

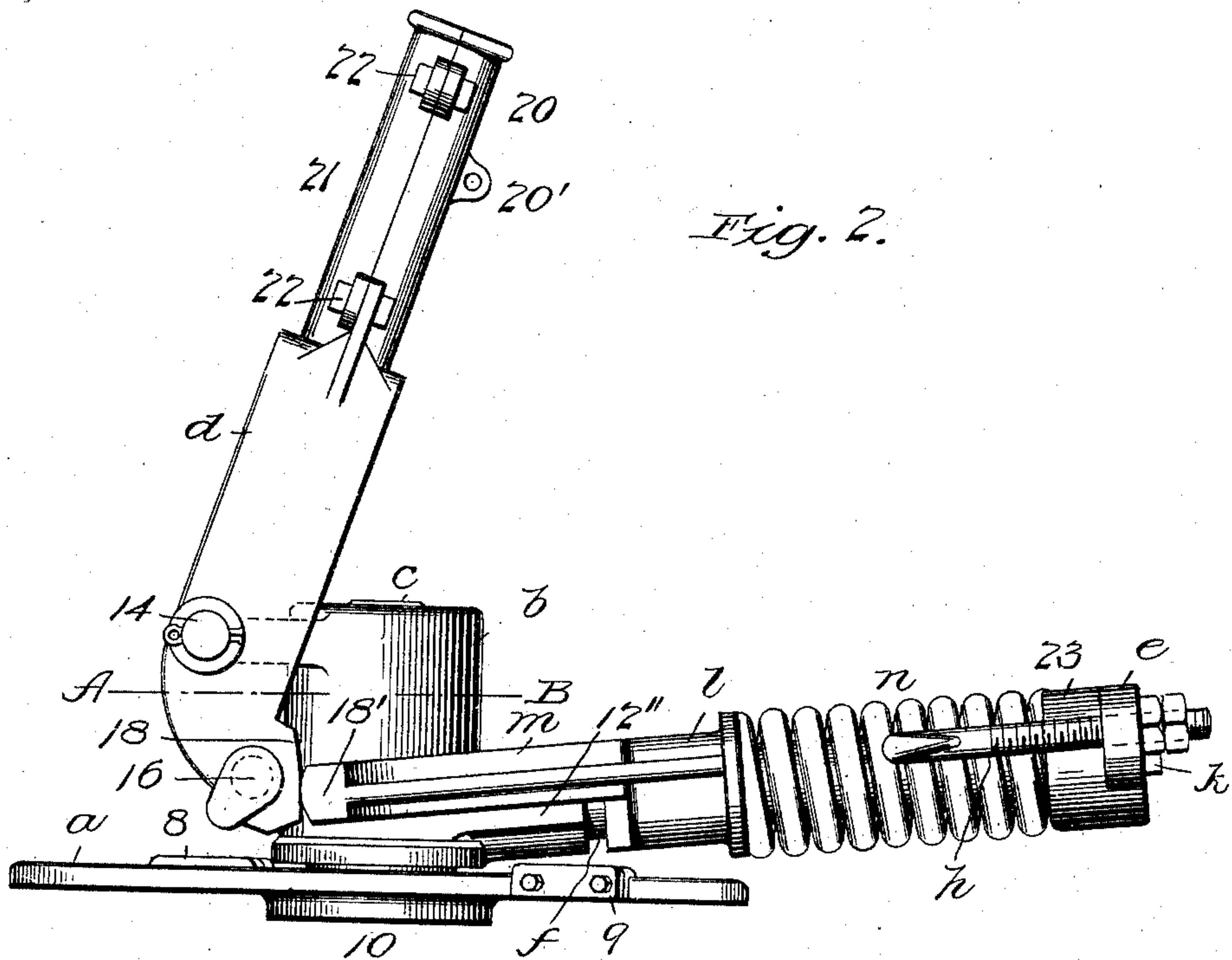
