

No. 706,210.

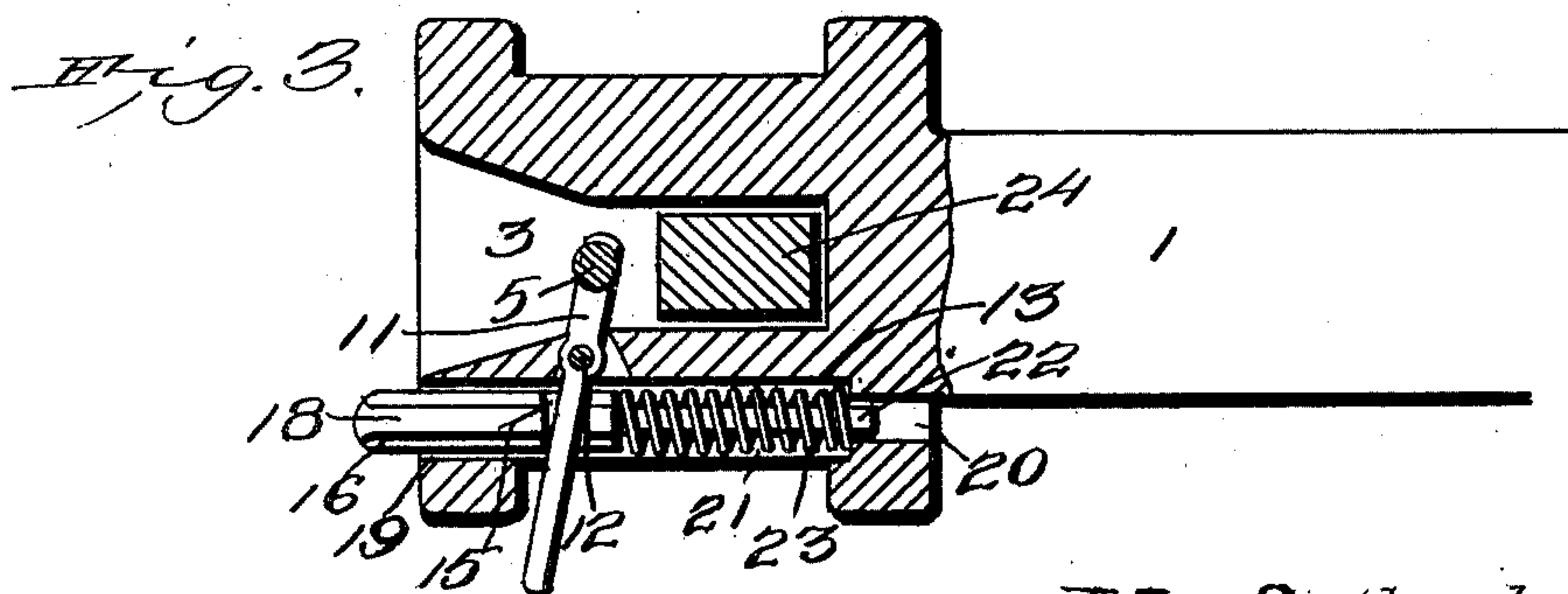
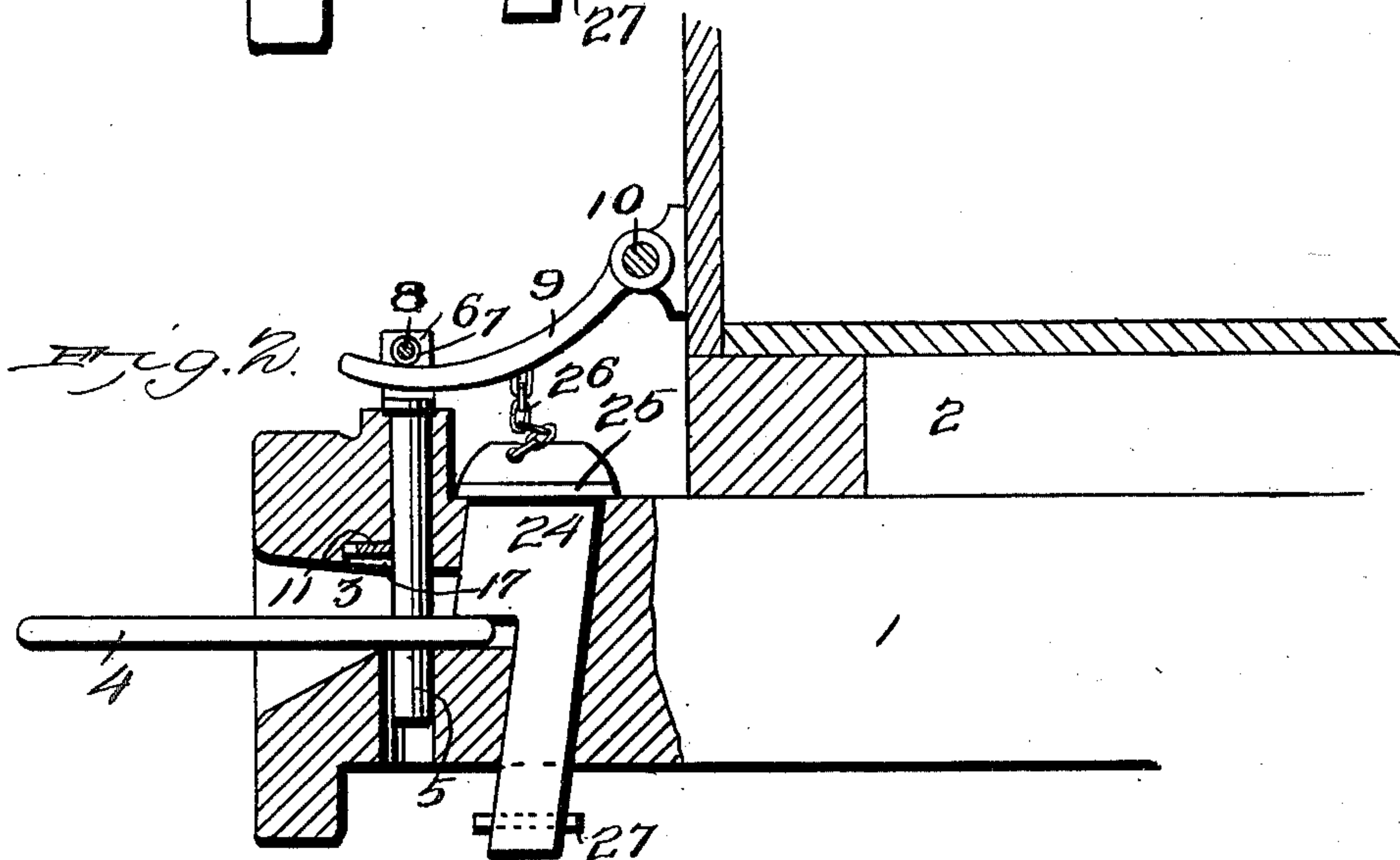
