

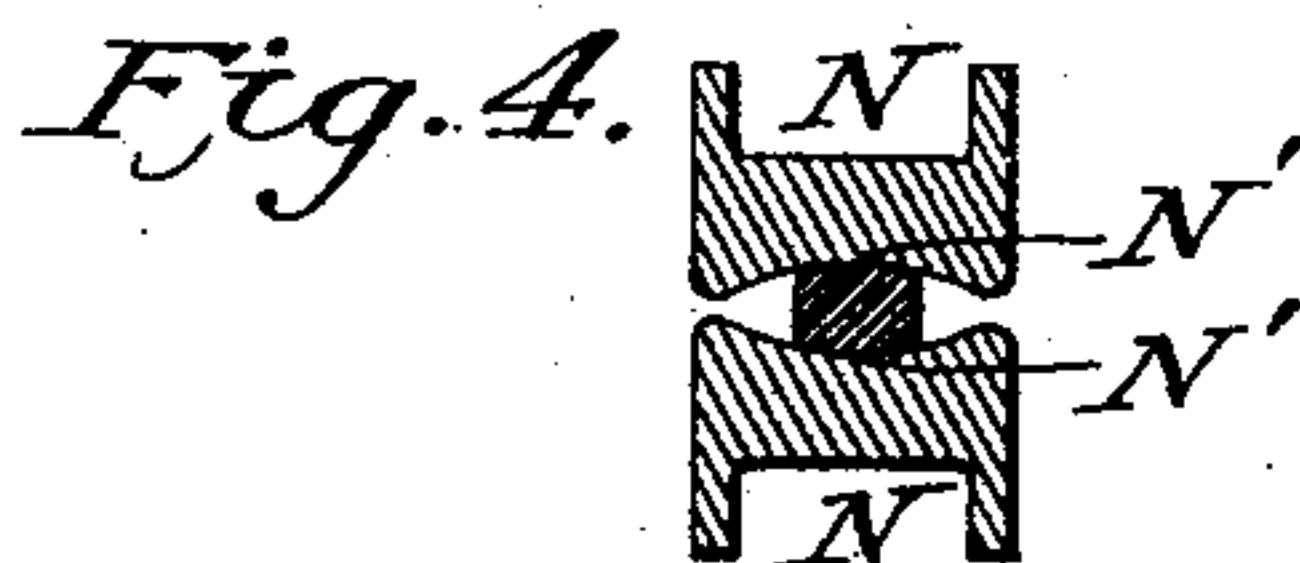
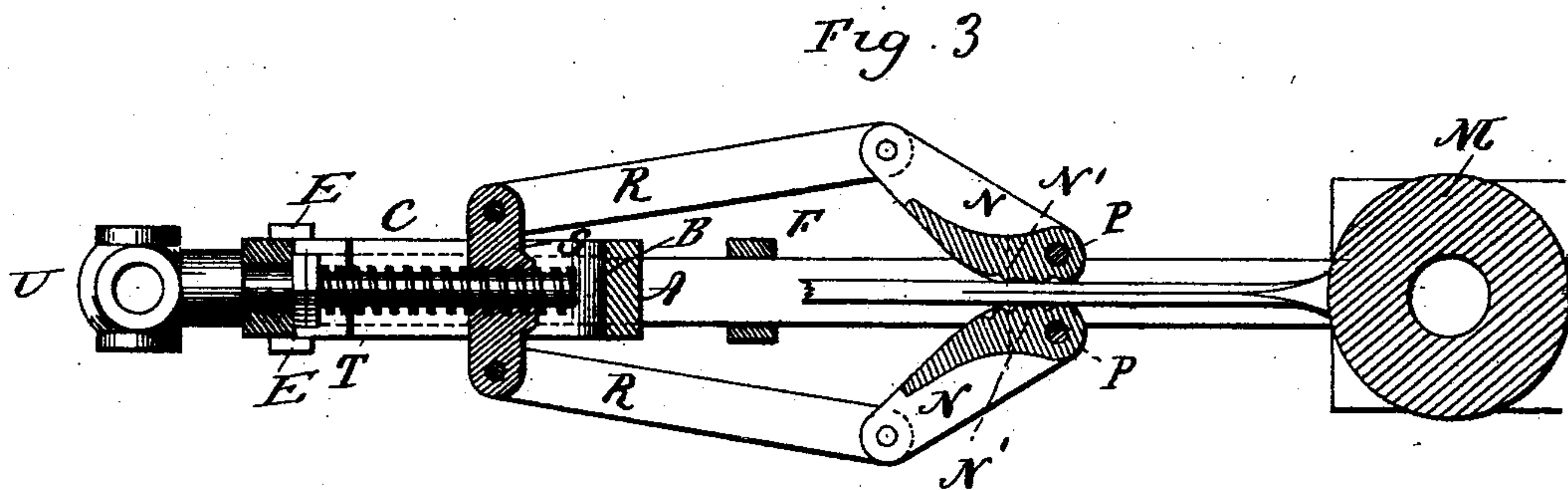
