

(No Model.)

B. F. STEIN.
WAGON SCALES.

No. 416,761.

Patented Dec. 10, 1889.

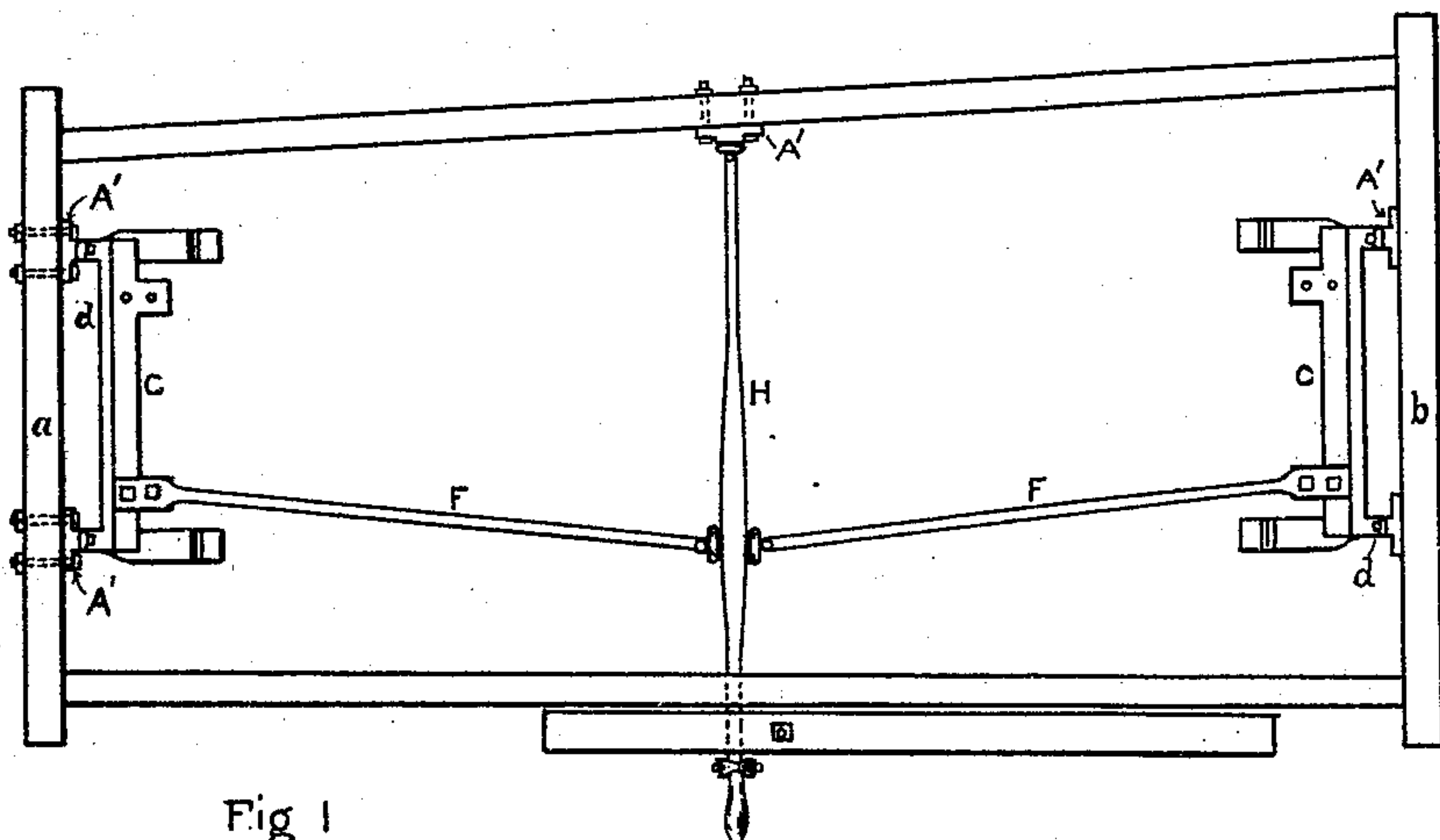


