

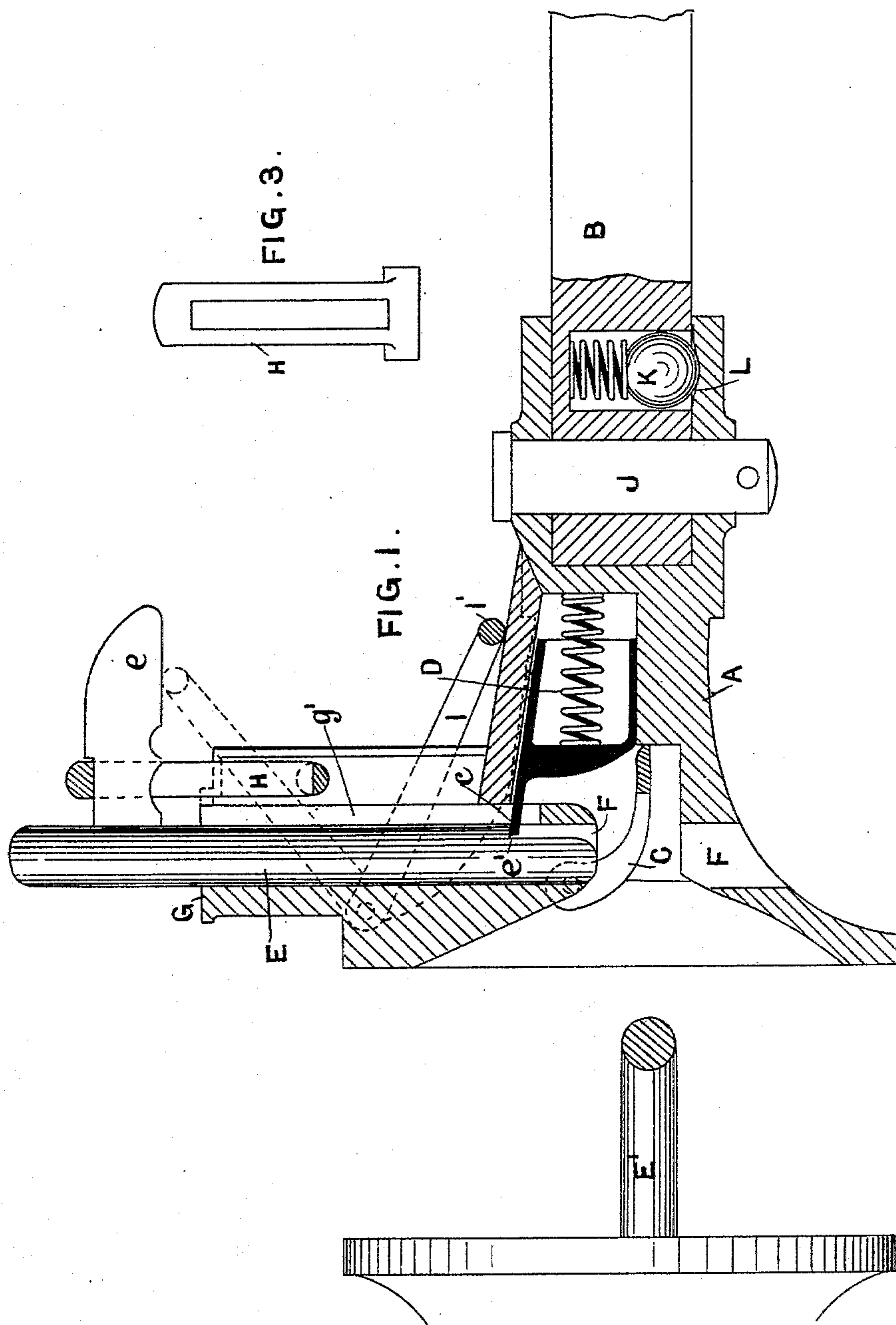
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3 Sheets—Sheet 1.

