

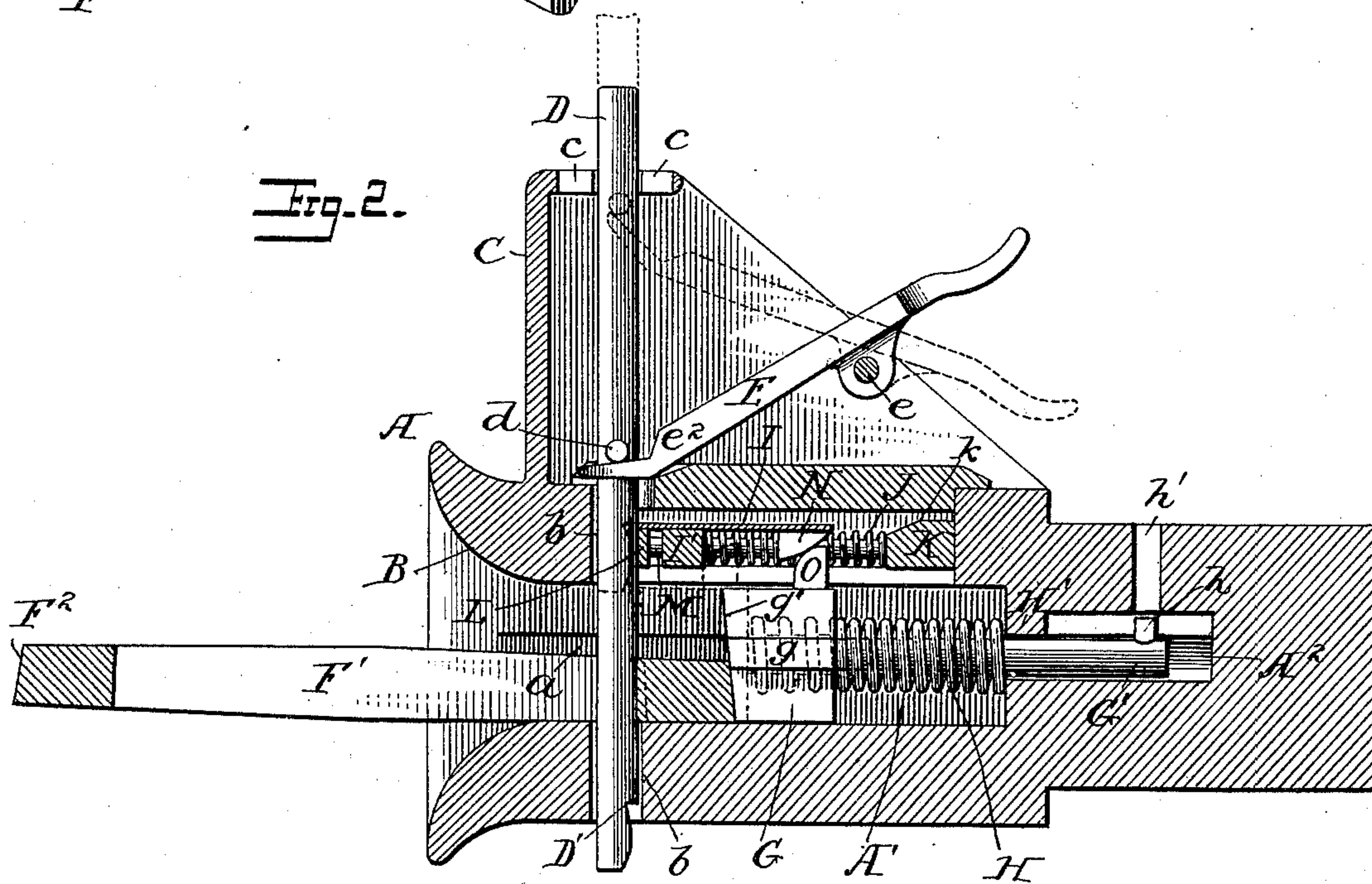
