(No Model.) 2 Sheets—Sheet 1.

N. P. COWELL & J. W. PINKHAM.

CAR COUPLING.

No. 335,992. Patented Feb. 9, 1886.

FIG. 1.

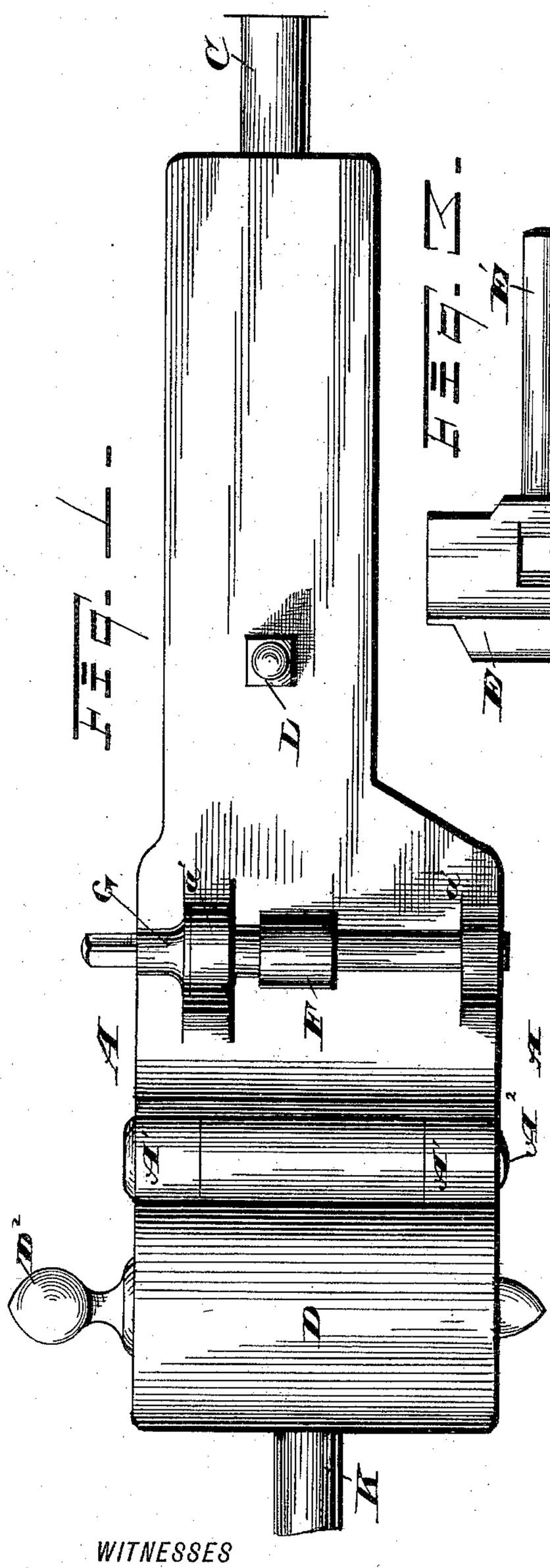


FIG. 3.

