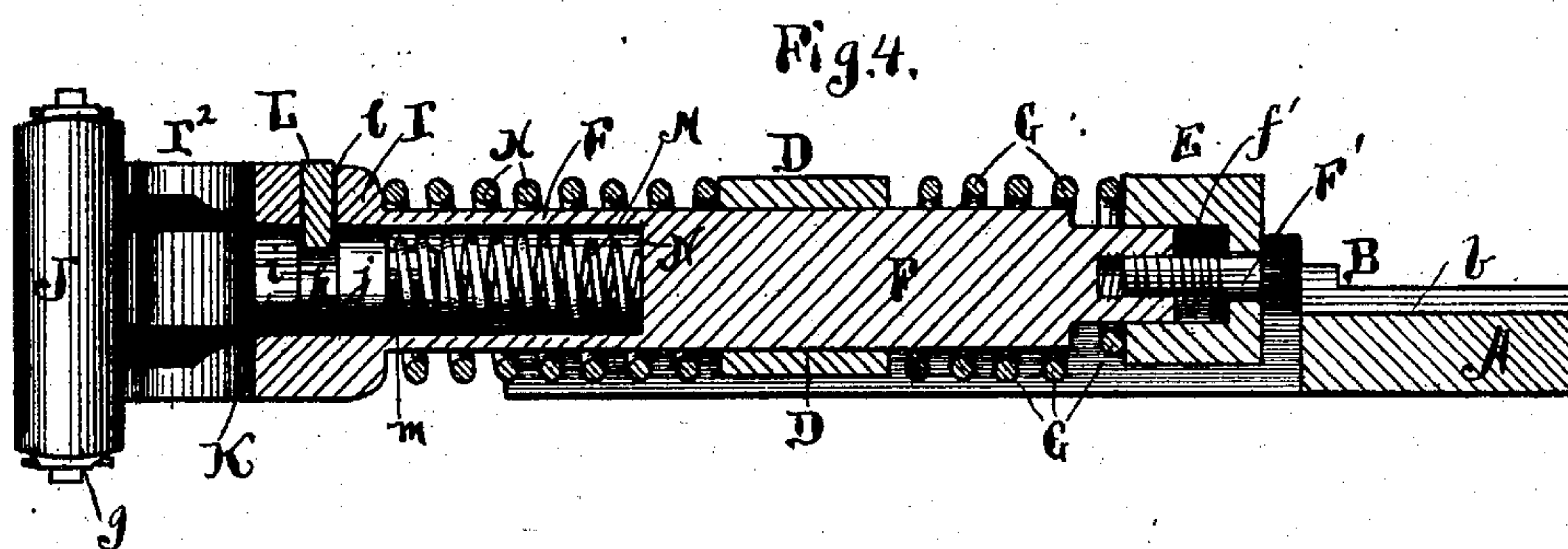
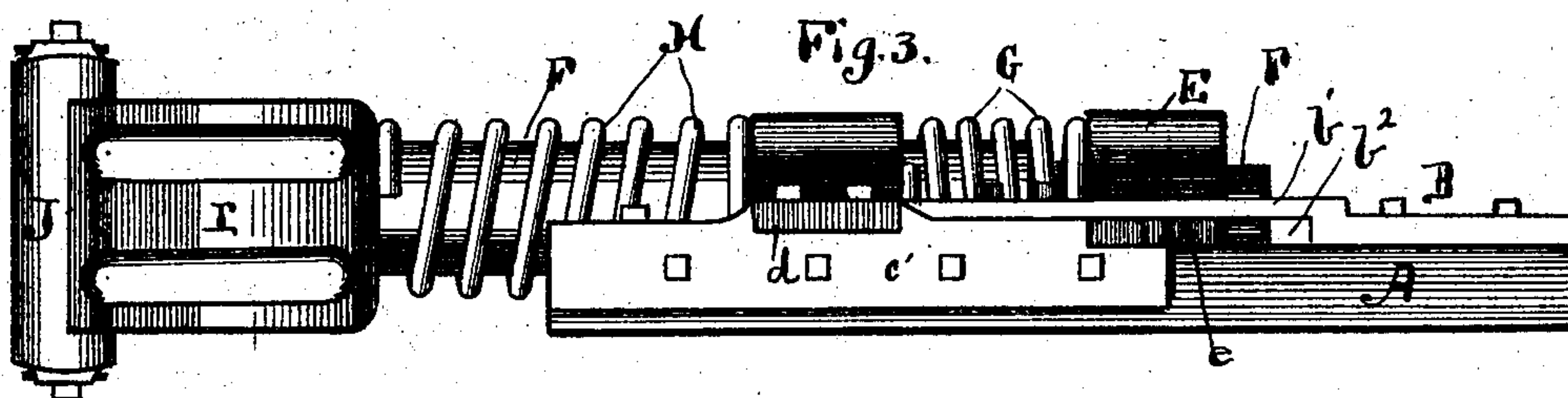