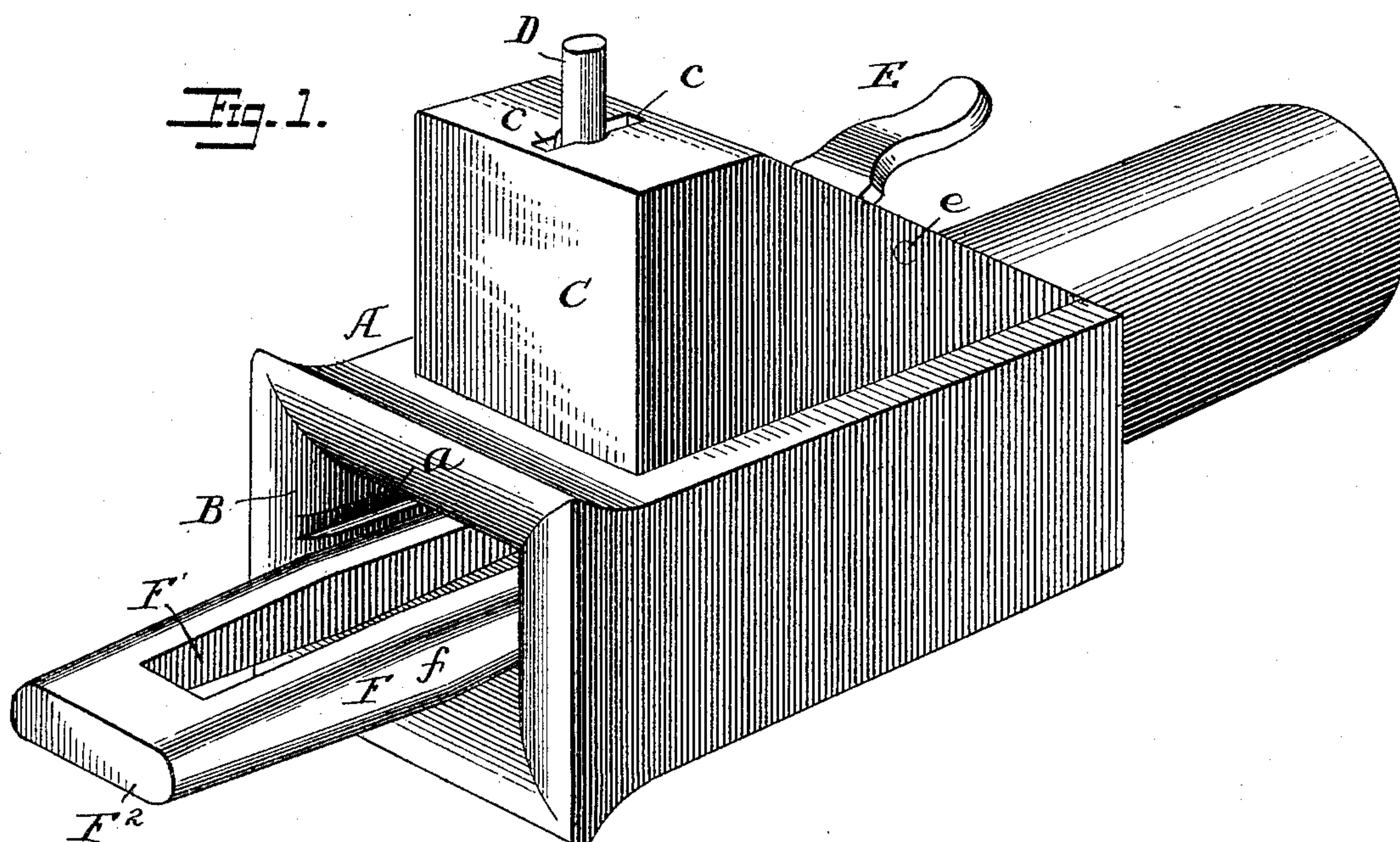
(No Model.)

