

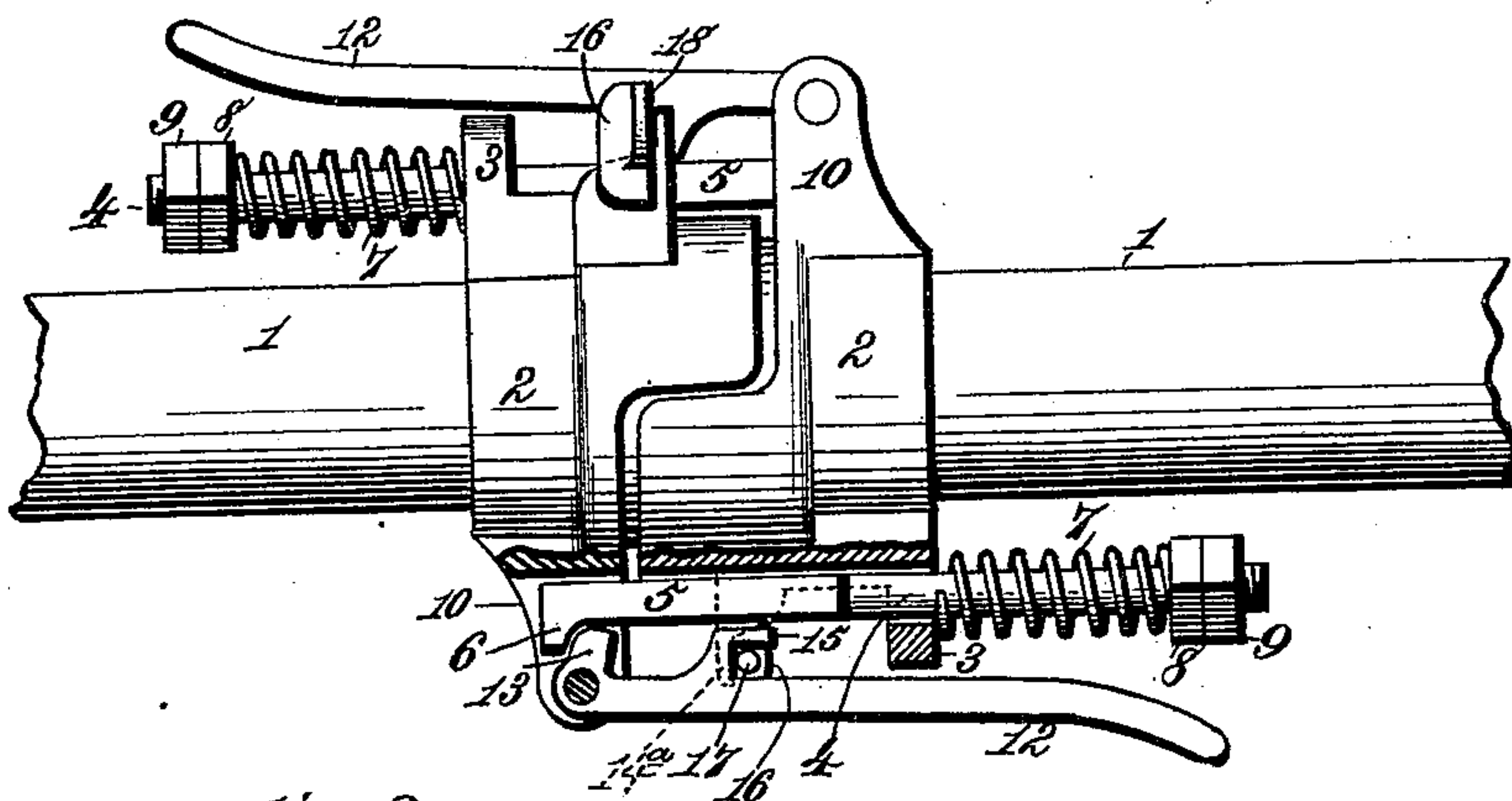
(No Model.)

