

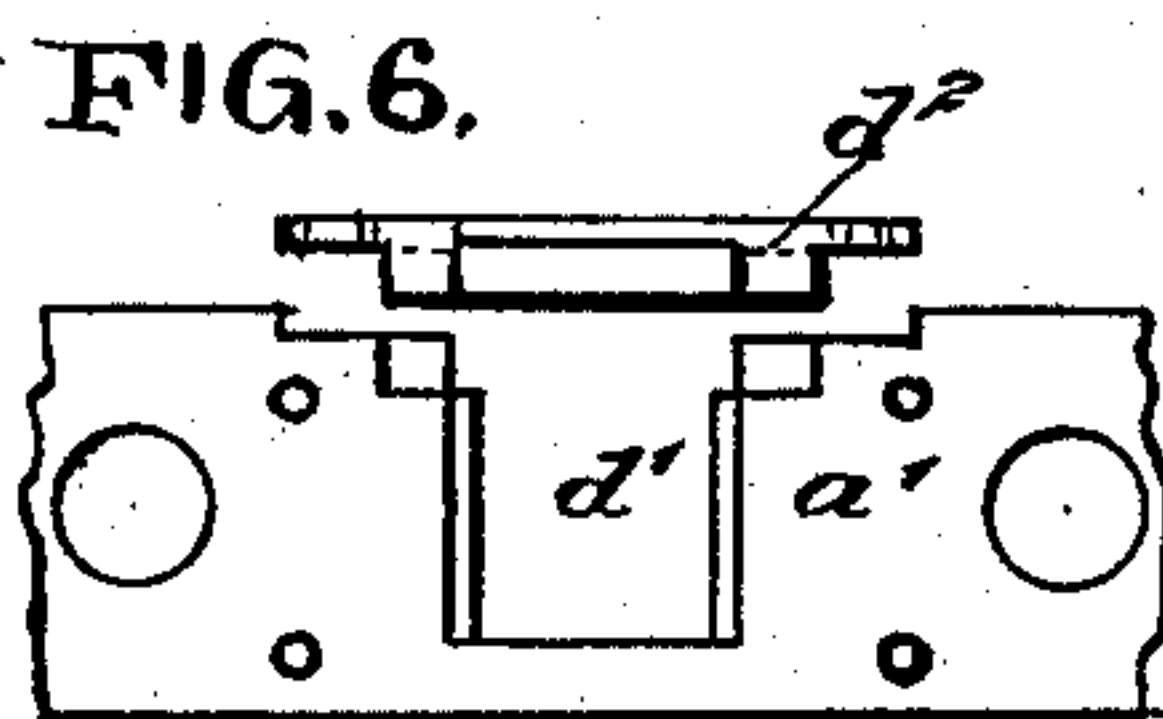
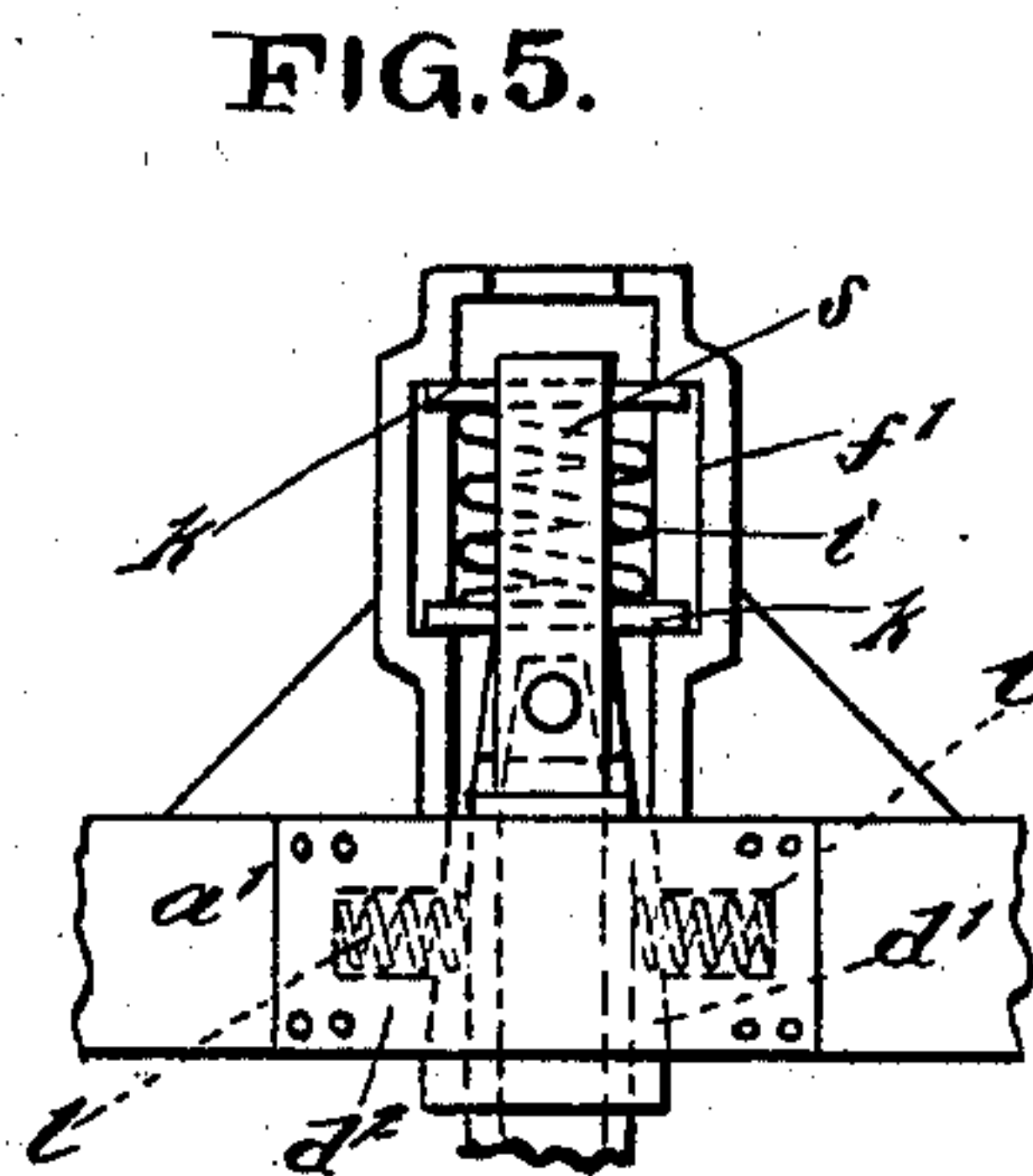