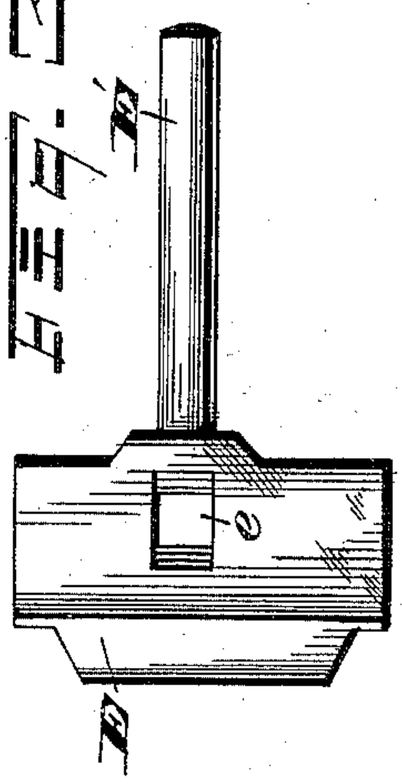
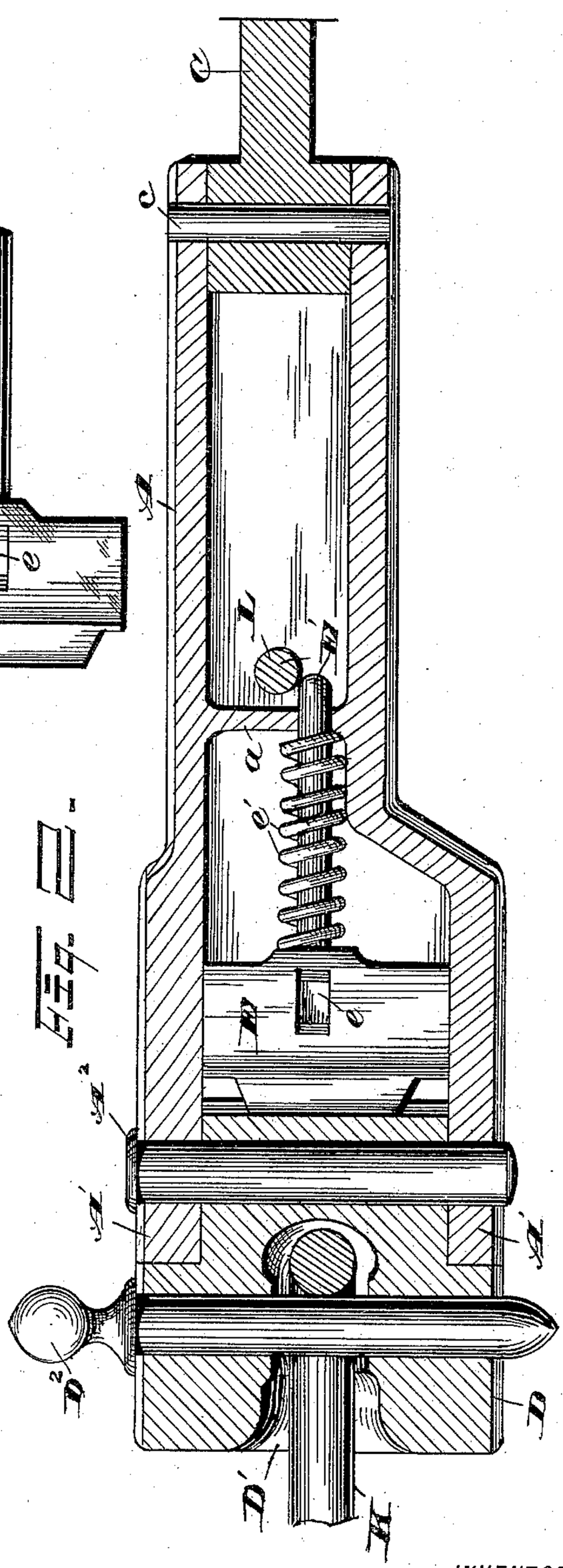


FIG. 2.



WITNESSES

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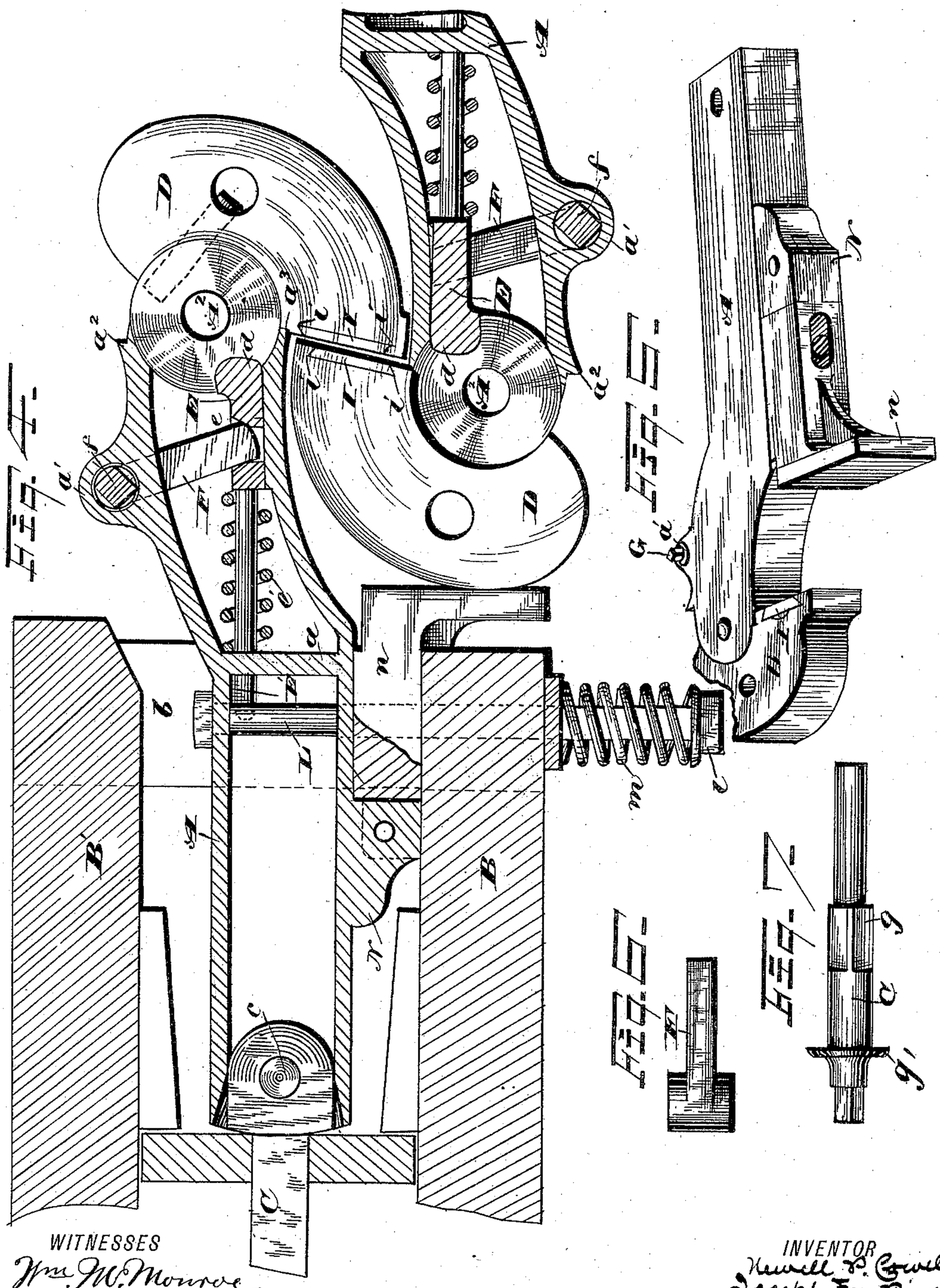

