

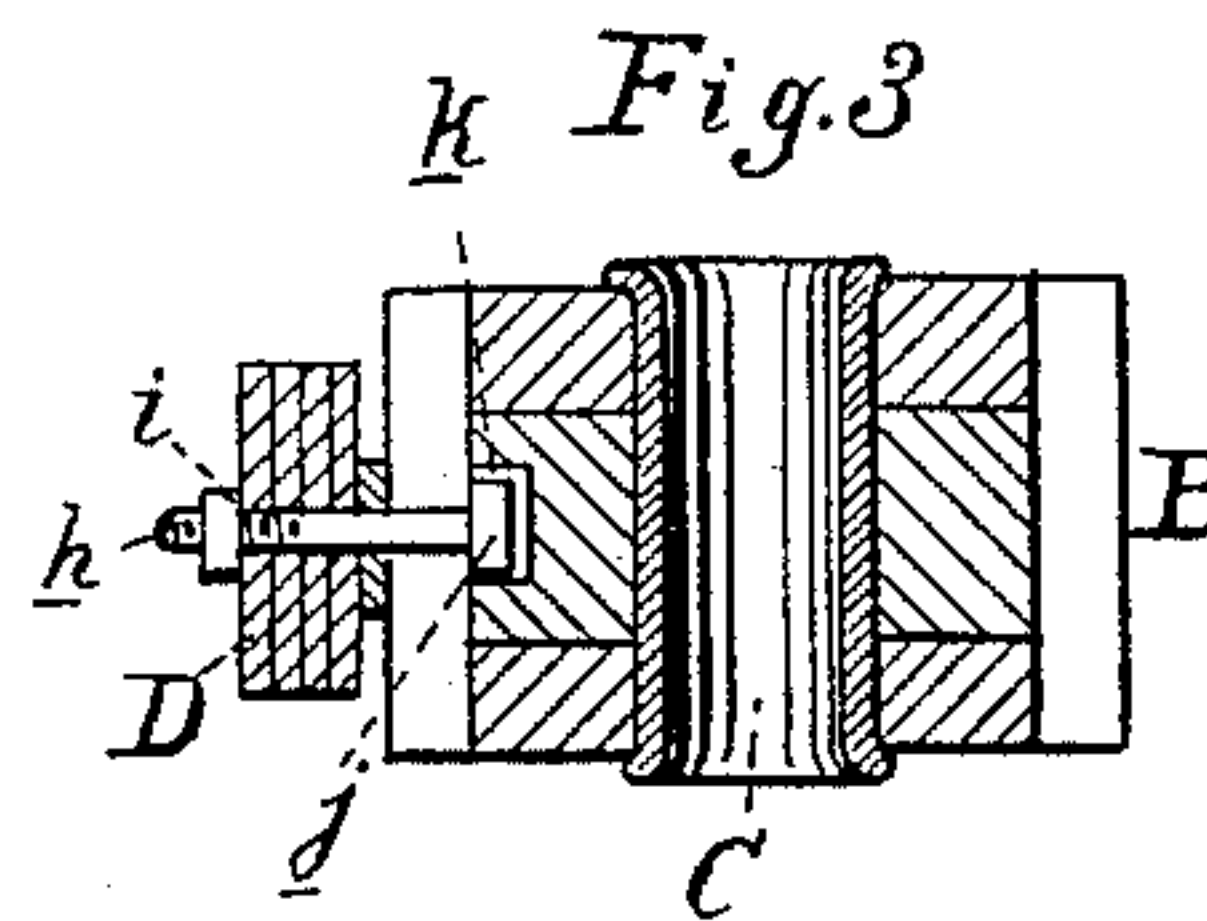
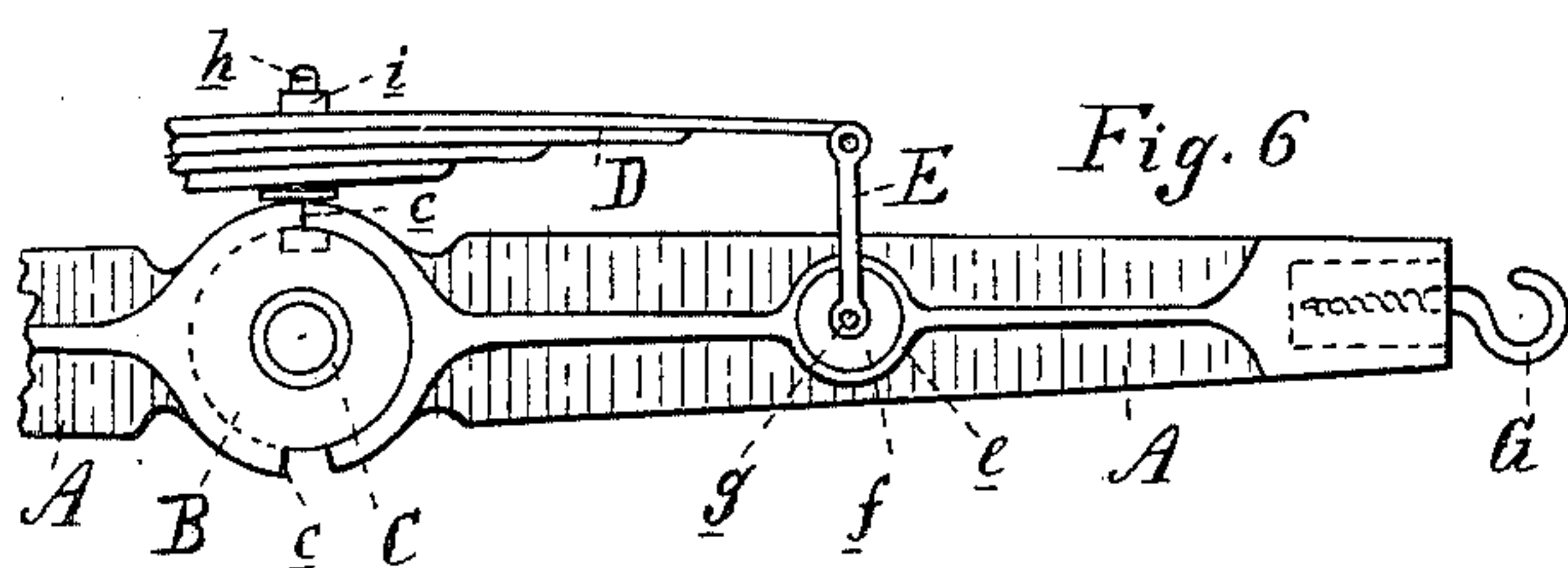