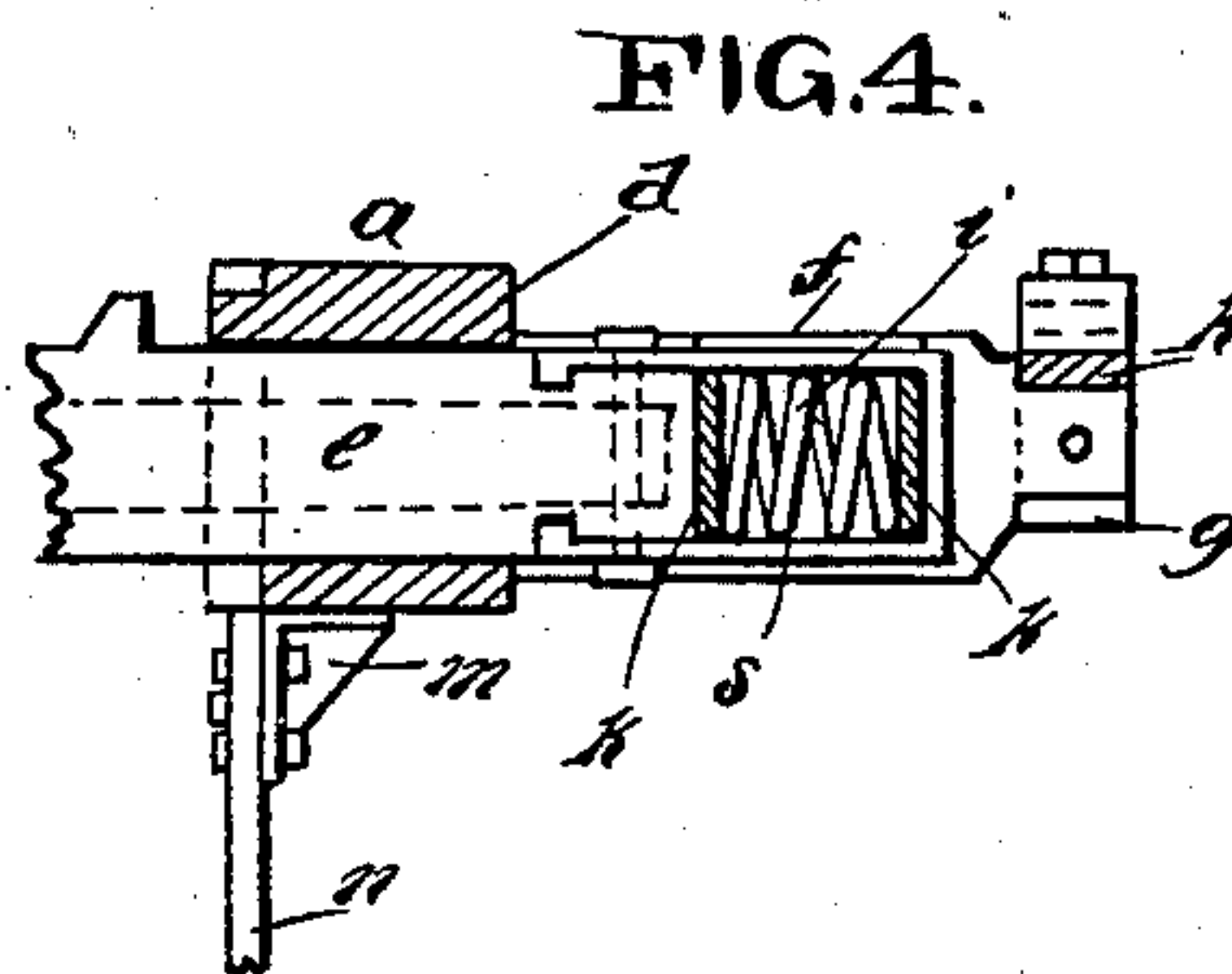
