

No. 754,942.

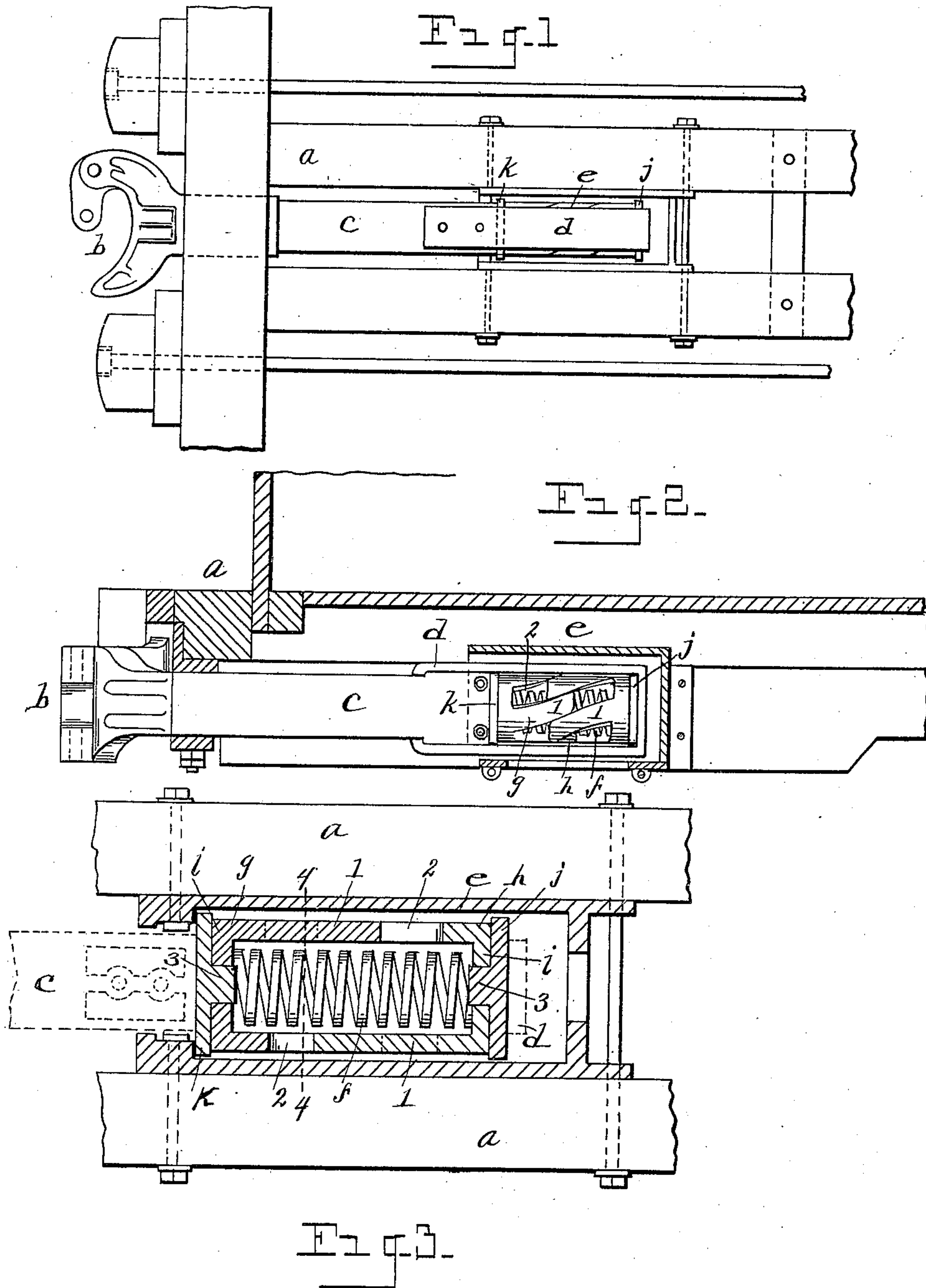
PATENTED MAR. 15, 1904.