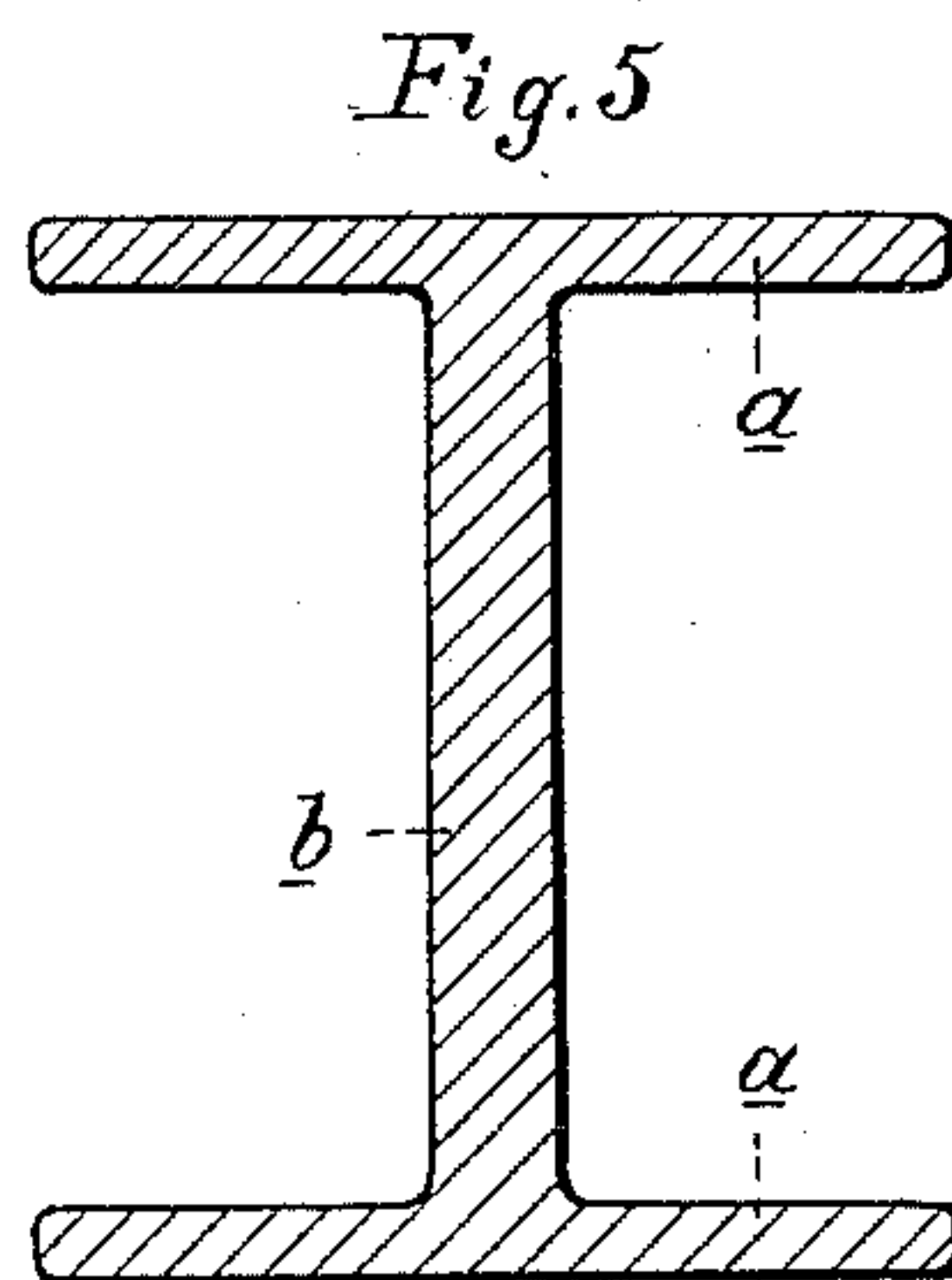