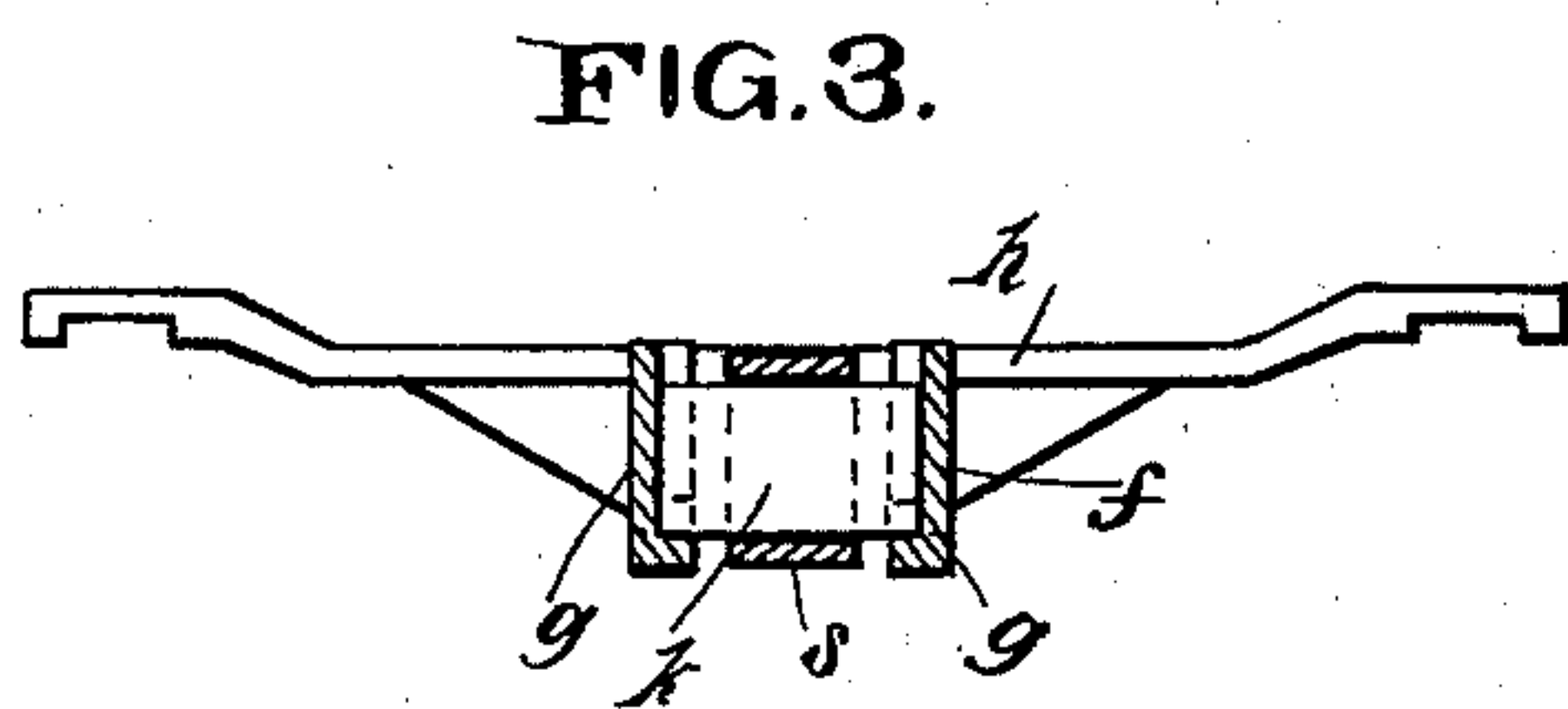
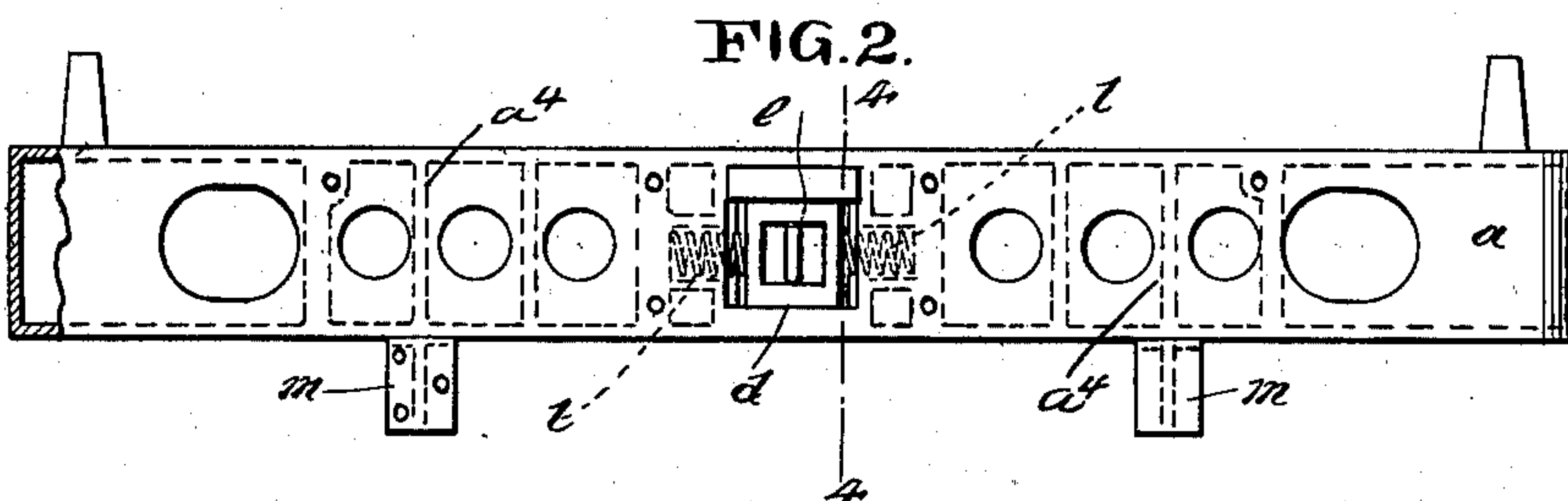
