

(No Model.)

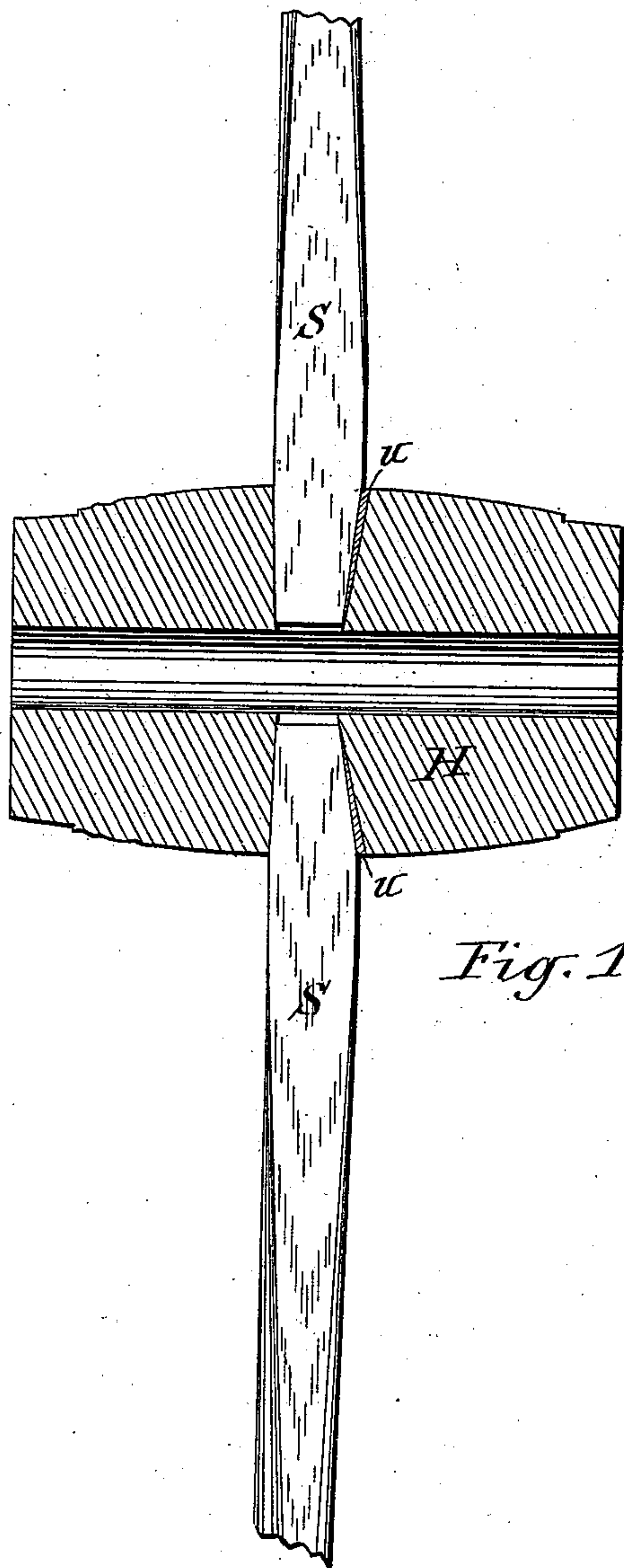
2 Sheets—Sheet 1

L. MILLER, J. ERSKINE & M. L. WRIGHT.

MEANS FOR REPAIRING VEHICLE WHEELS.

No. 377,952.

Patented Feb. 14, 1888.



WITNESSES:

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INVENTORS.