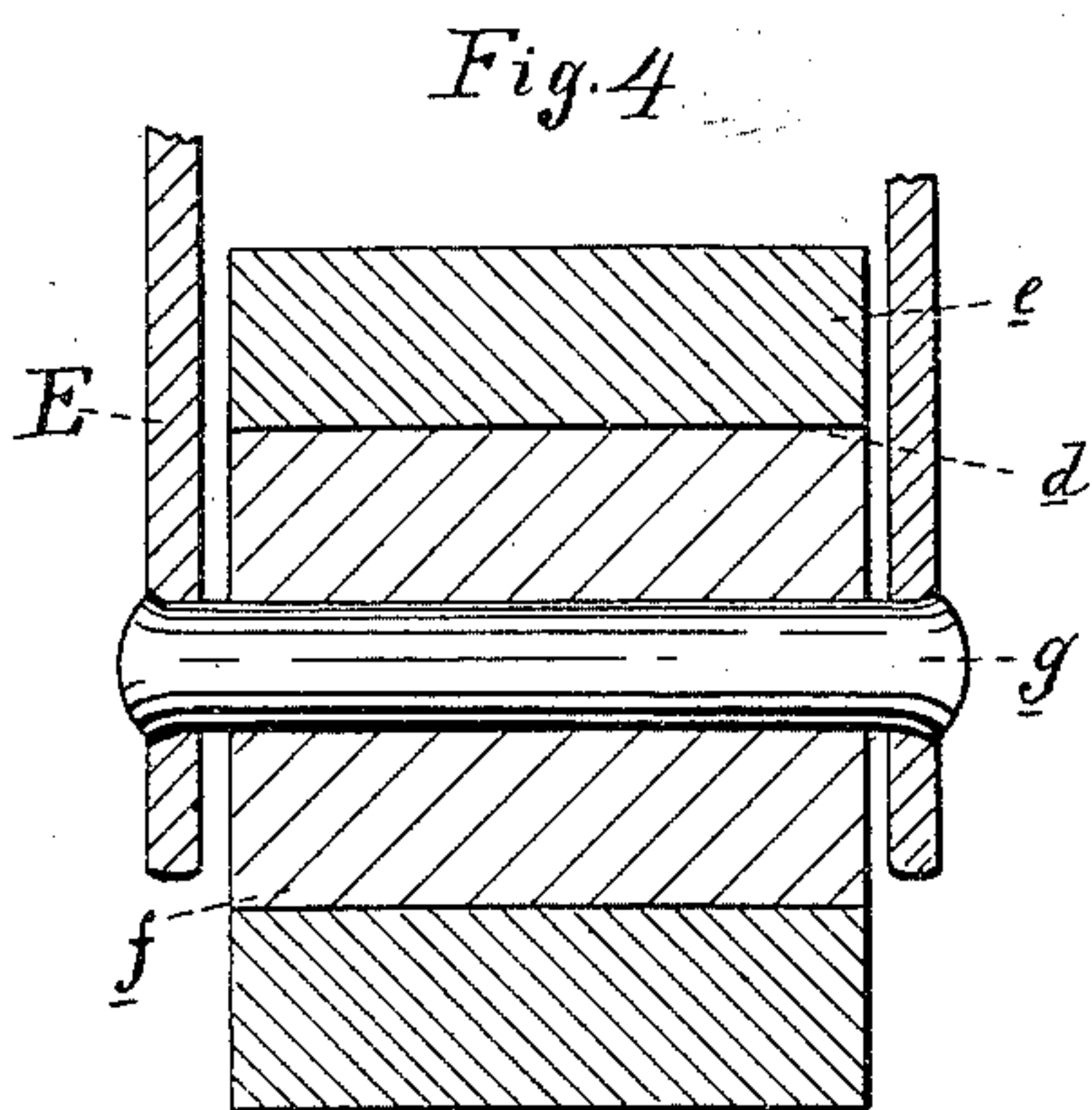
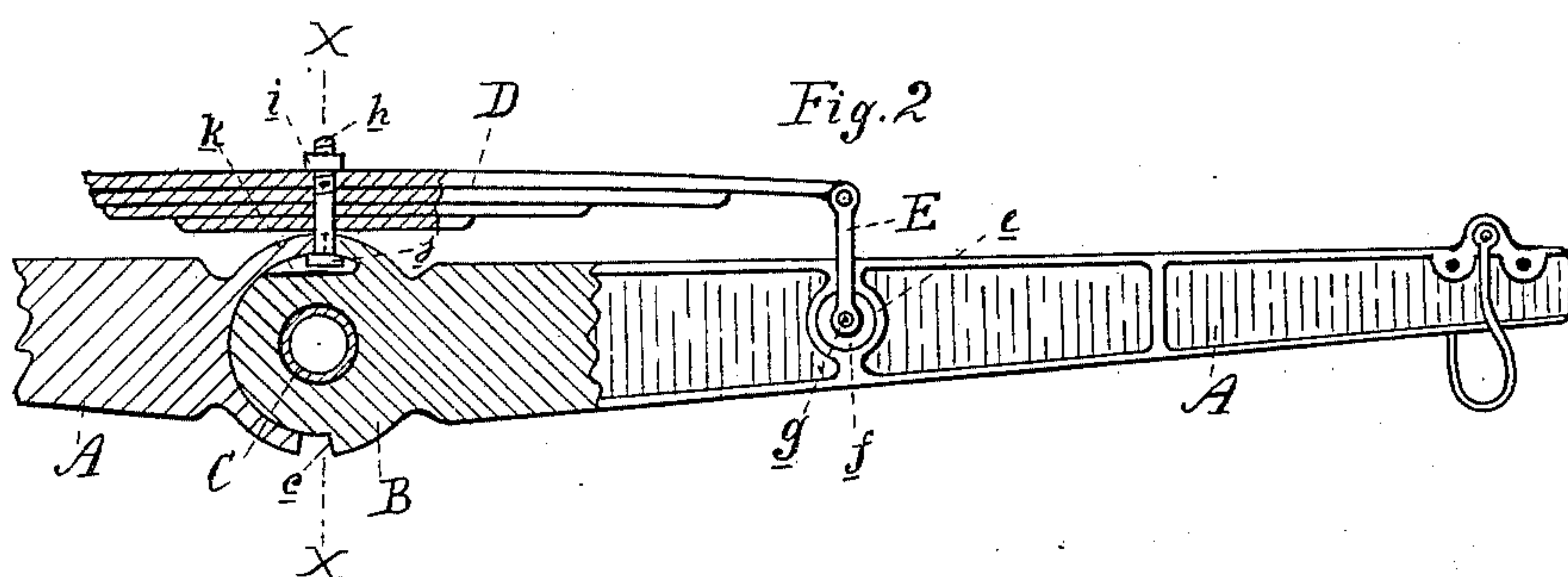
