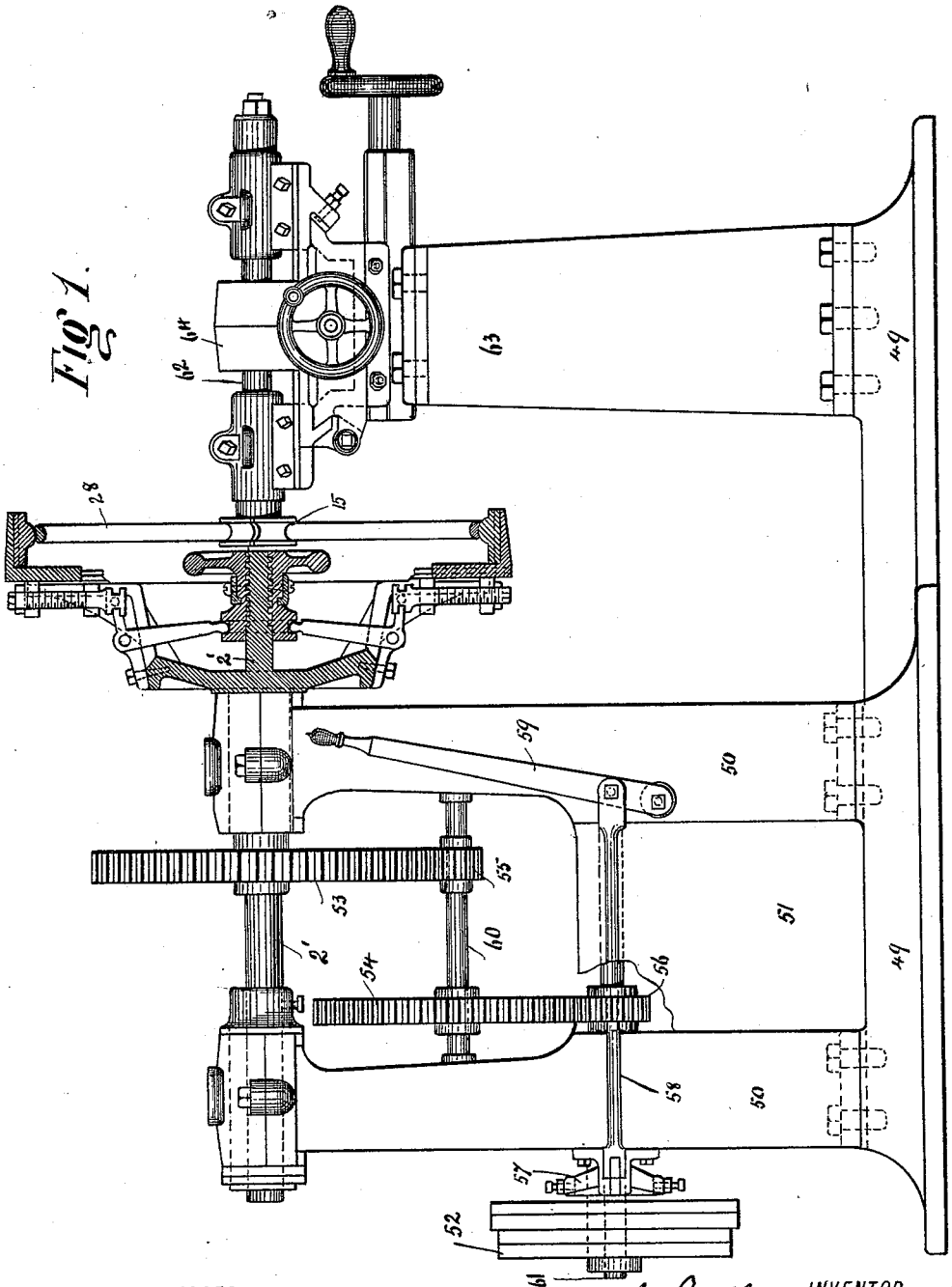
(No Model.) 4 Sheets—Sheet 1.

V. A. SALLOT.

UNIVERSAL CHUCK.

No. 583,127. Patented May 25, 1897.

Fig. 1.



WITNESSES:

Charles R. Wealthwood.

James V. Hamilton.

Victor A. Sallot- INVENTOR

BY Chapin & Denny

his ATTORNEYS.

