

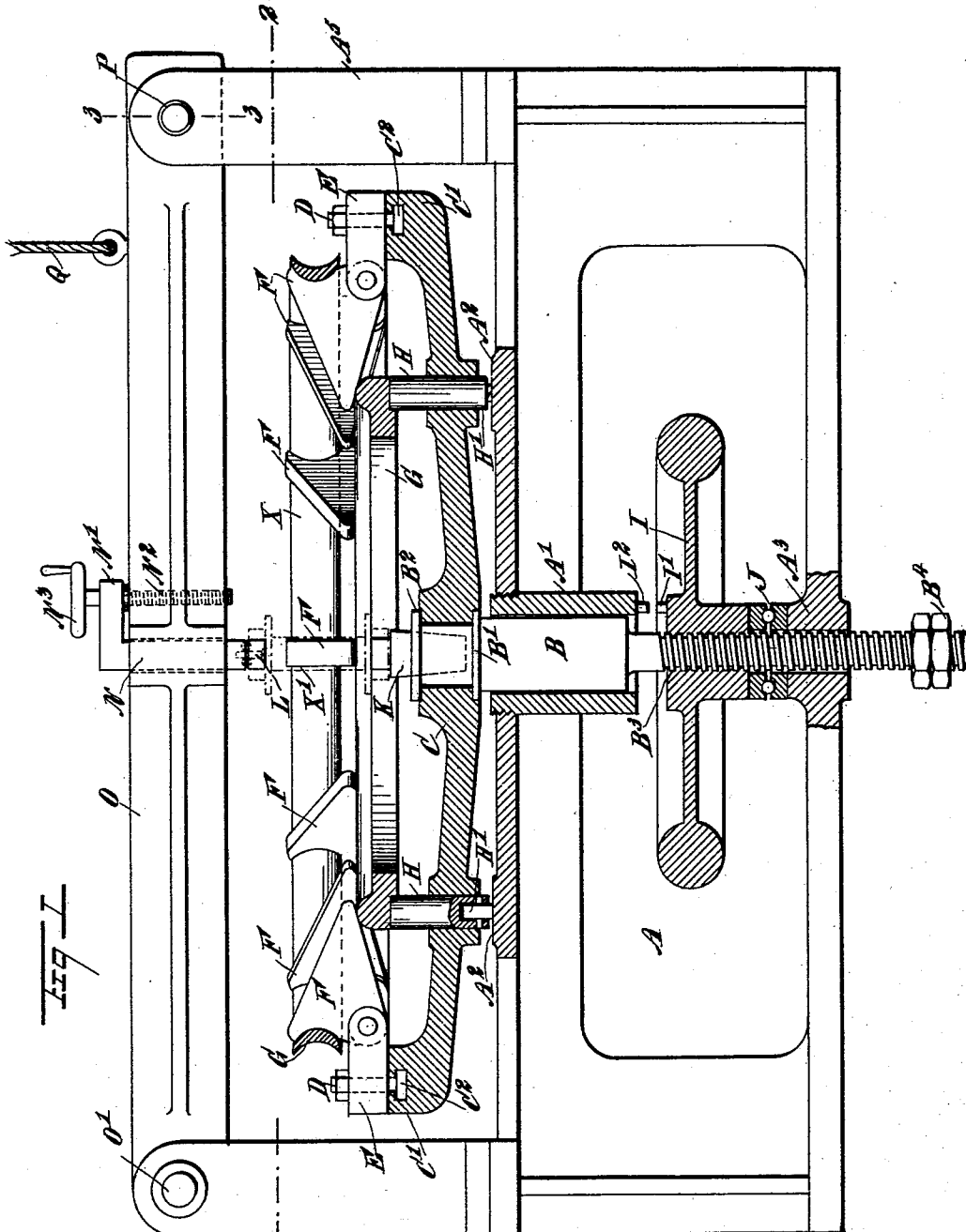
(No Model.)

2 Sheets—Sheet 1.

F. SCHRADER.
WHEEL TRUING DEVICE.

No. 569,033.

Patented Oct. 6, 1896.



WITNESSES:

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FREDERICK SCHRADER, OF ROCKAWAY, NEW JERSEY, ASSIGNOR TO THE
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WHEEL-TRUING DEVICE.

SPECIFICATION forming part of Letters Patent No. 569,033, dated October 6, 1896.