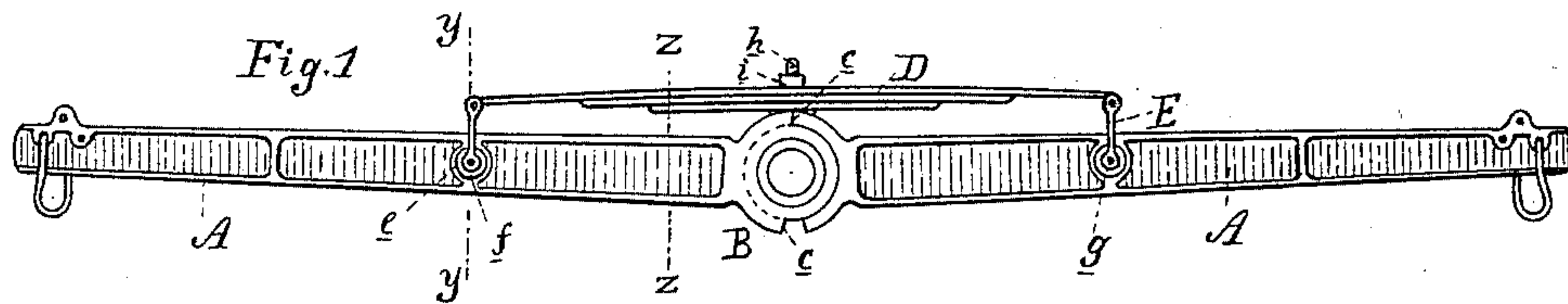
(No Model.)