Fig 1

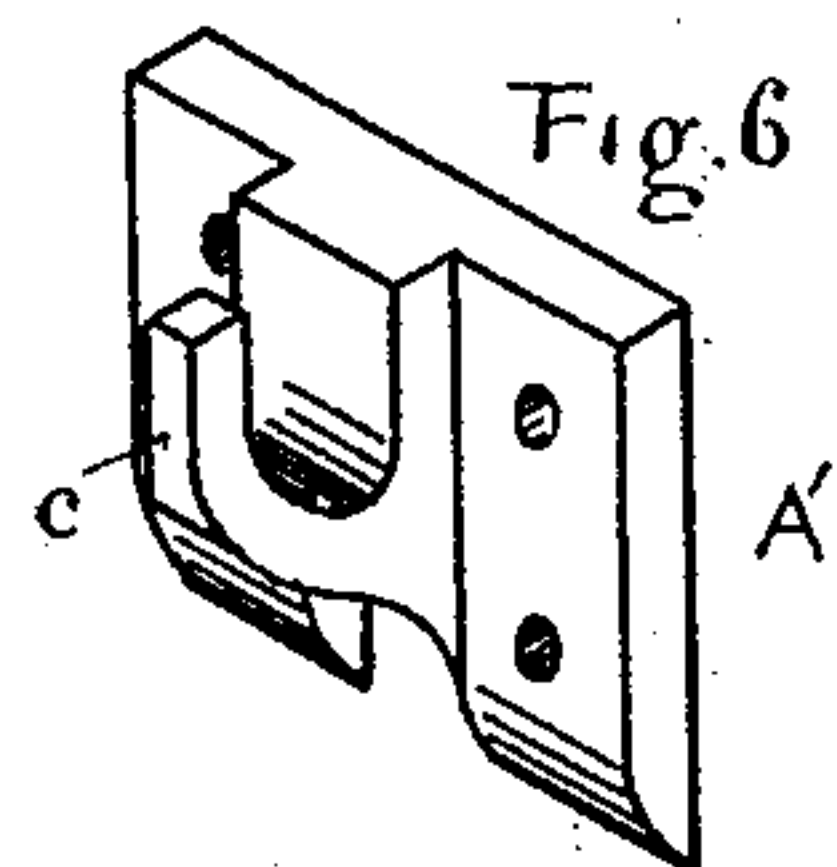


Fig. 6

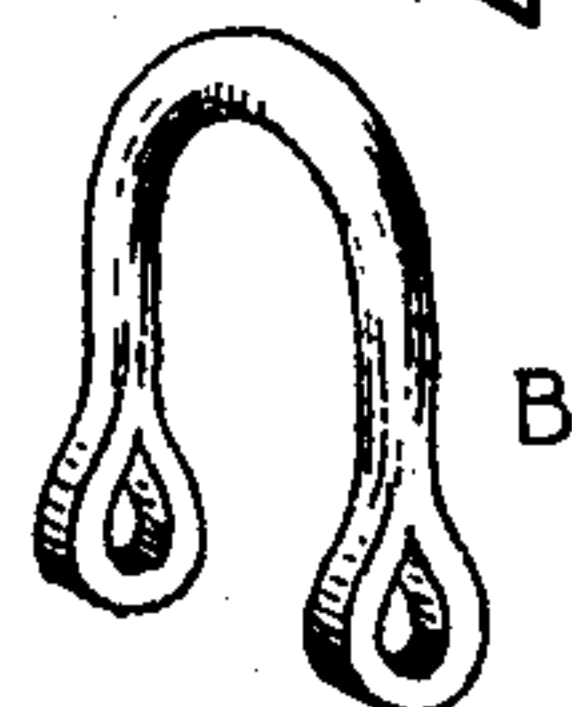