2 Sheets—Sheet 1.

F. DICKEY.
CAR COUPLING.

No. 452,774.

Patented May 26, 1891.



WITNESSES
Jno G Hinkel
Allen Dobson

INVENTOR
Foster Dickey
by Foster & Freeman
Attorney

(No Model.)

2 Sheets—Sheet 2.

F. DICKEY.
CAR COUPLING.

No. 452,774.

Patented May 26, 1891.

Fig. 3.

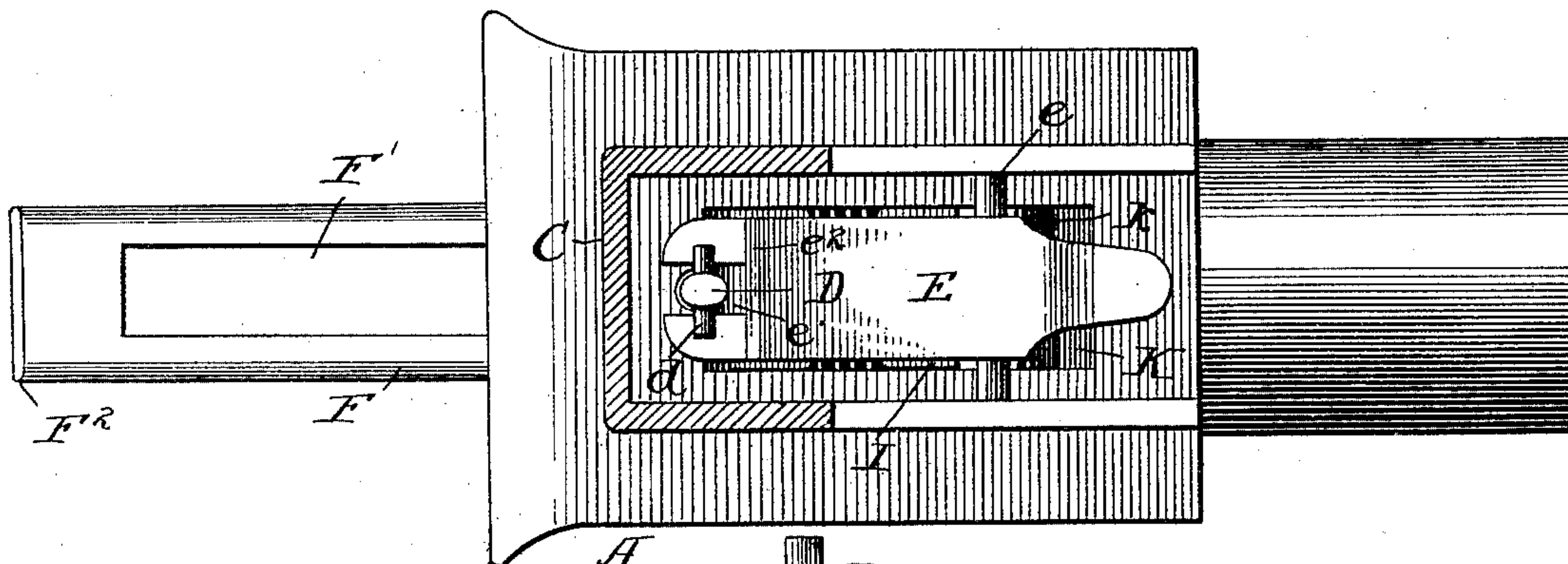


Fig. 4.