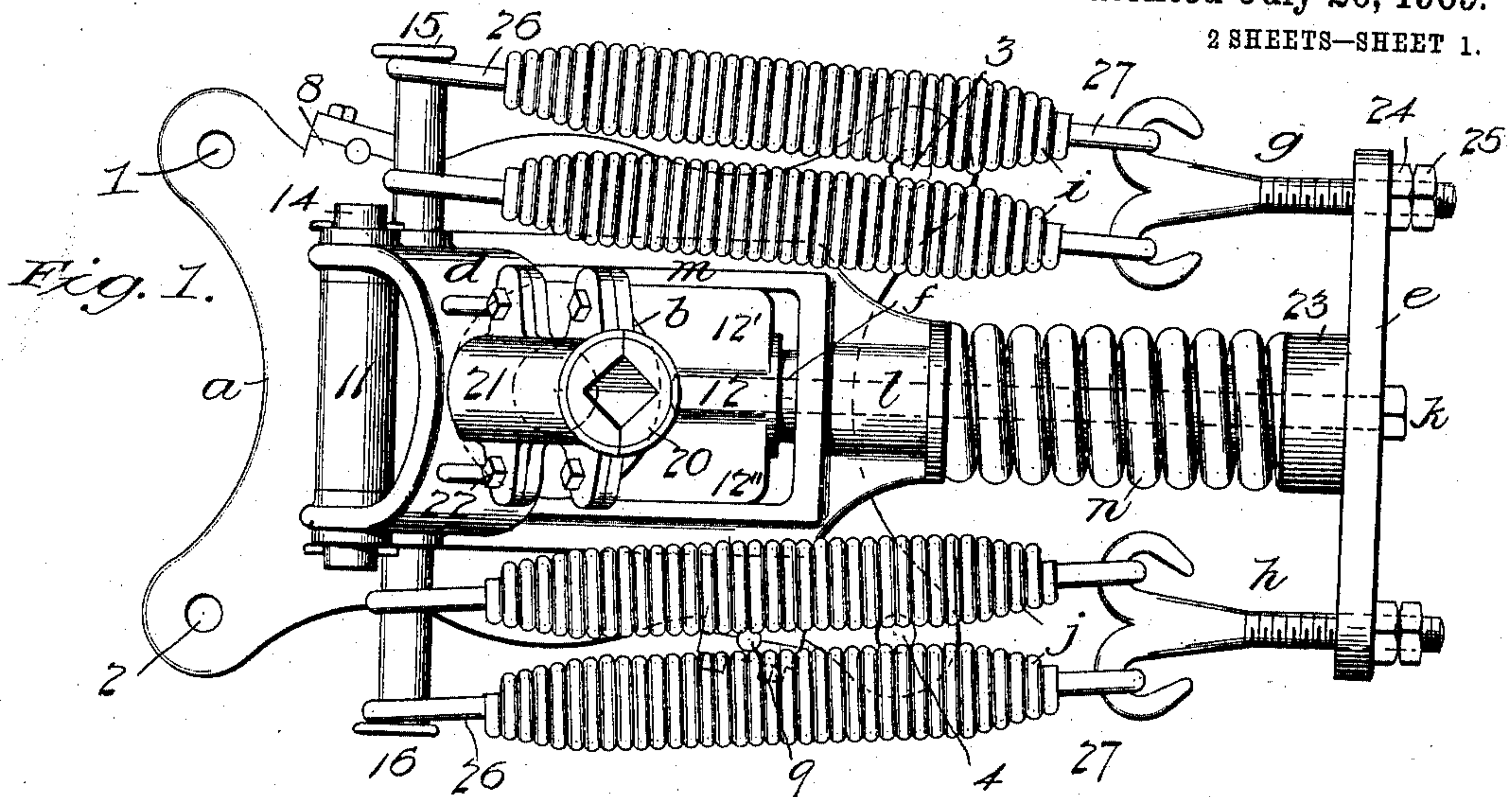
C. E. GIERDING.
TROLLEY BASE.

