

(No Model.)

W. J. A. MAKIBBIN.

DEVICE FOR ADJUSTING COUNTERBALANCE SPRINGS OF LOCOMOTIVES.

No. 575,123.

Patented Jan. 12, 1897.

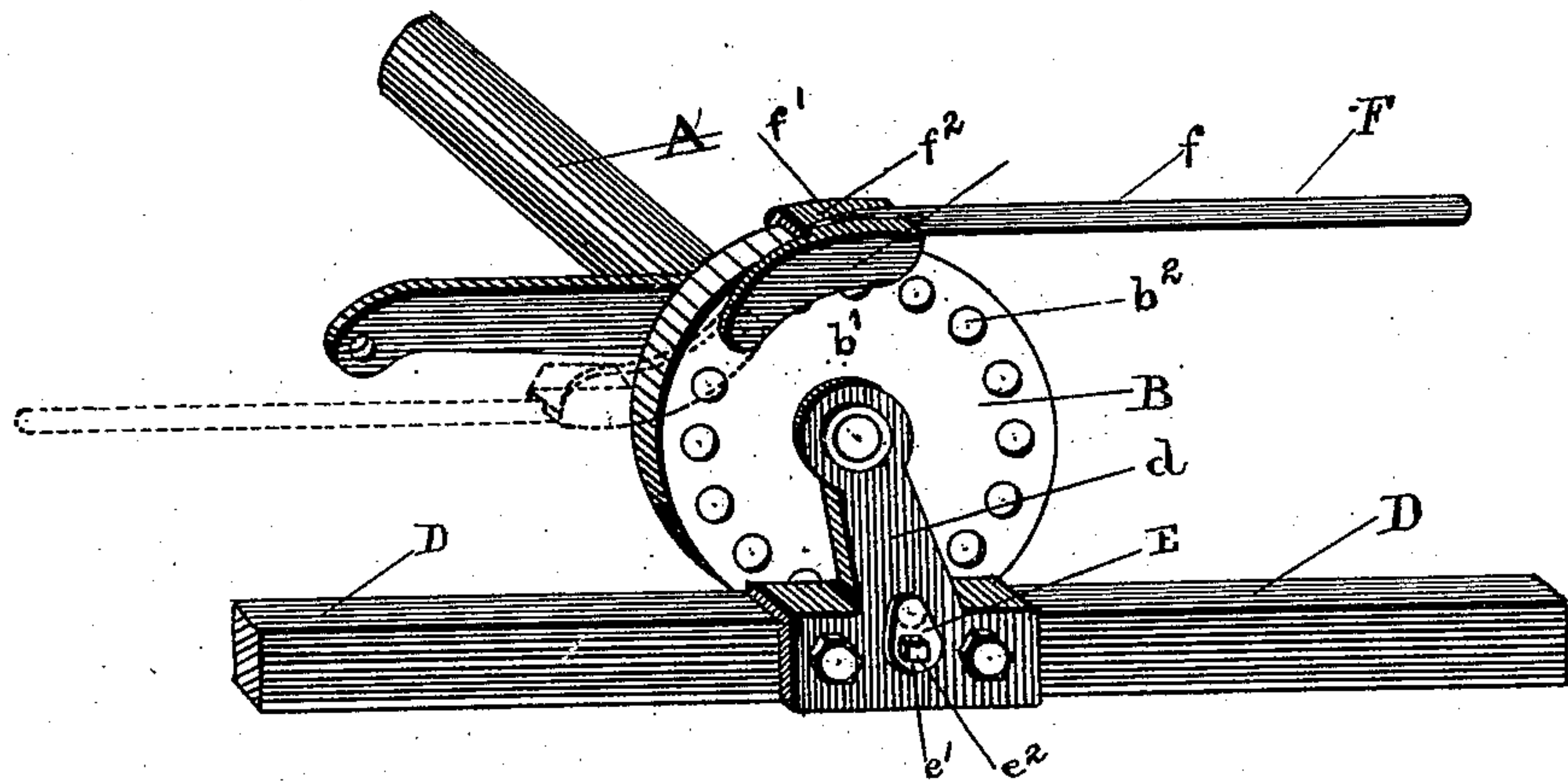


Fig. 1.