(No Model.) 4 Sheets—Sheet 2.

V. A. SALLOT.

UNIVERSAL CHUCK.

No. 583,127. Patented May 25, 1897.

Fig. 2.

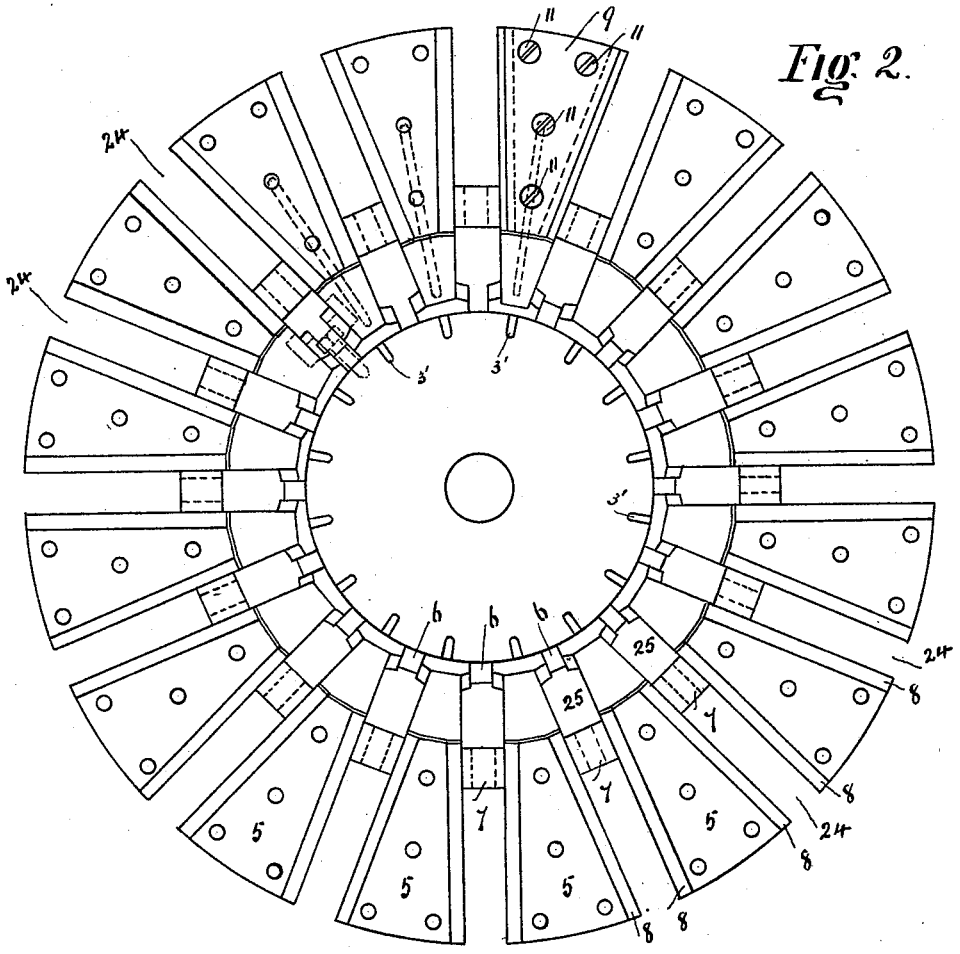
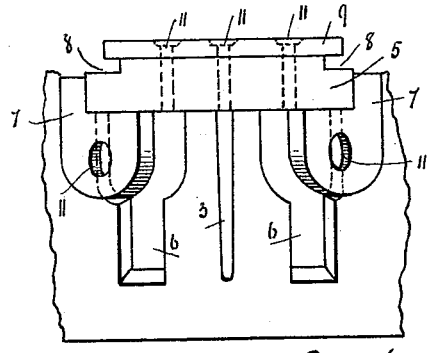


Fig. 11.



WITNESSES:

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(No Model.) 4 Sheets—Sheet 3.

V. A. SALLOT.

UNIVERSAL CHUCK.

No. 583,127. Patented May 25, 1897.