G. JOHNSTON.
CENTRAL BUFFER AND COUPLING.

No. 584,116.

Patented June 8, 1897.



Witnesses

W. V. Bridgman
J. Green

Inventor

George Johnston
By *Truitt Bros*
attys

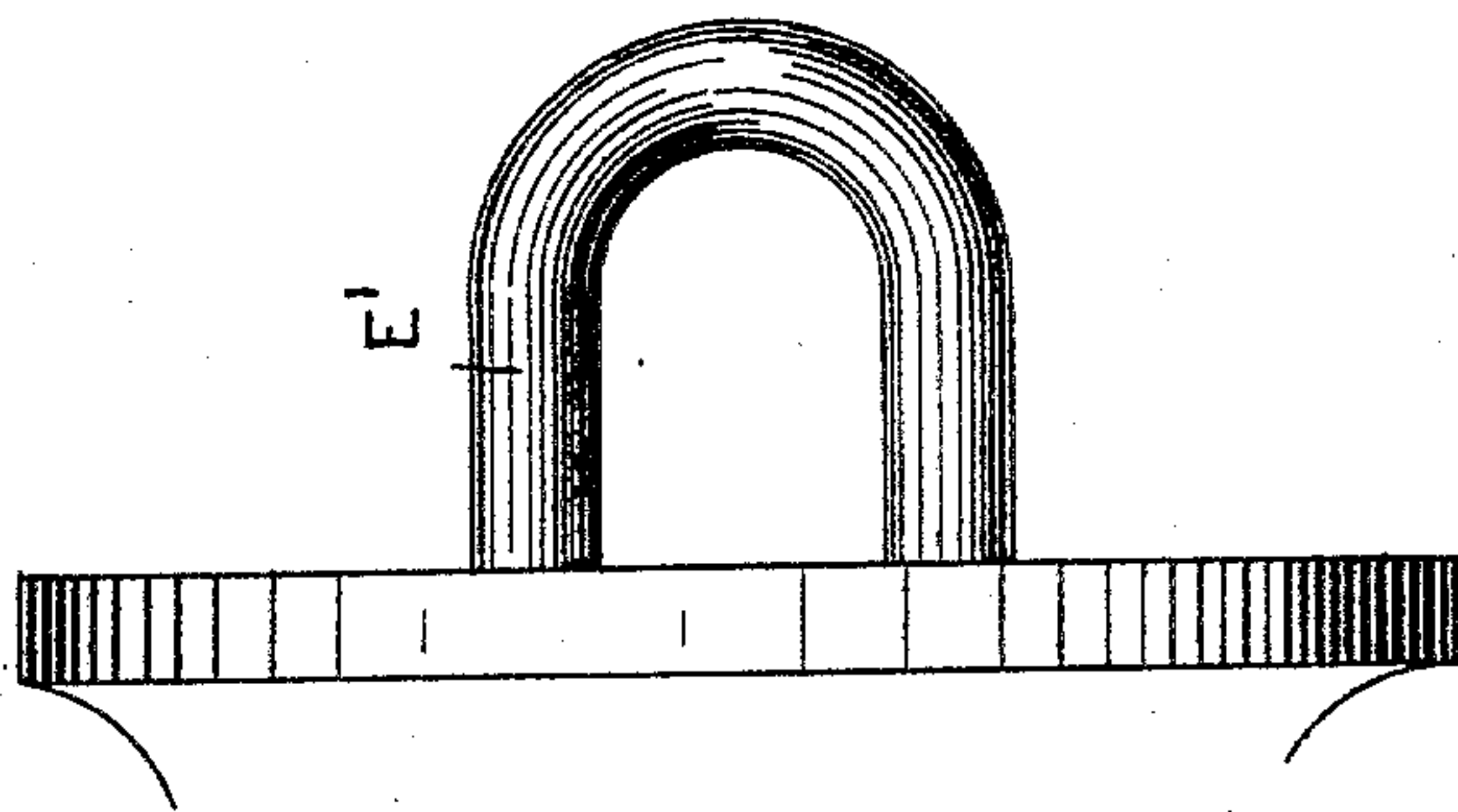
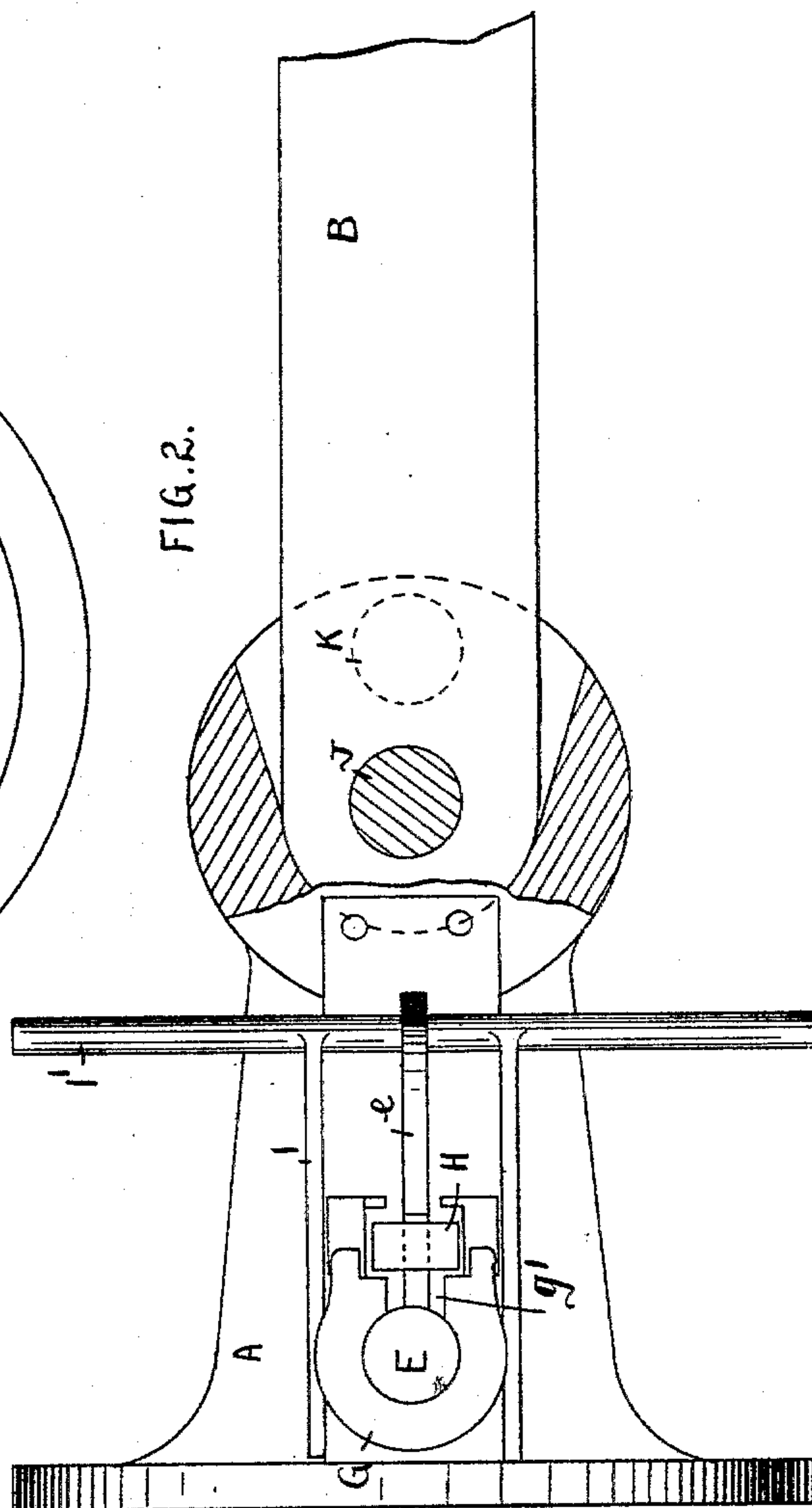