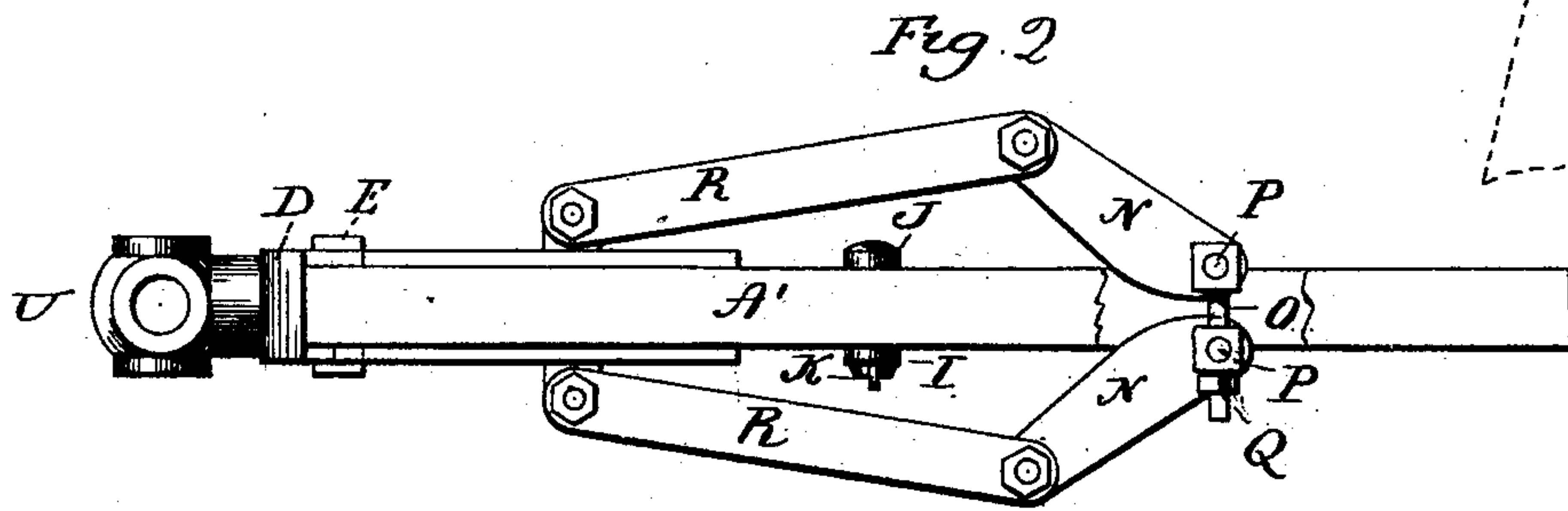
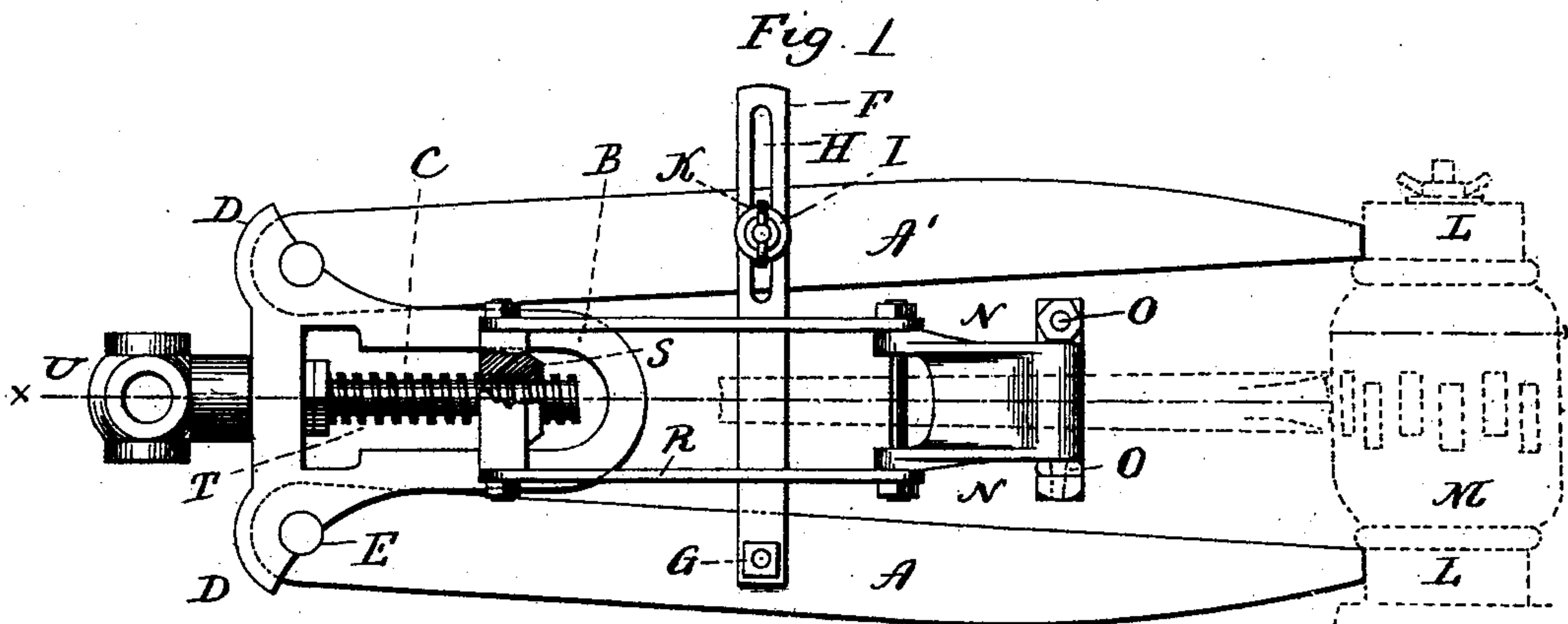
(No Model.)