W. THORNBURGH.  
RAILWAY CAR COUPLING ATTACHMENT.

APPLICATION FILED JULY 24, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:  
O. B. Baumgarter  
Maude M. Shaw

William Thornburgh INVENTOR.  
By  
Newell S. Wright ATTORNEY.

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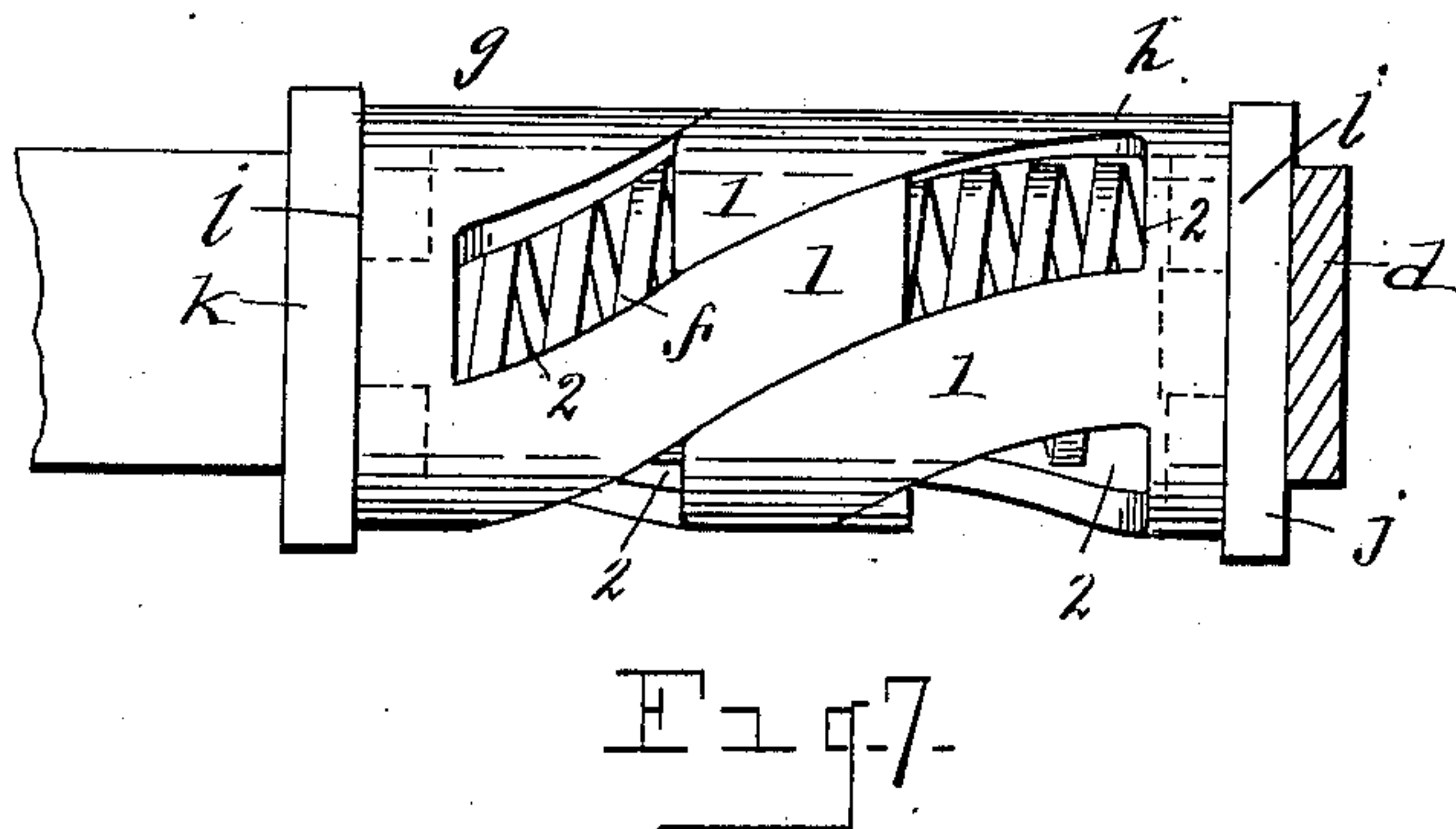
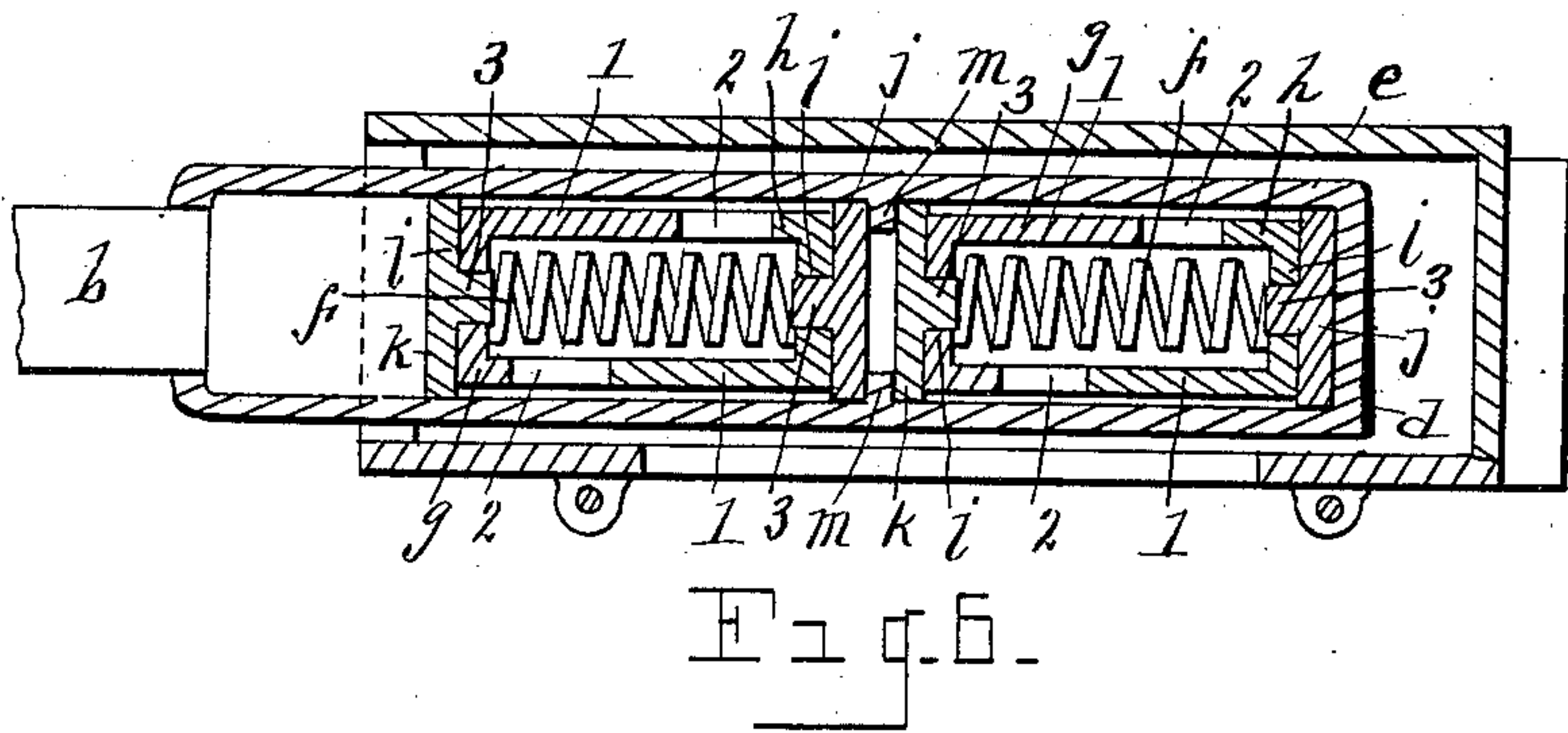