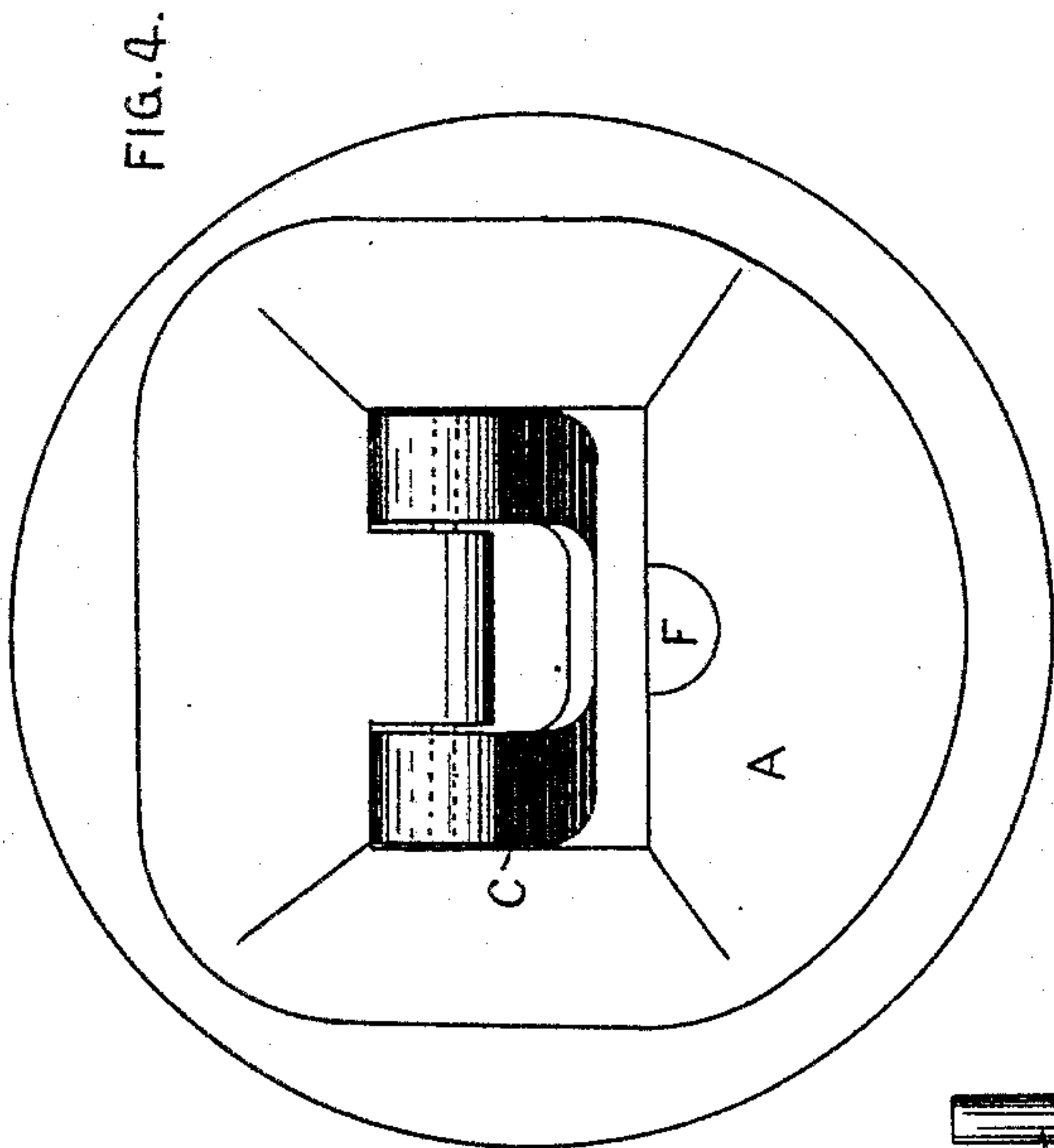
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CENTRAL BUFFER AND COUPLING.