H. COURTAD.

WHIFFLETREE.

No. 398,705.

Patented Feb. 26, 1889.



Inventor:

Henry Courtad.

By Thos L. Sprague & Son
Attys

Attest:

John Schuman.

J. Paul Mayer.
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UNITED STATES PATENT OFFICE.

HENRY COURTAD, OF SANDUSKY, OHIO.

WHIFFLETREE.

SPECIFICATION forming part of Letters Patent No. 398,705, dated February 26, 1889.

Application filed August 2, 1888. Serial No. 281,802. (No model.)

To all whom it may concern:

Be it known that I, HENRY COURTAD, a citizen of the United States, residing at Sandusky, in the county of Erie and State of Ohio, have
5 invented certain new and useful Improvements in Whiffletrees, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful
10 improvements in spring-whiffletrees; and the invention is designed to form an improvement on Letters Patent numbered 359,873, of March 22, 1887.

The invention consists in the peculiar construction of a jointed metallic whiffletree and
15 in its combination with a draft-spring, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is a plan view of a doubletree to
20 which my invention is applied. Fig. 2 is a horizontal section thereof. Fig. 3 is a cross-section on line *x x* in Fig. 2. Fig. 4 is a cross-section on line *y y* in Fig. 1. Fig. 5 is a cross-section on line *z z* in Fig. 1. Fig. 6 is a plan
25 of a single whiffletree to which my invention is applied, with a slight modification.