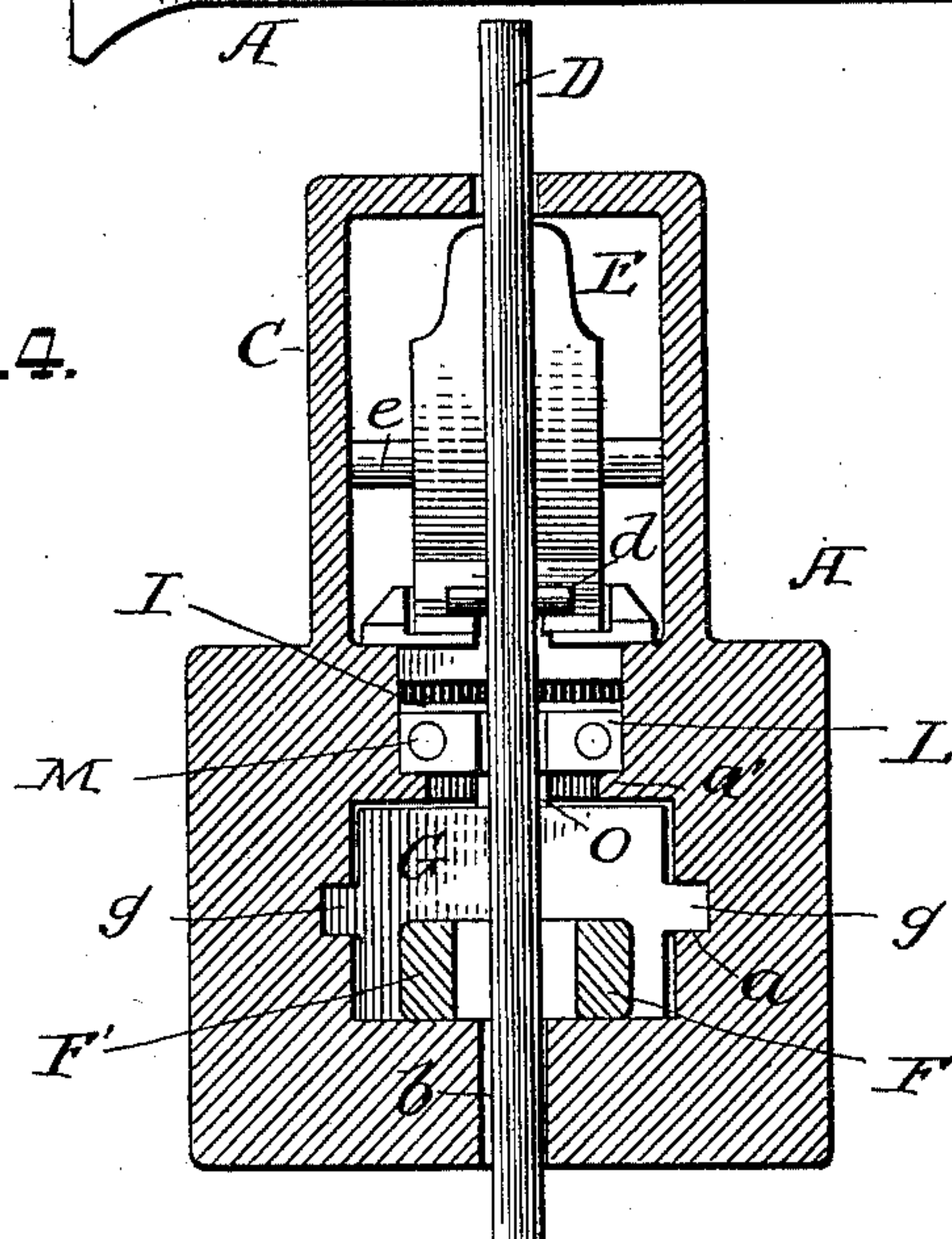
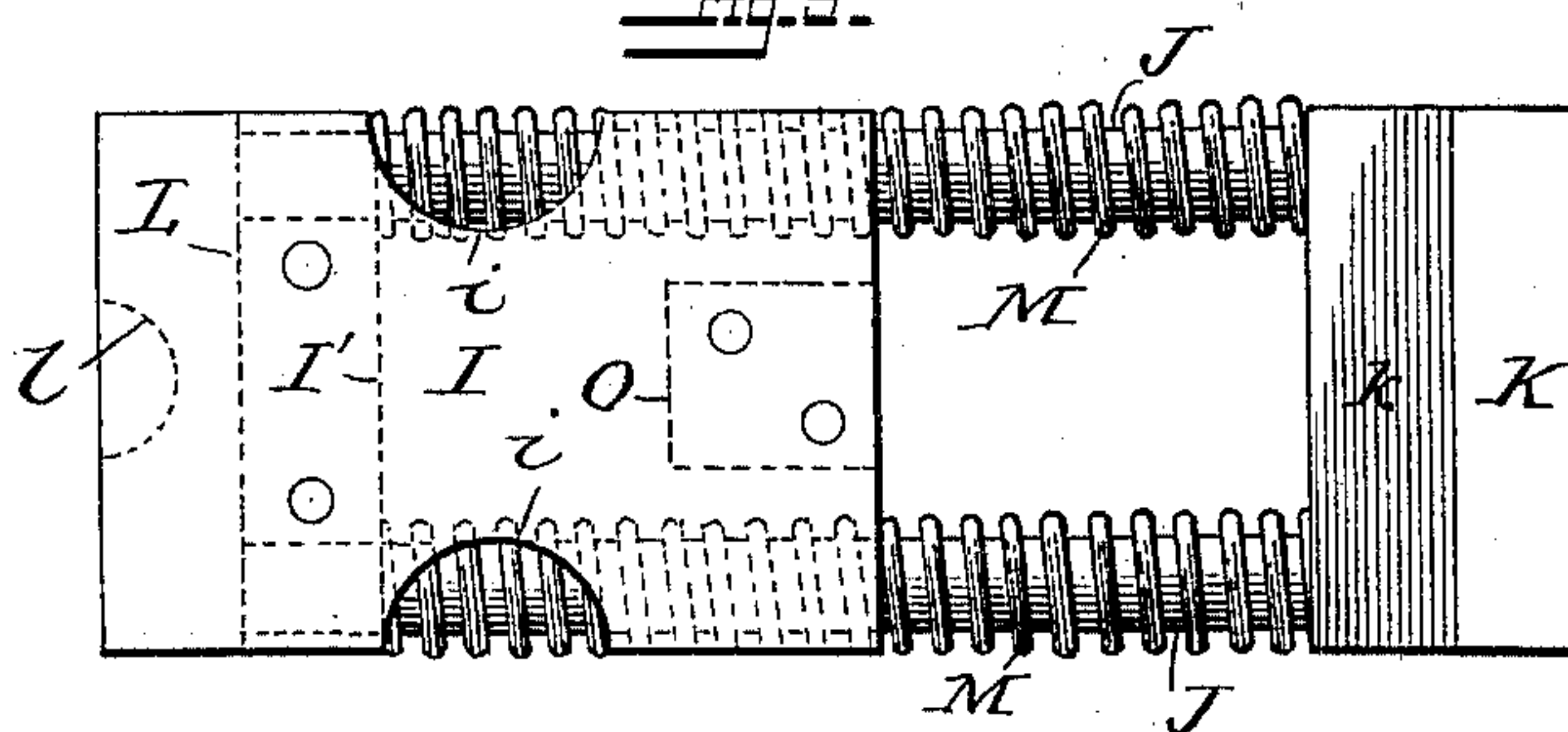