No. 584,116.

Patented June 8, 1897.



Witnesses

J. V. Bidgood
J. Green

Inventor

George Johnston
By Knight Bros.
Attys

(No Model.)

3 Sheets—Sheet 3.

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FIG. 5.

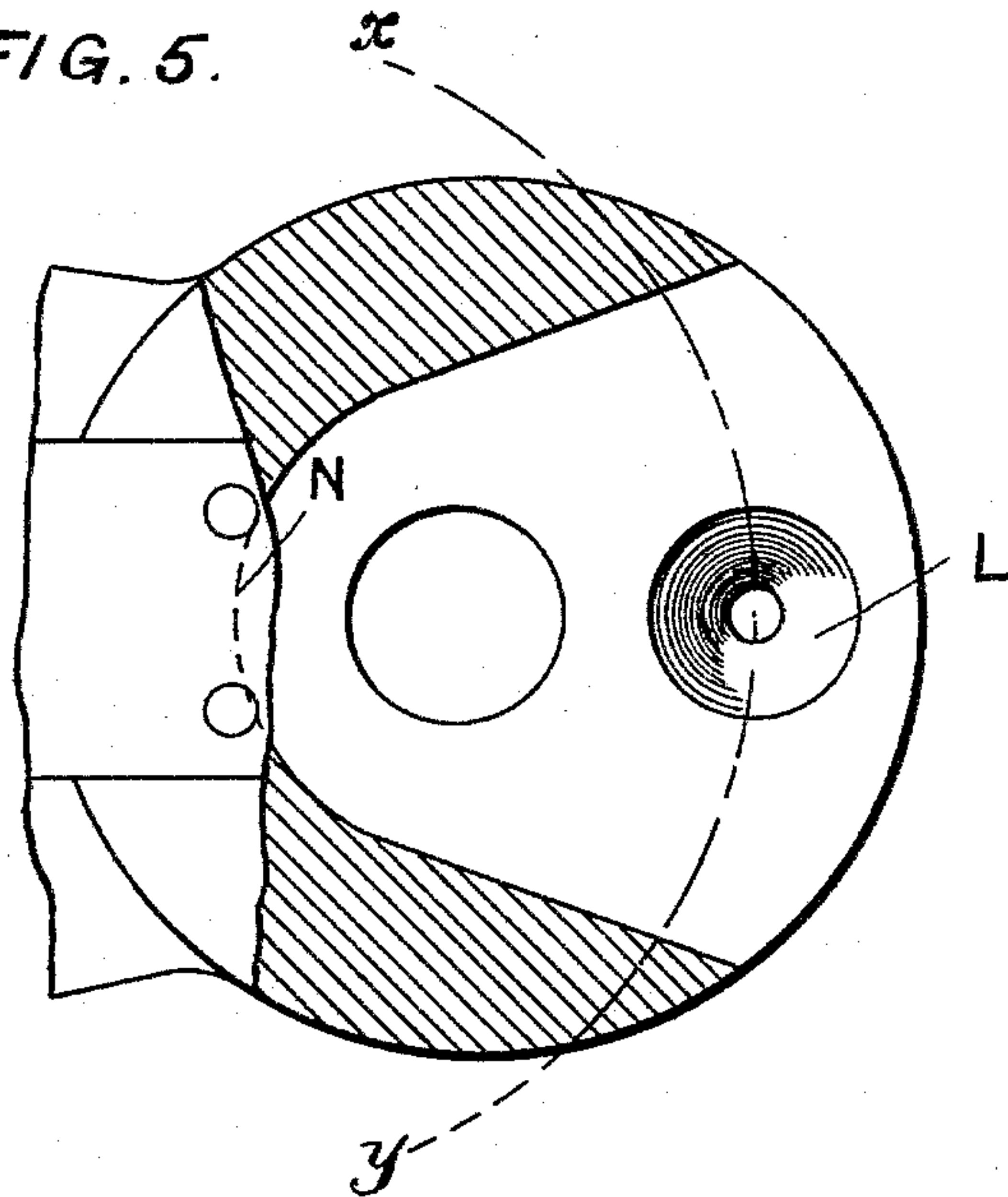
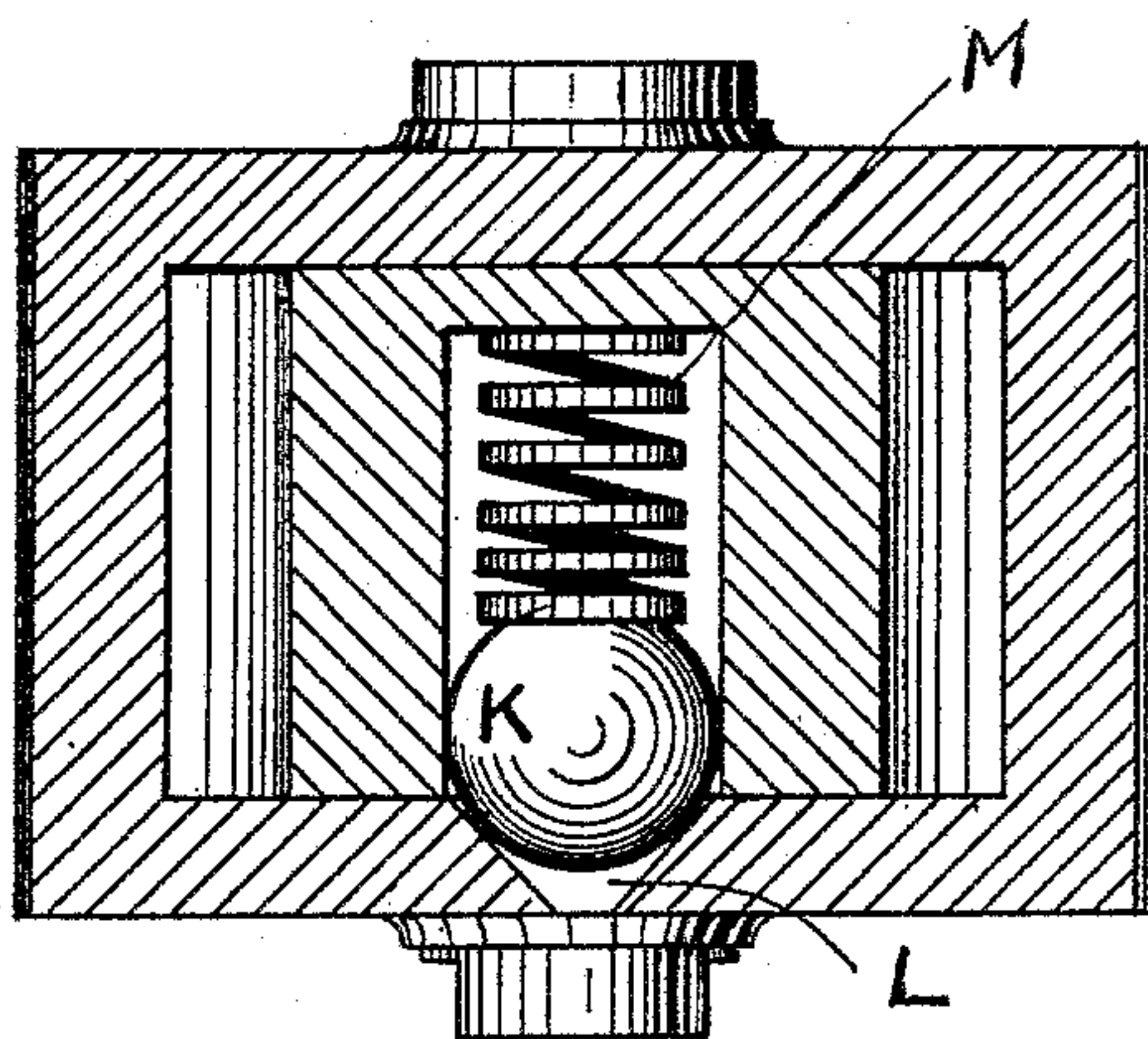


FIG. 6.