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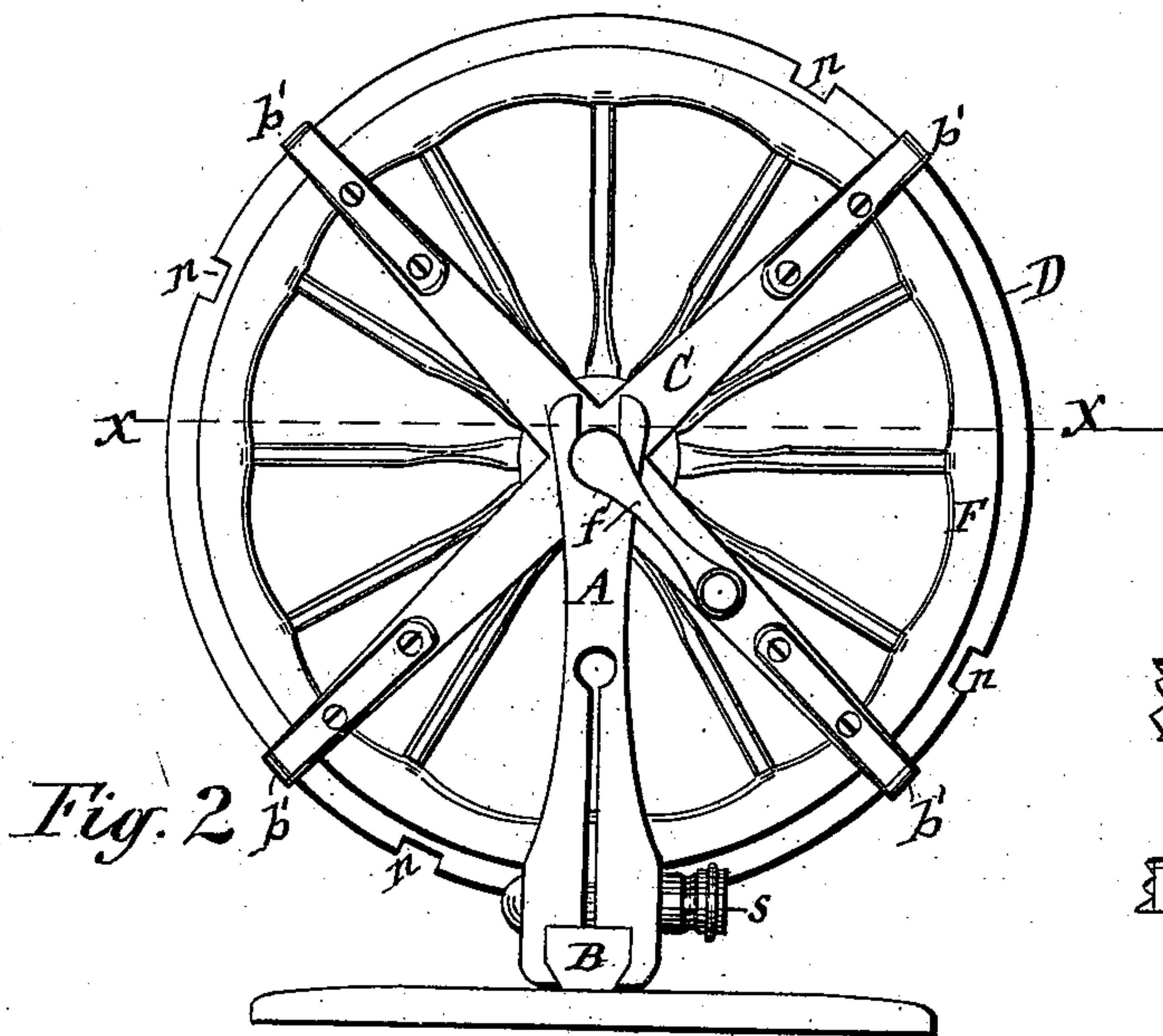