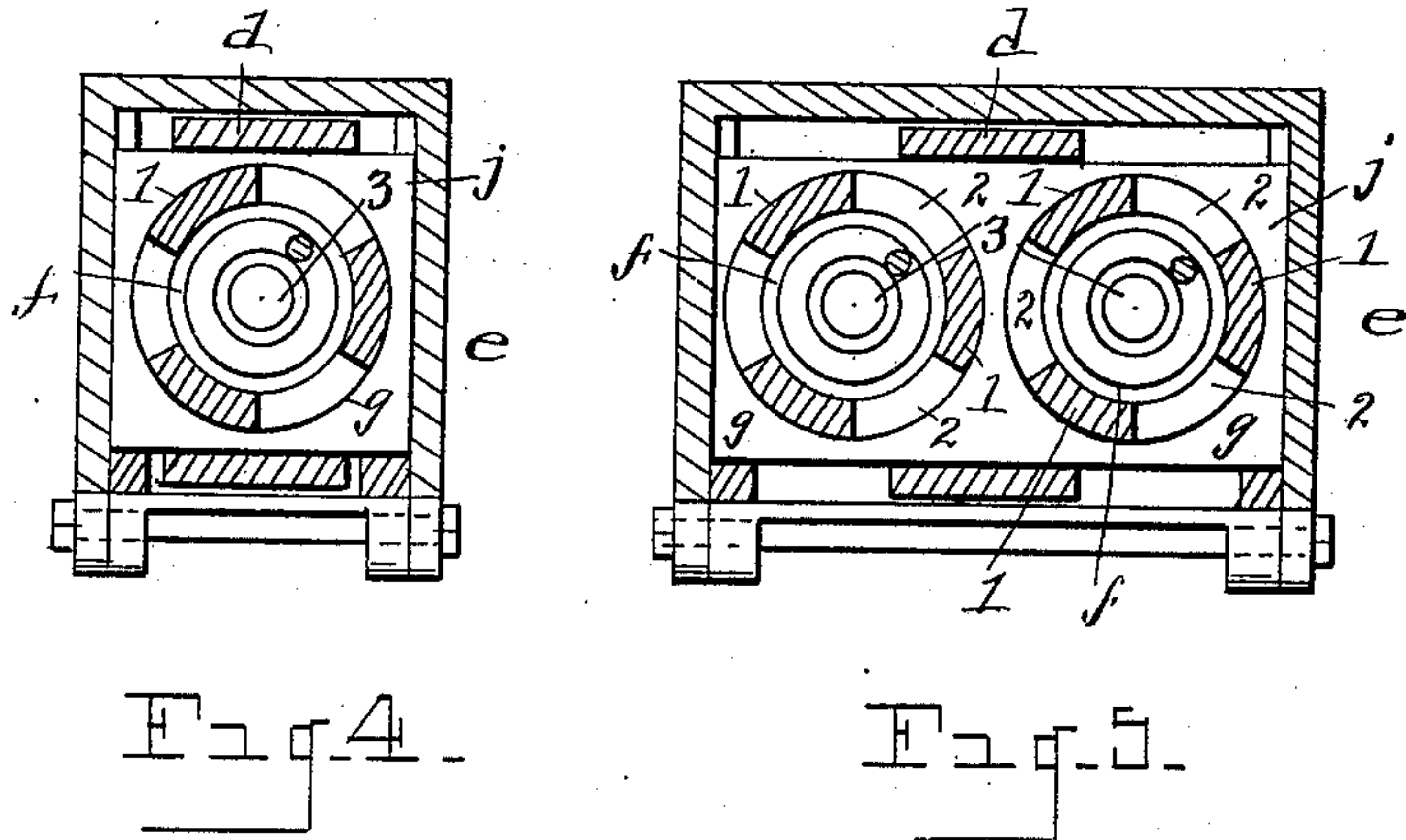
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WITNESSES:  
O. B. Barnziger.  
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# UNITED STATES PATENT OFFICE.