A A are two like halves of a whiffletree, preferably made of cast-iron, substantially of the cross-section shown in Fig. 5, wherein *a*
30 are two flanges slightly converging toward each other from one end to the other, and forming, respectively, the front and rear sides of the whiffletree, and *b* a central web connecting these flanges, and one or more strengthening-ribs are placed intermediate between
35 the ends of the halves of the tree. The two larger ends of the halves are connected together by means of a rule-joint, B, having a limited play both forward and back by means
40 of abutments or stops formed both on the front and rear sides of the joint. The two halves of the joint are connected by means of a central bushing, C, which is secured in the eye of the hinge in any suitable manner,
45 preferably by rivet-heading or peening the bushing, and through which the hammer-bolt engages to secure the whiffletree to the vehicle.

D is a compound leaf or semi-elliptic spring
50 centrally secured to the rear side of the jointed whiffletree, and with sufficient clearance be-

tween such spring and the rear side to allow a free action of the spring.

The ends of the spring are secured by means of shackles E to the respective halves
55 of the whiffletree, which to this end are provided with the apertures *d*, formed in a hollow boss, *e*, of the whiffletree, and which aperture is made sufficiently large to receive a wooden filling, *f*, through which the shackle-
60 bolt *g* passes and secures the shackle to the whiffletree. The center of the spring is secured to the center of the whiffletree in any suitable manner, but preferably in the manner shown in the drawings, wherein *h* is a bolt
65 passing through the spring, and *i* a nut securing the spring upon the bolt. The bolt projects through a suitable aperture centrally formed in the rear of the joint, and is secured by its head *j* from being withdrawn, a suitable
70 recess, *k*, being formed in the knuckle of the hinge to permit the free movement of the hinge.

The outer ends of the whiffletree are provided with a series of adjusting-holes, *l*, formed
75 in solid bosses, for adjustably securing the draft-clevis F thereto.

For singletrees I preferably cast the ends of the halves hollow to receive a wooden plug, into which I secure a suitable draft-hook, G,
80 as shown in Fig. 6.

In practice, the parts being arranged and constructed substantially as shown and described, it is intended to operate as follows: The spring is normally under sufficient tension
85 to hold the rear abutments of the rule-joint in contact with each other, or nearly so, so that when the draft is applied it will have to act through the medium of the spring until the front abutments or stops of the joint
90 approach each other, when further deviation of the spring will cease and the whiffletree become rigid. By suitably proportioning the strength of the spring the action of the spring may be maintained during the normal conditions of draft, while the front abutments, *c*, prevent the undue deflection of the spring under
95 abnormal conditions of draft.

The device is especially adapted as a whiffletree for the heavier description of vehicles
100 and farm implements, and its object is to make the load start easy and to take off all the

strain and jar from the horses' shoulders, which horses in drawing heavy loads are liable to be crippled or have their shoulders galled. When under way, the free elastic movement of the spring eases the load or jar upon the shoulders of the horses; also eases the jerking of the vehicle, due to the sudden taking up of the slack of the traces, and thereby enables the horses to pull the load much easier.

10 What I claim as my invention is—

1. A spring-whiffletree consisting of like halves A A, each integrally cast in one piece with the component part of a rule-joint connecting said halves together by means of a hollow bushing, and having the front and rear abutments, c, the spring D, centrally secured to said whiffletree, the shackles E, connecting the ends of the spring with the whiffletree, the wood filling f, secured in apertures of the

whiffletree, and the shackle-bolts g, secured in said wood filling, substantially as described. 20

2. A new article of manufacture, a whiffletree consisting of like halves, each integrally cast in one piece with the component part of a rule-joint having front and rear abutments, c, a hollow bushing connecting them together, the spring D, the shackles E, the recess k in the rule-joint, and the bolt h, engaging with its head into said recess and centrally securing the spring to the whiffletree, substantially as described. 25 30

In testimony whereof I affix my signature, in presence of two witnesses, this 28th day of June, 1888.

HENRY COURTAD.

Witnesses:

JOHN SCHUMAN,
P. M. HULBERT.