Fig. 7

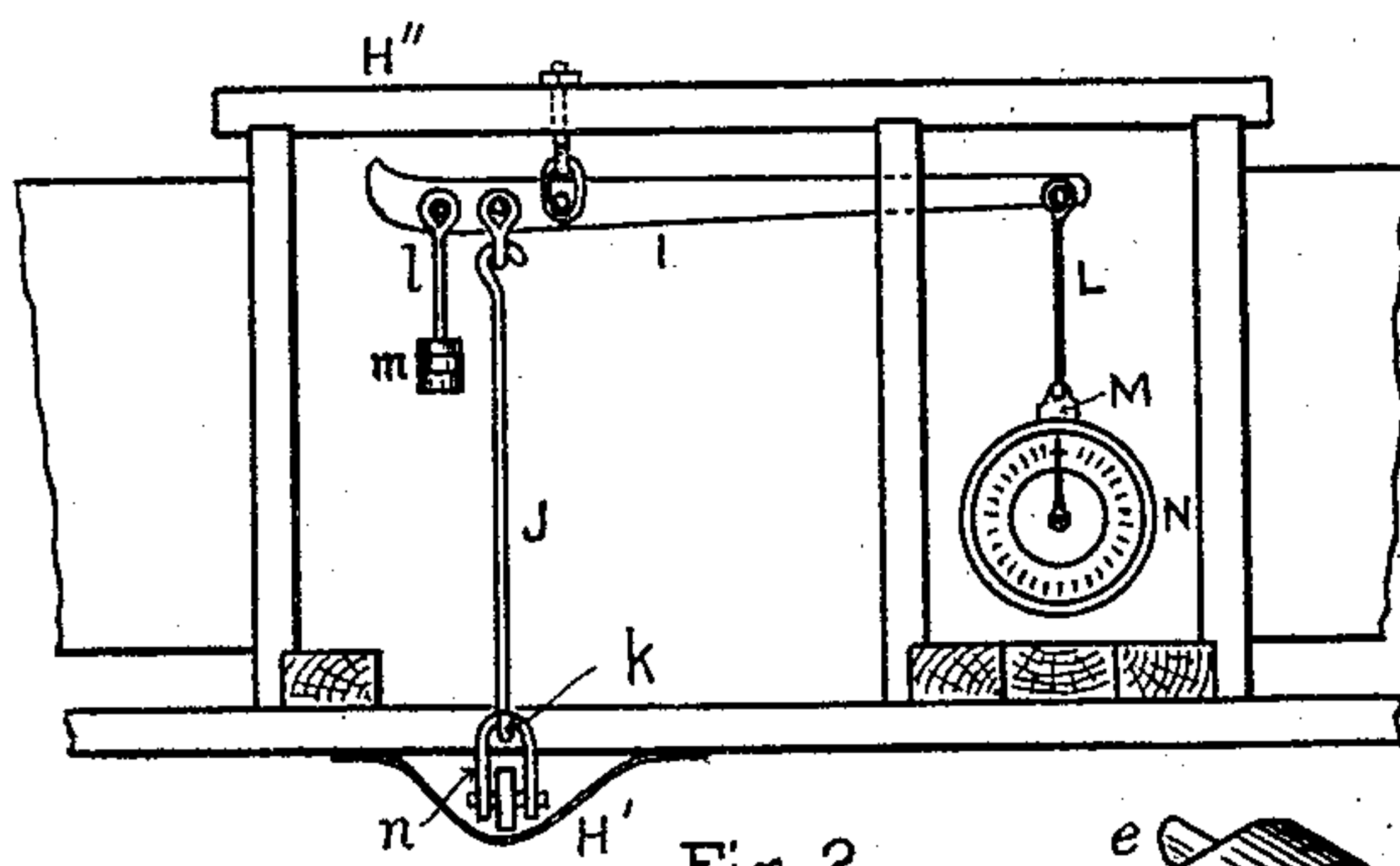


Fig 2

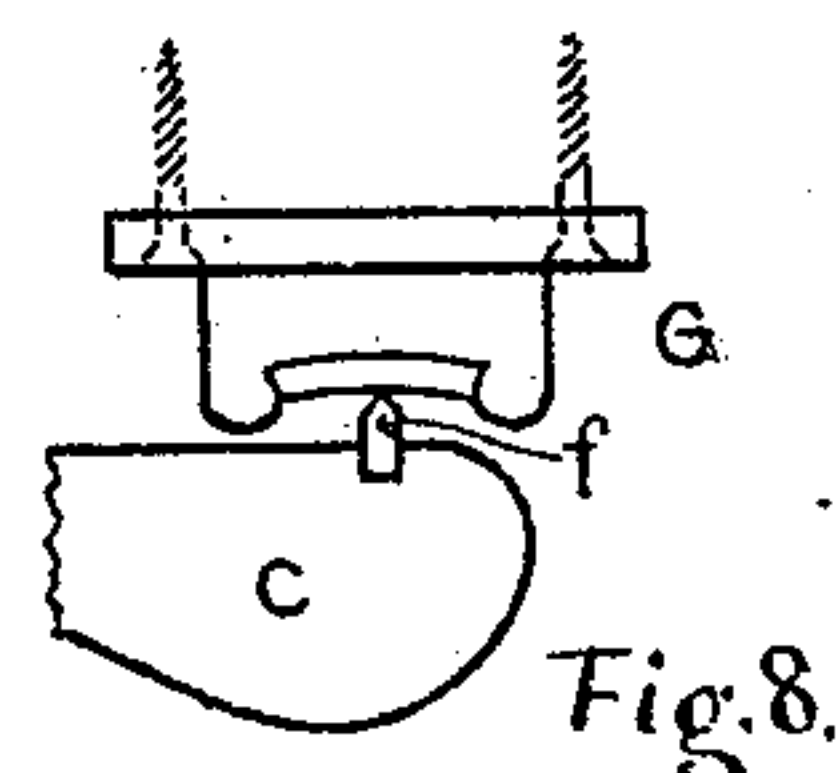


Fig. 8.

