

(No Model.)

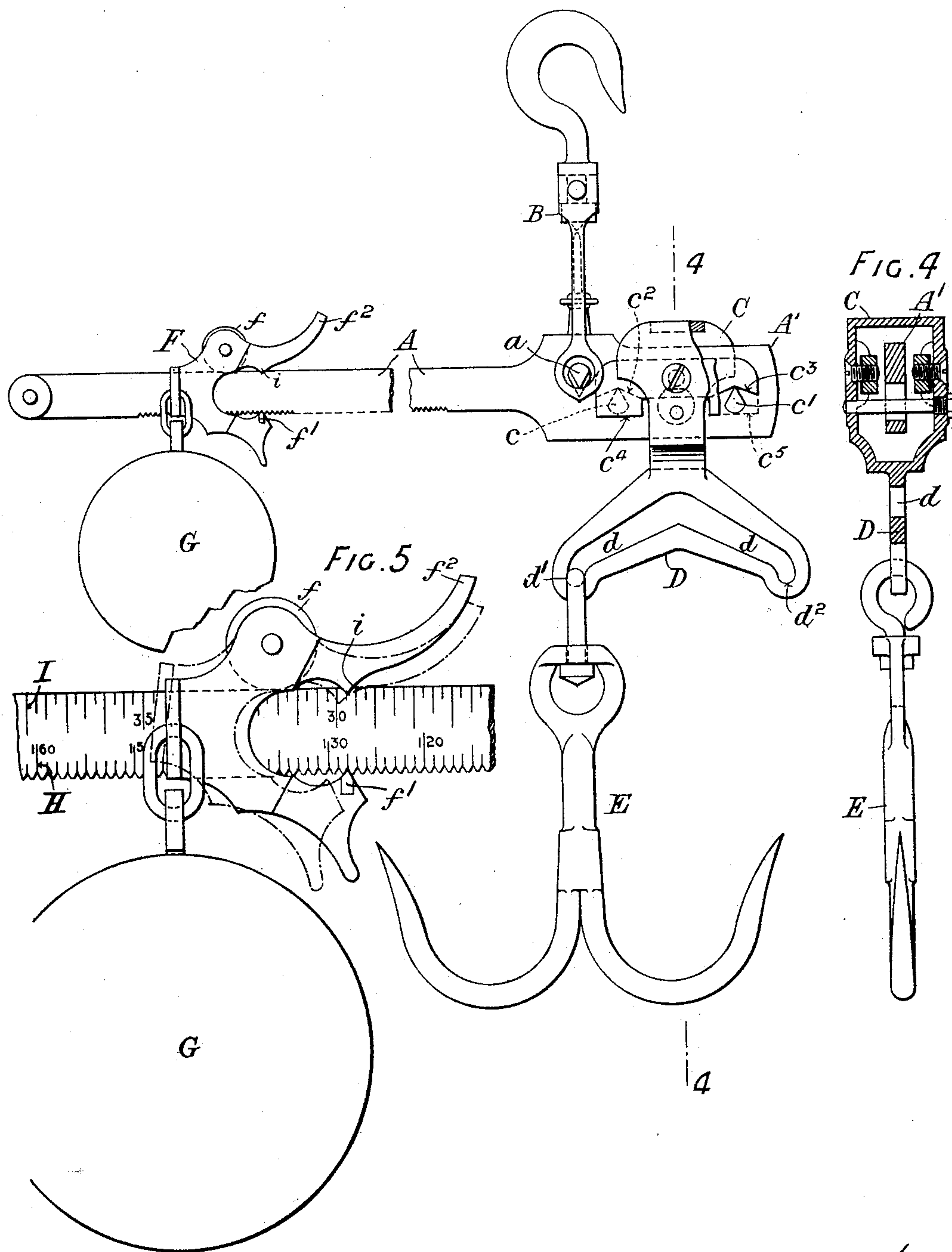
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C. H. BARTLETT.
STEELYARD.

No. 603,885.

Patented May 10, 1898.

FIG. 1



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(No Model.)