Application filed October 28, 1895. Serial No. 567,120. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK SCHRADER, of Rockaway, in the county of Morris and State of New Jersey, have invented a new and
5 Improved Wheel-Truing Device, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved wheel-truing device, more especially designed for application to bicycle-
10 wheels, to permit the workman to accurately true the wheel.

The invention consists principally of a series of pivoted jaws, arranged in a circle and adapted to engage the inner face of the wheel-
15 rim, and means for simultaneously moving the jaws in and out of engagement with said rim.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then
20 pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

25 Figure 1 is a sectional side elevation of the improvement on the line 1 1 of Fig. 2. Fig. 2 is a sectional plan view of the same on the line 2 2 of Fig. 1, and Fig. 3 is a transverse section of part of the improvement on the
30 line 3 3 of Fig. 1.

The improved wheel-truing device is mounted on a suitably-constructed frame A, provided with a central bearing A', in which is mounted to slide vertically a shaft B, having on its upper end collars B' and B'', between
35 which is mounted to turn the hub of a wheel or disk-like carrier C, preferably in dished form, having an upwardly-projecting rim C', formed with an annular dovetail-groove C'',
40 serving to receive a series of bolts D, held therein by the engagement of their heads with the enlarged lower portions of said groove C'', each of which bolts engages a pivot-block E, which is thereby secured in place on the said
45 wheel-rim and is arranged radially on said rim, as is plainly indicated in Figs. 1 and 2.

The inner end of each pivot-block E projects slightly beyond the rim C', and on it is fulcrumed a jaw F, preferably made triangular in shape, with its base or outer edge
50 formed with a recess for engaging the inner face of the wheel-rim X to be trued. The inner end of each jaw F rests on the top of a

ring or plate G, supported on a series of vertical pins H, fitted loosely in the web of the
55 wheel or carrier C and provided at their lower ends with antifriction-rollers H', adapted to travel on a circular track A'', formed on the top of the frame A.

The lower end of the shaft B is reduced and screw-threaded, as seen at B'', and its threads are engaged by a hand-wheel or nut I, resting at its lower end on a ball-bearing J, supported on a boss A'', formed in the lower portion of the frame A, and through which passes loosely
60 the threaded lower portion B'' of shaft B, as is plainly shown in Fig. 1. On the extreme lower end portion B'' of shaft B are held jam-nuts B'', forming stops for limiting the upward movement of the said screw-rod B'', said
65 nuts being adapted to engage the under side of the boss A'' when the shaft is moved upward by the operator turning the hand-wheel or nut I correspondingly.

Now it will be seen by reference to Fig. 1
75 that when the wheel C and shaft B are in a lowered position the jam-nuts B'' are a suitable distance below the under side of the boss A'' and the top of the said nut I is a suitable distance below the lower end of the
80 bearing A'. On the top of the hand-wheel or nut I is secured a pin I', adapted to engage a stop-pin I'', secured on the lower end of the bearing A', so as to prevent the nut I from screwing up too far after the wheel C has
85 been lowered, as hereinafter more fully described, it being understood that upon turning the nut I after the wheel C is in a lowered position said nut screws up on the rod B'' to finally bring the pin I' in engagement with
90 the stop-pin I'' and thereby prevent further turning of the wheel-nut in that direction.

In the upper end of the shaft B is held a pin K, adapted to engage the lower end of the hub X' of the wheel to be trued, the top
95 of said hub being engaged by an antifriction-roller L, held on the lower end of a rod N, fitted to slide vertically in the bar O, pivoted at O' to a standard A'', secured on the top of the frame A. The free end of the bar
100 O is adapted to be locked in the forked end of a standard A'', likewise secured on the frame A and arranged diametrically opposite the standard A''. A spring-pressed pin P serves to lock the free end of the bar O in the
105 standard A'', as will be readily understood by

reference to Figs. 1 and 3. A weighted rope Q is connected with the free end of the bar O, so as to counterbalance the latter and to permit of conveniently swinging the bar upward when the spring-pressed pin is withdrawn from the free end of the bar O. By this arrangement the bar O can be conveniently swung upwardly into an open position to permit of conveniently inserting the rim X or removing the wheel from the device after the spokes are tightened, as hereinafter more fully described.