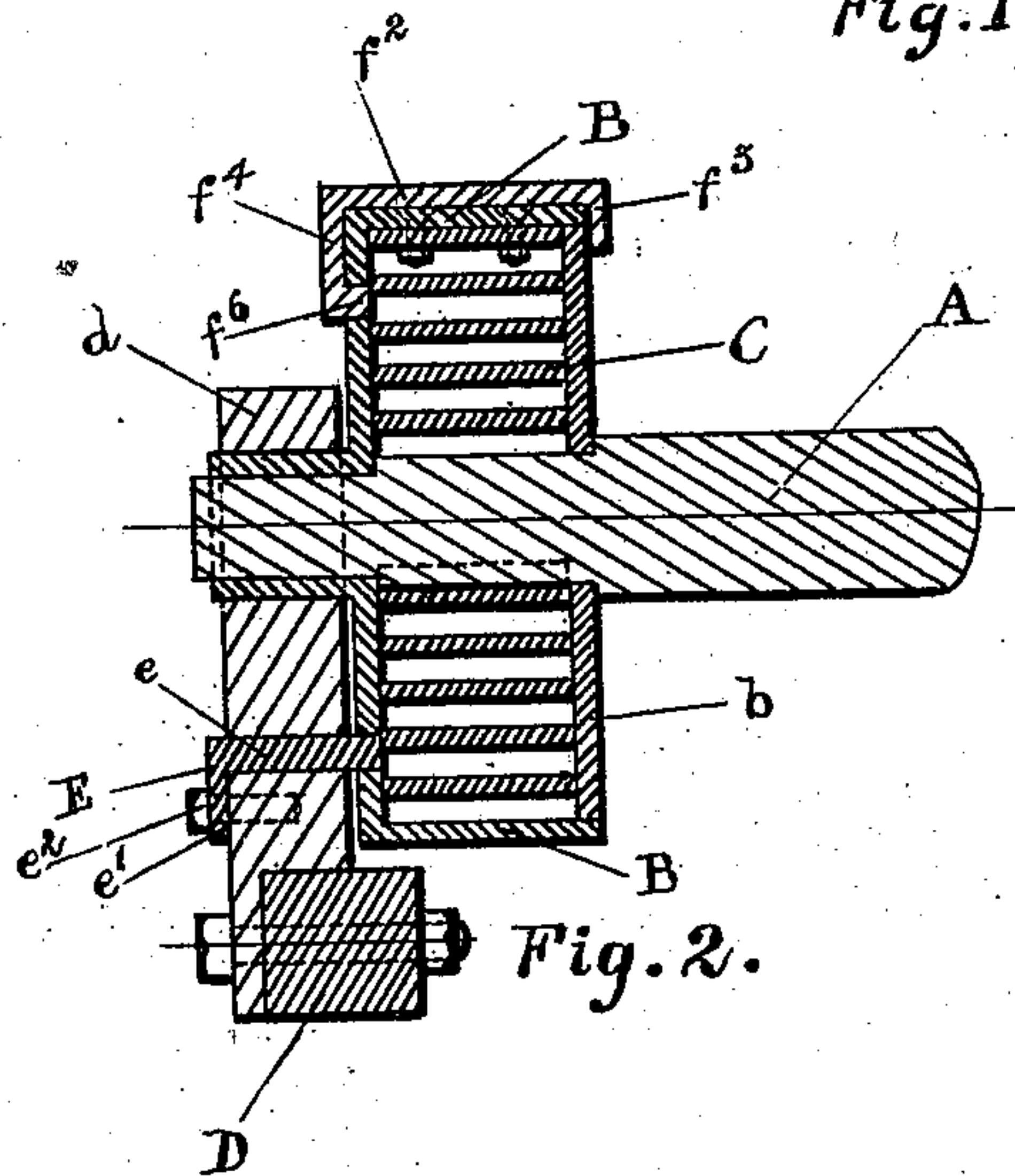


Fig. 2.