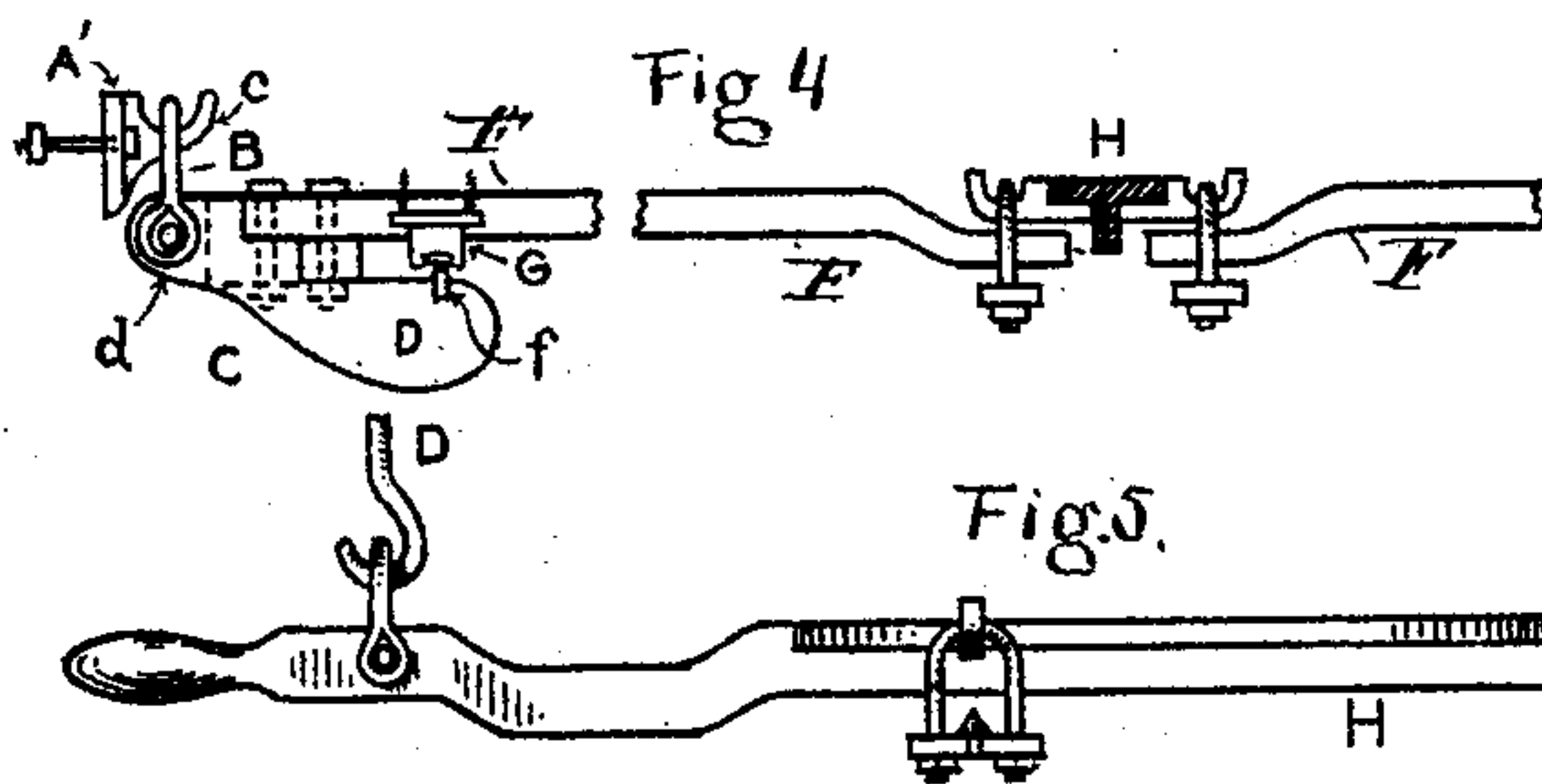


Fig 4

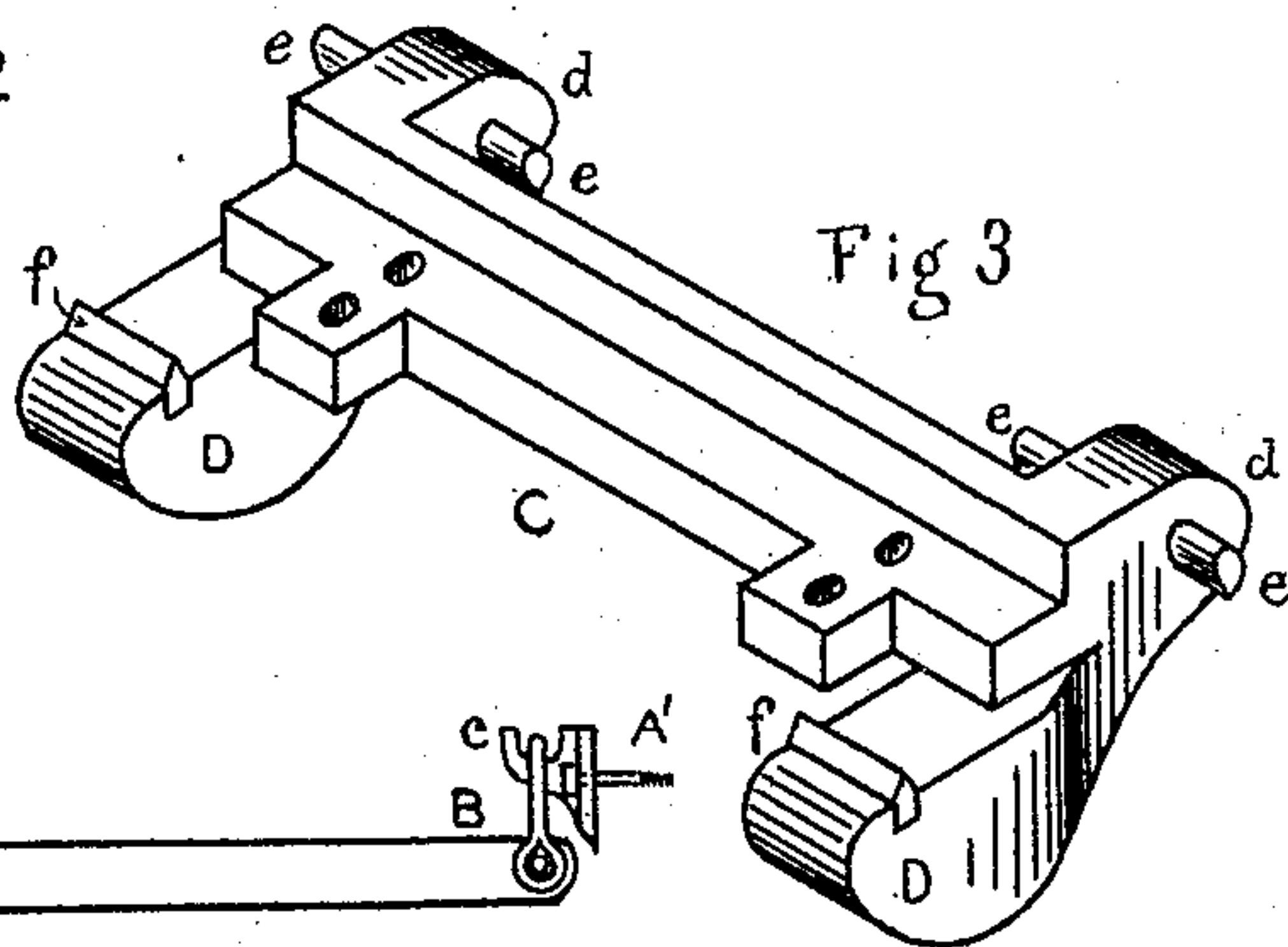


Fig 3

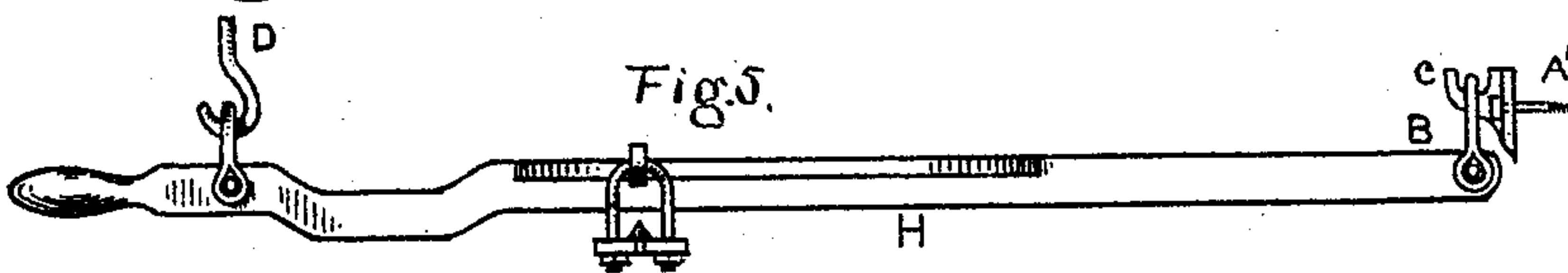


Fig. 5.

Witnesses:
E. S. Hubbard
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UNITED STATES PATENT OFFICE.

BENJAMIN F. STEIN, OF CLEVELAND, OHIO.

WAGON-SCALES.

SPECIFICATION forming part of Letters Patent No. 416,761, dated December 10, 1889.

Application filed August 3, 1889. Serial No. 319,633. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. STEIN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Wagon-Scales, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in the construction of scale-wagons.

The invention has for its object the construction of a simple and effective weighing apparatus designed to be removably placed upon a wagon running-gear, whereby the weight of a load contained within the wagon-box can be accurately determined.

The invention is especially designed for use upon coal-delivery wagons, in order that the purchaser may readily see that the amount ordered by him is being delivered.