The rod N is provided above the bar O with an arm N', engaged by a screw-rod N², screwing in the said bar, so as to permit of raising or lowering the rod N to move the antifriction-roller L in or out of engagement with the top of the hub X'. In order to conveniently turn the screw-rod N², I provide the upper end thereof with a hand-wheel N³.

The operation is as follows: When the bar O is in its raised position, the wheel-rim X to be trued and held in position for tightening of the spokes is placed in position with its hub or pin K as seen in dotted lines in Fig. 1, the wheel or carrier C being then in a raised position, this being accomplished by turning the hand-wheel or nut I so as to screw threaded portion B³ of shaft B upward. In doing so the wheel C on being lifted causes the pivot ends of the jaws F to be raised, so that the inner ends, resting on the ring G, remain stationary, while the upper outer ends swing inwardly into an open position to permit of conveniently placing the wheel-rim X over the several jaws. The bar O is then drawn down in a horizontal position to engage the friction-roller L with the hub X', after which said bar is locked in place by the spring-pressed pin P. The operator now turns the hand-wheel or nut I in the opposite direction, so as to cause the screw-rod B³, the shaft B, and wheel C to move downward, whereby the outer upper corners of the jaws F are caused to move in contact with the inner face of the wheel-rim X to engage the latter and to draw the same in a true circular position, as the pivots of the several jaws are arranged in a circle and these several jaws are actuated simultaneously upon the lowering of the wheel C.

The operator, after the rim X is properly clamped in position, proceeds to tighten the spokes in the rim X and hub X' in the usual manner, it being understood that the wheel C is conveniently turned by the operator from time to time as he proceeds with the tightening of the spokes, it being understood that the rim X and hub X' turn with the wheel C as the latter is turned.

It will be seen that by the arrangement described any desired number of pivot blocks and jaws may be placed on the rim of the wheel C to engage the wheel-rim X at as many places as desired to insure a proper truing of the rim. It will further be seen that only a few pins H are necessary to hold

the ring G, on which rest the inner ends of the jaws, and a simultaneous motion in opening and closing the jaws is obtained by having the inner ends of the jaws all rest on the said ring and in a circle.

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

1. A wheel-truing device, comprising a wheel mounted to turn and adapted to be raised and lowered, pivot-blocks held on said wheel, jaws fulcrumed on said pivot-blocks, and a rest for the inner ends of said jaws, and adapted to be turned with said wheel and always remain in the same horizontal plane upon raising and lowering the wheel, substantially as shown and described.

2. A wheel-truing device, comprising a wheel mounted to turn and adapted to be raised and lowered, pivot-blocks held on said wheel, jaws fulcrumed on said pivot-blocks, a rest in the form of a ring, for the inner ends of said jaws and adapted to be turned with said wheel and always remain in the same horizontal plane upon raising and lowering the wheel, and pins supporting the said rest, and loosely fitted in the web of said wheel, the lower ends of the pins being mounted to travel on a circular track, substantially as shown and described.

3. A wheel-truing device, comprising a carrier, means to move the same, a circular series of jaws mounted on the carrier and adapted to be moved into engagement with the wheel-rim, and means actuated by the movement of the carrier for moving said jaws into engagement with the wheel-rim, substantially as set forth.

4. A wheel-truing device, comprising a carrier, means to move the same, a circular series of pivoted jaws carried on the carrier and adapted to engage the rim of a wheel to be trued, and means actuated by the movement of the carrier for swinging said jaws into engagement with the wheel-rim, substantially as set forth.

5. A wheel-truing device, comprising a carrier, a circular series of pivoted jaws mounted thereon and adapted to engage the rim of a wheel to be trued, devices located centrally with respect to said series of jaws to engage and hold the wheel-hub, and a ring located between the said hub-holding devices and the carrier, said ring being arranged to engage said jaws and swing the same pivotally into engagement with the wheel-rim, substantially as set forth.

6. A wheel-truing device, comprising a carrier, means to move the same, a circular series of jaws mounted on the carrier and adapted to be moved into engagement with the rim of a wheel to be trued, and a plate arranged to engage said jaws when the carrier is moved, said jaws being moved by engagement with the plate into engagement with the wheel-rim, substantially as set forth.

7. A wheel-truing device, comprising a car-

rier, means to move the same, a circular series of pivoted jaws mounted on the carrier and adapted to engage the rim of a wheel to be trued, and a plate arranged to engage said jaws when the carrier is moved, said jaws being swung pivotally by engagement with the plate into engagement with the wheel-rim, substantially as set forth.