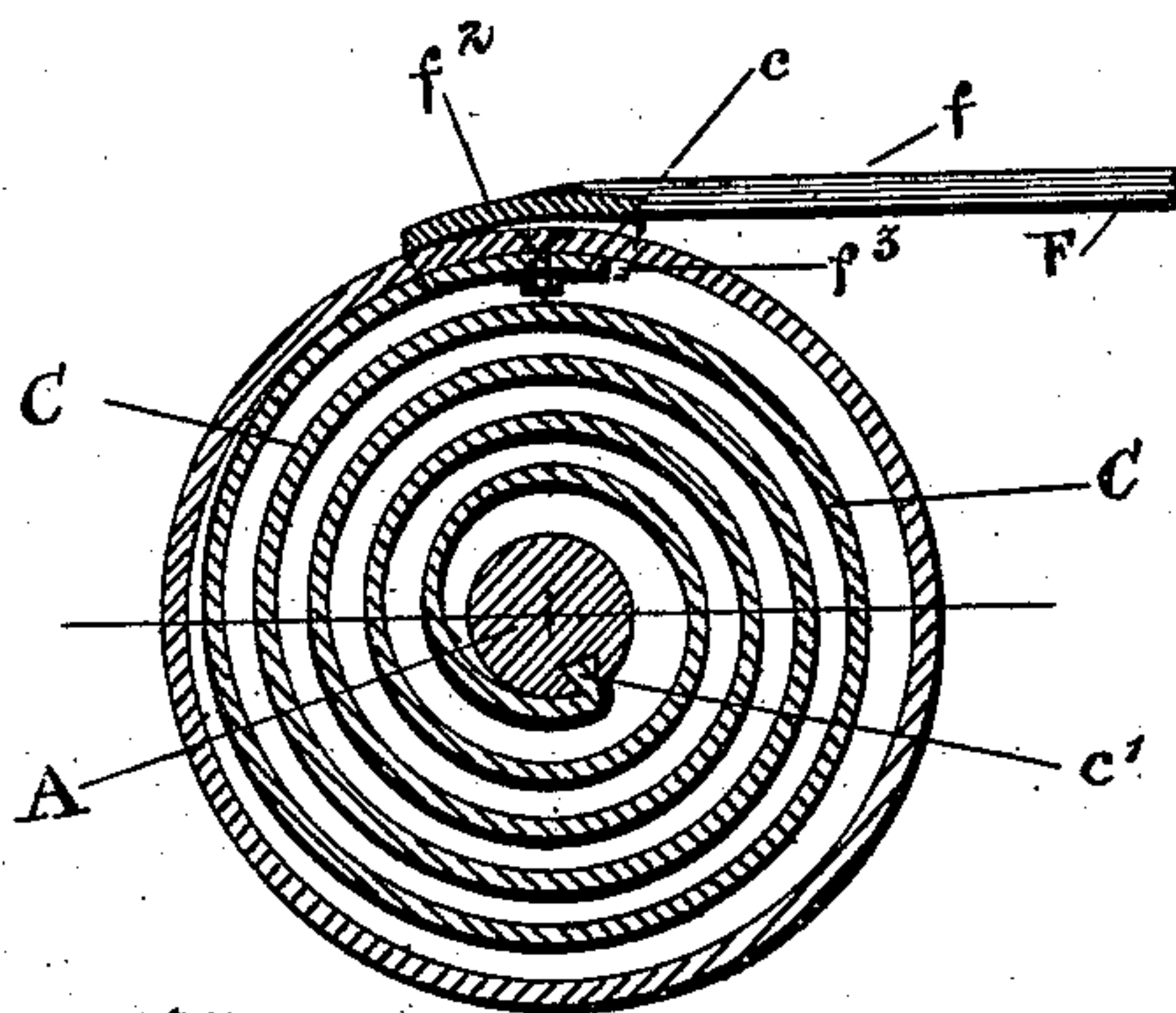


Fig. 3.

