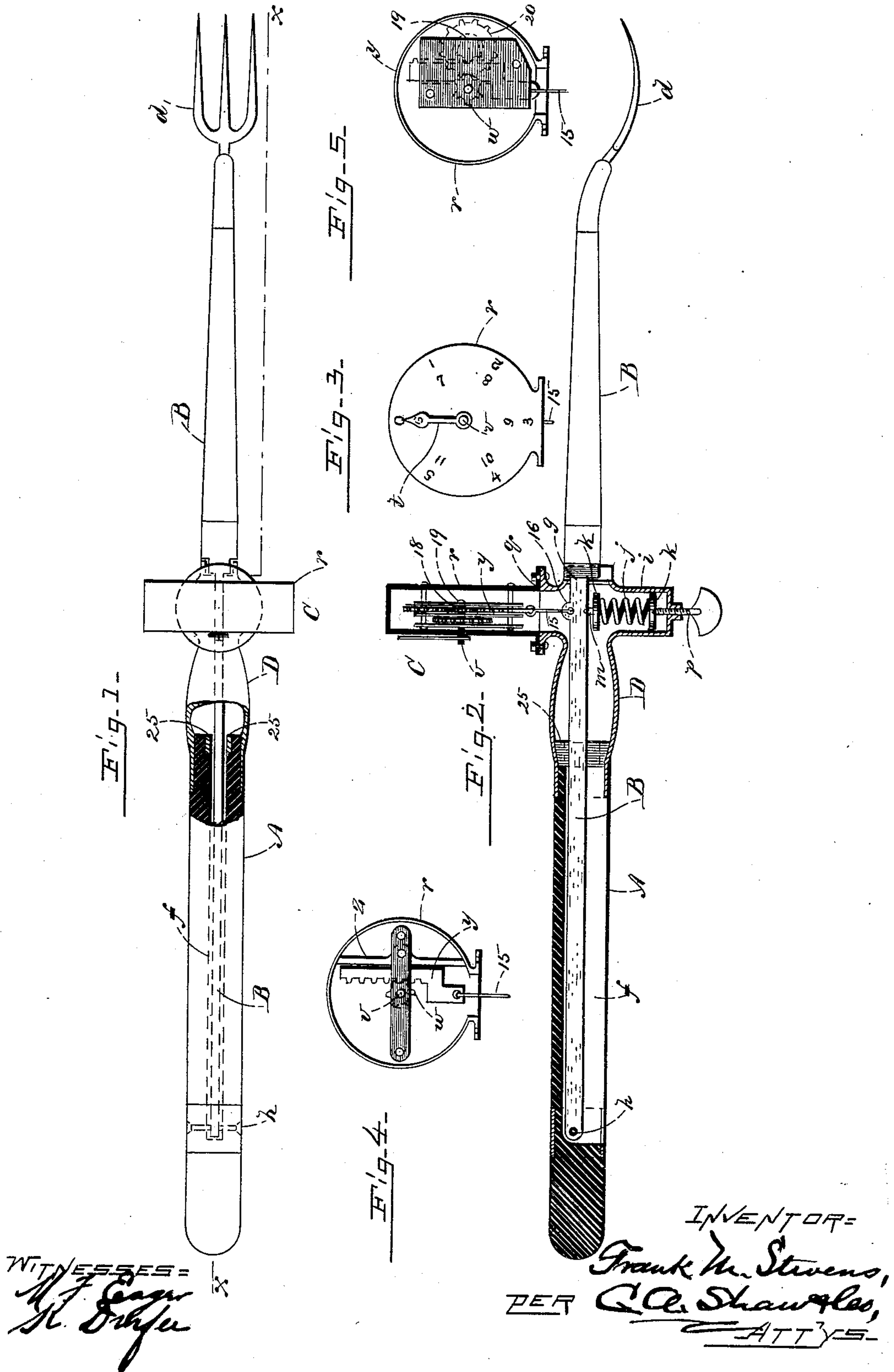


(No Model.)

F. M. STEVENS.
FEED FORK.

No. 450,642.

Patented Apr. 21, 1891.



UNITED STATES PATENT OFFICE.

FRANK M. STEVENS, OF LEBANON, NEW HAMPSHIRE.

FEED-FORK.

SPECIFICATION forming part of Letters Patent No. 450,642, dated April 21, 1891.

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To all whom it may concern:

Be it known that I, FRANK M. STEVENS, of Lebanon, in the county of Grafton, State of New Hampshire, have invented certain new and useful Improvements in Feed-Forks, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of my improved feed-fork, a portion of the dial-handle being broken away. Fig. 2 is a vertical longitudinal section of the same, taken on line $x x$ in Fig. 1. Fig. 3 is a front elevation of the dial removed. Fig. 4 is an elevation of the dial, the face-plate being removed to show the working mechanism; and Fig. 5, a like view showing a modification thereof.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to feed-forks which are provided with mechanism for weighing their load; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the main handle of the fork, B the supplemental handle, and C the weighing mechanism.