2 Sheets—Sheet 1.

W. F. BOWE.  
SPOKE EXTRACTOR.

No. 481,342.

Patented Aug. 23, 1892.



Witnesses.  
J. K. Shumway.  
Lillian D. Kellogg.

Wallace F. Bowe  
By atty. Inventor  
Eale & Seymour

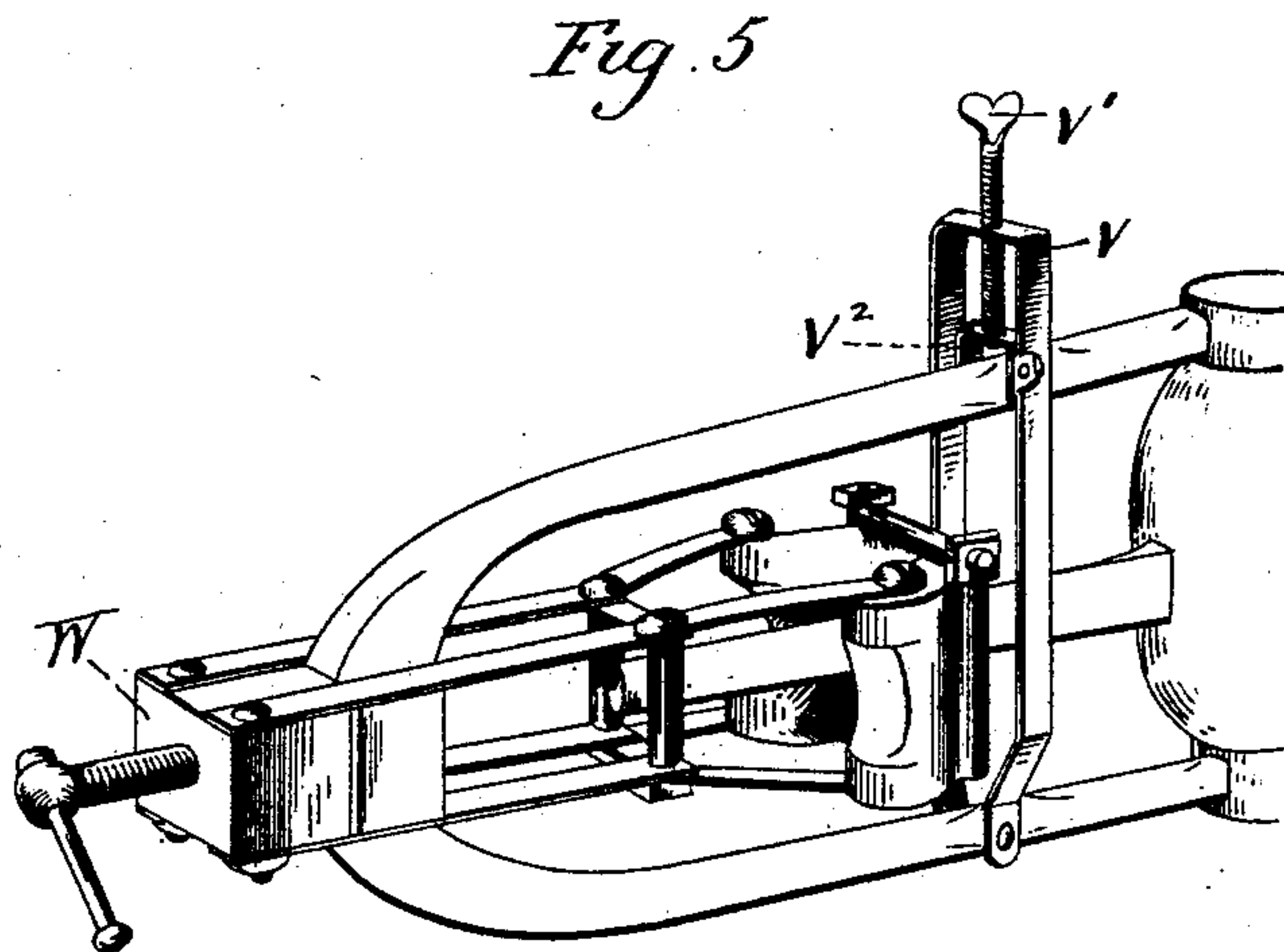
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*J. H. Hummway.*  
*Lillian D. Kelsey.*

