

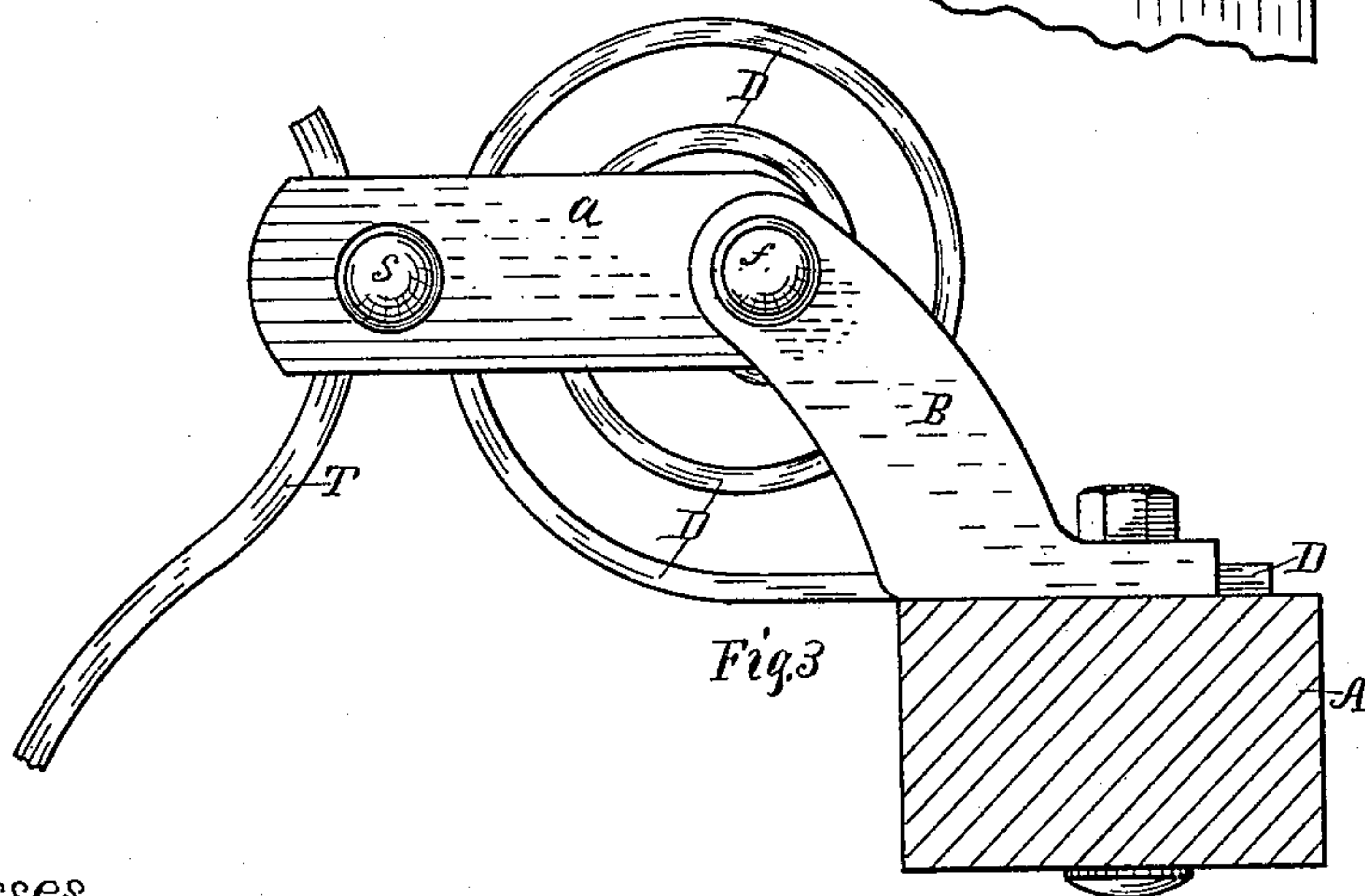
