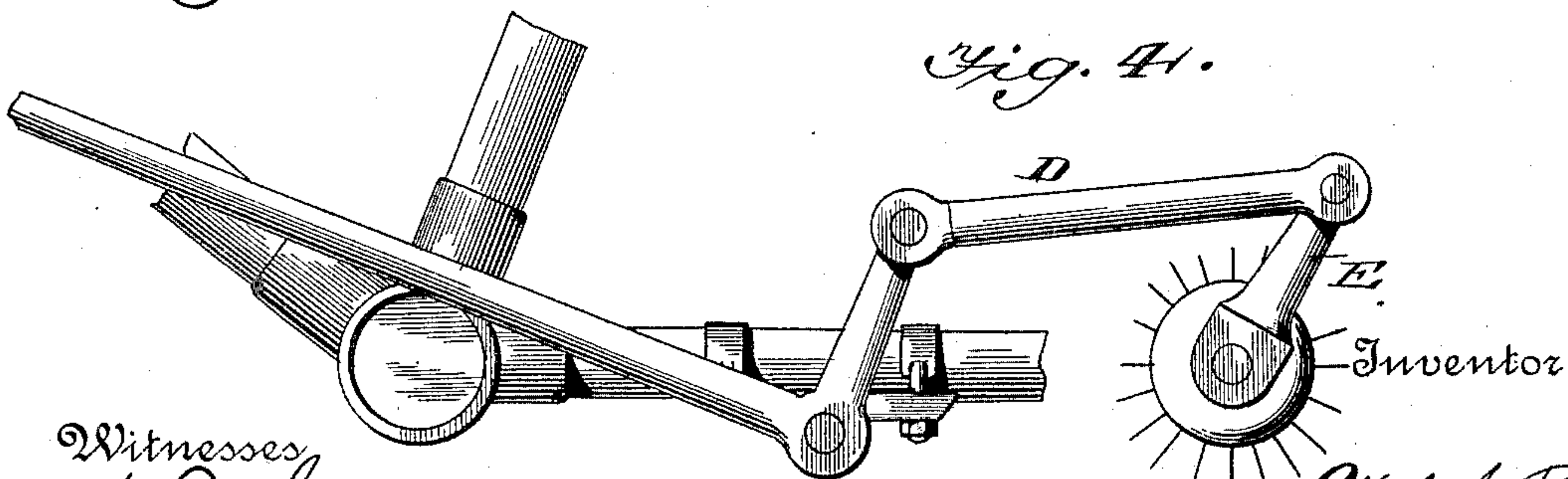