Fig. 2

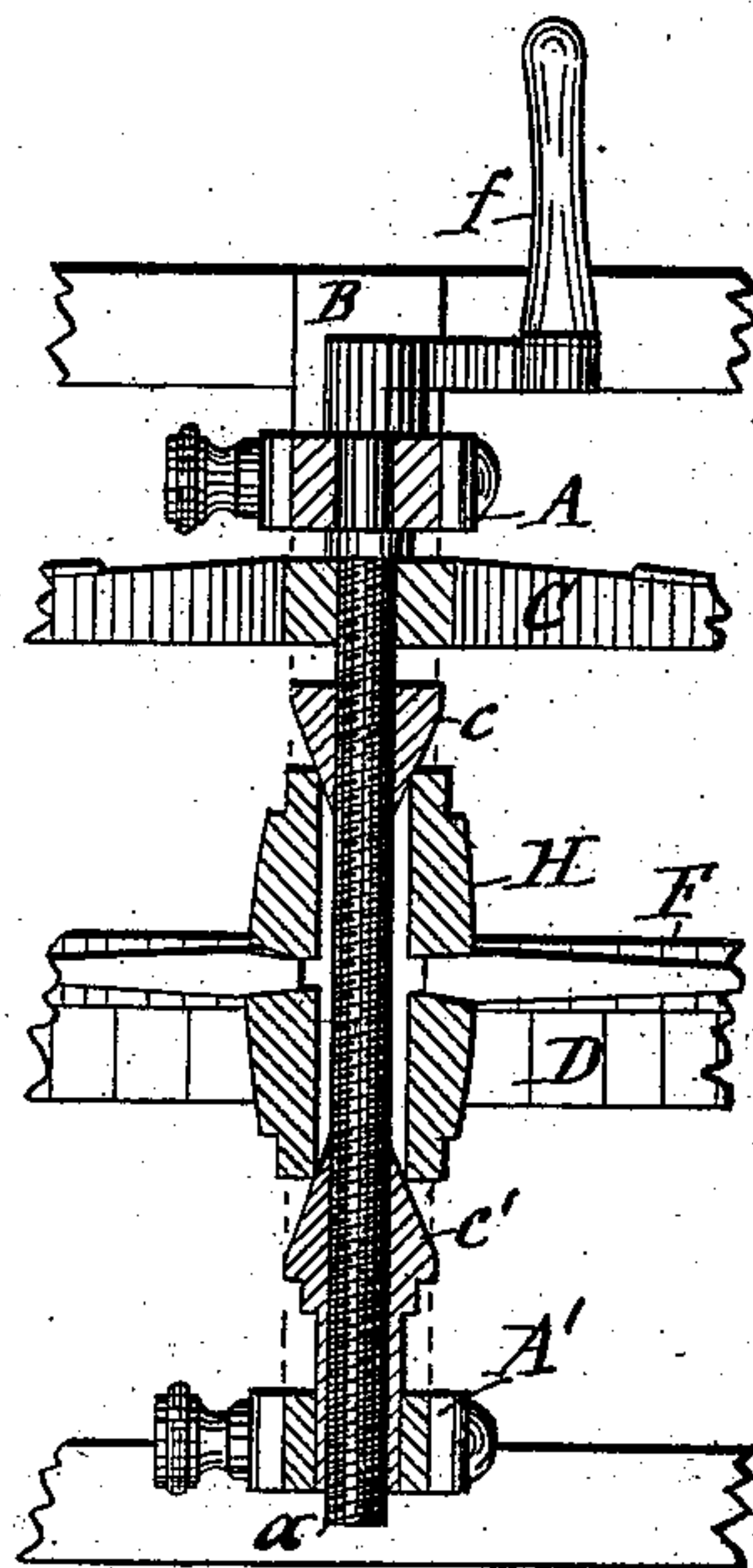


Fig. 4

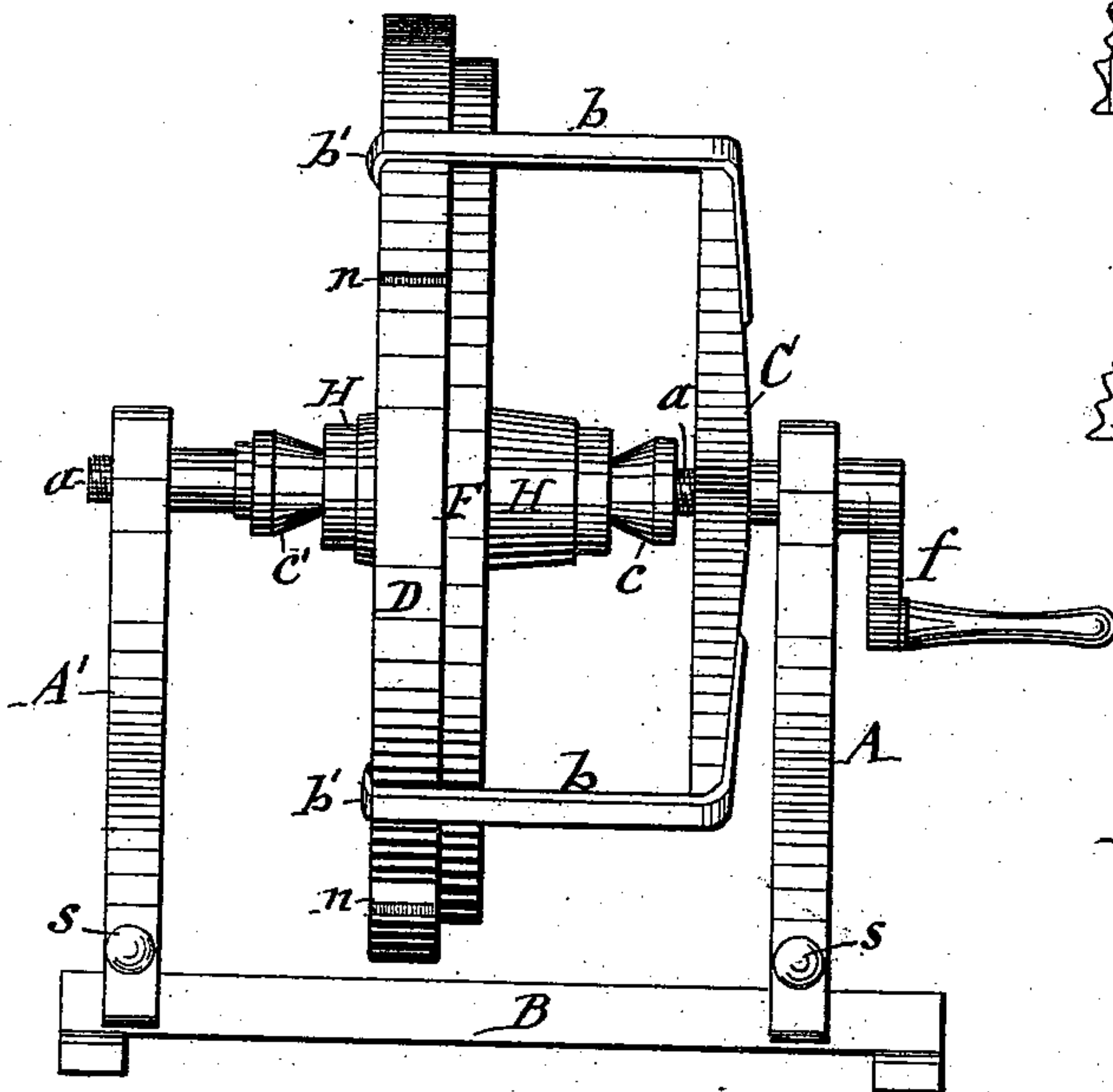


Fig. 3

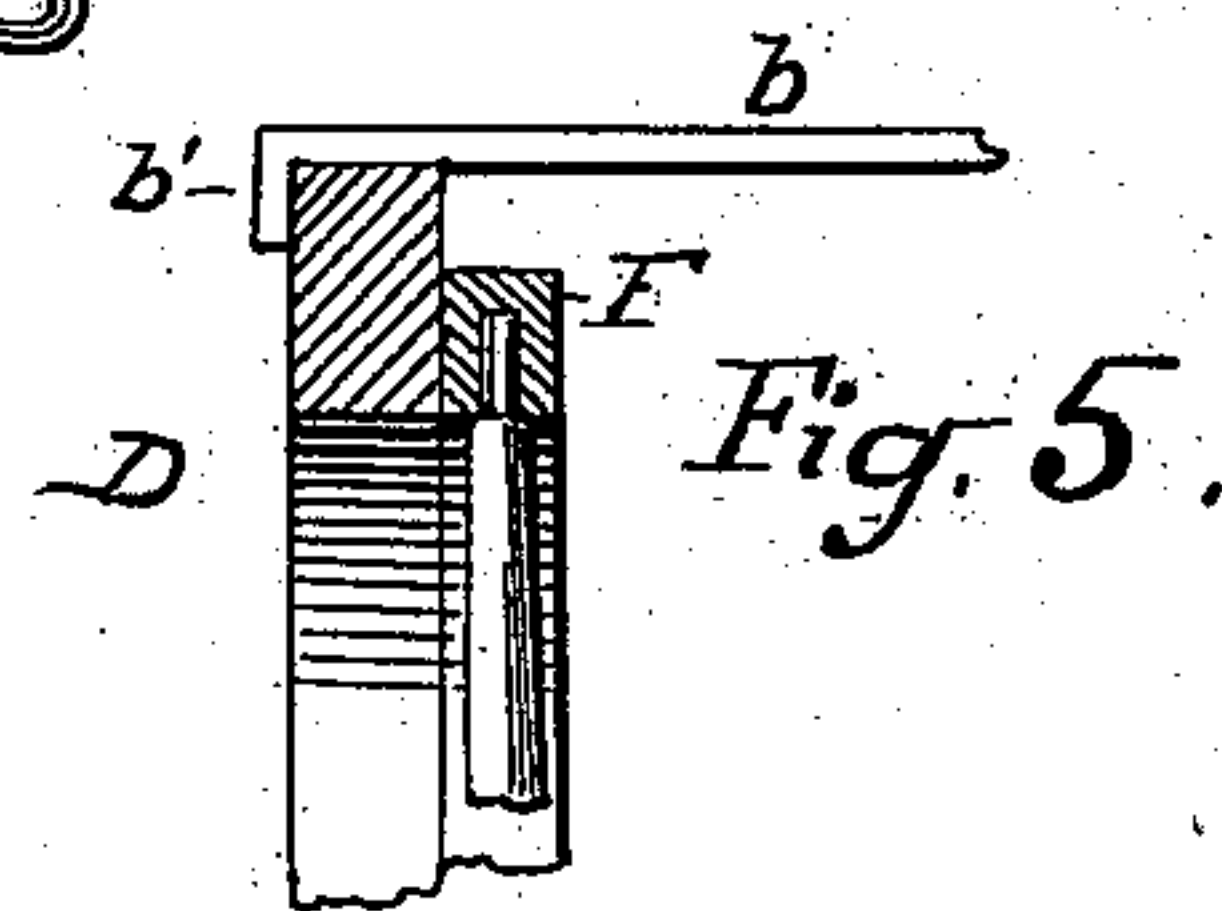


Fig. 5

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UNITED STATES PATENT OFFICE.

LEWIS MILLER, JOHN ERSKINE, AND MAURICE L. WRIGHT, OF MEXICO,
NEW YORK.

MEANS FOR REPAIRING VEHICLE-WHEELS.

SPECIFICATION forming part of Letters Patent No. 377,952, dated February 14, 1888.

Application filed March 14, 1887. Serial No. 230,810. (No model.)

To all whom it may concern:

Be it known that we, LEWIS MILLER, JOHN ERSKINE, and MAURICE L. WRIGHT, of Mexico, in the county of Oswego, in the State of New York, have invented new and useful Improvements in Means for Repairing Vehicle-Wheels, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention consists in novel devices for accurately and conveniently truing and adjusting the felly to its requisite plane on the wheel preparatory to tightening the spokes, all as hereinafter fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a longitudinal section of a vehicle-wheel hub, showing the spokes tightened therein by our