APPLICATION FILED AUG. 14, 1908.

928,442.

Patented July 20, 1909.

2 SHEETS—SHEET 1.



Inventor

Witnesses

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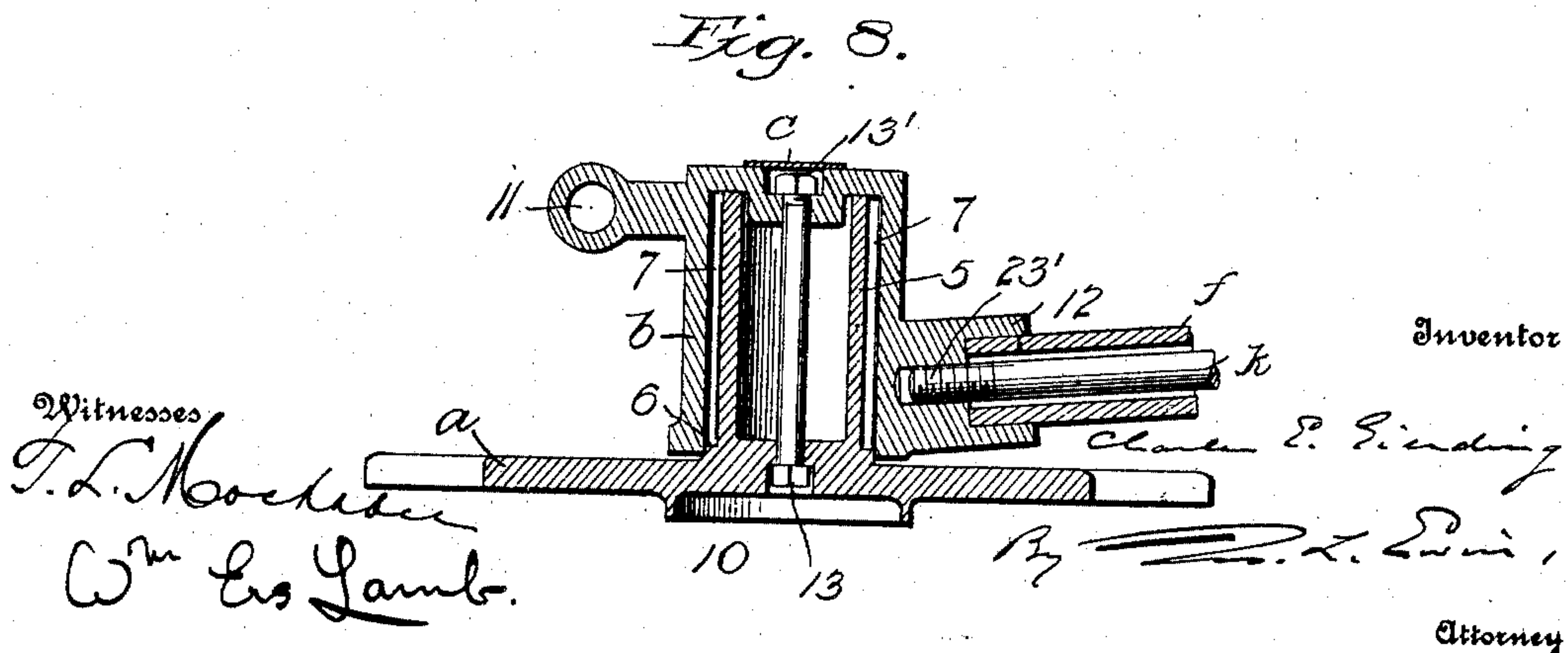