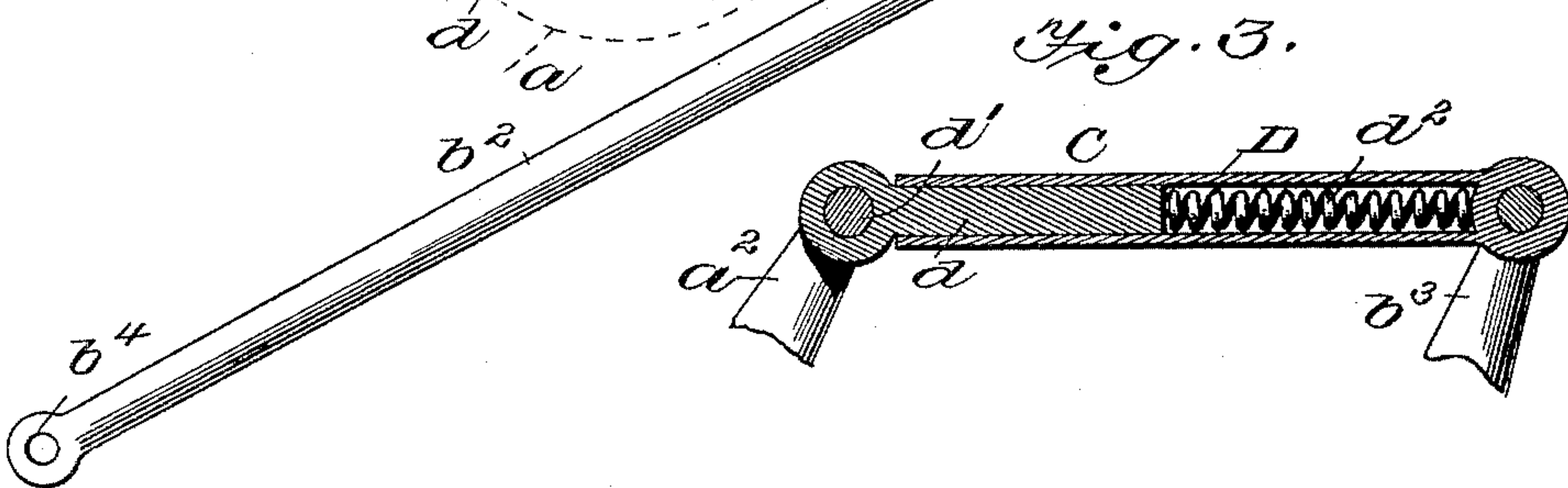
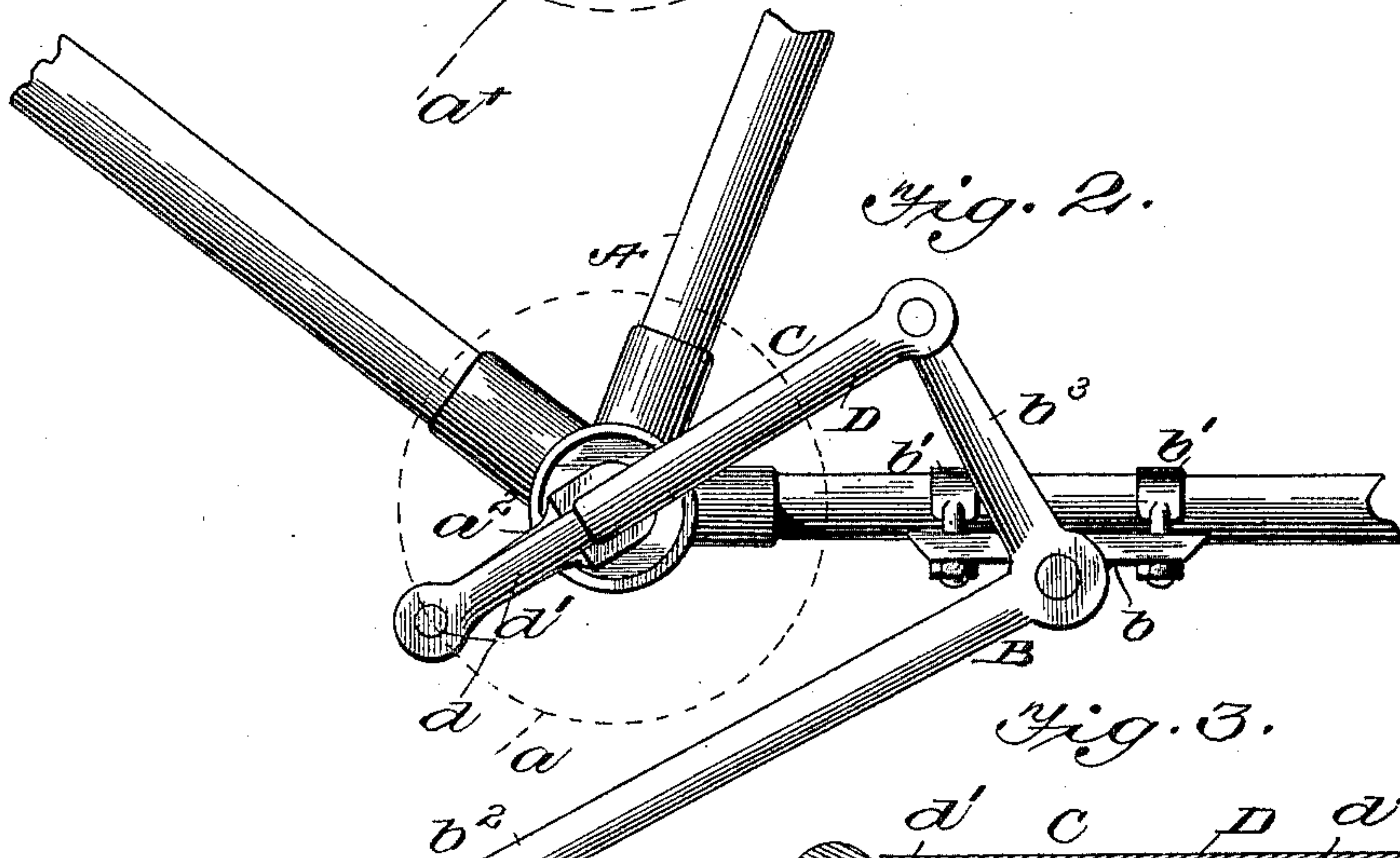