Fig. 5.



WITNESSES

WITNESSES
Jno. G. Hinkel
Alle N. Dobson

INVENTOR

by Foster Dickey
Foster S. Freeman
Attorney

UNITED STATES PATENT OFFICE.

FOSTER DICKEY, OF SCHUYLER, NEBRASKA, ASSIGNOR OF ONE-HALF TO
HENRY C. WRIGHT, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 452,774, dated May 26, 1891.

Application filed January 30, 1891. Serial No. 379,729. (No model.)

To all whom it may concern:

Be it known that I, FOSTER DICKEY, a citizen of the United States, residing at Schuyler, in the county of Colfax and State of Nebraska, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to car-couplers, and has for its object to provide a car-coupler which shall be automatic in its operation, and which shall be simple and cheap in construction and not liable to get out of order, and which may be operated to uncouple or couple the cars without the necessity of the operator passing between the adjacent ends of the cars or otherwise exposing his person to danger.

To these ends my invention consists in a car-coupler arranged, constructed, and operated in a manner hereinafter set forth.

Referring to the accompanying drawings, Figure 1 is a perspective view of one draw-head, embracing my improved coupling apparatus. Fig. 2 is a longitudinal vertical cross-section of the same. Fig. 3 is a plan view with a portion of the top covering removed. Fig. 4 is a vertical cross-section on the line of the coupling-pin. Fig. 5 is a detail.

One of the leading objects of my invention is to make a car-coupler which will conform in general outline to the ordinary draw-head in general use upon cars, so that the structure and arrangements of the parts of the cars will not have to be materially changed in order to substitute my improved car-coupler for the draw-heads ordinarily in use. In carrying out this feature I have adopted and shown my improvement applied to an ordinary draw-head A, shown in the form of a substantial rectangular casting, and having a flaring mouth B, the rear portion of the draw-head being shown in a conventional manner, as it forms no part of my invention.

Mounted upon or forming part of the draw-head is a casing C, which not only forms a protection for the operative parts of the device, but serves also as a support for certain portions thereof.