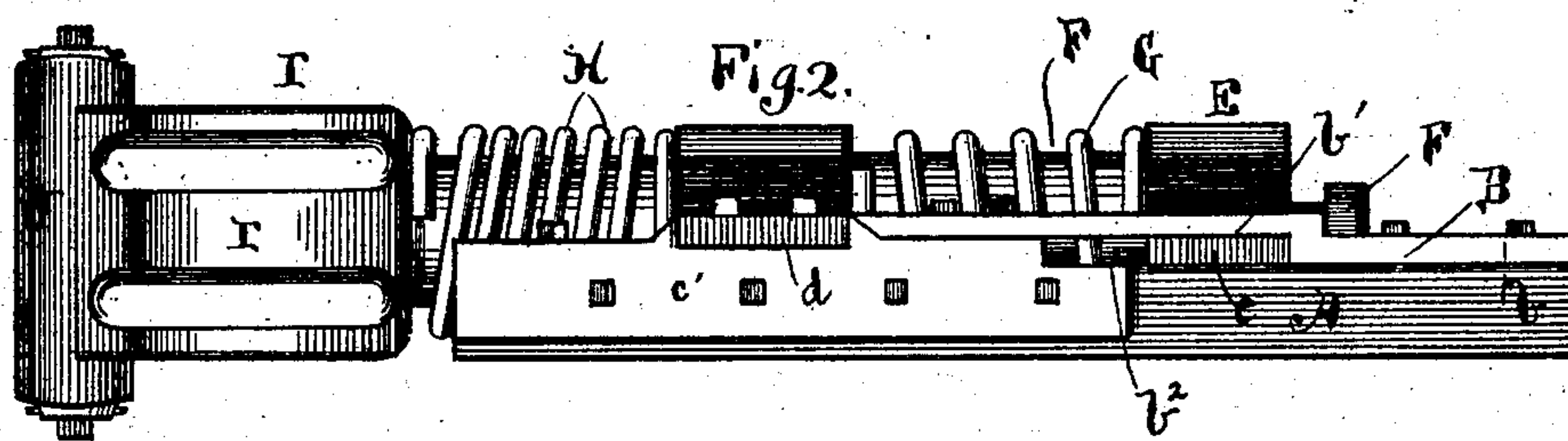
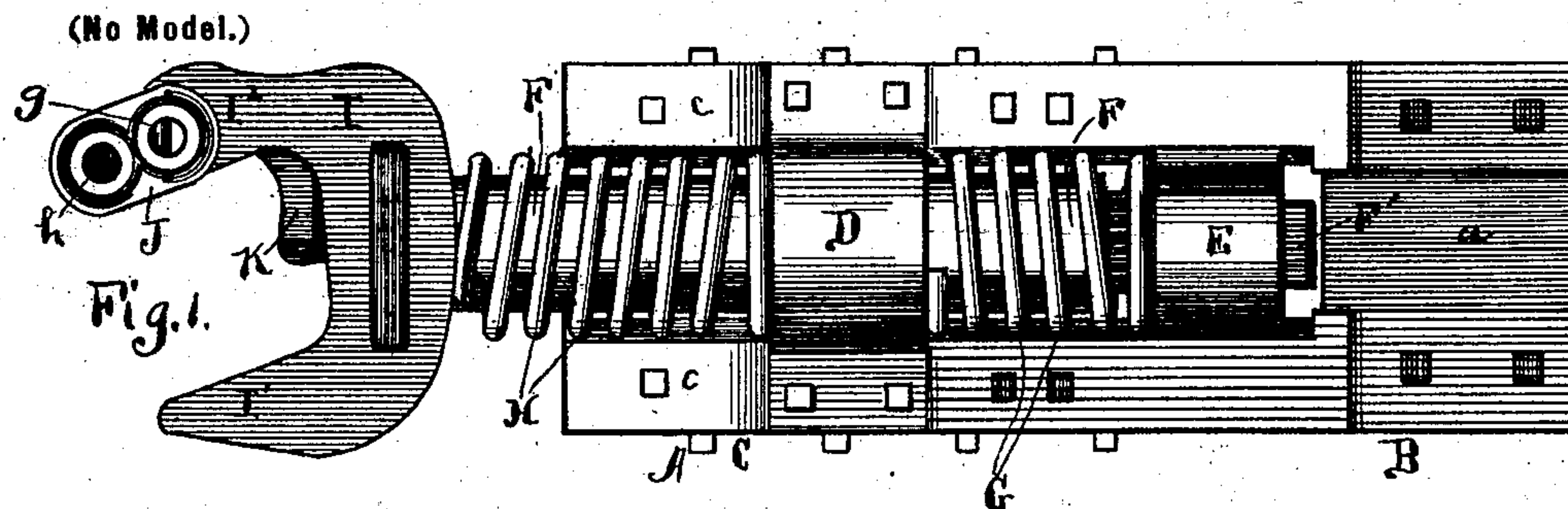