8. A wheel-truing device, comprising a carrier, a circular series of pivoted jaws mounted thereon and adapted to engage the rim of a wheel to be trued, a shaft connected to the carrier and adapted when operated to move the same axially, and a plate arranged to engage the jaws when the carrier is moved in one direction to swing said jaws pivotally into engagement with the wheel-rim, substantially as set forth.

9. A wheel-truing device, comprising an endwise-movable shaft, a disk-like carrier thereon adapted to be turned, a circular series of pivoted jaws on the carrier adapted to engage the rim of a wheel to be trued, and a plate arranged to engage the jaws when the carrier is moved, said jaws being swung pivotally on engagement with the plate into engagement with the wheel-rim, substantially as set forth.

10. A wheel-truing device, comprising a carrier and a plate arranged to turn in unison, the said carrier being provided with means for moving it toward and from the plate, and a circular series of pivoted jaws carried on the carrier and arranged to be engaged by said plate when the carrier is moved, said jaws being adapted when engaged by the plate to be swung pivotally into engagement with the wheel-rim, substantially as set forth.

11. A wheel-truing device, comprising a disk-like carrier provided with a circular groove, pivot-blocks having fastening devices engaging said groove and adjustable along the same, jaws pivoted on said blocks and adapted to be swung into engagement with the rim of a wheel to be trued, and means for actuating said jaws, substantially as set forth.

12. A wheel-truing device, comprising a wheel provided with a flat-topped rim projecting from its upper side and provided with a groove, pivot-blocks having bolts engaging said wheel, said blocks having their ends extending inward beyond the edge of the projecting rim of the wheel, jaws pivoted on the projecting ends of the pivot-blocks and adapted to be swung into engagement with the rim of a wheel to be trued, a circular plate arranged inside the projecting rim of the wheel whereon the jaws are carried, said plate being arranged to engage the jaws and swing the same into engagement with the rim of a wheel to be trued, and means for moving said ring relatively to said wheel, substantially as set forth.

13. In a wheel-truing device, the combination of a frame, a shaft mounted in the frame and adapted for endwise movement, a wheel

carried on the shaft and adapted to be turned, a series of jaws pivoted on said wheel and adapted when swung pivotally to engage the rim of a wheel to be trued, said wheel whereon the jaws are carried being provided with apertures extending through it, pins adapted to play through said apertures and having their lower ends engaging the frame, and a ring secured to said pins above the wheel through which the pins play, said ring being arranged to engage the jaws when the shaft is moved endwise to swing said jaws pivotally, substantially as set forth.

14. A wheel-truing device, comprising a frame, a shaft arranged to engage under the hub of a wheel to be trued, a carrier mounted to turn on the frame and having a circular series of jaws to engage the rim of a wheel to be trued, means for simultaneously actuating said jaws, a bar pivoted to the frame and adapted to swing vertically, said bar being arranged to extend across said carrier over the wheel thereon, and an adjustable rod connected to said bar and arranged to engage the upper part of the hub of the wheel on the carrier, substantially as set forth.

15. A wheel-truing device, comprising a frame, a shaft arranged to engage under the hub of a wheel to be trued, a carrier mounted to turn on the frame and having a circular series of jaws to engage the rim of a wheel to be trued, means for simultaneously actuating said jaws, a bar pivoted to the frame and arranged to extend across said carrier over the wheel thereon, and an adjustable rod connected to said bar and having a roller arranged to engage the upper part of the hub of the wheel on said carrier, substantially as set forth.

16. A wheel-truing device, comprising a frame, a shaft mounted therein and adapted to engage under the hub of a wheel to be trued, a carrier mounted on the frame and having a circular series of jaws to engage the rim of a wheel to be trued, means for moving the carrier, means actuated by the movement of the carrier for moving the jaws into engagement with the wheel-rim when the carrier is moved, and a rod adjustably carried on the frame in alinement with the shaft and arranged to engage the upper part of the wheel-hub, substantially as set forth.

17. A wheel-truing device, comprising a carrier, a circular series of pivot-blocks secured on the carrier, jaws pivoted on said blocks and arranged in a circular series, said jaws being arranged to be swung pivotally into engagement with the rim of a wheel to be trued, said pivot-blocks being adjustable circumferentially of the circular series, and means for actuating the jaws, substantially as set forth.

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Witnesses:

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