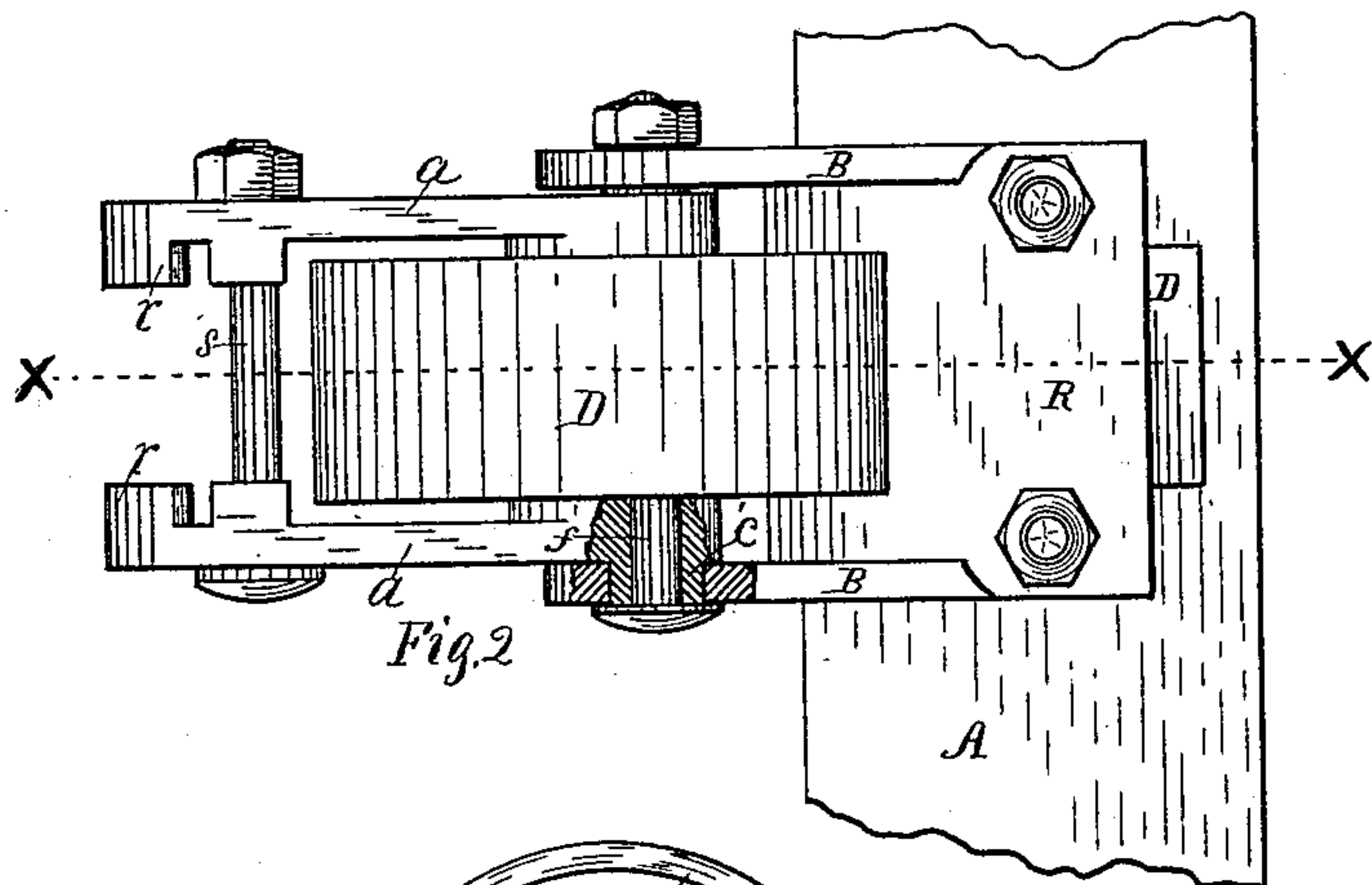