The invention consists in the peculiar construction, arrangement, and combinations of the various parts, all as more fully hereinafter set forth and claimed.

Figure 1 is a top plan of my improved device. Fig. 2 is a side elevation showing the vertical frame, beam-lever, and spring-scale. Figs. 3, 4, 6, 7 and 8 are details of construction. Fig. 5 is a side elevation of the hand-lever.

In the accompanying drawings, which form a part of this specification, A represents a suitable frame that is designed to be placed upon the running-gear of a wagon, resting upon the bolsters thereof. To the front and rear bars *a b*, respectively, are rigidly secured the plates *A'*, each of which is provided with a hook *c*.

C represents a casting, which is provided with the ears *d*, each ear being provided with laterally-projecting knife-edged trunnions *e*, Fig. 3. This casting is also provided with the arms *D*, each of said arms carrying a knife-edge bearing *f*. One of these castings is suspended at each end of the frame A from the hooks *c* by means of proper loops or clevises B, Fig. 7.

F represents lever-bars, the outer ends of which are rigidly bolted to the castings C. The inner ends of these levers are secured in any proper manner to the transverse hand-le-

ver H, as shown in Fig. 4, one end of which is pivotally hung from one of the longitudinal bars of the frame A by means of a hook-plate *A'* and a loop B, its opposite end projecting beyond the line of the wagon-box, so that it may readily be grasped by the operator when such box is in place. When the parts are in their lowered positions, the lever H rests in the hanger *H'*, which projects downwardly from the frame A.

H'' represents a suitable frame-work rising from the frame A at one side, about midway of its length. From the top of this frame *H''* is suspended in any suitable manner the beam-lever I, the short arm of which has pivotally secured to it a rod J, the lower end of which is provided with a hook *k*. The short arm of this lever is also provided with a balancing appliance, such as a rod *l* and removable weights *m*. The long arm of this lever I is connected, by means of a rod L, to the "pull" M of a spring-scale N.

The wagon-box when in place rests upon the bars *a b* of the frame A, and upon the bottom of the box, near each end, cross-cleats are secured, the lower faces of which are provided with irons G, Fig. 8, and these irons are so placed that when the levers F are raised they will rest upon the bearings *f* of the castings C. While loading, the levers above described are in their lowered positions, the lever H resting within the hanger *H'*, and the box resting upon the bars *a b* of the frame A.

To weigh the contents of the box, the lever H is raised and its loop *n* is engaged with the hook *k* of the rod J. This adjustment of parts turns the castings C upwardly upon their trunnions, brings the knife-bearings *f* in contact with the irons G on the under side of the box, and raises the latter with its load free from the frame A. The gravity of the load, through the medium of the connections herein described, actuates the pull M of the spring-scale N and causes it to indicate upon its dial the number of pounds contained in the wagon-box.

It will readily be seen that by the use of a device of this character the purchaser can readily determine whether the quantity bought is being delivered to him, and it will also be observed that while the wagon is be-

ing loaded and during transit the body rests upon the frame A, thus relieving the strain upon the spring.

What I claim as my invention is—

5 1. In a scale-wagon, the combination of the frame A, carrying the pivotally-hung castings C, provided with knife-edge bearings *f*, with the lever H, for the purpose of raising and lowering the wagon-box, substantially as de-
10 scribed.

2. In a scale-wagon, the combination of the frame A, hooked plates A', castings C, provided with ears *d* and arms D, said arms being provided with knife-bearings *f*, and levers F
15 and H, the parts being constructed, arranged, and operating substantially in the manner and for the purposes set forth.

3. In a scale-wagon, the combination of the frame A, castings C, levers F, connecting said castings with an actuating-lever H, beam-lever 20 I, rods J and L, and spring-scale N, the parts being constructed, arranged, and operating substantially in the manner and for the purposes specified.

In testimony whereof I affix my signature, in 25 presence of two witnesses, this 25th day of July, 1889.

BENJAMIN F. STEIN.

Witnesses:

H. S. SPRAGUE,
J. F. STEPHAN.