2 Sheets—Sheet 2.

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FIG. 2

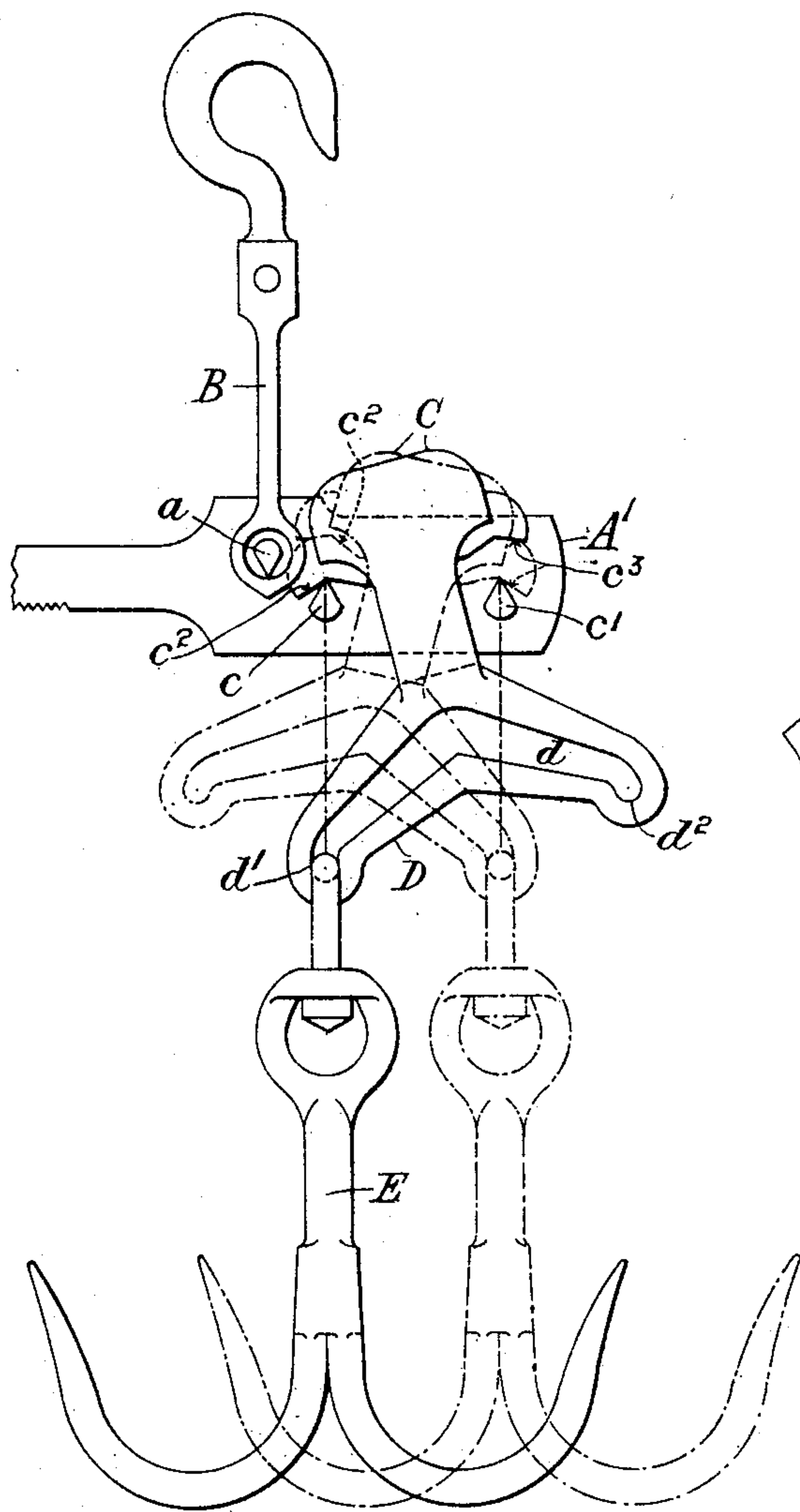
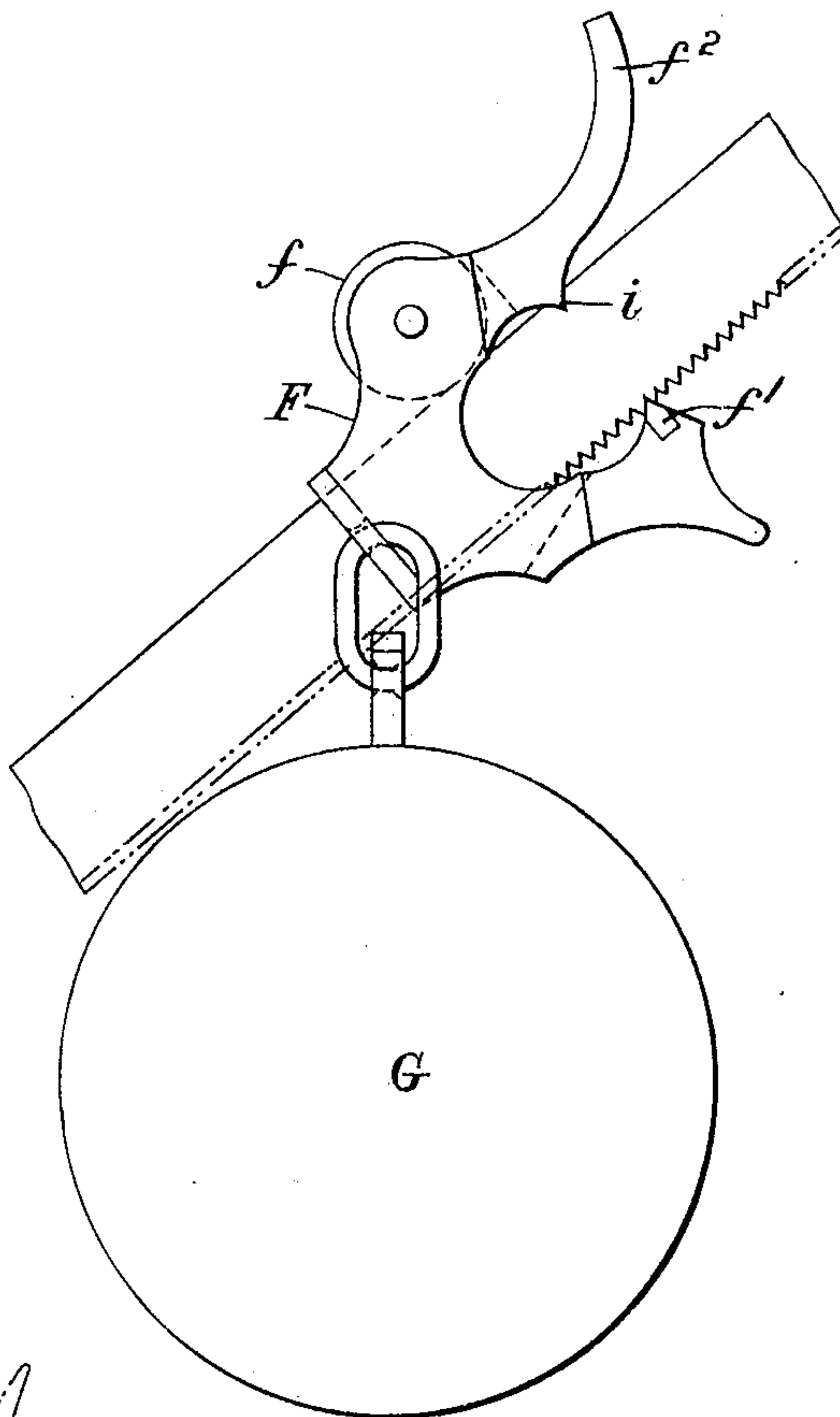