E. A. LELAND.  
BRAKE HOSE COUPLING.

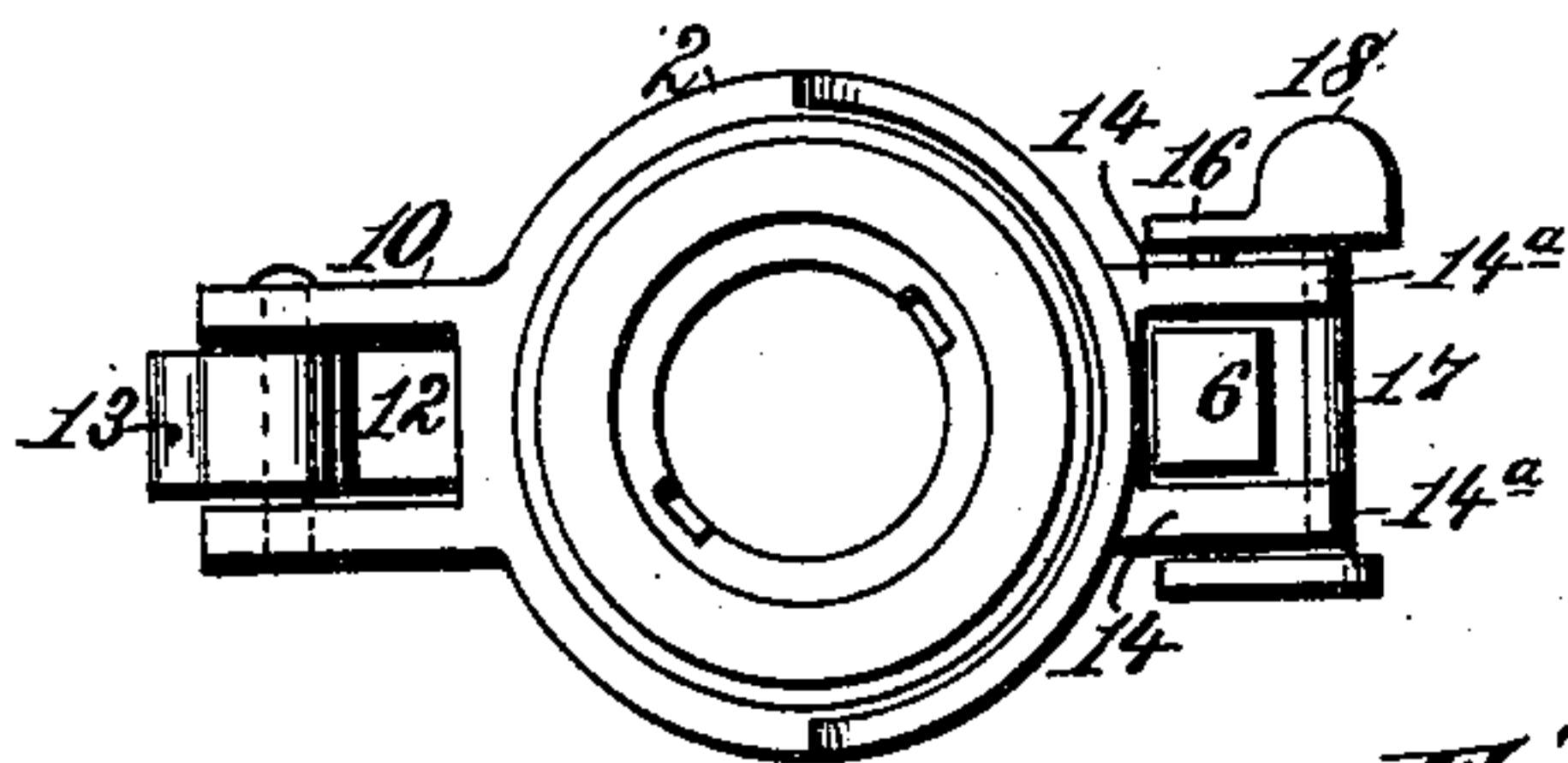
No. 420,810.

Patented Feb. 4, 1890.