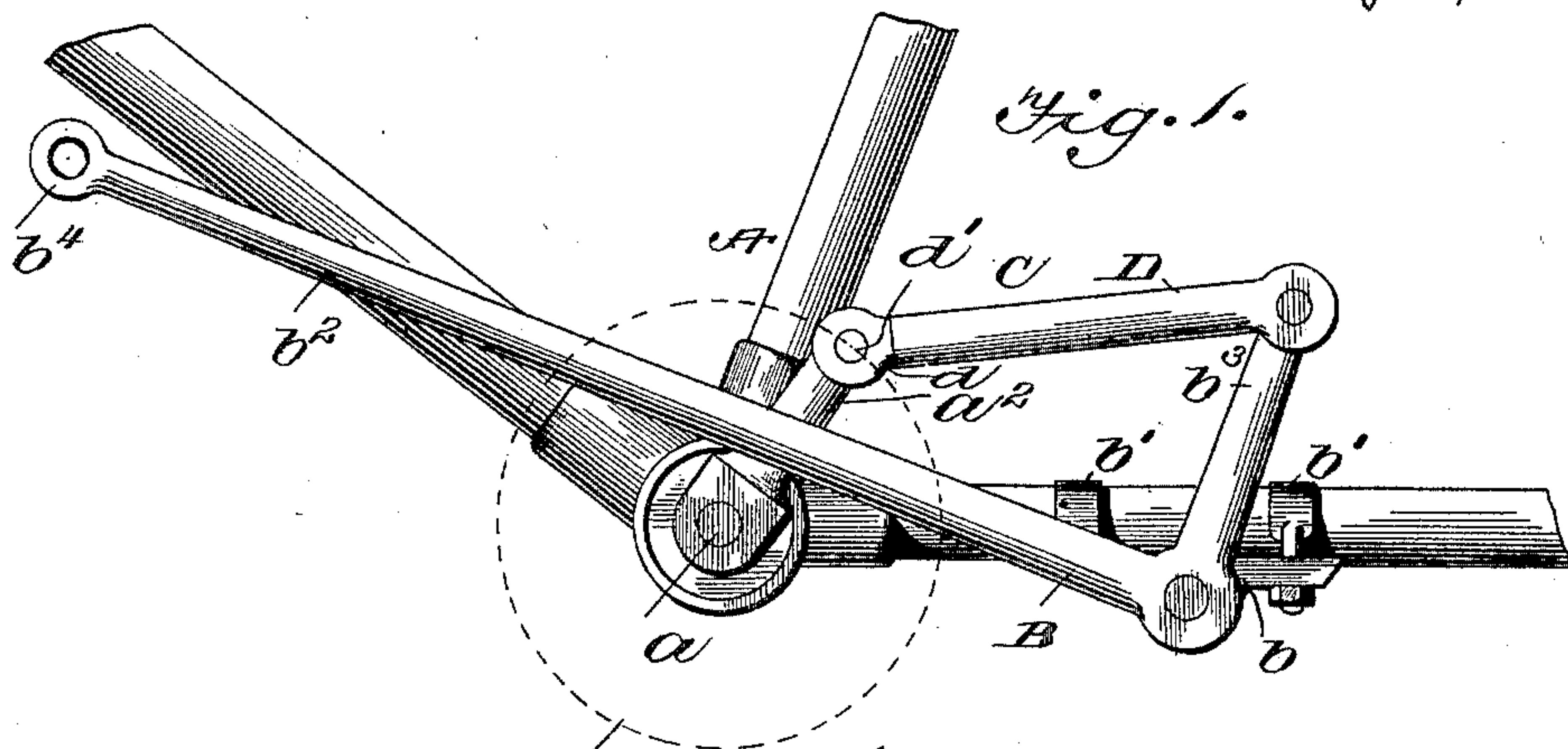