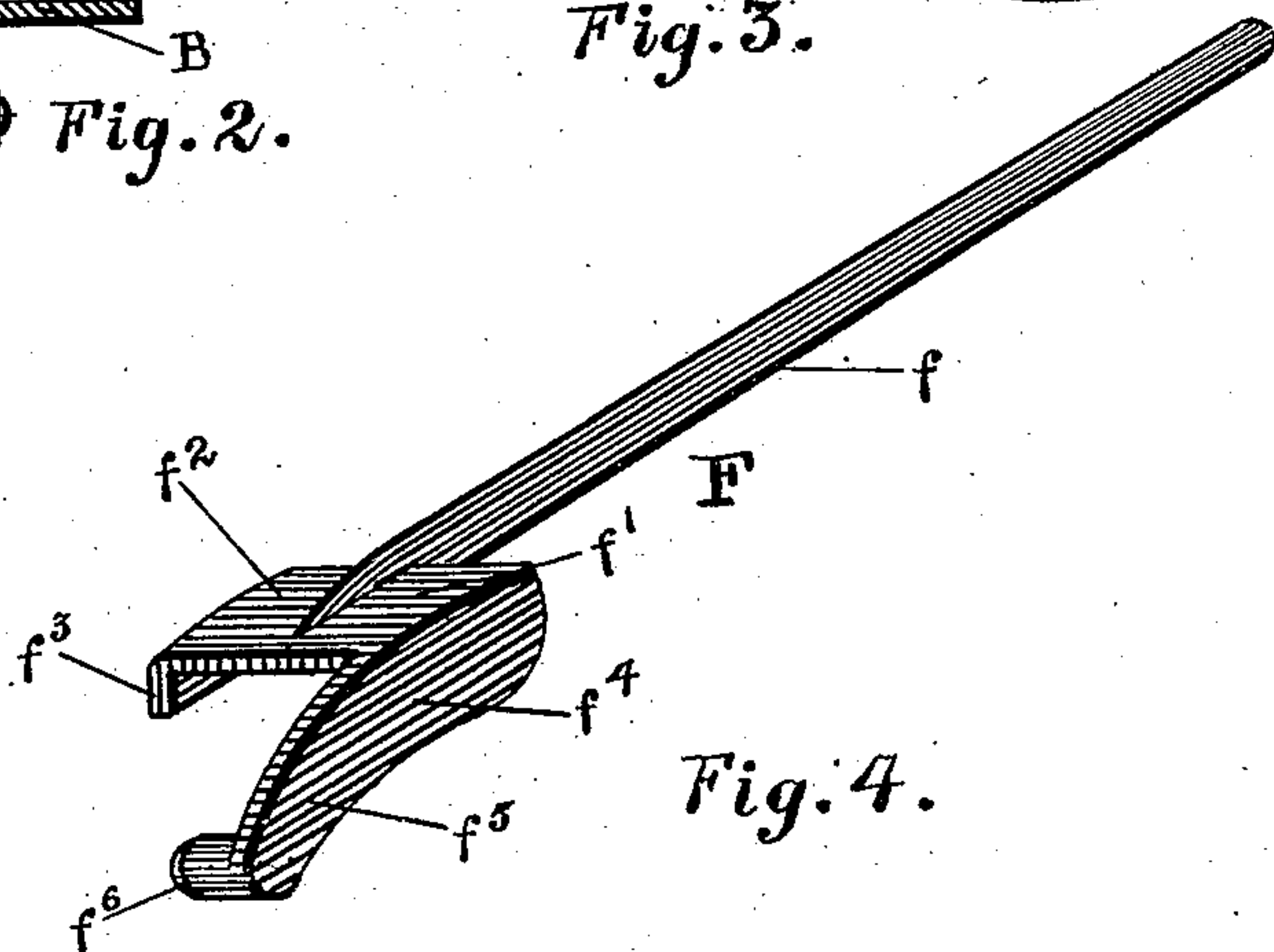


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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DEVICE FOR ADJUSTING COUNTERBALANCE-SPRINGS OF LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 575,123, dated January 12, 1897.

Application filed April 30, 1896. Serial No. 589,721. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. A. MAKIBBIN, a citizen of the United States, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented a new and useful Device for Adjusting Counterbalance-Springs of Locomotives, of which the following is a specification.

This invention relates to a lever or device especially adapted for the adjustment of that class of counterbalance-springs which are employed to equalize the weight of the links in reversing an engine or locomotive forwardly or rearwardly.

The object of my invention and improvements is to provide a simple device of this character which will possess advantages in point of convenience, ease of adjustment and operation, effectiveness, and general efficiency, and which will reduce the labor in the operation of adjusting such springs to a minimum.

In the drawings, Figure 1 is a perspective view showing my improved lever or device in position for winding up the spring, the position of the lever for connecting it with the spring-box being shown in dotted lines. Fig. 2 is a detail sectional view taken longitudinally with respect to the main shaft of the reversing mechanism. Fig. 3 is a detail sectional view taken transversely with respect to said shaft. Fig. 4 is a detail perspective of the lever detached.

In the reversing mechanism of locomotive-engines a counterbalance-spring is commonly employed, the office of this spring being to equalize the weight of the links in reversing the engine. Comprised in this reversing mechanism is the main or tumbling shaft A, upon which is mounted the spring-box