FIG. 1.

FIG. 5.

FIG. 6.

FIG. 7.

WITNESSES

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UNITED STATES PATENT OFFICE.

NEWELL P. COWELL AND JOSEPH W. PINKHAM, OF CLEVELAND, OHIO, ASSIGNORS TO THE COWELL PLATFORM AND COUPLING COMPANY, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 335,992, dated February 9, 1886.

Application filed June 20, 1885. Serial No. 169,224. (No model.)

To all whom it may concern:

Be it known that we, NEWELL P. COWELL and JOSEPH W. PINKHAM, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Car-Couplings; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

Our invention relates to improvements in car-couplers in which a draw-head is pivoted to the draw-bar, and held in its closed position for coupling by means of a sliding key engaging a recess in the draw-head, said key being located inside and extending lengthwise of the draw-bar, to the end that with such construction the draw-bar is not cut away or materially weakened by the chamber in which the said key operates. A buffer is attached to the draw-bar to engage an opposing draw-head, to the end that by such construction the draft-spring of the draw-bar is made to perform the functions of a buffer-spring. A bolt passes laterally through the draw-bar and draw-timber, with a coil-spring around the bolt outside of the draw-timber to hold the draw-bar and head in position by the side of an opposing draw bar and head when coupled, to the end that with such construction the draw-timber is not cut away or weakened, except by the said bolt-hole, and with the draw-timbers located in the standard position and without changing the same the draw-bar is made to operate and may be swung far enough to allow the device to be uncoupled. The draw-head has a link pocket and attachment of such construction that a link may enter the pocket and be automatically coupled with the draw-head in either its opened or its closed position, and if in the former position the act of coupling will force the draw-head to its closed position the same as when used as a hook-coupler, to the end that in the closed position of the head the draft-line of the link is substantially the same as the draft-line when the hook-couplers are operative.

A further object is to arrange the draw-bar and attachments in such a manner that the same may be applied to the standard frame-work, draw-timbers, &c., of freight-cars without changing or mutilating such frame-work or timbers.

In the accompanying drawings, Figure 1 is a side elevation of our improved car-coupler. Fig. 2 is an elevation in longitudinal section of the same. Fig. 3 is a side elevation of a a key for locking the draw-head. Fig. 4 is a horizontal section of the draw-bar and attachments, showing also a portion of an opposing coupler in position. Fig. 5 is a view in perspective of the coupler and buffer. Fig. 6 is a side elevation of the shifting-lever that operates the key. Fig. 7 is an elevation of the spindle on which the shifting-lever, when in position, is mounted.

A represents the draw-bar, that is substantially a hollow casting located between the draw-timbers B and B′, and supported in front by the "carry-iron" *b*, the latter being secured to the under side of the draw-timber. At the rear the draw-bar is connected with the draft-spindle C by a pin, *c*, the head of the spindle passing between the upper and lower walls of the draw-bar, and the side walls at the rear end being cut away on the inside, by means of which the draw-bar may swing laterally the limited distance required.