Witnesses

M. V. Biggs
H. L. Luskett

Inventor

George Johnston
By *Truitt & Bros.* attys

UNITED STATES PATENT OFFICE.

GEORGE JOHNSTON, OF LIVERPOOL, ENGLAND.

CENTRAL BUFFER AND COUPLING.

SPECIFICATION forming part of Letters Patent No. 584,116, dated June 8, 1897.

Application filed June 25, 1896. Serial No. 596,895. (No model.) Patented in England June 25, 1895, No. 12,270.

To all whom it may concern:

Be it known that I, GEORGE JOHNSTON, a subject of the Queen of Great Britain, residing at Liverpool, in the county of Lancaster, England, have invented certain new and useful Improvements in or Relating to Central Buffers and Couplings, (for which I have received Letters Patent in England, dated June 25, 1895, No. 12,270,) of which the following is a specification.

This invention has for its object an arrangement of central buffer and coupling in one, which shall automatically couple up, and in which the buffer is capable of turning on its axis, so as to facilitate the buffers of adjacent carriages remaining in line, whereby the buffering action is distributed over the whole face of the buffer whether the vehicles are traveling in a straight line or on a curve.

The invention will be understood from the following description, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of my invention applied to a central buffer, showing the buffer uncoupled from the draw-link; Fig. 2, a plan thereof partly in section; Fig. 3, a detail view of the slide-link H; Fig. 4, an end elevation of the buffer bell-mouth, showing the stirrup C in position; Fig. 5, a plan of the end of the buffer-box when it is coupled to the bar; Fig. 6, a sectional elevation on the line $x y$, showing the ball in central position.

In the figures, A is the central buffer, and B the buffer and draw-bar. This central buffer is provided with a stirrup C and a catch c or its equivalent controlled by a spring D, whereby when the draw-link is pressed in between the stirrup and the buffer-head the draw-link pressing against the stirrup will push back the catch c by engaging with the inclined front face thereof, allowing the coupling-pin E to fall down through the link and through holes F in the buffer-box above and below. The coupling-pin E passes through a sleeve G, cast in one with the buffer A or a separate part. It has a projecting arm e , over which a slide-link H passes, which prevents the pin E from being drawn entirely out and keeps the pin from turning, the back of the casting having a slot g' , which enables the arm to slide down to the bottom. Other means

may be used for preventing the pin from being drawn out or turning, such as a feather-key on the pin itself or a projection in a groove coming against an abutment.

The coupling-pin E is raised, when required, by means of a pivoted lever I, having a horizontal cross-bar I' thereon, which when raised in uncoupling two vehicles comes in contact with the projecting arm e and lifts the coupling-pin E out of engagement with the draw-link. The lever drops down when the force which lifted it from either side of the carriage is removed, leaving the coupling-pin E raised so that the link is free. The arm e may have notches, as shown, in its lower side, which when the lever I is raised to its extreme upward position engage with the cross-bar I' and thereby holds the pin E in its raised position independently of the action of the spring-catch. Thus in shunting operations, when it is not desired to automatically couple up, the lever I can be made to engage one of these notches in the arm e and so hold the pin permanently raised. Ordinarily, however, the lever would be raised only high enough to allow the spring-catch to act and would not engage with said notches. If preferred, the horizontal cross-bar I' may engage a slot in the arm e . One advantage of this arrangement is that it provides another simple expedient for preventing the pin E from turning and dispenses with the necessity of using the slide-link H and slot g' .