Passing through openings *b* in the draw-head is the coupling-pin D, and this is extended so that its upper portion passes through and slides freely in an opening in the upper

portion of the case C. This coupling-pin is provided with lugs or a cross-pin *d*, and the opening in the upper part of the case C is somewhat larger than the pin, to permit it to turn, and is provided with recesses *c*, through which the cross-pin *d* can pass when it is desired to remove the coupling-pin entirely from the draw-head. This coupling-pin may be cylindrical, although I prefer to make it oval in shape, in order that I can attain the greatest strength in the line of the draft, and, further, that it may retain its normal position in the holes *b*, so that the notch and other apertures hereinafter specified will be maintained in proper position. This coupling-pin may be withdrawn from its locking position by any suitable means, and I have shown a lever E, pivoted on a bar *e*, supported in the sides of the upper casing, and having its ends bifurcated or notched at *e'*, and fitted to embrace the coupling-pin, the bifurcated ends preferably being beveled or cut away at *e''* (best shown in Fig. 2) for the purpose of furnishing a good and sure bearing for the cross-pin *d*, and it will be seen that by pressing upon the free end of this lever by the foot, hand, or any other suitable appliance the pin may be withdrawn from its locking position.

In couplers of this class it is a great desideratum to have the coupling-link normally maintained in a position in one of the coupling-heads to freely enter the opening in the complementary coupling-head on the other car, so as to avoid the necessity of handling the link or otherwise guiding it when the cars are to be coupled. I make use of a coupling-link F, having a substantially rectangular opening F', and having a straight end F², substantially parallel with the end of the opening. I also make the sides of the link tapering from the central point, as *f*, toward each end, for the purpose not only of strengthening the link, but also of furnishing a proper bearing on the base of the opening in the draw-head to maintain the link substantially parallel therewith, or perhaps to slightly elevate its end, so that it will more certainly strike the opening of the complementary draw-head when the cars are brought together.

The opening or recess A' in the draw-head is extended rearwardly, as shown in Fig. 2, and

is provided with slots or grooves *a* in its sides, and moving in this opening is a block *G*, having ribs or an extension *g*, sliding in the grooves *a*. This block *G* has connected to it a guide-rod *G'*, projecting into an extended recess *A*² in the draw-head, and surrounding this rod is a spring *H*, which normally presses the block *G* outward, it being prevented from forcing the block out by a pin *h*, striking against the abutment *H'*, so that under no possible condition can the head *G* be forced out of its operative position. The front face of this head is preferably beveled slightly, as shown at *g'*, to conform to the similar bevel of the end *F*² of the connecting-link, and in this way there is a tendency to press the link downward at its end within the recess and thereby better maintain the free end of the link in its elevated position.

Some means must be provided for supporting the coupling-pin in its elevated position, so that when the coupling-link is inserted it will have a free opening to pass into the recess in the draw-head, and in addition to this some means shall be provided whereby the coupling-pin may be automatically dropped into position to engage the coupling-link. To do this, I form at or near the end of the pin a recess or notch *D'*, and I provide a locking-plate or slide *I*, which, in the present instance, is shown as a plate of metal secured to a cross-piece *I'*, arranged to slide upon the rods or bars *J*, mounted in a head or cross-piece *K*, the forward ends of the rods being connected by a cross-piece *L*, preferably recessed, as indicated at *l*, dotted lines, Fig. 5, to permit the free passage of the coupling-pin. These rods are surrounded by springs *M*, which normally press the cross-piece *I'* and plate *I* forward, and when the coupling-pin is lifted upward by the lever or otherwise the plate or slide *I* engages the notch *D'* therein and holds the pin in its elevated position.

In order that the slide may be retracted at the proper time to allow the coupling-pin to drop into position, I provide on the under side of the slide *I* a beveled block *N* and on the slide *G*, I attach a projection or toe *O*, arranged to engage the block and cause the plate to be retracted sufficiently to allow the coupling-pin to drop; and in order to release the slide from the toe *O*, I form the cross-piece *K* with an inclined or beveled edge *k*, up which the block *N* rides until it is released from the toe; and in order to release this I preferably make the plate *I* with recesses *i* in its sides, so that it will yield as the block rides up the bevel. This block *N* is placed near the rear of the slide *I*, so that normally when the block *G* is at the outermost position, as indicated in dotted lines, Fig. 2, it can move backward a distance sufficient to allow the coupling-link to pass into the recess, so that its slot is substantially in line with the coupling-pin before the toe *O* engages the beveled block *N* and withdraws the slide, allowing the coupling-pin to fall into position.