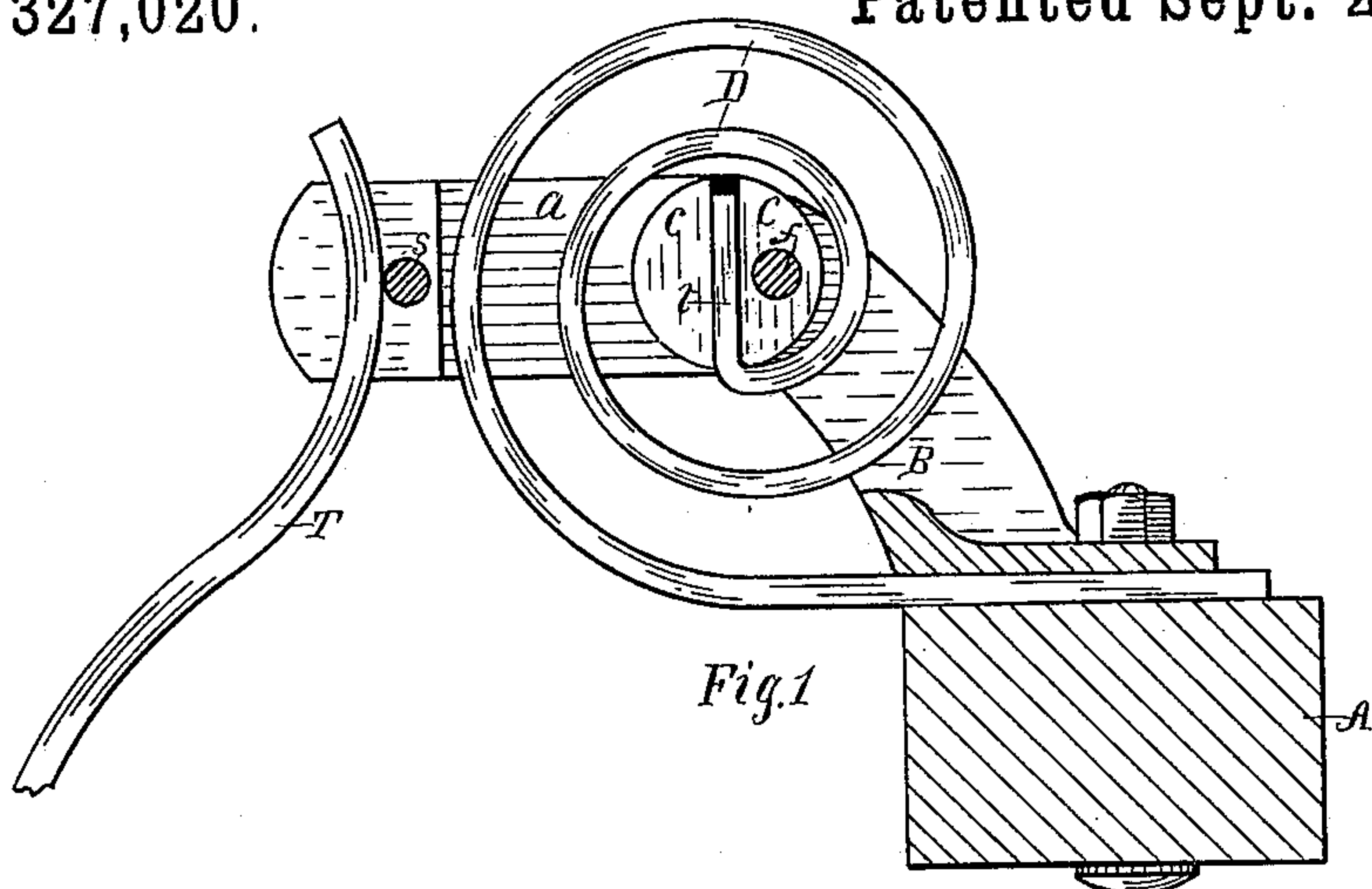
(No Model.)