WILLIAM THORNBURGH, OF VERMILION, OHIO, ASSIGNOR TO THOMAS H. SIMPSON, OF DETROIT, MICHIGAN.

## RAILWAY-CAR-COUPLING ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 754,942, dated March 15, 1904.

Application filed July 24, 1903. Serial No. 166,852. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM THORNBURGH, a citizen of the United States, residing at Vermilion, county of Erie, State of Ohio, have

invented a certain new and useful Improvement in Railway-Car-Coupler Attachments, of which the following is a specification, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object certain new and useful improvements in railway-car-coupler attachments or draft apparatus; and it consists of the construction, combination, and arrangement of devices and appliances hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a draft apparatus embodying my invention. Fig. 2 is a vertical longitudinal section through parts of said apparatus. Fig. 3 is a horizontal section through portions of the apparatus. Fig. 4 is a view in vertical section on the line 4 4, Fig. 3. Fig. 5 is a view in vertical section, illustrating a modification where twin springs are employed. Fig. 6 is a view in vertical section, illustrating another modification where tandem springs are employed. Fig. 7 is a view in elevation of a device embodying my invention wherein a single spring is employed.

More particularly my invention is designed to provide a novel construction of the box-followers or spring-protecting devices for railway-car couplers, my invention being applicable where a single spring is employed or where twin springs are employed, the accompanying drawings illustrating my invention as applied to these various modifications.

In the drawings, *a* represents the car-timbers, of any desired construction and arrangement; *b*, the coupler-head; *c*, the draw-bar; *d*, a customary yoke, and *e* the customary or side plate for a spring and its followers or protecting devices. One or more springs are indicated at *f*, and my improved box-followers are indicated at *g* and *h*, the followers *g* and

*h*, arranged toward opposite extremities of the spring, being, preferably, of similar structure, and the one may be practically the duplicate of the other, both of said followers being, preferably, of the same size and of the same form of construction. The aim of my present invention, more specifically, is to provide in a superior manner a sufficient degree of friction to overcome or govern the recoil of the springs with which they are related. Each of the box-followers is constructed with a head, (indicated at *i*,) said head provided with longitudinally-extending and spirally-arranged tongues (indicated by the numeral 1) and with longitudinally-extending and spirally-arranged grooves or ways 2 between adjacent tongues, said ways open at their inner extremities, so that the tongues of one follower may project into the corresponding ways of the opposite follower, the two adjacent followers having a longitudinal and spiral movement, the one in relation to the other. The tongues of each of the followers are preferably so constructed as to fit closely edge to edge when in place, so that when the followers reciprocate the adjacent edges of the tongues may contact and produce a considerable degree of friction to govern the recoil of the spring. Within the corresponding casing *c* are end plates *j* *k*, each preferably constructed with a shoulder or lug 3, projecting through a corresponding orifice in the adjacent head *i* of the box-follower. These end plates *j* *k* have no lateral movement, but simply a longitudinal movement within the casing, so that, as it will be apparent, the spiral movement in the reciprocation of the box-followers will correspondingly produce friction between the heads of the box-followers and their adjacent end plates.

I do not limit myself solely to constructing the end plates with lugs to project into corresponding orifices in the heads of the box-followers, as said heads and said plates may have a frictional engagement and relation the one to the other in any suitable manner. It will be apparent that the box-followers at each



end of the spring are of the same diameter and when closed together—that is, so that the arms of the one follower extend to the end of the ways of the corresponding follower—the two followers practically produce a cylinder. Obviously there is no liability whatever of the two followers getting out of place, inasmuch as the tongues are made to interlock when at the limit of their retracted movement. It will be evident that when the strain is relieved from the spring and it is free to exert its extension upon the two box-followers there will be a movement of the followers in opposite directions and in a spiral form, the heads of the followers also contacting with the laterally-immovable end plates, so that a very considerable degree of friction is thereby produced to overcome or govern the recoil of the spring. Should one of the followers stick, the friction would be the same, as the friction of the contact of the one with the other would be so much the more.