From the above description of the construction of my device its operation will be readily understood.

It will be observed that Fig. 2 shows one draw-head with a coupling-link secured in position and held by the pin ready to pass into the recess in the opposite draw-head, and in this draw-head the parts will be arranged substantially as indicated by the dotted lines in Fig. 2—that is to say, the coupling-pin will be in its elevated position supported by the slide *I*, engaging the notch *D'* in the pin, and the block *G* will be in its forward position ready to be forced backward when the free end of the coupling-link in the complementary head strikes it, and as it moves backward, compressing the spring *H*, its toe *O* will impinge against the beveled block *N* and release the pin, which drops into engagement with the link, and a further movement of the block *G* will cause the beveled block *N* to ride up on the beveled portion *k* of the cross-piece *K*, releasing the slide from engagement of the toe *O*, when the springs *M* will force the slide forward to its normal position against the coupling-pin. It will be seen that in the position shown in Fig. 2 the coupling-link is under stress of the spring *H* and bears against the coupling-pin, the tendency of the block *G* being to force it downward and hold the free end elevated, and the link is free to move laterally within the limits of the recess, so as to better engage the corresponding draw-head, if perchance they do not exactly coincide when brought together in coupling the cars.

If it is desired to remove the operative parts from the draw-head, this can readily be done by removing the plate *P*, which is fitted to cover the opening in the top of the draw-head, and then the plate *I* and its attachments can be readily lifted out of position where they have been supported on a ledge or projection *a'* in the draw-head. The toe *O* can then be removed, it preferably being screwed into the block *B*, and the pin *h* can be removed through the hole *h'*, and the block with its extension and surrounding spring can then be drawn out from the recess in which it is supported.

It will be observed that the length of the link is such that under no circumstances can it be forced into the recess against the block *B* a sufficient distance to materially injure the spring *H* or other parts of the device, and as an additional safeguard to prevent the block *B* being pressed too far inwardly the guide-slots *a* terminate at a point indicated by the dotted lines in Fig. 2, and the ribs *g* on the block *B* prevent the block from being forced beyond this point. To uncouple, it is only necessary to raise the coupling-pin, when the slide locks it in position, and the coupling-link will be forced out of the recess by the sliding block and the parts remain in condition to receive the same or another coupling-pin, which is inserted into the recess and au-

tomatically drops the coupling-pin into position to secure the link.

Having thus described my invention, what I claim is—

- 5 1. The combination, with a recessed draw-head and coupling-pin therefor, of a sliding block having a beveled end and a coupling-link having a rectangular opening and a beveled end, substantially as described.
- 10 2. The combination, with a recessed draw-head and coupling-pin, of a coupling-link having a rectangular opening and straight ends, the ends being beveled and the size of the link being enlarged toward its center, substantially as described.
- 15 3. The combination, with the recessed draw-head and a coupling-pin therefor, of a coupling-link having a straight and beveled end, and a spring-pressed block sliding in the recess having a beveled face engaging the beveled end of the coupling-link, substantially as described.
- 20 4. The combination, with a recessed draw-head and a coupling-pin provided with a notch, of a spring-pressed plate engaging said notch, the plate being provided with a beveled block, and a block sliding in the recessed head provided with a projecting toe engaging the beveled block on the plate, substantially as described.

eled block, and a block sliding in the recessed head provided with a projecting toe engaging the beveled block on the plate, substantially as described.

5. The combination, with the recessed draw-head, of a coupling-pin provided with a notch, a sliding plate engaging said notch, rods supporting said plate, springs surrounding the rods and pressing said plate forward, a beveled block on the rear of said plate, and an inclined projection on the cross-piece connecting the rods, substantially as described.

6. The combination, with the recessed draw-head, of a casing mounted on the head, a coupling-pin sliding in the openings in the draw-head and casing, a lever pivoted in said casing, and a cross-pin connected to the rod and engaging the lever, whereby the coupling-pin may be elevated, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FOSTER DICKEY.

Witnesses:

H. C. WRIGHT,
F. L. FREEMAN.