improved method and means. Figs. 2 and 3 are elevations, taken at sides at right angles to each other, of the machine, by which we true and adjust the felly to its requisite plane on the wheel preparatory to tightening the spokes in the hub and felly. Fig. 4 is a transverse section on line *xx*, Fig. 2; and Fig. 5 is a transverse section of the rim or felly of the wheel and annulus bearing against the side thereof.

Similar letters of reference indicate corresponding parts.

It is a well-known fact that it is absolutely essential to every vehicle to have the wheels track truly, and in order to effect this the spokes must fit tightly in the hub and felly, so as to maintain the wheel in its proper dish form and the felly in a uniform plane at right angles to the axis of the wheel.

Our invention is designed to restore to the aforesaid proper condition vehicle-wheels which have been strained and warped and their spokes loosened in the hub and felly. To accomplish this we first impart to the wheel its requisite dish form, and true and adjust the felly *F* to a uniform plane at right angles to the axis of the wheel by means of the following apparatus or machine:

On a base, *B*, are erected two standards, *A*, *A'*, for carrying the mandrel or axial support of the wheel to be operated on. In order to adapt the standards to receive between them wheel-hubs of different lengths, we render one or both of said standards adjustable in their

position, so as to permit of varying the distance between them. However, we prefer to make only one of the standards adjustable in its position by forming the base *B* of a beam having parallel undercut longitudinal side edges, and mounting the standard *A'* movably on the said base, the lower end of the standard being bifurcated and embracing the side edges of the base, and being clamped thereon by a screw, *s*, passing transversely through the standard, and drawing the bifurcated portion thereof together and tightly against the base.

The axial wheel-support or mandrel *a* consists of a shaft, which is screw-threaded over the greater portion of its length, and is journaled in open bearings in the top of the standards, so as to permit of a ready removal of the said mandrel, for the purpose hereinafter explained.