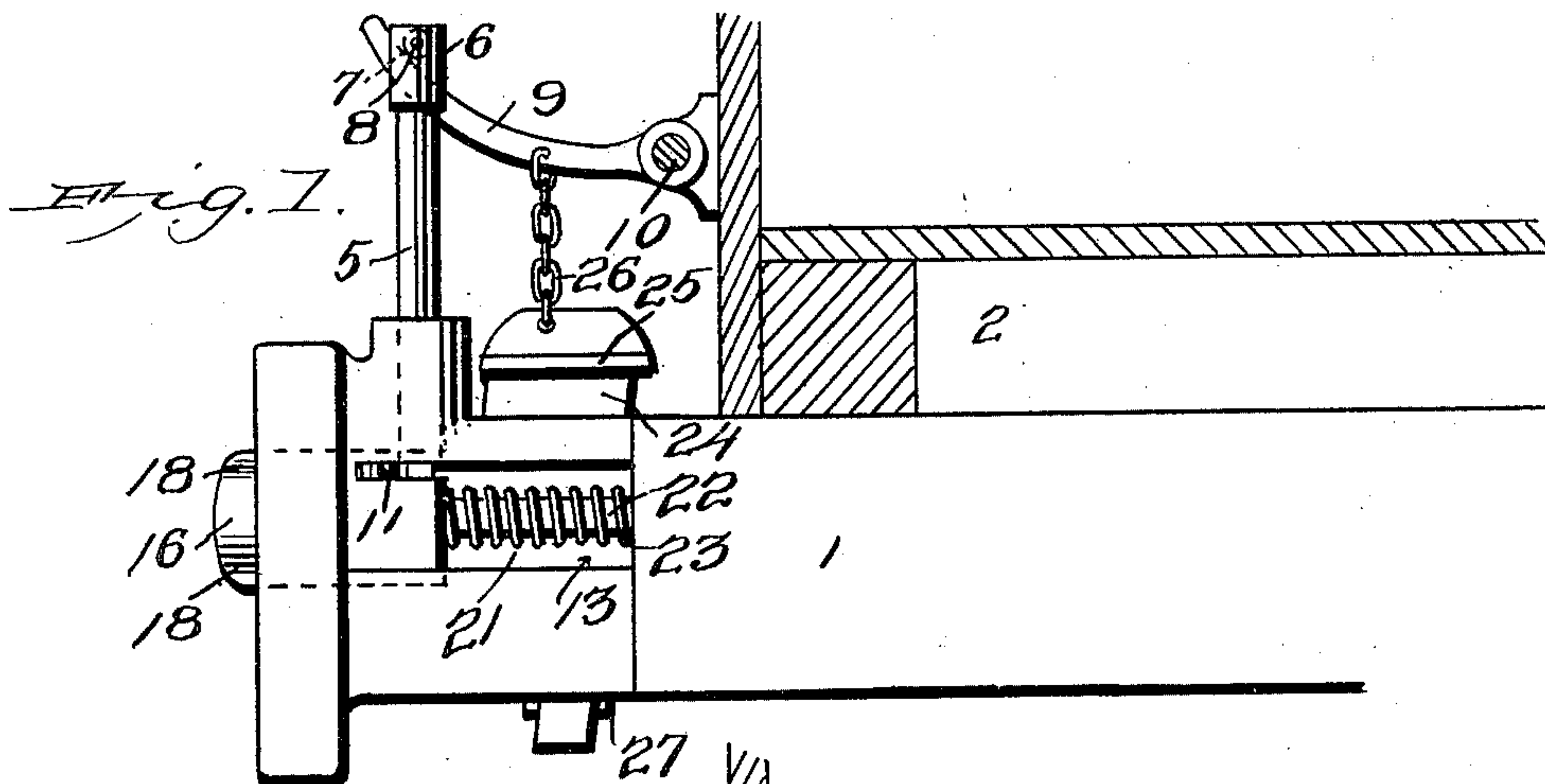
Patented Aug. 5, 1902.