Where twin springs are employed, the end plates *j* *k* would be made of corresponding size and provided with plural lugs to engage in each of the adjacent box-follower heads, or, in other words, the end plates would be made longer. Where the springs and the box-followers are arranged tandem, the yoke would be formed with ribs or stops *m* to separate the adjacent end plates.

Obviously the friction occasioned by this method of constructing the box-followers and their end plates will cause the springs to recoil gradually.

It will be observed that the ways and corresponding tongues have spirally-curved edges.

What I claim as my invention is—

1. A draft apparatus comprising box-followers, and end plates contacting with the outer ends of the box-followers, said box-followers constructed with oppositely-extended tongues having spirally-curved edges and intermediate spirally-curved ways, the tongues of the box-followers respectively, fitting into the ways of the opposite box-followers, and longitudinally and spirally movable in said ways, the tongues of said followers having frictional contact at their adjacent edges, substantially as and for the purpose described.

2. A draft apparatus comprising a spring, box-followers about opposite ends of the spring, each of said followers constructed with longitudinally-extended tongues having spirally-curved edges and intermediate spirally-curved ways, the tongues of one of said followers fitting into the ways of the opposite follower, and laterally-immovable end plates having frictional contact with the adjacent extremities of the box-followers, the tongues of said followers having a reciprocatory and spiral movement in the ways of the opposite followers upon the compression and recoil of

the spring, the tongues of said followers having frictional contact at their adjacent edges.

3. A draft apparatus comprising box-followers, and end plates having frictional contact with the outer ends of the box-followers respectively, said box-followers constructed with oppositely-extended tongues having spirally-curved edges, and intermediate spirally-curved ways, the tongues of one of the box-followers fitting into the ways of the opposite box-follower and longitudinally and spirally movable in said ways, said box-followers being of equal diameters throughout their length, the tongues of said followers having frictional contact at their adjacent edges.

4. A draft apparatus comprising a spring, and box-followers about opposite ends of the spring, said box-followers having longitudinally-extended interlocking tongues having spirally-curved edges and intermediate spirally-curved ways whereby, upon the compression and recoil of the spring, said followers will have a longitudinal and spiral movement.

5. A draft apparatus comprising side plates, end plates laterally immovable within said plates, a spring-box, box-followers about opposite ends of the spring having interlocking longitudinally-extended tongues having spirally-curved edges and intermediate spirally-curved ways, the outer extremities of said followers having frictional contact with said end plates, and a draw-bar yoke whereby, upon endwise movement of the yoke, said box-followers will have a reciprocatory and spiral movement.

6. A draft apparatus comprising a spring, box-followers about opposite ends of the spring having oppositely-extended interlocking tongues having spirally-curved edges, intermediate spirally-curved ways and laterally-immovable end plates, the extremities of said followers having a rotatable frictional contact with said end plates, and the interlocking tongues of the box-followers having frictional contact one with another at their adjacent edges, whereby upon a compression or recoil of the spring said box-followers will have a reciprocatory and spiral movement for the purpose described.

7. A draft apparatus comprising box-followers each constructed with a head at its outer end, and oppositely-extended tongues having spirally-curved edges and intermediate spirally-curved ways, a spring located between said heads and within said tongues, the tongues of one of the box-followers fitting into the ways of the other box-follower and longitudinally and spirally movable in said ways, said box-followers when closed together forming a cylindrical structure.

8. A draft apparatus comprising duplicate box-followers, said box-followers each constructed with a head, with oppositely-extended



tongues having spirally-curved edges, and  
with intermediate spirally-curved ways, the  
tongues of one of the box-followers fitting  
into the ways of the opposite box-follower,  
5 and longitudinally and spirally movable in  
said ways.

In testimony whereof I have signed this

specification in the presence of two subscrib-  
ing witnesses.

WILLIAM THORNBURGH.

Witnesses:

N. S. WRIGHT,  
MAUDE SHAW.