No. 695,615.

Patented Mar. 18, 1902.

J. C. LEIDY.
CAR COUPLING.

(Application filed Apr. 29, 1901.)



Witnesses,
Samuel W. Banning
Thomas B. McGregor

Inventor
James C. Leidy.
By Banning & Banning,
Attys.

UNITED STATES PATENT OFFICE.

JAMES C. LEIDY, OF GALESBURG, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 695,615, dated March 18, 1902.

Application filed April 29, 1901. Serial No. 57,976. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. LEIDY, a citizen of the United States, residing at Galesburg, in the county of Knox and State of Illinois, have invented a certain new and useful Improvement in Car-Couplers, of which the following is a specification.

This invention is primarily designed for use with car-couplers of the automatic class known or termed "twin-jaw," but is applicable to and can be used with other forms of car-couplers. It is desirable and necessary in the use of car-couplers to have the coupler work against or in connection with a cushion to relieve the jar and concussion in making the coupling and in operating the train; and the object of the invention is to construct a simple, effective, and reliable connection or support for the coupler by which jar, concussion, and rebound will be overcome and which will furnish a perfect cushioning effect in the operation of the coupler; and the invention consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings illustrating the invention, Figure 1 is a top or plan view showing a coupler of the Master Car-Builders' type in general construction with my invention applied thereto; Fig. 2, a side elevation showing the position of the parts when making a coupling or when a coupling of one car is impacted against the coupling of an adjoining car; Fig. 3, a side elevation showing the position of the parts when the coupling is drawn out and under the strain of a pull; and Fig. 4, a longitudinal sectional elevation through the coupling with the parts in normal position, as shown in Fig. 1.

The invention is capable of use with couplers of any of the usual types of the twin-jaw automatic couplers of the Master Car-Builders' class or with other forms of draw-head and couplers; but it is only deemed necessary to show one type of coupler in order to illustrate the invention, and of this type only one draw bar and head, with its component parts, is shown, the other draw-bar and component parts being of a corresponding construction, except having a reverse relation, as usual in this class of couplers.

In constructing the coupler of my inven-

tion two side sills A are employed, connected at their inner ends by a cross piece or block *a*, leaving a space between the sills forward of the block, in which is located the draw-bar of the coupler and the springs and cross-yokes which enter into the invention. A plate B is attached to each side sill A at the inner end, and each plate has a division *b*, which lies directly on the face of the side sill, and a division *b'*, which is in a higher plane than the division *b*, leaving a space *b²* between the division *b'* and the face of the side sill. A plate C is attached to each side sill A at the forward portion, which plate is of right-angle formation, having a flange or wall *c*, which lies on the upper face of the sill, and a flange *c'*, which lies against the side face of the sill, and over the flange or wall *c* the division *b'* of the plate B extends, so as to firmly bind or connect the two plates B and C of each sill and prevent one plate from being moved without moving the other. The plates B and C are secured to the side sills by suitable bolts or otherwise, so as to be held in place on the sills, and together form the support for the yokes or sockets hereinafter described.