*Wallace F. Bowe.*  
Inventor  
By atty.  
*Earle Seymour*



# UNITED STATES PATENT OFFICE.

WALLACE F. BOWE, OF MERIDEN, CONNECTICUT.

## SPOKE-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 481,342, dated August 23, 1892.

Application filed July 23, 1891. Serial No. 400,470. (No model.)

*To all whom it may concern:*

Be it known that I, WALLACE F. BOWE, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Spoke-Extractors; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation of a spoke-extractor constructed in accordance with my invention and shown in its application to a wheel for extracting a spoke therefrom; Fig. 2, a plan view of the device; Fig. 3, a view of the device, partly in plan and partly in section, on line *x x* of Fig. 1. Fig. 4 is a view of the gripping-jaws in transverse section on the line *a b* of Fig. 3 to show how they are transversely concaved, and Fig. 5 is a perspective view of a modified form which my improved device may assume.

My invention relates to an improved spoke-extractor for drawing spokes from wheels, the object being to produce a simple, durable, powerful, and easily-operated device for this purpose.

With these ends in view my invention consists in a spoke-extractor having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

As herein shown, the frame of the device consists of two legs *A A'*, corresponding to each other and having tapering outer ends, and of a head *B*, cast in one piece of metal, having a longitudinal opening *C* and widened at its outer end to form two sockets *D D*, which receive the rounded inner ends of the legs *A A'*, which are pivoted in the said sockets on short studs *E*, the inner end of the head extending forward between the said legs and having a rounded termination. The said legs *A A'*, being pivoted in the head, are both movable toward and away from each other. This construction is preferred as being more convenient, although it is not essential, for it will be sufficient if one of the legs is movable. The legs are set in any desired separation from each other by means of two coupling-plates *F F*, respectively applied at corre-

sponding points on their opposite faces and each perforated at one end to receive a bolt *G*, by means of which they are pivotally secured to the leg *A*, and each provided at the other end with an elongated slot *H*, receiving a bolt *I*, extending transversely through the leg *A'* and provided at one end with a head *J* and at its opposite end with a thumb-nut *K*, the plates being clamped upon the leg *A'* by means of the said bolt *I* and the thumb-nut *K*. By loosening the said thumb-nut the legs may be moved toward each other or separated within the limits of the slots *H*, and then positively set in the desired adjustment by means of the thumb-nut. I do not, however, limit myself to the particular means described for positively varying the separation between the legs, for such means may be replaced by other devices answering the same purpose—such, for instance, as a stirrup *V*, pivoted to one leg and embracing the other and containing a screw *V'*, entering a bail *V<sup>2</sup>*, pivoted to the leg embraced by the closed end of the stirrup, as shown by Fig. 4 of the drawings.

It will be understood that in using my device the tapering ends of the legs are set against the collars *L L* of a hub *M*, as shown by Fig. 1 of the drawings. The provision for adjusting the legs toward and away from each other is necessary in order to adapt the device to hubs of different sizes.