B. F. RIX.

HARROW.

No. 327,020.

Patented Sept. 29, 1885.



*Witnesses.*

John C Perkins

J. L. West

*Inventor:*

Benz. F. Riv.

By Lucius C. West.

Array:-

# UNITED STATES PATENT OFFICE.

BENJAMIN F. RIX, OF KALAMAZOO, MICHIGAN.

## HARROW.

SPECIFICATION forming part of Letters Patent No. 327,020, dated September 29, 1885.

Application filed June 14, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN F. RIX, a citizen of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented a new and useful Harrow, of which the following is a specification.

This invention relates to that class of harrows in which the shares are acted upon by coil-springs. It has for its object an improved construction and arrangement of parts, hereinafter described and claimed.

In the drawings forming a part of this specification, Figure 3 is a side elevation with the share broken away; Fig. 2, a top view with share removed and portion broken away; and Fig. 1 is a vertical section on the line *xx* in Fig. 2, parts being left full.

The share-holder consists of the two brackets *a* B, hinged together by a bolt, *f*. The part B is secured to the share-beam A, and with the rear end of the other part, *a*, the share T is connected. Any style of share may be used.

The spring is coiled around the hinged ends of the brackets *a* B, as at D, like a clock-spring, the inner end being secured to the bracket *a*, with which the share is connected, as at *t*. By this means when the harrow-beam A is drawn forward and the share moves backward and upward, the rear end of the movable bracket is raised upward, bringing a central purchase on the coil. Circularly-coiled springs have heretofore been connected with hinged harrow-teeth; but so far as I know, the leverage-purchase of the teeth have been on the outer end of the coil, said outer end of the coil being directly connected with the pivoted tooth, necessitating a spring of much greater length and thickness of steel to secure the proper degree of spring-tension, from the fact that the outer end of the coil yields more freely than the inner end.

By the introduction of a bracket or tooth-holder pivotally connected in a horizontal position with the stationary bracket, I retain the desirable action of the share found in other harrows having hinged or pivotally-connected brackets, the same being a rear-

ward tilt of the lower end when meeting an obstruction, and at the same time, by securing the inner end of the circularly-coiled spring to the said hinged bracket, near the hinging pivot, and the outer end to the harrow-beam, I obtain a leverage-purchase of the tooth on the inner end of the coil, enabling me to retain the desirable action of the share above stated in a harrow in which all the draft-strain comes on the harrow-beam, brackets, and share, and to use very lightweight steel, because the inner end of the coil presents greater resistance to the leverage force.

A further important feature of my improvement is, that by confining the outer end of the coil and allowing it to spring in the center, the tooth is prevented from dropping down and tilting forward, obviating the necessity of any further construction, as in other harrows, to prevent said objectionable action. The outer end of the coil is secured under the stationary bracket B to the harrow-beam A.

The movable bracket is made in two parts, having recessed ends *rr* and *cc*, adapted to clamp the tooth T and coil D in securing the parts together.

The hinged end of the movable bracket *a* is provided with bearing-lugs *c'*, passed into the eyes of the stationary bracket, Fig. 2, so that by tightening the hinging-bolt *f* it will clamp the parts of the bracket *a*, said hinging-bolt being passed through a hole in said bearing-lugs.

What I claim as new is—

The combination of a share, the circularly-coiled spring, the harrow-beam bracket, the spring-clamping bracket having the perforated bearing-lugs in the eyes of the beam-brackets, and the combined hinging and clamping bolt, substantially as set forth.

In testimony of the foregoing I have hereunto subscribed my name in the presence of two witnesses.

BENJAMIN F. RIX.

Witnesses:

JOHN H. CHASE,  
GEO. W. YOUNG.