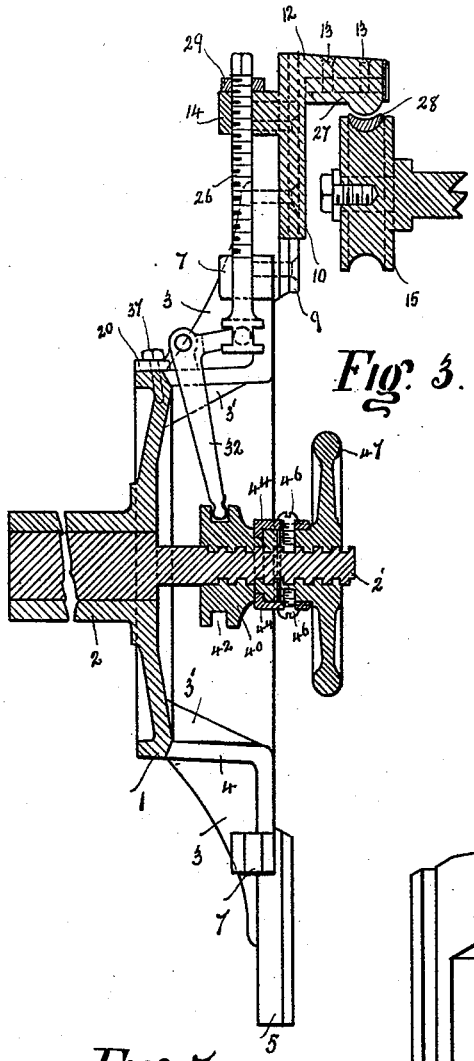

Fig. 3.

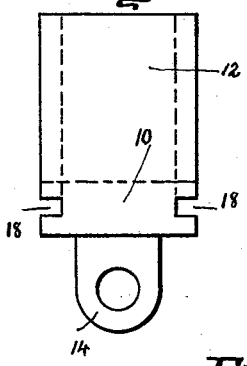

Fig 6.

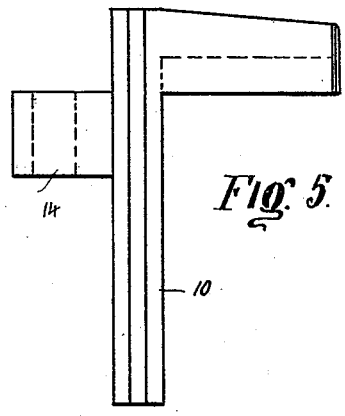

Fig. 5.

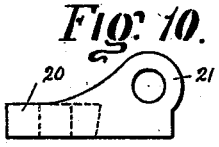

Fig. 10.

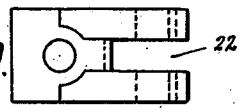

Fig. 9.

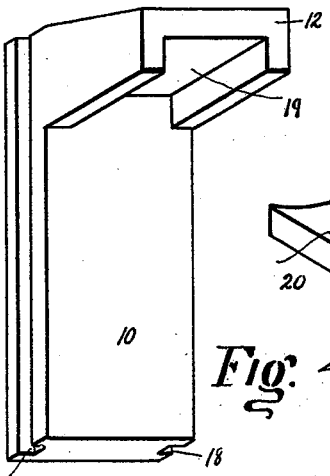

Fig. 4.

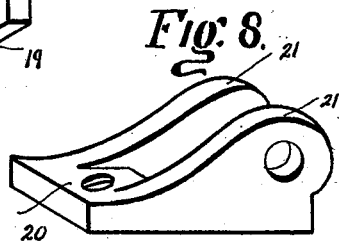

Fig. 8.

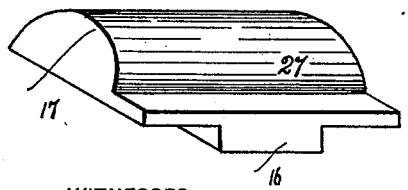

Fig. 7.

WITNESSES:

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(No Model.) 4 Sheets—Sheet 4.

V. A. SALLOT.

UNIVERSAL CHUCK.

No. 583,127. Patented May 25, 1897.

Fig 13.

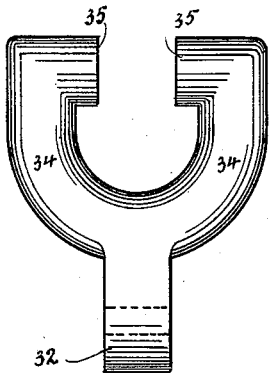


Fig 12.