The plates C carry a yoke or socket D, for which purpose the flange or wall *c* of each plate has therein a recess *c²*, which receives a wing or ear *d*, extending out from the side of the yoke or socket and through which ear and the flange or wall of the plate bolts pass, holding the yoke or socket in place and at the same time assisting in securing the plate to a side sill. A movable yoke or socket E is located between the side plates B, the yoke or socket having on opposite sides wings or ears *e*, which enter the slot or opening *b²*, permitting the yoke or socket to move to the limit of the slot or opening in both directions.

The draw-bar or stem F of the coupling passes through the stationary or fixed forward yoke or socket D, and its inner end is square, forming a tenon or end *f*, rectangular in cross-section, which enters a rectangular hole *f'*, formed in the inner yoke or socket, as shown in Fig. 4. An adjusting-bolt F' is entered through a hole therefor in the end wall of the yoke or socket E and has a screw-threaded engagement in the end of the draw-bar or stem, so that by turning the bolt the draw-

bar or stem can be advanced or receded, as may be desired. A coil-spring G encircles the draw-bar or stem F, between the fixed yoke or socket D and the movable yoke or socket E, so as to have a resistance against the movable yoke or socket. A coil-spring H encircles the draw-bar or stem forward of the fixed yoke or socket and between such yoke or socket and the head of the coupler, so as to have a resistance against the head of the coupler. The two springs are oppositely wound, as shown, and have a counter resistance by which with the movement of the draw-bar in one direction one of the springs will furnish the resistance and with the movement of the draw-bar in the opposite direction the other spring will furnish the resistance, and this result is obtained by having one spring forward of the fixed or stationary yoke or socket and the other spring rearward of such yoke or socket. It will thus be seen that the benefits and advantages and the full use of a spring in pulling or pushing are attained and that the rebound or recoil of a spring will be resisted or counterbalanced by reason of one spring working against the other. The operation of the two springs, one on each side of the fixed or stationary yoke or socket, gives a perfect cushioning effect which can be regulated as may be desired by adjusting the tension of the spring through the adjusting or tightening bolt or screw F', passing through the end of the movable yoke or socket and engage with the draw-bar or stem. The inner movable yoke or socket is drawn forward against the power of the rear spring by the engagement of the head of the adjusting bolt or screw with the end face or wall of the yoke or socket, by which arrangement the double purpose is served of furnishing a resistance for the spring and a bumper to prevent the spring from being crushed or collapse in use. The forward or fixed yoke or socket furnishes a guide for the draw-bar or stem and also acts as a bumper for receiving the push and pull on the springs, which rebound or recoil from the fixed yoke or socket with a greater or less force, according to the tension under which they act. A pull on the draw-bar or stem sufficiently strong to pull the springs forward for the wings or ears of the inner yoke or socket to move forward the full limit of the slot or opening in which they are located brings the parts into position where the head of the adjusting bolt or screw will engage the end wall of the yoke or socket for the pull or draw to be transmitted to the yoke or socket without affecting the spring. The bolt or screw furnishes a guide for maintaining and holding the draw-bar or stem in operative position and also furnishes a draw by which the car will be pulled in case the spring or springs give way, and this bolt slides in and out after it is once adjusted in the end wall of the yoke or socket, permitting a perfectly free sliding movement of the draw-bar or stem in either direction and against the resistance of a spring

and at the same time spreads the opposite spring, so as to furnish a resistance on the return of the draw-bar or stem.

The draw-bar or stem F in the construction shown has formed integral therewith a draw-head I, and the draw-head on one side has the usual guard-finger I' and on its opposite side has an extended wall or end I², in which is pivoted by a suitable pin g the coupling hook or knuckle J, which hook or knuckle has pivoted thereto by a suitable pin h the outer end of its operating-stem K, which stem at its inner end, as shown, has flanges i j, between which is a groove or recess k, into which the locking-block L enters to hold the parts in position when the coupling hook or knuckle is closed. The locking-block is located in a suitable opening l therefor through the top face of the draw-head and drops by gravity into its locking position and is raised from its locking position in any usual and well-known manner. The stem which actuates the coupling hook or knuckle is projected to open the hook or knuckle by the action of the coil-spring M, located in a chamber N, within the draw-bar or stem, as shown in Fig. 4. The construction of coupling hook or knuckle and the parts which coact therewith are not herein specifically described, as they form the subject-matter of another application by me covering such coupling hook or knuckle and its cooperative parts.