(No Model.)

W. J. PINE.
BICYCLE.

No. 581,766.

Patented May 4, 1897.



Witnesses
John W. Smith
Frank Barry

Inventor
Walter J. Pine
by *J. Fred. Reilly*
his Attorney

UNITED STATES PATENT OFFICE.

WILBER J. PINE, OF OSHKOSH, WISCONSIN.

BICYCLE.

SPECIFICATION forming part of Letters Patent No. 581,766, dated May 14, 1897.

Application filed February 6, 1896. Serial No. 578,264. (No model.)

To all whom it may concern:

Be it known that I, WILBER J. PINE, a citizen of the United States, residing at Oshkosh, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Bicycles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in bicycles and the like; and it has for its object the production of a bicycle-gear which will be simple in construction and by means of which an increase in leverage and a consequent increase in power are obtained, whereby the value of the machine is greatly enhanced.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figures 1 and 2 are views in side elevation illustrating my invention in different positions. Fig. 3 is a sectional detail. Fig. 4 is a view of a modification.

Referring to the drawings, A designates a portion of a bicycle-frame; a , the usual crank-shaft; a' , the sprocket-gear, and a^2 the crank-arm.

Inasmuch as the following parts are duplicated in practice—i. e., one set being used on each side of the bicycle—I shall only describe one of them. In a bearing b , secured by means of clips b' to the bicycle-frame, is pivoted a lever B, the same having a long arm b^2 and a short or angular arm b^3 , projecting upwardly and at right angles to said former arm. The pedals (not shown) are designed to be secured at the outer end b^4 of arm b^2 .

C is an extensible pitman-like arm which is designed to connect the arm b^3 and crank-arm a^2 . This pitman comprises a hollow cylindrical sleeve D, which is pivoted to arm b^3 , and working or telescoping therein is an arm or member d , connected at d' to arm a^2 . Within sleeve D and bearing against the inner end thereof and the outer end of member d is a coil-spring d^2 .

In Fig. 4 I have shown a slight modification of the foregoing. Instead of using the sprocket-gear I secure a crank-arm E on the rear axle and connect the same by pitman D to the lever. By this means the same results are obtained.

In operation the downward stroke of arm b^2 causes arm b^3 to move forward and, through pitman D, effects a partial revolution of the crank-shaft. As the crank-arm a^2 passes its vertical center, the arm b having reached the downward limit of its movement, the spring d^2 will force said crank-arm around, the members of pitman D extending or lengthening the connection between said crank-arm and said arm b^3 . The arm b^2 remains stationary until the crank-arm begins to rise under the action of the other opposite pedal, whereupon said spring is again compressed, and the first pedal will be thereby raised, said spring being strong enough to support the same.

From what has been said it will be seen that I have produced an improvement in bicycle-gears which is simple in construction, efficient in operation, and not liable to readily get out of order or become deranged.

I claim as my invention—

1. The herein-described improved driving mechanism for bicycles, comprising a shaft having a crank-arm, a pivoted arm or lever having an angular arm or member, an extensible pitman consisting of two telescoping members connecting said crank-arm and said angular member, and a coil-spring bearing against the parts of said pitman, substantially as and for the purposes set forth.

2. The herein-described improved driving mechanism for bicycles, comprising a shaft having a crank-arm, a pivoted lever having an angular arm or member, a tubular member pivoted to said angular arm, a cylindrical member pivoted to said crank-arm and extended into said tubular member, and a spring within said tubular member and bearing against the inner end of said cylindrical member, substantially as set forth.

I testimony whereof I affix my signature in presence of two witnesses.

WILBER J. PINE.

Witnesses:

W. N. ARMINGTON,
L. O. CHASE.