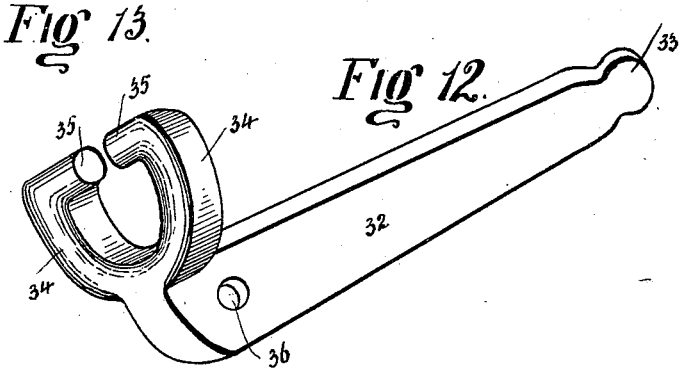


Fig 15.

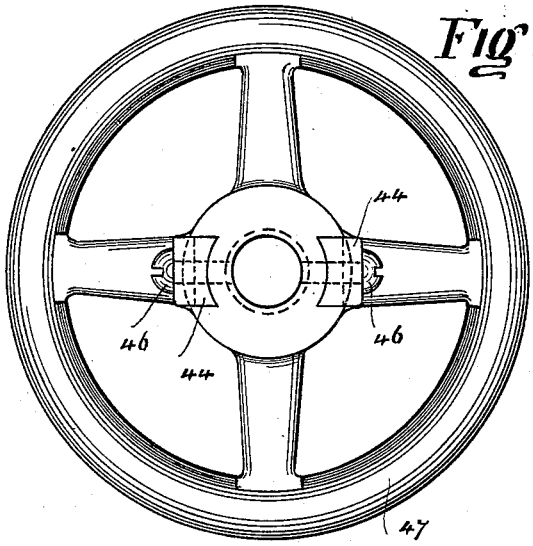


Fig 16

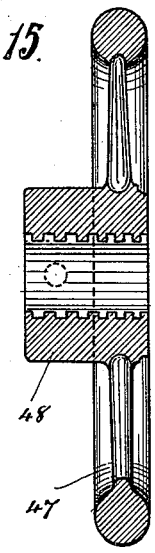


Fig 14

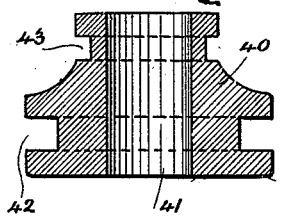


Fig 17.

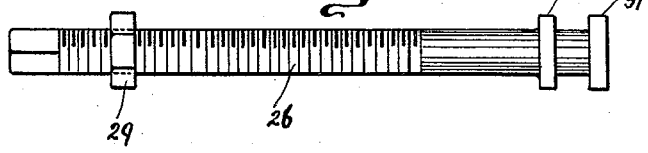
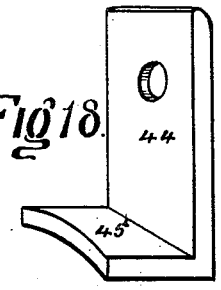


Fig 18.



WITNESSES:

Charles P. Wealtherbogg.

James S. Hamilton.

Victor A. Sallot INVENTOR

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his ATTORNEYS.

UNITED STATES PATENT OFFICE.

VICTOR A. SALLOT, OF FORT WAYNE, INDIANA.

UNIVERSAL CHUCK.

SPECIFICATION forming part of Letters Patent No. 583,127, dated May 25, 1897.

Application filed November 15, 1895. Serial No. 569,036. (No model.)

To all whom it may concern:

Be it known that I, VICTOR A. SALLOT, a citizen of the United States, residing at Fort Wayne, in the county of Allen, in the State of Indiana, have invented certain new and useful Improvements in Universal Chucks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in universal chucks for bicycle-rim-turning lathes.

In a former application, filed November 15, 1895, Serial No. 568,578, I have described and claimed a universal chuck for gripping and securing a bicycle-rim while its outer and concave perimeter is being turned by a proper revolving cutting-tool.