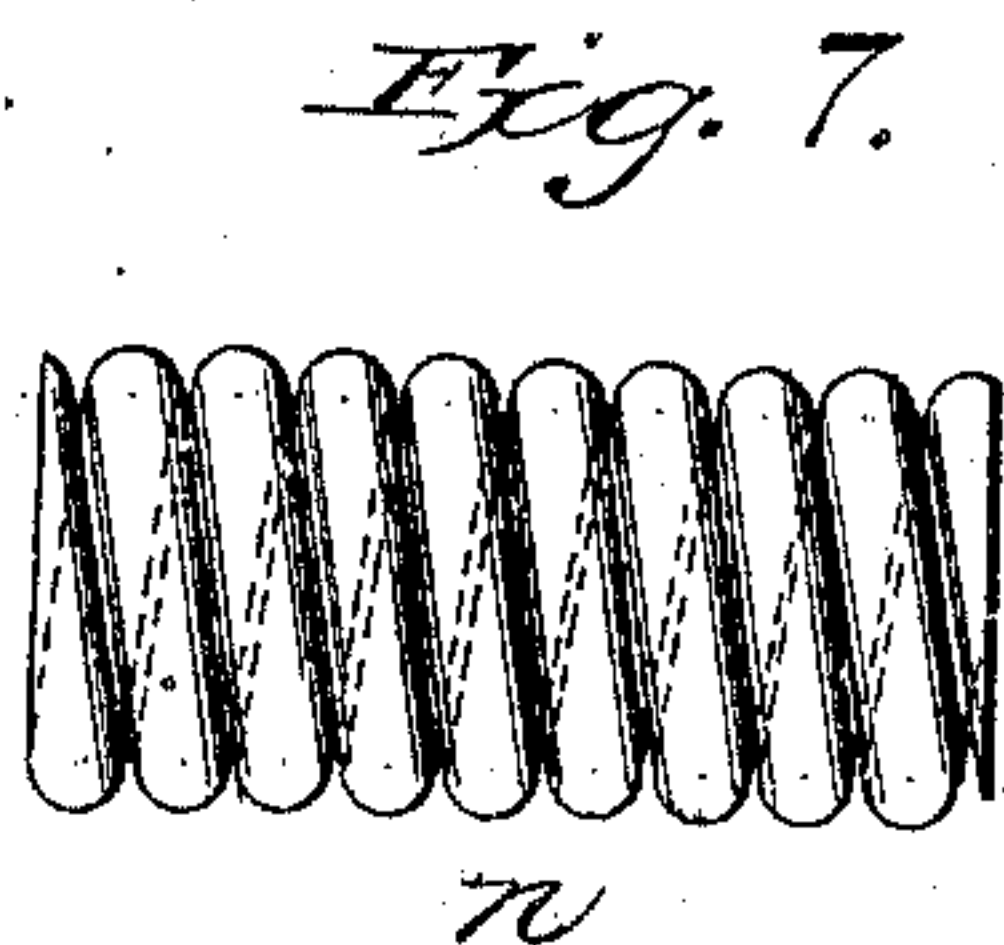
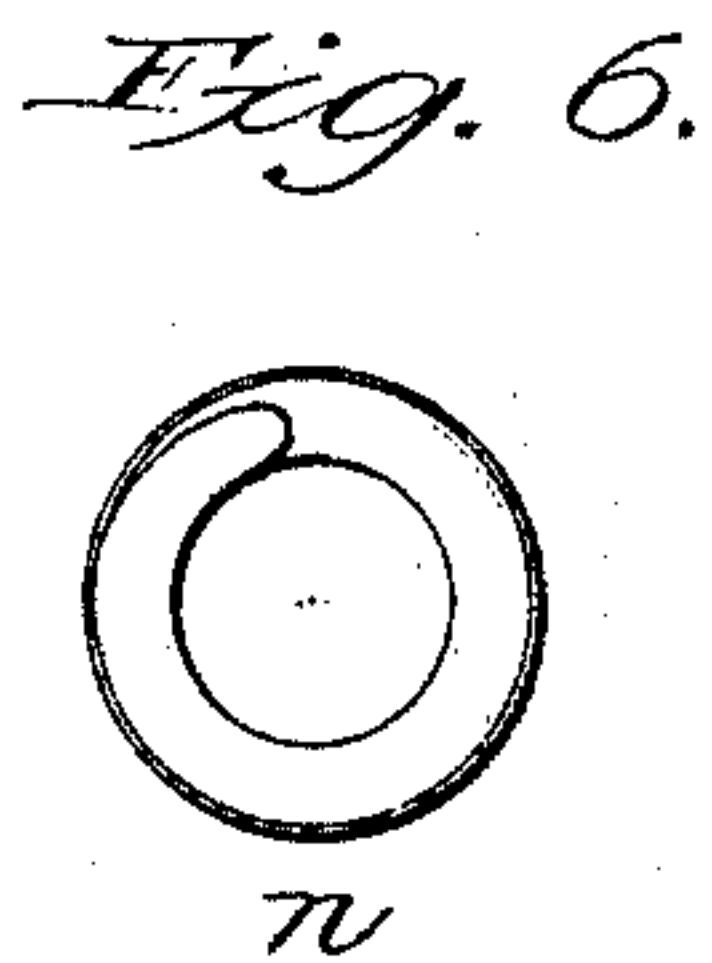
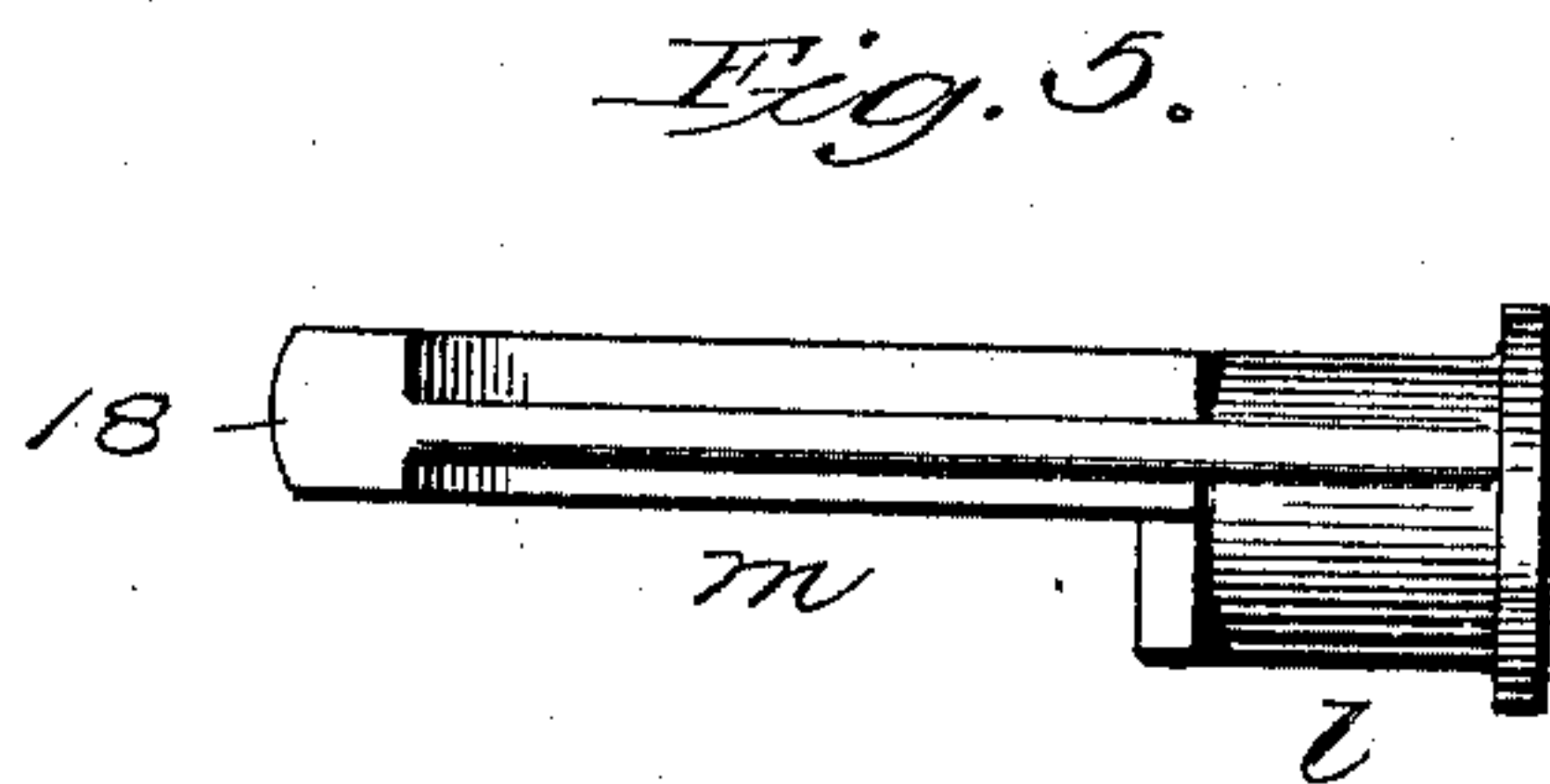