J. L. SUTHERLAND.

CAR COUPLING.

(Application filed Apr. 28, 1902.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES L. SUTHERLAND, OF MAYFIELD, KENTUCKY.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 706,210, dated August 5, 1902.

Application filed April 28, 1902. Serial No. 105,102. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. SUTHERLAND, a citizen of the United States, residing at Mayfield, in the county of Graves and State of Kentucky, have invented a new and useful Car-Coupling, of which the following is a specification.

The invention relates to improvements in car-couplings.

The object of the present invention is to improve the construction of pin-and-link car-couplings and to provide a simple, inexpensive, strong, and durable car-coupling capable of coupling automatically when two cars come together and adapted to be readily uncoupled without going between the cars.

A further object of the invention is to provide a car-coupling of this character in which the pin-supporting devices will be protected from the weather and in which the link will be held in a horizontal position for guiding it into the mouth of a draw-head.

Another object of the invention is to enable the link-engaging device to be operated by the same means as the coupling-pin and to permit the said link-engaging device to have a limited movement independently of the coupling-pin to prevent it from interfering with or accidentally lifting the coupling-pin should the draw-heads of two cars be arranged at different elevations incident to one car being loaded and the other emptied.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a side elevation, partly in section, of a car-coupling constructed in accordance with this invention and shown applied to a car. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a horizontal sectional view.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a draw-head designed to be secured to a car 2 in the usual manner and provided with the usual longitudinal link-receiving opening 3, having a flaring mouth for guiding a link into the draw-head. The link

4 is engaged by a vertically-movable coupling-pin 5, having its upper end 6 bifurcated and provided in the bifurcation with an anti-friction-roller 7, mounted on a suitable pivot 8 and arranged to ride on a curved arm 9 of a rock-shaft 10. The rock-shaft 10, which is journaled in suitable bearings of the car, is designed to extend across the same to enable the car-coupling to be operated from either side of the car, and any suitable means may be provided for enabling the car-coupling to be operated from the top of a car or from the platform of a coach. The curved arm, which is loosely arranged in the bifurcation, does not interfere with the longitudinal play or vibration of the draw-head, and it is adapted to readily lift the coupling-pin when the rock-shaft is turned in the proper direction. The coupling-pin is supported in an elevated position, preparatory to automatic coupling, by means of a horizontally-disposed pin-supporting lever 11, fulcrumed between its ends on a vertical pin 12 in a slot 13 of one side of the draw-head and extending into the longitudinal opening of the same and projecting outward beyond the draw-head to enable it to be readily operated by hand, if desired. The outer arm of the pin-supporting lever is arranged in a recess 15 of a longitudinally-movable spring-actuated push bar or rod 16, located at one side of the draw-head and normally extending outward beyond the same and adapted to be forced inward when two cars come together for coupling, whereby the supporting inner arm of the lever 11 will be carried from a point beneath the coupling-pin to withdraw the support from the latter to cause the coupling-pin to drop and couple the cars. The inner arm of the pin-supporting lever is located in a recess of the top wall of the draw-head, and this recess 17 forms an extension of the longitudinal link-receiving opening and is located adjacent to the coupling-pin perforation, as clearly shown in Fig. 2. The front portion of the push-bar is provided with upper and lower flanges 18, and the opening of the draw-head for the reception of the push-bar is correspondingly shaped to receive the same. The car-coupling is provided at one side with front and rear openings 19 and 20, and it has a connecting hori-