My present invention comprises a universal chuck having a multiplicity of rim-gripping jaws, preferably sixteen in number, slidingly mounted upon a corresponding series of parallel slideways in the chuck-body, the said jaws being arranged radially to the central adjusting-hub, to which the said jaws are pivotally connected, and having a screw-threaded connection with a series of adjusting-screws, which in turn have a pivotal connection with a series of actuating radially-arranged pivoted levers, whose inner ends are loosely mounted in the centering and adjusting hub, whereby the said jaws are adapted for both an independent and a universal radial adjustment to grip the outer and concave perimeter of the rim while its inner and convex perimeter is being turned.

The object of my improvement is to provide a self-centering universal chuck for bicycle-rim-turning lathes having a plurality of radially-arranged jaws adapted for both an independent and a universal adjustment, and also adapted to grip the outer perimeter of the rim at sixteen points thereon for the purpose of securing a perfectly true rim.

The novel feature of my invention consists in the simple and improved means for securing a universal and independent adjustment of the said gripping-jaws.

Referring now to the drawings, in which similar reference-numerals indicate corresponding parts throughout the several views, Figure 1 is a central section of my improved chuck having a bicycle-rim in position therein on a working lathe of ordinary construction. Fig. 2 is a front view of the front face of the chuck-body, showing the radial guideways for the gripping-jaws with all but one of the jaw-securing plates removed to show the guideways. Fig. 3 is a central section of the chuck-body, showing the general arrangement of the jaw-adjusting mechanism. Fig. 4 is a perspective view of one of the gripping-jaws, showing the vertical recess in the head thereof for the rim-gripping blocks and also showing the lateral longitudinal grooves for the retaining-plates. Fig. 5 is a side view of the same, showing the depending apertured lug on the bottom thereof for the adjusting-screw. Fig. 6 is a front end view of the same. Fig. 7 is a perspective of the rim-gripping block for the said jaws. Fig. 8 is a perspective of the supporting-bracket for the forward end of the jaw-adjusting lever. Fig. 9 is a plan of the same. Fig. 10 is a side view of the same. Fig. 11 is a fragmentary view of the outer edge of the chuck-body, showing the radial slideways and slots for the said jaws and also showing the relative arrangement for the apertured depending lugs for the rear end of the said adjusting-screw. Fig. 12 is a perspective view of the pivoted jaw-actuating lever. Fig. 13 is an end view of the same, showing the bifurcated forward end thereof adapted to grip the rear end of the said adjusting-screw. Fig. 14 is a vertical central section of the adjusting-hub, showing the annular recesses therein. Fig. 15 is a side elevation of the hand-wheel, showing the arrangement of the gripping-plates for securing it to the said hub. Fig. 16 is a central section of the said wheel, showing its screw-threaded bore. Fig. 17 is a side view of the threaded adjusting-screw, showing the annular flanges at the head thereof. Fig. 18 is a detail perspective of one of the gripping-plates which connect the lever-actuating hub with the operating hand-wheel.

The metallic chuck-body 1, Figs. 2 and 3, comprises an annular disk or face-plate having a plurality of radial slots 24, preferably sixteen in number, extending inwardly from the outer perimeter thereof, a corresponding

number of pendent apertured lugs 7 at the inner end of the said slots, adapted to loosely support the inner end of the jaw-adjusting screws 26, and a second series of slots 25, extending from the said lugs to the inner perimeter of the said face-plate, and a circular base-plate approximately parallel to the said face-plate, having its perimeter united to the perimeter of the face-plate by the vertical circular wall 4, provided with a series of extended vertical slots 6, registering with the said slots 25 and adapted to loosely receive the jaw-actuating levers. The upper ends of the said slots 6, Fig. 11, are laterally enlarged to permit the ready removal or replacement of the said adjusting-screws. The said base-plate of the chuck-body is centrally apertured for the inner end of the supporting-mandrel 2′, and has upon its outer face an integral hub 2, by which the chuck-body is rigidly secured in any proper manner. The said face-plate is strengthened by the opposite flanges 3 and 3′, Fig. 3, upon the outer and inner faces of the wall 4, respectively, and intermediate the said slots 6, and has a thickened portion 5 between the said radial slots 24, provided upon each side thereof with the slideways 8, upon which the said jaws are slidingly mounted, and are secured in position thereon by the retaining-plates 9, whose lateral edges overhang the said ways and slidingly engage the grooves or recesses 18 of the said jaws, and are then rigidly fixed in position by proper holding-screws 11.