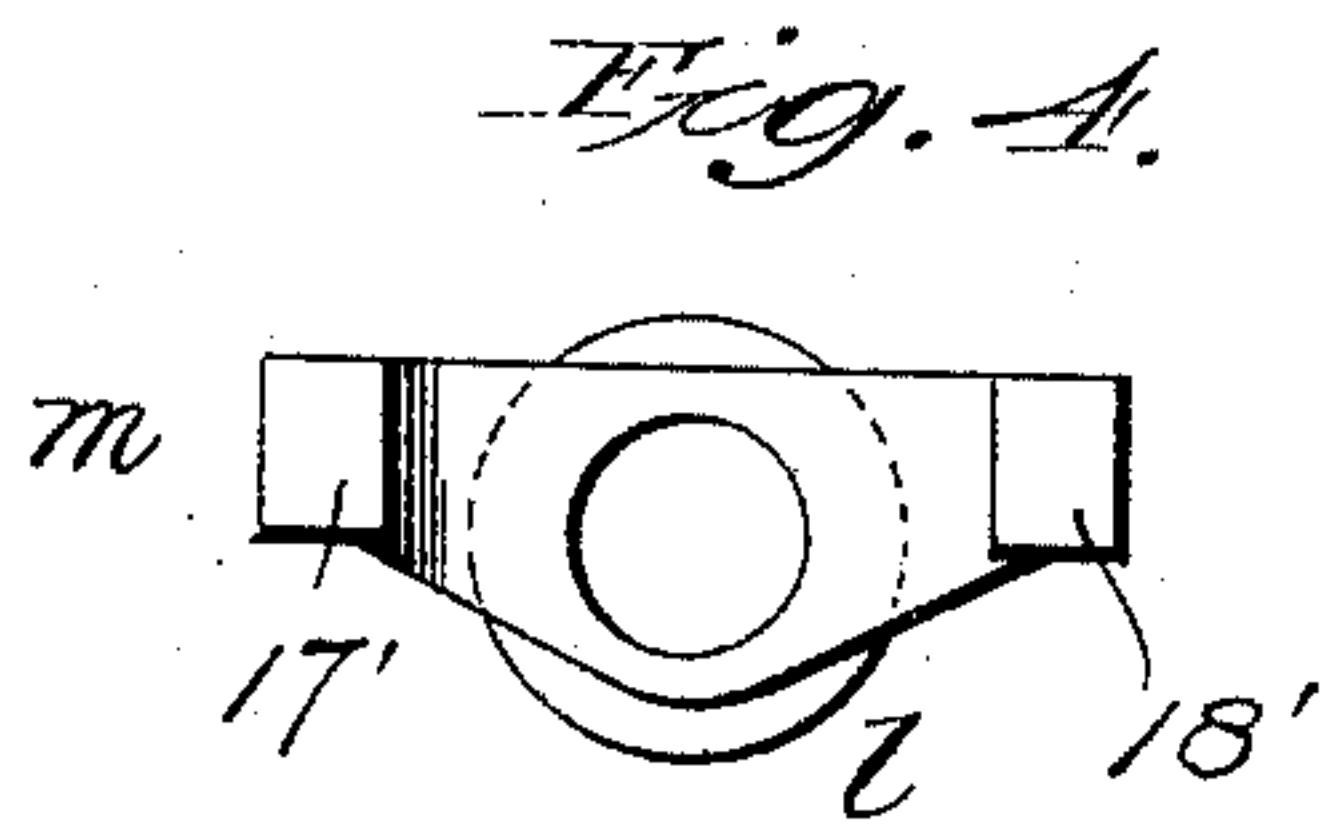
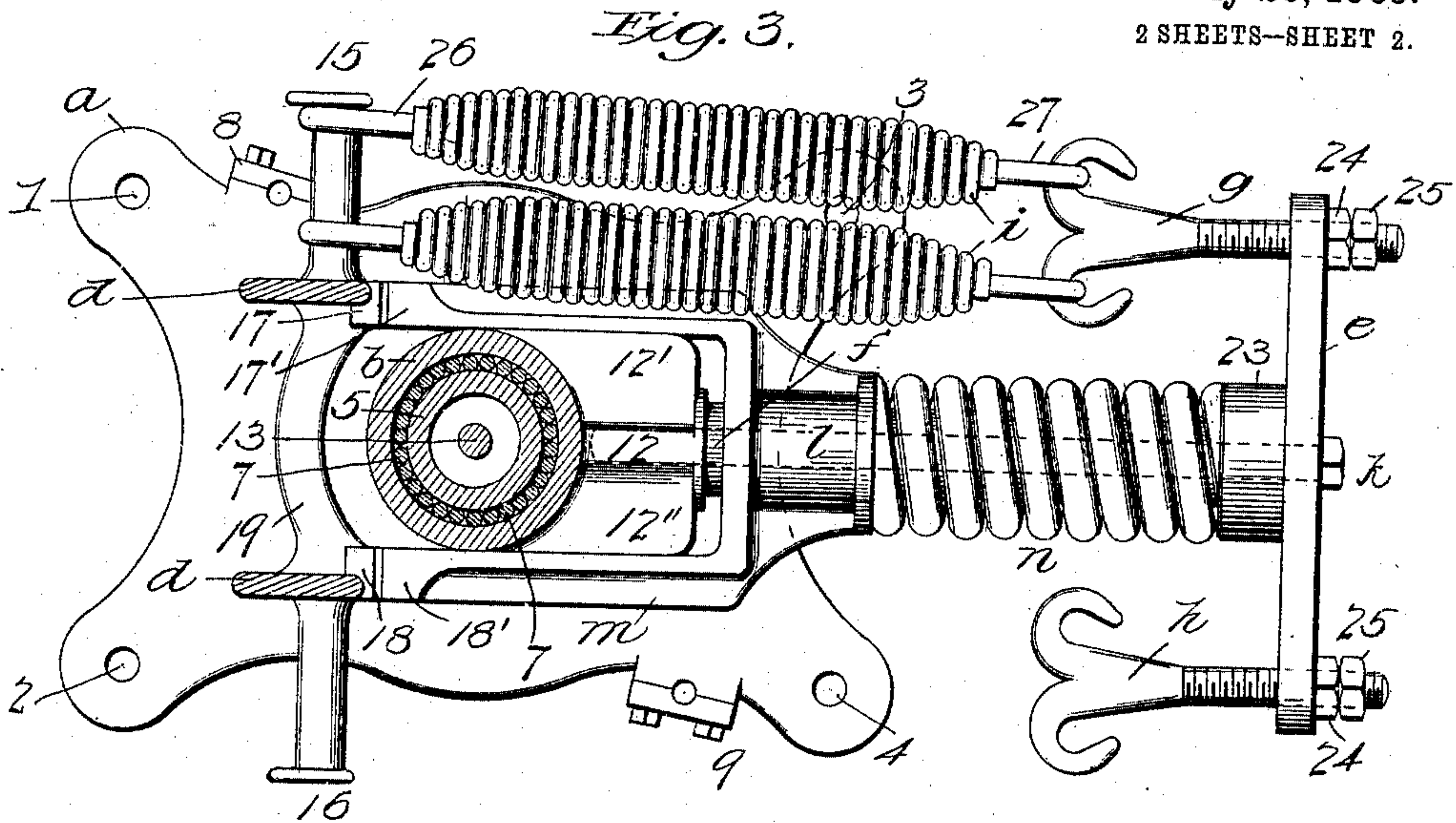
Charles E. Gierding