The gist or essence of the present invention is applicable not only to the construction of twin-jaw coupler shown, but to couplers of other forms, and consists in locating the draw-bar or stem in supporting yokes or sockets, one of which is movable, and mounting the sockets on side sills, so that one socket will be held firmly in place, while the other yoke or socket is free to move fore and aft against the resistance of a spring in either direction of movement and having the springs in such relation one to the other as to work one against the other, giving a reliable and perfect cushioning effect and giving the draw-bar or stem and the coupler the full benefit of a spring, both in pulling and pushing, with one spring counterwound against the other, so as to take off the rebound or recoil of either spring when the tension or resistance is released. It will thus be seen that by the use of my invention the effects of the push and pull on the coupler is removed, as the springs act to take up the push and pull and also to prevent the rebound or recoil from producing injurious effects.

The construction and arrangement of the parts which enter into the invention are simple, and at the same their operation is such as to be positive, reliable, and effective in use for the purpose intended of relieving the coupler from jars or concussions in operation.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a car-coupler, the combination of two supports, a fixed yoke or socket transversely

between and attached to the supports, a movable yoke or socket transversely between and slidably connected with the supports, a draw-bar or stem mounted in and passing through the fixed yoke or socket and slidable therein and having its end adjustably entered into the movable yoke or socket and having a restricted endwise movement therein, and resistance-springs, one on each side of the yoke or socket and encircling the draw-bar or stem, the two springs having a counter action in relation to each other, substantially as described.

2. In a car-coupler, the combination of two side sills, a support on each sill, a fixed yoke or socket transversely of and attached to the supports, a movable yoke or socket transversely of and slidably connected with the supports, a draw-bar or stem mounted in and passing through the fixed yoke or socket and slidable therein and having on its outer end a draw-head and having its inner end adjustably entered into the movable yoke or socket and having a restricted endwise movement therein, and resistance-springs one on each side of the fixed yoke or socket, one spring engaging the draw-head and the other spring engaging the movable yoke or socket, the two springs having a counter action in relation to each other, substantially as described.

3. In a car-coupler, the combination of two side sills, two plates on each side sill, one plate overlapping the other, a fixed yoke or socket transversely of and attached to one of the plates, a slot between the overlapping plate and the face of the side sill, a movable yoke or socket transversely of and movable in the slot, a draw-bar or stem passing through the fixed yoke or socket and having its inner end entered into the movable yoke or socket and carrying a draw-head on its outer end and resistance-springs, one on each side of the fixed yoke or socket, one spring engaging the draw-head and the other spring engaging the movable yoke or socket, the two springs having a counter action in relation to each other, substantially as described.

4. In a car-coupler, the combination of two side sills, a support on each side sill, each support formed of two plates one plate over-

lapping the other, a fixed yoke or socket transversely of and attached to the forward plates of the support, a slot for the rear plate, a movable yoke or socket transversely of and movable in the slot, a draw-bar or stem passing through the fixed yoke or socket and having its inner end entered into the movable yoke or socket and carrying a draw-head on its outer end, an adjusting bolt or screw passing through the end wall of the movable yoke or socket and screw-threaded into the rear end of the draw-bar or stem and resistance-springs, one on each side of the fixed yoke or socket, one spring engaging the draw-head and the other spring engaging the movable yoke or socket, the two springs having a counter action in relation to each other, substantially as described.

5. In a car-coupler, the combination of two side sills, a support on each sill, each support formed of two plates one plate overlapping the other, a fixed yoke or socket having on opposite sides wings or ears for attachment of the yoke or socket to the forward plates of the support and transversely of the support, a slot for the rear plate of the support formed between the face of the plate and the side sill, a yoke or socket having on opposite sides wings or ears to enter the slots of the support and slidably mount the yoke or socket transversely of the support, a draw-bar or stem passing through the fixed yoke or socket and having its inner end entered into the movable yoke or socket and carrying a draw-head on its outer end, an adjusting bolt or screw passing through the end wall of the movable yoke or socket and screw-threaded into the rear end of the draw-bar or stem, and resistance-springs, one on each side of the fixed yoke or socket, one spring engaging the draw-head and the other spring engaging the movable yoke or socket, the two springs having a counter action in relation to each other, substantially as described.

JAMES C. LEIDY.

Witnesses:

A. B. HARRIS,

A. B. HOOK,

CHAS. S. HARRIS.