward to a desired point.

A retaining clip 22 is secured upon one end of the head 1 and constitutes the cap of a bearing in which the hub 23 of a gear 24 is journaled. This gear meshes with gear 5 and has an angular passage 25 therethrough designed to receive the shank 26 of a wrench 27. The head of this wrench is provided with a socket 28 and obviously heads having sockets of different sizes may be used interchangeably. Ears 29 extend upward from the head and adjacent gear 24 and pivotally mounted between these ears is an arm 30 extending from a supporting ring 31. This ring is designed to normally rest upon the head and to surround the wrench but it can, if desired, be raised from the wrench so that access may be readily had thereto as indicated in Fig. 3.

A sliding frame 32 is mounted on the standards 7 and is provided with a yoke-like cross bar 33 constituting means for engaging and supporting the end of a wheel hub, there being another cross bar 34 cooperating therewith for holding the hub in position upon the frame. An arm 35 extends from this frame and between the standards and is secured to a chain 36, one end of which is fastened to lever 18 while its other end is attached to a spring 37 engaging a hook 38 or other connecting device depending from the head 1.

A collar 39 is adjustably mounted on the

arm 14 and has an outstanding loop 40 in which is mounted a holding tool 41 in the form of a stem which is disposed directly above the wrench 27.

5 The spring 37 is designed to hold the slidable frame 34 and the lever 18 normally raised. Obviously the tool 41 will also be held normally in its uppermost position because of the raised position of rod 17 and
10 arm 15. The wheel to be operated on is placed with its hub upon yoke 33 and under bar 34, and this will bring the rim or felly thereof in position above the ring 31. The operator rotates the wheel until one of the
15 tire nuts is brought into position directly above the wrench whereupon he depresses the lever 18. Chain 36 will therefore pull the frame 32 and the wheel downward until the nut to be operated on is seated within the
20 wrench. At the same time tool 41 will be brought downward onto the periphery of the wheel and the outer end of the bolt. While the parts are thus positioned the operator applies motion to the shaft 4 and the gears
25 will therefore rotate the wrench and cause the nut to be unscrewed from the bolt, the tool 41 exerting sufficient pressure upon the bolt to prevent it from becoming displaced longitudinally and from rotating. If the
30 nut is to be screwed onto the bolt it is first placed in the wrench and the mechanism is rotated in the opposite direction as is obvious. After one nut has been screwed on or unscrewed from a bolt in the manner herein
35 described the operator releases the lever 18 from guide 20 whereupon the spring 37 will raise the wheel and the tool 41 and the wheel can then be partly rotated until another nut is positioned within the wrench or above the
40 wrench.

It will be seen that by means of this machine the nuts can be quickly placed in or removed from position upon the bolts and the operation of assembling or detaching the
45 parts greatly facilitated.

What is claimed is:

1. In a machine of the character described the combination with a wrench and mechanism for rotating the same; of a yieldingly
50 supported wheel engaging slide, means for shifting the slide to position a wheel upon and around the wrench, and means movable

with the slide for binding upon that portion of the wheel which is upon the wrench.

2. In a machine of the character described 55 the combination with a wrench and mechanism for rotating the same; of guide standards, a yieldingly supported slide thereon, said slide constituting wheel hub engaging means, means for actuating the slide to position a
60 wheel upon and around the wrench, and a retaining tool supported above and movable into engagement with the wheel simultaneously with the actuation of the slide.

3. In a machine of the character described 65 the combination with a wrench, a centering ring movably mounted adjacent thereto, and mechanism for rotating the wrench; of a wheel hub engaging device slidably mounted relative to the wrench, means for actuating
70 said slide to position a wheel upon and around the wrench and centering ring, and a retaining tool shiftable by said means for binding upon the wheel rim.

4. The combination with a revoluble 75 wrench and mechanism for actuating the same; of wheel hub engaging means for supporting a wheel with its rim extending over the wrench, a retaining tool supported above the wrench, and manually operated means
80 for simultaneously lowering the wheel to place the rim nut in engagement with the wrench and for moving said tool into engagement with the wheel.

5. The combination with a gear, a wrench 85 detachably mounted therein and revoluble means for rotating the gear and wrench; of a centering ring pivotally mounted adjacent and normally surrounding the wrench, guide standards, a wheel hub engaging slide mount-
90 ed thereon, means for yieldingly supporting the slide, said slide being disposed to hold a wheel with its rim extending over the wrench, and a manually operated means for lowering the slide to position a rim nut within the ring
95 and in engagement with the wrench.

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

ALBERT H. McCUTCHAN.

Witnesses:

GEO. H. KNUPP,
H. C. TUSON.