By *[Signature]*
Attorney

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APPLICATION FILED AUG. 14, 1908.

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2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

CHARLES E. GIERDING, OF NEWARK, NEW JERSEY, ASSIGNOR TO STERLING-MEAKER COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TROLLEY-BASE.

No. 928,442.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed August 14, 1908. Serial No. 448,507.

To all whom it may concern:

Be it known that I, CHARLES E. GIERDING, a citizen of the United States of America, and a resident of Newark, in the State of New Jersey, have invented a new and useful Improvement in Trolley-Bases, of which the following is a specification.

This invention is additional to the improvement in trolley bases set forth in my specification forming part of United States Letters Patent No. 802160, dated October 17, 1905, and relates therewith to the construction of bases for trolley poles adapted to be attached to the roofs of trolley cars and to render the poles swiveled, folding and self-elevating with reference to the top of the car.

The leading object of the present invention is to provide a trolley base of the type set forth in said patent specification with a "cushion stop" of novel construction adapted to operate in connection with the low-down spring-supporting strut and the lower extremities of the downwardly projecting pole-carrying fork and other parts of said patented trolley base. Heretofore the lower extremities of the pole-carrying fork of said patented trolley base, hereinafter termed the "pole fork", were stopped against lugs cast on the cap or turret which incloses the roller bearings of the main pivot or "stem", and when dewirement took place under considerable tension, the sudden stopping of the pole fork would some times bend or even break the pole. The substitution of the cushion stop frees said patented trolley base from this objection, and is readily and effectively accomplished according to the present improvement.

The present invention consists in certain novel combinations of parts, hereinafter set forth and claimed, and in an improved trolley base embodying the same or any of them.

Two sheets of drawings accompany this specification as parts thereof.

Figure 1 is a top view of the improved trolley base with its pole fork erect; Fig. 2 is a side view projected from Fig. 1 with the tensile springs on the near side removed; Fig. 3 is a top view partly in section on the line A—B, Fig. 2; Figs. 4 and 5 are detail views of the buffer fork of the cushion stop device, detached; Figs. 6 and 7 are detail views of the buffer spring detached; and

Fig. 8 represents an axial vertical section through the turret and roller bearing.

Like reference characters refer to like parts in all the figures.

In common with the parts of said patented trolley base, the base proper or base plate, *a*, is a nearly flat casting with bolt holes, 1, 2, 3 and 4, which provide for bolting it to the roof of the car in a customary way; it is provided at its center with a hollow cylindrical standard or stem, 5, the periphery of which, together with an annular step, 6, at its base, is adapted to support longitudinal antifriction rolls, 7, as in Figs. 3 and 8, and further provided with sockets or couplings, 8 and 9, which may be of any improved form, as means for connecting the trolley base with the conductors leading to the motor. The base plate is further provided with a stiffening flange, 10, on its bottom concentric with said stem 5. The electric contact is between the top of said stem 5 and the inside top of the turret, and is steady, constant and protected against grit and weather.

The cap or turret, *b*, which incloses the roller bearing as aforesaid, is also constructed as in said patented trolley base in the form of an inverted cup having a transverse horizontal pivot socket, 11, at or near its top and a subjacent horizontal or substantially horizontal strut socket, 12, at right angles to said pivot socket and substantially perpendicular to the vertical axis of the turret; but said pivot socket 11 is preferably and conveniently located at the front of the turret in the improved construction, and a pair of guides, 12' and 12'', are formed at the sides of said strut socket 12; the outer lateral surfaces of said guides being parallel with each other and as wide apart as the sides of the turret. The turret *b* is held in place longitudinally against accidental displacement, as in the patented trolley base, by an axial bolt, 13, extending through the chamber of the hollow stem 5; but in the improved construction this bolt preferably interacts with a nut, 13', within a recess at the top of the turret, which is covered by a cap plate, *c*. The pole fork, *d*, is also, as in said patented trolley base, pivoted to said turret *b* by a horizontal pivot, 14, fitted to the said transverse socket 11 of the turret and to pivot holes in the respective sides of the fork; and these sides of

the fork are extended beyond their pivot holes and project in the normal position of the parts downward to the plane of said strut socket 12, and are provided at what are here-
 5 in termed their lower extremities with later-
 ally projecting wrist pins, 15, 16, parallel
 with said horizontal pivot 14, and with
 buffer surfaces, 17, 18; the latter, of any ap-
 10 proved form, being located in the improved
 structure at the rear edges of the fork, as
 best shown in Fig. 2. A tie brace, 19, Fig. 3,
 preferably and conveniently connects the
 fork ends with each other in front of the tur-
 15 ret *b*, being so formed as to be at all times out
 of contact with the turret in the working con-
 dition of the improved trolley base. The
 pole socket, 20, 21, is also preferably, as here-
 tofore, bisected longitudinally, and its cap or
 20 clamp, 21, is held in place by bolts, 22, pass-
 ing through perforated lugs on the respective
 parts; and the front of the socket is conven-
 iently provided with a staple, 20'. A cross
 25 bar, *e*, parallel with said horizontal pivot 14
 and said wrist pins, 15, 16, is supported as
 heretofore by a central strut, *f*, of metallic
 tubing or "pipe"; one end of the strut occu-
 pying said socket 12 at the back of the turret
 30 *b*, within which it is seated, and its other end
 a like socket within a central boss, 23, on the
 cross bar.

The extremities of the cross bar *e* are pro-
 vided as heretofore with holes through which
 the screw-threaded shanks of a pair of double
 hooks, *g* and *h*, extend; and each of said
 35 shanks is provided with a pair of nuts, 24
 and 25, behind the cross bar, to provide for
 the longitudinal adjustment of the hooks
 and for securely locking them in their ad-
 justed positions. Stretched from said dou-
 40 ble hooks *g* and *h*, respectively, to the respec-
 tive wrist pins 15 and 16 of the pole fork *d*, as
 heretofore, are two pairs of tensile springs, *i*
 and *j*, which in the improved construction
 are preferably of rod steel so coiled as to form
 45 conical ends, within which the shanks of
 coupling eyes, 26 and 27, are securely held;
 the eyes of each spring embracing respec-
 tively the adjoining wrist pin, 15 or 16, and
 one of the hooks of the opposing double hook
 50 *g* or *h*.