The pulling mechanism of the device comprises two jaws *N N*, having transversely-concaved gripping-surfaces *N' N'* formed toward the forward ends of their inner faces, which are cammed or bulging. The said forward ends of the jaws are adjustably connected together by means of two eyebolts *O O*, respectively applied to their upper and lower faces by means of bolts *P P*, passing through the said ends of the jaws and holding the eyebolts in place, each of the eyebolts being provided with a nut *Q* for permitting the jaws to be relatively adjusted at their forward ends. The outer ends of the jaws are respectively connected by two pairs of links *R R* to the projecting opposite ends of a heavy nut *S*, located in the longitudinal opening *C* of the head of the frame and moved back and forth in said opening by means of a heavy operating-screw *T*, which enters it



and which is itself mounted in the outer end of the head and provided with an operating-head U, adapted to receive a handle or bar for turning the screw.

- 5 I would have it understood that I do not limit myself to the particular means shown and described for connecting the inner ends of the jaws with the screw, for such means may be varied in construction and location.  
 10 For instance, the nut might be located on the outside of the head instead of in an opening formed in it. The nut W of the construction shown by Fig. 4 of the drawings illustrates such an arrangement. This pulling mechanism, it will be observed, is located between the  
 15 legs and in the head of the frame, and is thus protected from injury.

In using my improved device the legs are set in accordance with the size of the wheel-hub and the spoke to be pulled is inserted between the separated outer ends of the jaws of the pulling mechanism. The screw is then operated to draw the jaws inward toward the head, whereby they are firmly clamped upon  
 20 the spoke, which they will then pull upon with sufficient power to extract it, and this without in any way marring or straining the hub or any other part of the wheel.

My device, although of simple and compact  
 30 construction, has very great power and is very convenient and easy to use and enables spokes to be extracted with great rapidity.

In view of the suggested changes which may be made in the device I would have it understood that I do not limit myself to the exact  
 35 construction herein shown and described, but hold myself at liberty to make such departures therefrom as fairly fall within the spirit and scope of my invention.

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

1. In a spoke-extractor, the combination, with a frame consisting of a head and two  
 45 legs, one of which is adjustable toward and from the other, of pulling mechanism mounted in the said frame between the legs thereof and means for positively varying the separation between the ends of the said legs, substantially as described.  
 50

2. In a spoke-extractor, the combination, with a frame consisting of a head and two legs pivoted to the said head which extends between them, of pulling mechanism mounted  
 55 in the said frame between the legs thereof and means for positively varying the separation of the free ends of the legs, substantially as described.

3. In a spoke-extractor, the combination,  
 60 with a frame consisting of a head and two

legs connected therewith and one being movable toward and away from the other, of pulling mechanism located between the said legs and including two jaws pivotally connected at their forward ends, a screw mounted in the  
 65 said head, and connections between the rear ends of the jaws and the screw, substantially as described.

4. In a spoke-extractor, the combination, with a frame consisting of a head having a  
 70 longitudinal opening and two parallel legs connected therewith, one being movable toward and away from the other, of pulling mechanism including two jaws pivotally connected at their forward ends, a screw mounted  
 75 in the outer end of the said head, a nut mounted in the opening of the head, and connections between the inner ends of the jaws and the nut, substantially as described.

5. In a spoke-extractor, the combination, 80 with a frame consisting of a head and two parallel legs connected therewith, one being movable toward and away from the other, of a pulling mechanism consisting of two jaws pivotally connected at their forward ends,  
 85 which are separated, a screw mounted in the outer end of the head, a nut located in the opening of the head, and two pairs of bars respectively connecting the inner ends of the jaws with the projecting opposite ends of the  
 90 nut, substantially as described.

6. In a spoke-extractor, the combination, with a frame consisting of a head having a longitudinal opening and enlarged at its outer  
 95 end to form two sockets and of two parallel legs respectively pivoted in the said sockets, of a pulling mechanism consisting of two jaws pivotally connected at their forward ends, which are separated, a screw mounted in the  
 100 outer end of the head, a nut located in the opening of the head, and connections between the rear ends of the jaws and the said nut, substantially as described.

7. In a spoke-extractor, the combination, with a frame consisting of a head and two  
 105 parallel legs, one of which is movable toward and away from the other, of a pulling mechanism consisting of two jaws pivotally and adjustably connected together at their forward ends, a screw mounted in the head, and con-  
 110 nections between the rear ends of the jaws and the said screw, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WALLACE F. BOWE.

Witnesses:

WILBUR F. DAVIS,  
 WILLIAM C. MUELLER.