B, inclosing the spiral spring C. The spring has its outer end *c* secured to the spring-box and its inner end *c'* secured to the shaft A. The end of the tumbling-shaft has a bearing in an upright or arm *d*, projecting upwardly from the engine-frame D. The box containing the spring is loosely mounted upon the shaft A and is held in rigid position by a right-angular pin E, one arm of which, *e*, projects inwardly through the upright *d*, while its other arm, *e'*, rests against said upright and is adapted to be secured by a suitable bolt *e*². The spring-

box is circular in shape, corresponding to the inclosed spring, and is provided with a flat periphery *b*, while in its outer face *b'* is provided an annular series of holes or recesses *b*² near the periphery *b*, which holes are adapted to be engaged by the inwardly-projecting arm *e* of the pin E to lock the spring-box in position.

In the foregoing construction and arrangement, as commonly comprised in the reversing mechanism of locomotive-engines, the counterbalance-spring C is wound up or adjusted, so that it will effectively operate to equalize the weight of the links in reversing the engine by turning the spring-box B upon the shaft. To do this, it is necessary to remove the pin E from engagement with the spring-box, so that the latter can be turned, when the pin E is again secured in engagement with one of the holes *b*² of the spring-box to retain the latter in the position to which it has been turned for the proper adjustment of the counterbalance-spring. As heretofore practiced, this operation of adjusting these counterbalance-springs of locomotives has been very laborious and inconvenient and has necessitated the employment of several men. It is the purpose of my invention to obviate these disadvantages by providing a simple and improved lever device by which the above operation may be readily and conveniently effected.