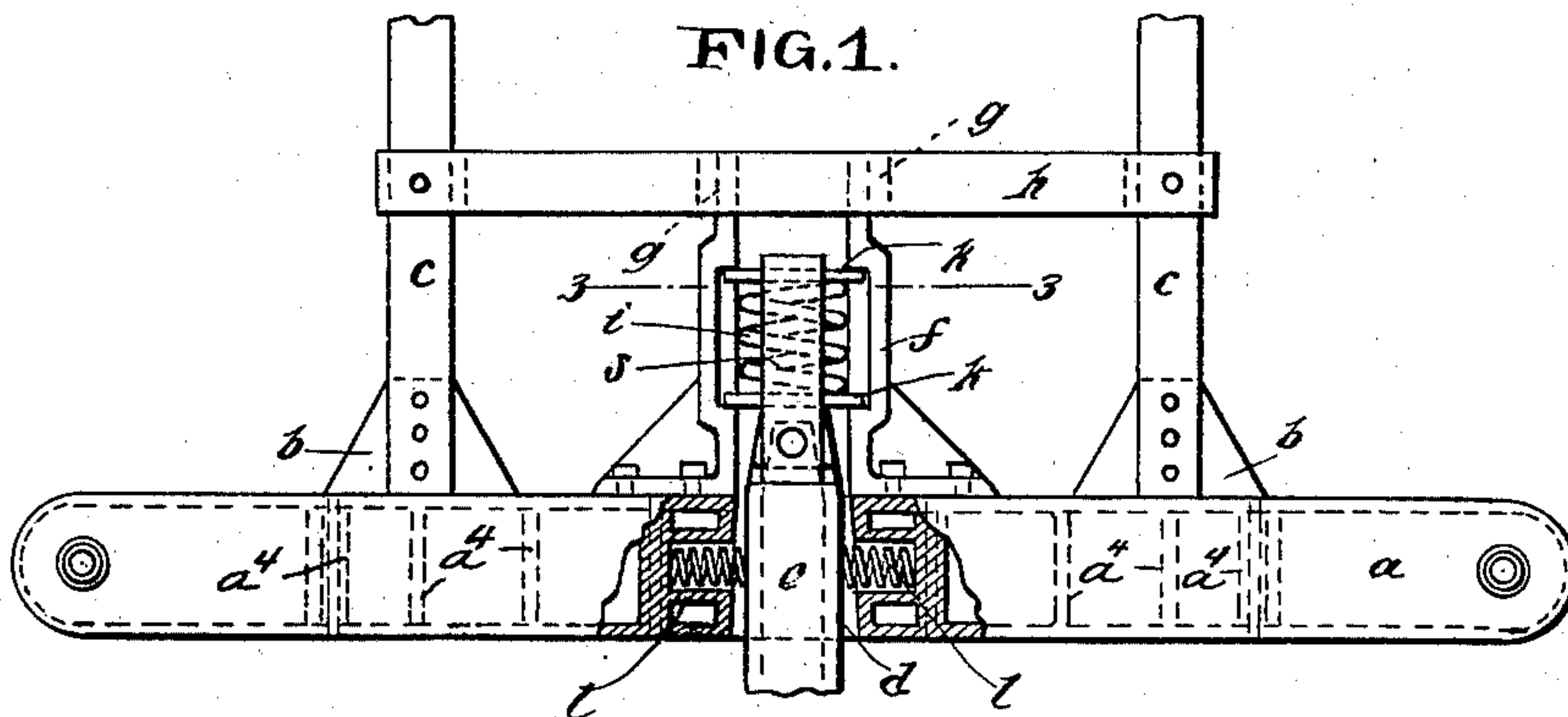
No. 656,531.