The draft-spindle C has a draft-spring (not shown) attached in the usual manner. The forward end of the draw-bar has jaws A′, between which the hook draw-head D is pivoted on the pin A^2. The draw-head has a recess, *d*, that in the closed position of the head (shown more clearly in Fig. 4) is engaged by a sliding key, E, that holds the head in the closed position for coupling. In place of the recess *d* in the draw-head a lug or projection on the head would answer the same purpose, or a shallow recess and lug might be employed for engaging the key. This key has a transverse opening, *e*, through which passes the free end of the rock-arm or shifting-lever F. The rear end of the key terminates in a pin, E′, on which is mounted the spiral spring *e′*. The pin E′ passes through a hole in the transverse partition *a* of the draw-bar. The spring is confined between this partition and the shoulder of the enlarged portion of the key. When the key is forced rearward by the shifting-lever,

the spring is compressed, and by its recoil forces the key forward into the recess *d* when the draw-head is closed. Suitable ribs on the top and bottom walls of the draw-bar form ways for guiding the key.

It will be seen that the key is inclosed in the draw-bar, and that the latter is not cut away or weakened to provide room for the key, as would be the case if the key passed laterally through the draw-bar, as in former devices.

The shifting-lever F has a square hole, *f*, that receives the square portion *g* of the spindle G. This spindle is journaled in the lugs *a'*, that extend laterally from the side of the draw-bar. The spindle has a collar, *g'*, that rests on the upper lug, and the spindle requires no fastening, its gravity being sufficient to hold it in place. The spindle may extend upward any desired distance—usually to the top of the car in case of box-cars—and at the upper end has a hand wheel or lever attached for operating the same.

In case the spindle G extended upward some distance, as with box-cars, it will be convenient to have a second hand-wheel, hand-lever, or suitable device for operating the same located where it is accessible from the ground or from a flat car, and for this purpose an extension of the shifting-lever E might be arranged. By turning this spindle in one direction the key E is forced back and the head D released, after which no further attention is required, as the head D in coupling will be returned to its closed position, and the key snubbed back as the head closes. The shoulders a^2 and a^3 of the draw-bar limit the lateral movement of the draw-head.

The draw-head has a broad link-pocket, D', so braced in a lateral direction that an ordinary link, K, may freely enter and be coupled with the head either in its open or in its closed position.

The head has an inclined recess extending upward and rearward, in which a sliding bar, *h*, operates, the position of parts being such that when the link-pin D^2 is raised the bar *h* will slide forward by gravity and engage the lower end of the pin and hold it elevated, and the said bar will be snubbed back by a link, when the latter enters its pocket, by means of which the pin is raised and the link automatically coupled, all of which is more fully described in a former application for Letters Patent.

The hook-face of the draw-head has a recess with undercut or dovetailed shoulders *i*, and a steel-plate, I, is inserted in the recess, as shown in Figs. 4 and 5. A slight lug on the plate I engages the draw-head on top and limits the depression of the plate. The face of the plate is preferably made slightly crowning. This plate may be tempered, if preferred, and made very durable, and may at any time be replaced by a new one. The continuous rubbing of the hook-faces of the draw-heads produces excessive wear of the parts, and these removable steel plates are therefore of great utility. Heretofore a spring has been similarly arranged between the draw-bar and one of the draw-timbers to hold the draw-bar toward the opposing hook. With such construction the draw-timber was either cut away or separated from the opposite draw-timber further than was desirable; also, if the spring employed was flat, owing to the construction of the frame-work it was somewhat difficult to secure the spring. To remedy this difficulty, we pass a bolt, L, laterally through the draw-bar and through the draw-timber B. The bolt is provided with the nut *l*, and between the nut and draw-timber a spiral spring, M, is provided, the tension of which holds the draw-bar, as desired, the elasticity of the spring allowing the draw-bars to separate in coupling or uncoupling.

N is a lug projecting laterally from the draw-bar, and to which is attached the buffer *n*. This bumper extends forward of the car-sill, and is in position to engage an opposing draw-head, (see Fig. 4,) by means of which the draft-spring of the draw-bar serves also as a spring for the buffer.

What we claim is—

1. In a car-coupler, the combination, with a hollow draw-bar and a head pivoted thereto and provided with a shouldered inner surface, of the sliding key adapted to engage the shoulder and hold the head in a closed position, a spring encircling the key, the shifting-lever engaging the key, and the spindle for operating the shifting-lever, substantially as set forth.

2. The combination, with a draw-bar, a pivoted head forming a hook-coupler, and provided with an elongated pocket and with a shouldered inner surface, of the sliding key, the spring, the shifting-lever, and the spindle for operating the shifting-lever, substantially as set forth.

3. The combination, with a draw-bar, a coupling-head pivoted thereto, and a lug, N, on one side of said draw-bar, of the buffer *n*, secured to said lug, substantially as set forth.

In testimony whereof we sign this specification, in the presence of two witnesses, this 17th day of June, 1885.

NEWELL P. COWELL.
JOSEPH W. PINKHAM.

Witnesses:
CHAS. H. DORER,
ALBERT E. LYNCH.