The handle B is provided with tines d in the ordinary manner. The handle A is chambered or socketed longitudinally at f . The handle B is reduced at g , said reduced portion being pivoted by its end at h to the inner end of the chamber f in the handle A. A metallic box D is secured on the inner end of the handle A, through which the handle B passes, and which supports the weighing mechanism C. A vertical chamber i is formed in the lower portion of the box D, and a coiled spring j of known tension is mounted in said chamber, the ends of said spring being provided with horizontal disks k . The upper

disk k has a cone-shaped stud m centrally disposed thereon, upon which the handle B rests, said stud engaging said handle at a point centrally between its pivot h and the tines d . A thumb-screw p passes through the bottom of the chamber i and engages the lower disk k , whereby the tension of said spring on said handle may be regulated.

The box D opens in its top at q and a circular dial-case r is secured thereon. The face of said dial is preferably coated with phosphorescent or other luminous paint to enable it to be used in the dark. An index t is mounted on an arbor v in the usual manner, said arbor bearing a pinion w . A vertically-arranged rack y engages said pinion and works between it and a guide-plate z within the box, as shown in Fig. 4. A link 15 connects the rack with an ear 16 on the handle B in the same vertical plane as the spring-stud m .

The face of the dial (shown in Fig. 3) is provided with an outer row of numerals indicating the weight in pounds and a consecutively increasing inner row, the purpose of which is to enable the finger t to travel twice around the dial and the device to be employed in weighing double the amount as when a single row is used with a spring j of the same tension. To cause the index to thus travel, the device shown in Fig. 5 is employed, in which the rack y is toothed on its opposite edge and meshes with a pinion 18 on a stub-shaft 19 within the case r , a gear 20 on said stub-shaft meshing with the index-pinion w . In the mouth of the handle-chamber f two wear or guide plates 25 are inserted for the reduced portion of the handle B to play against.

In the use of my improvement the load is raised by the tines d in the usual way. The handle-section B, moving on its pivot h , descends, compressing the spring-balance j and drawing the rack y downward. This rotates the index-shaft and registers the amount of weight on the dial r in the ordinary manner of spring-scales of this class. In the construction described the load on the tines is at the same distance from the point of contact of the beam or reduced handle g , with the spring j as is the handle-fulcrum h from said spring. This arrangement is essential to the proper working of the device, as by shorter-

ing or lengthening the distance between the fulcrum and spring the same amount of load on the tines will exert greater or less leverage and indicate a disproportionate weight on the dial.

By compounding the index-gears and employing double numbers on the dial, as described, I am enabled to weigh a greater load with the fork than when a scale of the ordinary form is used.

Having thus explained my invention, what I claim is—

1. In a feed-fork of the character described, a chambered main handle, a supplemental handle bearing tines at one end and pivoted by its opposite end in said chamber, and a scale-spring centrally supporting said handle, substantially as described.

2. In a device of the character described, a main handle chambered longitudinally and provided with a spring-scale, in combination with supplemental handle bearing tines and pivoted within said chamber, said handle resting centrally on the scale-spring, substantially as described.

3. In a device of the character described, the combination of a chambered main handle provided with an indicator-dial, a scale-spring disposed in said handle, a supplemental handle bearing tines, said handle being pivoted by an end in said chamber and resting centrally on said spring, and a rack linked centrally to said handle and actuating the dial-index, substantially as set forth.

4. A feed-fork of the character described, provided with a handle formed in two sec-

tions, the tine-section being pivoted by an end in the main section and resting centrally on a scale-spring, an illuminated dial on said main section, provided with an index, and mechanism for actuating said index, substantially as set forth.

5. In a device of the character described, the chambered handle A, provided with a spring-scale, as C, in combination with the handle B, pivoted at *h* and resting centrally on the scale-spring, substantially as set forth.

6. In a device of the character described, the chambered handle A, provided with the adjustable scale-spring *j* and indicating mechanism therefor, in combination with the tine-handle B, pivoted at *h*, said handle being engaged centrally with said spring and connected with said mechanism, substantially as set forth.

7. In a device of the character described, the combination of the chambered main handle A, the tine-handle B, fulcrumed at *h* and connected centrally between its fulcrum and tines with a scale mechanism on the main handle, substantially as set forth.

8. The combination of the chambered handle A, provided with the box D and dial *r*, the adjustable scale-spring *j* in said box, the tine-handle B, fulcrumed at *h* and resting centrally on said spring, the index, and actuating mechanism connected to said handle, substantially as described.

FRANK M. STEVENS.

Witnesses:

HARVEY A. COWEN,
J. E. DEWEY.