J is a pivot which couples the buffer-box to the bar B, the former being thus not rigidly united to the latter, but is capable of turning on its axis to facilitate the buffers of adjacent carriages remaining in line when the carriages are on a curve. The end of the bar B abuts against a solid abutment N on the buffer-head A, so that the entire pressure on the buffer is received by the end of the bar B instead of on its pivot J. An arrangement is provided for causing the buffer A to resume a position in line with the bar B when the vehicle is detached or when traveling in a straight line. This arrangement consists in providing in the end of the bar a spring m , pressing on ball K, engaging a depression L in the buffer-box A. It is so arranged that when the spring and ball engage the depression in the buffer box or head the latter will

be held in line with the bar, and by exerting a little force the buffer-head can be turned to one side or the other, but it will at once resume its position when the force that turned it laterally is removed.

It is obvious that the bar B may engage a jaw on the buffer-head A or the buffer-head may engage a jaw in the bar and the spring-stud be arranged either on the bar or in the buffer-head, as the case may be, either arrangement being a mechanical equivalent of the other.

The mode of action of the coupling-link E' itself is as follows: When two vehicles come together, the draw-link E' automatically enters the bell-mouth of the central buffer and is guided by the sloping sides and by the stirrup C into the exact position for the pin E to fall. The link pushing back the stirrup C, which in its turn pushes back the spring-catch c from engagement with the shoulder e' on the carriages coming together, leaves the pin E free to fall through the link E' and thus fastens the buffers. The moment, however, the pin E is raised from the link and the two carriages are separated the spring-catch c flies into position engaging the shoulder on the pin and prevents the pin E from again falling into the buffer until this or another link is again inserted, when the weight of the pin E on the pushing back of the catch c by the link causes the said pin E to fall and lock the coupling-link. The apparatus is by preference so arranged that the coupling-link is held in a horizontal line by means of a flat horizontal seat on the buffer-head and the stirrup and catch holding the link down on said seat, so that when two buffers are brought together the coupling-link of one buffer will approach the bell-mouth of the other buffer horizontally, as depicted in Fig. 1, and, furthermore, the buffer being bell-mouthed and the pin being held when in the uncoupled position behind or protected by this bell-mouth or flaring front insures the link entering it, even if one buffer is on a lower plane than the adjacent buffer due to the vehicles being unequally loaded.

It must be distinctly understood that I do not confine myself to any special arrangement for lifting the pin E, as any suitable mechanism may be used for this purpose. The arrangement hereinbefore described for lifting

it is merely set forth as an example. The stirrup C may, if desired, be dispensed with, in which case the spring-catch is arranged in such a position that the coupling-link on entering a buffer shall strike the catch direct and slide it back from engagement with the pin, while the moment the pin is raised from the link and the two carriages are separated the spring-catch flies into position, engaging the shoulder on the pin and preventing the pin from again falling into the buffer until it or another link is again inserted, when the weight of the pin on the pushing back of the catch by the link causes the said pin to fall and lock the coupling-link.

I claim as my invention—

1. In a car-coupling, the combination with the link and pin, of a buffer-head having a flat horizontal seat for the link, a spring-actuated catch sliding in said head and forming a support for the pin and a stirrup pivoted in the head and engaging with the link and with the inclined face of the catch, whereby it simultaneously pushes back the catch so as to release the pin, and presses the link against its horizontal seat, so as to hold said link in a horizontal position.

2. In a car-coupling, the combination with the link of a pin having a rearwardly-extending notched arm, a buffer-head, a spring-actuated catch sliding in said head and forming a support for the pin and a stirrup pivoted in the head and engaging with the link and with the inclined face of the catch, whereby it simultaneously pushes back the catch so as to release the pin, and presses the link against its horizontal seat, so as to hold said link in a horizontal position and an actuating-arm adapted to engage with the notched arm on the pin, and to catch in the notch therein.

3. In a central buffer, the combination of the draw-bar, the buffer-head pivoted thereto and having a depression, a ball engaging in said depression, and a spring bearing freely against said ball and against the draw-bar.

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

GEO. JOHNSTON.

Witnesses:

GEO. C. DYMOND,
W. H. BEESTON.