On one end of the mandrel, at the outside of the standard *A*, is a hand-crank, *f*, by which to rotate the mandrel, when required. At the inside of the aforesaid standard is a spider, *C*, mounted on the mandrel, which spider has its hub screw-threaded, so as to work on the screw-threads of the mandrel. From the arms of the spider project horizontal arms *b b*, which terminate with hooks *b' b'*. Two cones, *c c'*, are mounted on the mandrel between the spider *C* and standard *A'*, and disposed with their apices toward each other. The cone *c* is rigidly secured to the mandrel some distance from the spider *C* for the purpose of allowing the latter to travel a certain distance on the mandrel. The other cone, *c'*, is mounted movably on the mandrel and works on the screw-threads thereof. In connection with the described machine we employ an annulus or ring, *D*, of a circumference to allow it to bear against the side of the wheel-felly to be operated on. It is provided with notches *n n* in its outer periphery to allow the hooks *b' b'* of the spider-arms *b b* to pass through them, as hereinafter described.

In operating the aforesaid machine for restoring the vehicle-wheel to its dish form we proceed as follows: We lift the end of the mandrel out of its bearing on the standard *A'* and remove the cone *c'* from the mandrel; then slip the hub of the wheel, by its bore or eye, onto the aforesaid end of the mandrel and

bring said hub to bear against the end of the cone *c*, which serves to center the wheel on the mandrel. We then slip the annulus over the free end of the mandrel and replace the cone *c'* on the mandrel and the latter into its bearing on the standard *A'*. We next place the annulus *D* against the side of the felly of the wheel by bringing the notches of the annulus in range with the arms *b b* and passing the hooks *b' b'* thereof through the aforesaid notches and then turning the annulus, so as to cause the aforesaid hooks to engage it. Then, by turning the mandrel while holding the wheel and annulus stationary, the spider *C* is caused to travel from the wheel, and, by means of the arms *b b*, draw or press the annulus against the felly and thereby restore the felly to a uniform plane at right angles to the axis of the wheel and impart the desired dish shape of the wheel. After this is accomplished we turn up the cone *c'* and bring the apex thereof to enter the eye of the wheel-hub *H* and to press against the same, and thus sustain the wheel in its central position on the mandrel while we proceed with the tightening of the spokes in the felly and hub. This latter we accomplish by calking or driving into the open joints around the tenons of the spokes *S* oakum or analogous calking material, as illustrated at *u* in Fig. 1 of the drawings.

The oakum or packing is to be thoroughly pounded into the joints, so as to render the packing hard and compact.

Experience with wheels thus repaired has proven that the oakum packing is not liable to either shrink or swell under different temperatures, nor liable to work loose in the hub or felly, and consequently said wheels are more durable than wheels repaired in the ordinary and well-known manner of driving wedges into the joints at the sides of the spokes.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. An apparatus for truing and adjusting the felly of a wheel to its requisite plane, con-

sisting of a mandrel adapted to pass through the eye of the hub of the wheel and provided with screw-threads, an annulus adapted to bear against the side of the felly, and a spider mounted on the screw-threaded portion of the aforesaid mandrel and provided with corresponding screw-threads and sustained in a plane at right angles to the mandrel, and bearings on said spider pressing against the side of the felly, substantially as and for the purpose set forth.

2. An apparatus for truing and adjusting the felly of a wheel to its requisite plane, consisting of a screw-threaded mandrel adapted to pass freely through the eye of the hub of the wheel, cones mounted on the mandrel and disposed with their apices toward each other to enter the ends of the hub-eye and thereby center the same on the mandrel, an annulus adapted to bear against the side of the felly, a spider mounted on the mandrel at the opposite side of the wheel and provided with corresponding screw-threads, and arms extended from the spider and adapted to engage the annulus and draw the same toward the wheel, substantially as described and shown.

3. In combination with the wheel-supporting mandrel, the base *B*, having parallel undercut side edges, the standard *A*, secured to one end of said base, the standard *A'*, mounted movably on the opposite end of the base and having its lower end bifurcated and embracing the side edges of the base, and the clamping-screw *s*, for fastening the standard *A'* on the base, substantially as described and shown.

In testimony whereof we have hereunto signed our names and affixed our seals, in the presence of two attesting witnesses, at the village of Mexico, in the county of Oswego, in the State of New York, this 5th day of March, 1887.

LEWIS MILLER. [L. S.]

JOHN ERSKINE. [L. S.]

MAURICE L. WRIGHT. [L. S.]

Witnesses:

F. N. WHITNEY,

WEBSTER M. RICHARDSON.