FIG. 3



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UNITED STATES PATENT OFFICE.

CHARLES HENRY BARTLETT, OF BRISTOL, ENGLAND.

STEELYARD.

SPECIFICATION forming part of Letters Patent No. 603,885, dated May 10, 1898.

Application filed December 22, 1897. Serial No. 663,013. (No model.) Patented in England October 18, 1894, No. 19,900.

To all whom it may concern:

Be it known that I, CHARLES HENRY BARTLETT, scale-maker and manufacturer of tea mixing and cutting machines, of 2 and 3 Welsh Back, Bristol, in the county of Gloucester, England, have invented new and useful Improvements in Steelyards, (for which I have obtained Letters Patent in Great Britain, dated October 18, 1894, No. 19,900,) of which the following is a full, clear, and exact description.

My invention has for its object, first, to render a steelyard self-adjustable for weighing either light or heavy loads and to facilitate the transition from one to the other of these operations without any manual alteration of position of the centers upon which the load is hung or of the center of suspension of the steelyard itself.

The invention has, secondly, for object to prevent the adjustable weight, which moves longitudinally of the steelyard, from running down the tail of the steelyard when the latter is caused to assume an extremely-inclined position in consequence of the load being suddenly put on or taken off, and also to enable the scales corresponding to both denominations of standard weights to be read off on the same side of the tail.

The invention will be described with reference to the accompanying drawings, forming part of this specification, wherein—

Figure 1 is a front elevation of the steelyard when not in use. Fig. 2 is a similar view showing in full and dotted lines the positions assumed when weighing a heavy and a light load, respectively. Fig. 3 illustrates the self-sustaining action of the adjustable-weight carriage when the load is suddenly removed. Fig. 4 is a transverse section on line 4 4, Fig. 1. Fig. 5 is a side elevation of the adjustable-weight carriage drawn to a larger scale.

The same letters of reference denote like parts in all the figures.

The steelyard A A' is suspended in the usual manner by its main center of suspension a in a hanger or shackle B, and the short arm or load end A' of the steelyard is furnished with two sets of knife-edged centers c c' , situated at different distances from the center of suspension a , the ratio of leverage

being such that the notches or certain of them on the lower edge of the tail will correspond to the divisions of both scales. The short arm A' is straddled by a single hanger or shackle C, which is provided with two sets of Λ -bearings c^2 c^3 , corresponding to the two sets of knife-edges c c' , and also with a double set of antifriction-plates c^4 c^5 , adapted to bear against the beveled points of the knife-edges c c' in the usual manner for the purpose of maintaining the central position of the steelyard in the hanger.