horizontal groove 21, forming a way for the push-bar, which is provided with a stem 22, on which a coiled spring 23 is disposed. The coiled spring fits against the enlarged front portion of the push-bar and against the rear portion of the draw-head, as clearly shown in Fig. 3, and it is adapted to maintain the lever in position for supporting the coupling-pin and the push-bar in an extended position. The pin 12 of the lever retains the pin-supporting mechanism in place, and when it is removed the lever, the push-bar, and the spring may be taken out. When the coupling-pin is raised to the position illustrated in Fig. 1, the spring automatically throws the inner arm of the lever beneath the lower end of the coupling-pin to form a support for the same, and when two cars come together for coupling the push-bar will be forced inward to oscillate the lever and cause the coupling-pin to fall and couple the cars. The link is maintained in a horizontal position for guiding it into the mouth of a draw-head by means of a bar or pin 24, arranged in an upright opening of the draw-head and having an enlarged portion or head forming a projecting shoulder 25 for engaging the adjacent end of a link, as clearly shown in Fig. 2. The link-engaging bar, which is arranged at a slight inclination, is of sufficient weight to maintain the link in a horizontal position, and its upper end or head is connected by a short chain 26 or other flexible connection with the curved arm of the rock-shaft to enable the said link-engaging bar to be lifted by the uncoupling mechanism for operating the coupling-pin. The flexible connection between the link-engaging bar and the uncoupling mechanism permits the former to move independently of the coupling-pin, so that the position of the link when connecting draw-heads of different elevations will not affect the coupling-pins and accidentally lift the same, as is the case when the link-engaging device is connected directly to the coupling-pin. The lower end of the link-engaging bar is perforated for the reception of a key 27, located beneath the draw-head and adapted to engage the same to prevent the link-engaging bar from being entirely withdrawn from the draw-head.

It will be seen that the car-coupling is exceedingly simple and inexpensive in construction, that it possesses great strength and durability, and that it is positive and reliable in operation and capable of coupling automatically and of being readily uncoupled

and set for automatic coupling without going between cars.

What I claim is—

1. In a car-coupling, the combination with a draw-head, and a coupling-pin, of an uncoupling mechanism having an arm connected with and adapted to lift the coupling-pin, means for supporting and tripping the coupling-pin, and a link-engaging bar mounted in the draw-head in rear of the coupling-pin and connected with the said arm and capable of upward and downward movement independently of the pin, substantially as and for the purpose described.

2. In a car-coupling, the combination with a draw-head, and a coupling-pin, of an uncoupling mechanism having an arm connected with and adapted to lift the coupling-pin, a link-engaging bar mounted in the draw-head in rear of the coupling-pin and capable of movement independently of the coupling-pin, and a flexible connection extending from the arm to the link-engaging bar, substantially as described.

3. In a car-coupling, the combination with a draw-head, of a coupling-pin having a bifurcated upper portion, an antifriction-roller mounted in the bifurcation, an uncoupling mechanism having a curved arm arranged within the bifurcation and receiving the roller, a link-engaging bar provided with a flexible connection secured to the arm, and means for supporting and tripping the coupling-pin, substantially as described.

4. In a car-coupling, the combination with a draw-head provided at one side with a horizontal groove and having openings at the front and rear of the same, a push-bar having a stem and provided with a recess and mounted in the groove and openings of the draw-head, a spring disposed on the stem of the push-bar and engaging the same, and a lever fulcrumed between its ends on the draw-head and having its inner arm arranged to support the coupling-pin in an elevated position, its outer arm being detachably arranged in the recess of the push-bar and extended beyond the draw-head, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES L. SUTHERLAND.

Witnesses:

C. W. WILSON,
T. L. WALLACE.