My improved chuck-body thus constructed is rigidly fixed upon the supporting-mandrel 2′, Fig. 1, which is revolubly supported in the usual or other proper manner upon the upright standards 50, which are rigidly bolted to the base 49 and are connected by an integral strengthening-girt 51. The said standards also carry suitable geared mechanism for reducing the speed of the actuating cone-pulley 52, comprising the gear-wheel 53, fixed upon the said mandrel 2′, the pinion 55, rigid on the counter-shaft 60, adapted for an actuating engagement with the gear-wheel 53, the gear-wheel 54, fixed on the shaft 60, and the rigid pinion 56 on the shaft 61, which also carries the said cone pulley, all of well-understood construction and arrangement. I have also shown in Fig. 1 an ordinary clutch 57 for the said pulley, operated by a pivoted hand-lever 59 and a pivotal connecting-rod 58.

The cutting-tool 15 is fixed upon the actuating-spindle 62, properly journaled and supported upon proper longitudinal and cross feeds and carrying a driving-pulley 64, all of which is of well-understood construction, and is supported by the upright standard 63, rigidly bolted upon the base 49, but not in alinement with the said standards 50.

As none of the above-mentioned mechanisms for actuating the mandrel of the cutting-tool constitute any part of my invention and are all of well-known construction, no further or more particular description is required.

The jaws 10, Fig. 4, sixteen in number, have an extended base whose opposite sides are provided throughout their length with the parallel grooves 18, adapted to loosely receive the proximate overhanging edges of two adjacent plates 9, with the base of the said jaws resting upon the corresponding slideways 8. The forward end of the said jaws is provided with an upright head 12, having upon its rear face a rectangular recess 19, in which the rim-gripping wooden block 27, having a transverse rectangular projection 16, Fig. 7, adapted to snugly fit the said recess 19, is rigidly secured by means of proper holding-screws 13, Fig. 3. The said block 27 has a semicylindrical portion 17 at right angles to the said projection 16 and adapted to engage the correspondingly-curved concave outer perimeter of the vehicle-rim 28, Fig. 1, whereby the said rim, thus braced at sixteen points, is rigidly presented to the cutting-tool 15 for a continuous operation. Although the said block 27 may be made of metal, if desired, it is much cheaper and more efficient for a gripping-surface when made of wood. At a suitable point upon the bottom of said jaws and midway the sides thereof is arranged an integral depending lug 14, having a screw-threaded perforation therein for the forward end of the adjusting-screws 26. The said screw 26 has its greater portion threaded and has upon its outer end a holding-nut 29 and upon its inner end the integral annular flanges or collars 30 and 31, Fig. 17, between which the bifurcated end of the actuating-lever 32 forms a loose engagement. In the coincident perforations of the said lugs 7 and 14 the said screw 26 is rotatably mounted, having a screw-threaded engagement with the latter and being secured in such position by the nut 29. The brackets 20, Fig. 8, in which the said levers are fulcrumed, have bifurcations 22 and the parallel ears 21, provided with registering perforations in which a fulcrum-pin is fixed. These brackets 20, equal in number to the said jaws 10, are rigidly fixed at or near the lower edge of the sides 4 of the chuck-body by a proper holding bolt or screw 37, Fig. 3.

The levers 32, sixteen in number, have their inner end rounded to loosely engage the annularly-slotted hub, presently to be described, and have their outer end provided upon its upper surface with a pair of curved arms 34, having upon the free end the opposite transverse lugs 35, Fig. 13, adapted to grip the inner end of the adjusting-screw 26 between the said annular flanges 30 and 31, Fig. 3, and between which the said screw can be freely rotated without displacement. Near the forward end of the said lever is provided a lateral perforation 36 for a suitable pin or pivot which also passes through and is rigidly secured in the registering perforations of the said ears 21 of the supporting-brackets 20, in which the said levers are thus pivotally fulcrumed.

The lever-actuating hub 40 has a smooth

central bore or aperture 41 for the supporting shaft or mandrel 2', on which it is loosely mounted, an annular recess 42 near the base thereof, and is provided at its contracted top with an annular recess 43 for the hub-connecting plates 44, provided with a right-angular flange 45 upon the lower end thereof, having a concave inner edge to conform to the perimeter of the said hub in the recess 43.