The hanger C is caused to take its bearing upon the pair of knife-edges c or on the pair c' , according as the load-suspension hook E is placed at the one or other end of a yoke or link D, forming part of the hanger C. This yoke or link extends in such relation to the knife-edge bearings—that is to say, is of a length extending in the plane of the steelyard so far beyond the centers c c' on either side—that the hanger when supporting a load will be caused to assume an inclined position, as shown in Fig. 2, such that it will be lifted entirely off the one pair of knife-edges and so leave the load entirely pendent from that pair of knife-edges corresponding to the end of the yoke or link at which the load-suspension hook E happens to be placed.

In the example shown, D is a slotted link, through the slot d of which the swivel-head of the hook E passes, and in order to prevent the possibility of the load being supported by both sets of centers at once the yoke or link D is made of double inclined or Λ shape, so that the load-suspension hook cannot possibly remain in an intermediate position, but will run quite to that end of the yoke toward which it is placed, where it will be retained by dropping into one or other of the notches d^1 d^2 at the extremities of the slot d . It will thus be obvious that the only alteration of position required in changing from a heavy load to a light one, or vice versa, is to shift the hook E from the end d^1 to the end d^2 . It will also be apparent that the shifting of the hook E does not involve any liability of damage to the knife-edge centers c or c' , as might be produced by a sudden blow or other cause arising from careless handling were the hanger or shackle C itself to be bodily transferred from one set of centers to the other or

were the centers themselves carried by a pivoted shackle which is thrown over from one to another position, according to the requirements of the load to be weighed.

5 The carriage F, from which the adjustable weight G is suspended, is mounted upon a roller f , resting and running upon the upper edge of the tail A of the steelyard, which is notched on the lower instead of on the upper
10 edge for engagement by a nib f' , forming part of the carriage, the relative positions of the nib f' , the roller f , and the weight G being such that the nib f' will be held by the gravity of the weight in engagement with the notched lower
15 edge of the steelyard whatever may be the inclination of the latter or however suddenly its position may be changed, as indicated in Fig. 3. The carriage F acts as a lever, having for its fulcrum the roller f , upon which it may be
20 rocked by means of the thumb-lever f^2 and moved in order to disengage the nib from the notches and to shift the carriage along the steelyard, as indicated by the dotted outline, Fig. 5. The nib f' serves also as the weigh-
25 ing-index with reference to a scale H, Fig. 5, marked on the face of the steelyard toward its lower edge and to whose graduations the notches correspond, this scale being appropriated to, say, the heavier range of loads,
30 the carriage being provided with a second index i , moving along in front of the upper edge of the steelyard and referring to a scale I, marked along the same face of the steelyard near the upper edge, this scale being ap-
35 propriated to, say, the lighter range of loads. When, therefore, the load-suspension hook is placed at the end d' of the link D for weighing heavy loads, the reading will be taken on the scale H, and when placed at the end d^2
40 for weighing a light load the reading will be taken on the scale I.

I claim—

1. The combination, with the short arm of a steelyard, of two sets of knife-edge centers

at different distances from the center of sus- 45
pension, and of a single hanger provided with two sets of bearings adapted to rest on either set of centers indifferently, and having a shift-
ing connection with the load-suspension de- 50
vice whereby the load may be caused to bear through the hanger entirely upon the one or other set of centers, as and for the purpose specified.

2. The combination, with the short arm of a steelyard, of two sets of knife-edge centers 55
at different distances from the center of suspension, and of a single hanger provided with two sets of bearings adapted to rest on either set of centers indifferently, and provided with
a rigid yoke or link adapted to permit of a 60
shifting connection with the load-suspension shackle, the yoke or link extending beyond the knife-edge centers so as to cause the load-suspension hook, when at the one or other end
of such link, to bear, through the hanger, en- 65
tirely upon the one or other set of centers, substantially as and for the purpose specified.

3. The combination, with a steelyard having notches in its lower edge, of a carriage 70
for the adjustable weight adapted to act as a lever having its fulcrum movable upon the upper edge of the steelyard and having a nib which is caused to engage with the notched lower edge by the gravity of the weight, sub-
stantially as and for the purpose specified. 75

4. The improved steelyard herein described, consisting of a steelyard provided with two sets of knife-edge bearings and a hanger self-adjusting thereon, as described, in combination with an adjustable weight-carriage 80
adapted to engage with the notched lower edge of the steelyard and provided with indexes referring to two scales upon the same face of the steelyard, as specified.

CHARLES HENRY BARTLETT.

In presence of—

W. B. MALUFALL,

DAVID THOMAS MAY.