My improved lever device F is preferably formed integrally, with all its parts or members in one piece, and may be forged from steel, wrought-iron, or other suitable metal. The lever F comprises a handle *f*, at the end of which is formed a head *f'*, adapted to engage the periphery or outer edge portion of the spring-box. The head *f'* comprises a plate or body portion *f*², preferably corresponding to a segment of the periphery of the spring-box and projecting across said periphery, for which purpose the plate *f*² may be slightly convex. From one side of the plate *f'* projects downwardly at right angles a plate or flange *f*³, adapted to embrace the side of the spring-box at its outer edge or periphery, while at the opposite side projects a corresponding plate *f*⁴, embracing the opposite side or face of the spring-box. The periphery or outer edge portion of the spring-box is thus

embraced by the side plates or flanges f^3 and f^4 of the lever-head f' , while the top or body portion f^2 extends across the periphery of the box. From the side plate or flange f^4 , which
 5 is adapted to rest against the outer side or face b' of the spring-box, projects forwardly a tongue or arm plate f^5 , adapted to rest against the face of the spring-box and provided with an inwardly-turned end or projec-
 10 tion f^6 , adapted to be engaged in one of the holes or recesses b^2 .

In placing the lever F in position upon the spring-box the point or projection f^6 is engaged in one of the holes or recesses b^2 with
 15 the lever in the position shown in dotted lines in Fig. 1, when the lever may be carried over to the position shown in full lines in Fig. 1. The lever F will then be locked upon the spring-box in position for operation.

20 The operation and advantages of my invention will be readily understood by those skilled in the art to which it appertains.

It will be obvious that my improved lever can be readily and conveniently worked or
 25 operated by one man from the pit underneath the locomotive to turn the spring-box to the desired point of adjustment, when the pin E may be inserted into engagement with one of the openings b^2 to lock the box in adjusted
 30 position.

It will be understood that while my invention is especially adapted for use in connection with the above-described class of counterbalance-springs of locomotive-engines it
 35 may be effectively used in connection with similar mechanisms in other positions and arrangements.

Having thus described my invention, I claim and desire to secure by Letters Patent—
 40 ent—

1. A device of the class described, comprising the lever embodying a handle and the head portion consisting of a top plate adapted to extend across the periphery of a circular
 45 spring-box and side plates projecting therefrom and adapted to embrace the sides or faces of the spring-box, one of said plates being provided with an inwardly-turned point or projection, substantially as and for the
 50 purpose set forth.

2. A device of the class described, comprising the lever embodying a handle f and the head f' consisting of the plate or body f^2 hav-

ing the projecting side plates or flanges f^3 and f^4 , the side plate or flange f^4 being provided
 55 with the forwardly-projecting tongue or arm plate f^5 having the inwardly-turned point or projection f^6 , said head portion of the lever approximately conforming to and being adapted to embrace the periphery or outer edge por-
 60 tion of a circular spring-box, substantially as and for the purpose set forth.

3. A device of the class described, comprising the lever having a head adapted to embrace the periphery or outer edge portion of a
 65 circular spring-box and provided with means for engaging said spring-box, substantially as and for the purpose set forth.

4. A device of the class described, comprising the lever embodying a handle and a
 70 head portion consisting of a plate or body adapted to extend across a periphery of a circular spring-box and side plates or flanges adapted to embrace the side or face of the spring-box, said head portion being provided
 75 with means for engaging the spring-box, substantially as and for the purpose set forth.

5. In a device or mechanism of the class described, the combination, with the circular
 80 spring-box having the periphery b , of the lever embodying the handle and the head portion projecting across the periphery of the spring-box and provided with side plates or flanges embracing the periphery or outer edge portion
 85 of the latter, said head portion being locked in engagement with the spring-box, substantially as and for the purpose set forth.

6. In a device or mechanism of the class described, the combination, with the circular
 90 spring-box provided with the series of holes or recesses in its face, of the lever embodying the handle and the head portion consisting of the plate or body and the side plates or flanges, one of said side flanges being provided with the inwardly-turned point or projection en-
 95 gaging one of said holes or recesses, said head portion approximately conforming to and embracing the periphery or outer edge portion of the spring-box, substantially as and for the
 100 purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM J. A. MAKIBBIN.

Witnesses:

W. H. JONES,

ALONZO MARTIN.