Patented Aug. 21, 1900.

J. F. DUNN.  
LOCOMOTIVE BUFFER BEAM.

(Application filed Apr. 4, 1899.)

(No Model.)



WITNESSES:

*Donna Twitchell*  
*David B. Adams*

INVENTOR

*James F. Dunn*

BY

*Munn*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

JAMES F. DUNN, OF SALT LAKE CITY, UTAH.

## LOCOMOTIVE BUFFER-BEAM.

SPECIFICATION forming part of Letters Patent No. 656,531, dated August 21, 1900.

Application filed April 4, 1899. Serial No. 711,649. No model.)

*To all whom it may concern:*

Be it known that I, JAMES F. DUNN, of Salt Lake City, in the county of Salt Lake and State of Utah, have invented a new and Improved Locomotive Buffer-Beam, of which the following is a full, clear, and exact description.

This invention relates to certain improvements by means of which I am enabled to produce a metallic locomotive buffer-beam which is cast in steel and so constructed that all of its parts are comprised in an integral casting, to which the proper parts of the engine may be directly attached.

An important purpose of this invention is to protect the cylinder-heads, boiler-head, and adjacent vital parts of the locomotive in case of collision.

This specification is the disclosure of several forms of the invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of one form of the invention with parts in section. Fig. 2 is a front elevation of the same. Fig. 3 is a section on the line 3 3 in Fig. 1. Fig. 4 is a section on the line 4 4 in Fig. 2. Fig. 5 is a plan view of a modification. Fig. 6 is a front elevation thereof.