The hand-wheel 47 has a central screw-threaded bore and an extended integral hub 48, also screw-threaded, Fig. 16, and is adapted for a screw-threaded engagement with the screw-threaded and reduced end of the mandrel or arbor 2, Fig. 3. The hub 48 of the said hand-wheel has two of its opposite sides flattened, as seen by dotted outline in Fig. 15, for the upper end of the plates 44, and is also provided with a screw-threaded perforation for the holding-screws 46, by which the said plates are secured, thereby providing a loose connection between the said hub and said hand-wheel, whereby the said hand-wheel can be freely rotated without rotating the said hub. The hub 40 may be, if desired, rigidly secured to the said hand-wheel, or it may even be made integral therewith, though I prefer the construction shown.

The operation of my improved chuck thus described is substantially as follows: The metallic jaws 10, having their rim-gripping wooden blocks 27 secured therein, as shown, are slidingly mounted upon the parallel slideways 8 of the radial guideways in the chuck-body 1, being secured in position by the engagement of the plates 9 with the recesses 18 thereof and by its screw-threaded engagement with the screw 26, and are adapted for a simultaneous and uniform radial adjustment by a single movement of the operating hand-wheel 47, for as the recessed hub 40 is adjusted toward the chuck-body by means of the said hand-wheel the inner ends of the levers 32 will be uniformly lowered, thereby withdrawing the said jaws simultaneously toward the hub 40 by means of the connection of the outer end of said levers with the inner end of the said adjusting-screws 26. A reverse adjustment of the said hub by the same means will in a like manner give the said jaws a universal radial expansion to grip the vehicle-rim of a greater diameter. It is obvious that each of the said jaws 10 is adapted for a convenient independent adjustment by means of the said adjusting-screws 26, either for giving the said jaws a greater range of radial spread or for the purpose of gripping and securing irregular forms.

My improved universal chuck is thus adapted for a prompt and convenient universal radial adjustment to suit any ordinary bicycle-rim, which in practice varies from twenty-four to thirty inches, though my improvement can readily be constructed to operate with equal facility and in a similar manner for any desired diameter of vehicle-rim and for an independent adjustment for any desired irregular form of rim. As the vehicle-rim 28 is thus gripped and supported at sixteen different points upon its outer perimeter, which has been previously given its concave form by a prior operation in a different form of chuck, preferably that form described in my said prior application, it is adapted for a uniform and successive presentation to the cutting-tool 15, and a perfectly true vehicle-rim is invariably secured.

It is obvious that the particular number or form of the jaws, levers, and other parts of the operating mechanism may be variously modified without departing from the spirit of my invention, which comprises a plurality of rim-holding jaws radially adjusted upon the chuck-body, with means for independent, universal, and simultaneous adjustment thereof.

My invention thus described is inexpensive in construction, easily operated, and positive, efficient, and reliable in operation.

Having thus described my invention, what I desire to secure by Letters Patent is—

1. In a universal chuck, a chuck-body comprising an annular disk radially slotted as shown, having a plurality of slideways for the rim-gripping jaws, and provided with a series of pendent lugs arranged as described, a circular base-plate centrally apertured for the supporting-mandrel, and having its perimeter united to the said disk by an integral wall 6 slotted as shown, for jaw-actuating levers, in combination with a plurality of radial jaws 10 slidingly mounted upon said ways and secured therein by the plates 9, having a gripping-block 27 removably mounted therein to grip the outer concave perimeter of the rim, and provided with a pendent lug 14 for the purpose specified, all substantially as described.

2. In a universal chuck a sliding jaw 10 having a recessed head for the gripping-block, a pendent apertured lug 14 for the adjusting-screw, and a longitudinal recess 18 upon the sides thereof for the securing-plates 9 of the face-plate, and a rim-gripping block 27, having an angular projection 16 upon its inner face adapted to fit the said recessed head of the jaw, and having upon its outer face the convex projection at right angles to the projection 16, and adapted to fit the concave perimeter of the rim for the purpose specified, all substantially as described.

Signed by me, at Fort Wayne, Allen county, State of Indiana, this 11th day of November, A. D. 1895.

VICTOR A. SALLOT.

Witnesses:
LOUIS H. GOCKE,
JAMES H. POWER.