Both ends of the strut *f* in the improved
 construction are seated within closed sockets,
 and an axial tie-bolt, *k*, extends through the
 cross bar *e* lengthwise of the strut *f* into a
 55 tapped hole, 23', in the turret casting, as
 shown in Fig. 3. The other parts of the
 cushion stop device are a buffer fork, *l-m*,
 shown detached by Figs. 4 and 5, and a
 buffer spring, *n*, shown detached by Figs. 6
 60 and 7. Said buffer fork has at one end a
 central sleeve portion (*l*) which embraces
 said strut *f* and is slidable thereon, and a
 long bifurcated portion (*m*), the respective
 65 extremities of which, 17' and 18', interact
 with said buffer surfaces 17 and 18 of the pole

fork. Compare Figs. 2 and 3. The buffer
 spring *n* is preferably and conveniently of
 helically coiled rod steel, and embraces the
 strut *f* between the inner ends of said sleeve
 70 portion *l* of the buffer fork, and said central
 boss of the cross bar *e*, 23. Normally, when
 the trolley wheel is in contact with the
 overhead wire, as well as when the trolley
 pole is pulled down flat upon the top of the
 75 car or as occasion may require, the buffer
 surfaces 17 and 18 are out of contact with
 said extremities 17' and 18' of the buffer
 fork *l-m*, and the buffer spring *n* is free from
 tension. When dewirement occurs, said
 80 buffer surfaces 17 and 18 come into contact
 with said extremities 17' and 18' of the buffer
 fork *l-m*, and the buffer spring *n* is com-
 pressed between said sleeve portion *l* of the
 buffer fork and said boss 23 of the cross bar
 85 *e*, and serves to cushion the strain, so that no
 injury to any of the parts of the trolley base
 is likely to result.

That end of the improved trolley base and
 of each of its parts shown at the left in Figs.
 1, 2 and 3 is herein termed the front end. 90

The improved trolley base may obviously
 have any preferred form and number of ten-
 sile springs; the buffer spring may likewise
 be volute or of any other preferred form; and
 other like modifications will suggest them-
 95 selves to those skilled in the art.

Having thus described said improvement,
 I claim as my invention and desire to patent
 under this specification:

1. A trolley base having, in combination, 100
 a base plate constructed with a vertical
 roller-bearing stem, a turret pivotally mount-
 ed on said stem inclosing its roller bearing
 and constructed with a transverse pivot
 105 socket on its front at top and a strut socket
 substantially at right angles to said pivot
 socket on its back at bottom, a downwardly
 projecting pole fork pivoted to said turret at
 said pivot socket and having wrist pins and
 buffer surfaces near its lower extremities, a 110
 tubular strut seated in said strut socket, a
 cross bar having a central boss socketed to
 admit the rear end of said strut, a tie-bolt
 axial to said strut connecting said turret and
 cross bar, tensile springs stretched between 115
 said cross bar and said wrist pins, a buffer
 spring embracing said strut and seated on
 said cross-bar boss, and a buffer fork slidable
 on said strut in contact with said buffer
 spring, straddling said turret in the plane of 120
 said strut socket and interacting by its bi-
 furcated end with said buffer surfaces of the
 pole fork.

2. The combination, in a trolley base, of a
 vertical stem, a turret pivotally mounted on 125
 said stem, a pole fork pivoted to said turret
 by a horizontal pivot and having down-
 wardly projecting bifurcations provided with
 buffer surfaces, a strut projecting rearwardly
 from said turret, a cross bar supported by the 130

rear end of said strut, connections including
tensile springs between said cross bar and
said pole fork, a buffer spring embracing said
strut and seated on said cross bar, and a
5 buffer fork having a sleeve portion slidable
on said strut in contact with said buffer
spring and bifurcations arranged to interact
with said buffer surfaces of the pole fork.

3. The combination, in a trolley base, of a
10 vertical stem, a turret pivotally mounted on
said stem, a pole fork pivoted to said turret
by a horizontal pivot and having down-
wardly projecting bifurcations provided with
buffer surfaces, a tubular strut projecting
15 rearwardly from said turret, a cross bar sup-
ported by the rear end of said strut, a tie

bolt extending lengthwise through said strut
and connecting said turret and cross bar, con-
nections including tensile springs between
said cross bar and said pole fork, a buffer 20
spring embracing said strut and seated on
said cross bar, and a buffer fork having a
sleeve portion slidable on said strut in con-
tact with said buffer spring and bifurcations
arranged to interact with said buffer sur- 25
faces of the pole fork, substantially as here-
inbefore specified.

CHARLES E. GIERDING.

Witnesses:

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