The improved beam is cast in one integral structure, preferably of steel, and comprises the beam *per se*, with various auxiliary parts facilitating the application of the beam to the engine. The beam has a main portion or beam proper, *a*, on the rear side of which are cast integrally two lugs *b*, respectively received in slots formed in the front ends of the engine frame-beams *c*, the beams being bolted to the lugs, as shown. Within the beam and respectively directly forward of the side frames *c* are formed strengthening-ribs *a*<sup>4</sup>. The greatest buffing stress of the beam is borne at this point, and such stress is therefore communicated to the side frames *c* by the ribs *a*<sup>4</sup>. The beam is provided with a centrally-located transverse passage *d* therein, which passage is situated midway between the lugs *b* and is adapted to receive the draw-head *e* of the coupler, the shank of which is

held in a box *f*, that may be bolted rigidly to or cast integral with the beam and which projects rearwardly and horizontally from the beam and has its rear portion held between the jaws *g* of the tail-brace *h*, the tail-brace extending transversely between the frame-beams *c* and being bolted thereto, as shown. The drawings show the box *f* bolted to the beam. The shank of the draw-head *e* is provided with a yoke *s*, fitting loosely in the box *f* and carrying a spiral spring *i*, which bears between buffer disks or plates *k*, held in the yoke *s* and bearing against the box *f*. The draw-head is held to yield laterally by means of springs *l*, seated in cavities formed in the beam at each side of the draw-head. The beam is provided with downwardly-extending lugs *m*, cast integrally therewith and adapted to have the heel *n* of the pilot bolted thereto, as shown in Fig. 4. The beam is provided with horizontal bolt-holes to facilitate bolting the cap of the pilot to the front face of the beam.

Figs. 5 and 6 show a modification of the construction of the beam *a'* involving the casting of the box *f'* integral with the beam. In these views the transverse passage *d'* is open at the top and provided with a cap *d'*<sup>2</sup> bolted to the beam, so that the draw-head may be dropped in place by movement downwardly from the beam as contradistinguished from moving the draw-head horizontally through the beam. The box *f'* is shown in Figs. 5 and 6 as cast integrally with the beam, and the draw-head is mounted in the box and beam in the same manner as in Figs. 1, 2, 3, and 4, and in all other respects the construction of the beam is the same as that previously described.

With such a beam it is clear that a most effective protection is provided for the vital parts of the locomotive at the head thereof. The cast-metal beam is practically indestructible, and this prevents the colliding engine from driving into the boiler-front and smashing the cylinder mechanism, as is almost invariably the case with the usual wooden construction.

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

1. A locomotive buffer-beam, having a



transverse passage formed therein, the beam also having cavities respectively communicating with opposite sides of the passage, a box fastened to the inner side of the beam, a  
5 draw-head mounted in the passage and having spring connection with the box, an additional spring mounted in the aforesaid cavities and bearing against opposite sides of the draw-heads to yieldingly hold the draw-head against  
10 lateral movement.

2. A locomotive buffer-beam, having a transverse passage formed therein and the beam also having cavities formed therein respectively on the sides of the transverse pas-  
15 sage and communicating therewith, the said transverse passage serving to carry a draw-head, and the cavities serving to carry springs resisting the lateral movement of the draw-head.

3. The combination of a locomotive buffer-beam formed with a centrally-located transverse passage, engine frame-beams attached to the buffer-beam respectively at the sides of the transverse passage therein, a tail-brace  
20 extending transversely between the frame-beams, a box fastened rigidly to the rear side of the buffer-beam and extending to and fastened to the tail-brace, and a coupler draw-head mounted in the box and extending for-  
25 wardly through the passage in the buffer-beam.

4. The combination of a locomotive buffer-

beam formed with a passage extending transversely therethrough approximately at the middle thereof and with two lugs projecting  
35 rearwardly from the beam at the respective sides of the passage, engine frame-beams fastened to said lugs, a tail-brace extending between and fastened to the engine frame-beams, a box secured to the side of the buffer-  
40 beam and to the said brace and extending between the two, the box being in juxtaposition with the transverse passage in the buffer-beam, and a coupler draw-head mounted in the box and extended forwardly through the  
45 passage in the buffer-beam.

5. The combination of a locomotive buffer-beam formed with a transverse passage extending therethrough at approximately its middle, the buffer-beam also having cavities  
50 at each side of the passage and in connection therewith, a box mounted at the rear side of the buffer-beam, a coupler draw-head mounted in the box and extended forwardly through the transverse passage in the buffer-beam, 55  
and springs mounted in the cavities in the buffer-beam and bearing against opposite sides of the draw-head to resist the lateral movement thereof.

JAMES F. DUNN.

Witnesses:

JNO. M. RITTER,  
ISAAC B. OWENS.