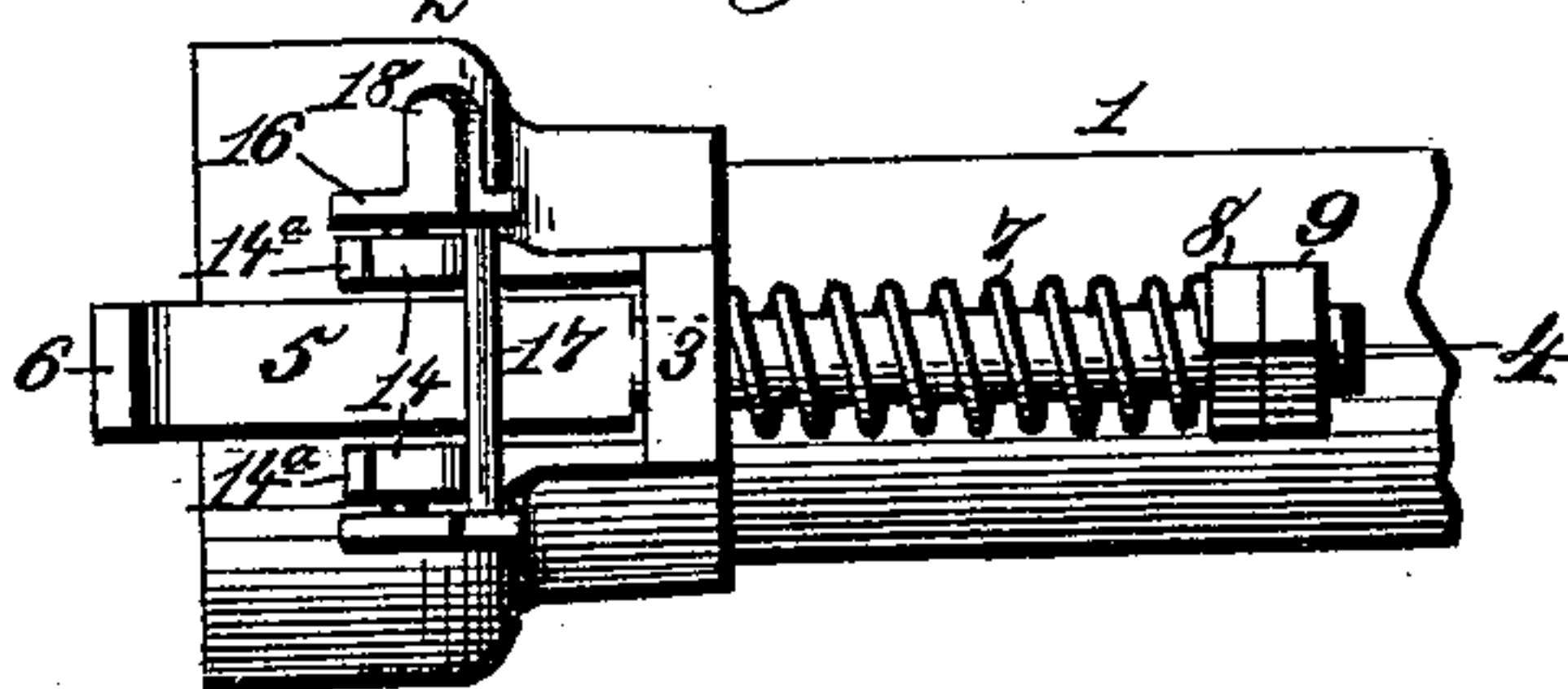
*Fig. 1.*



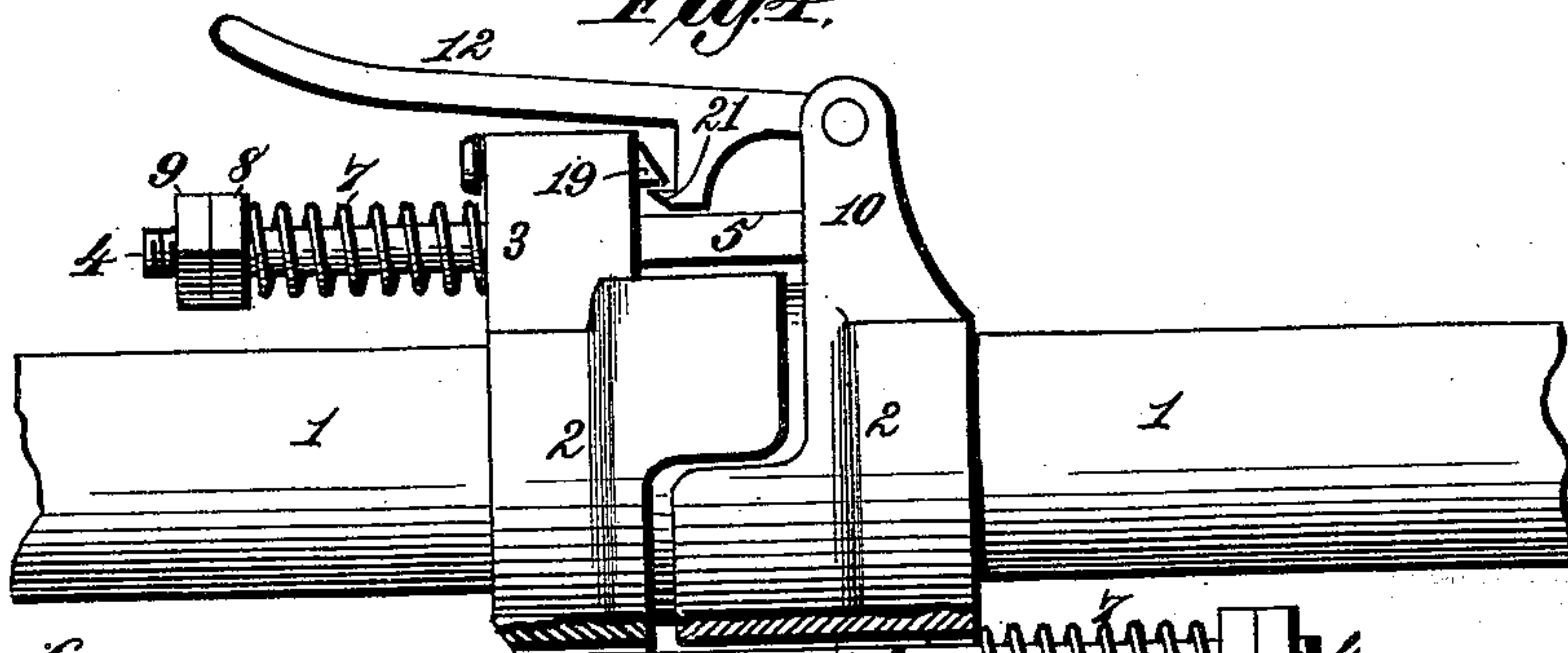
*Fig. 2.*



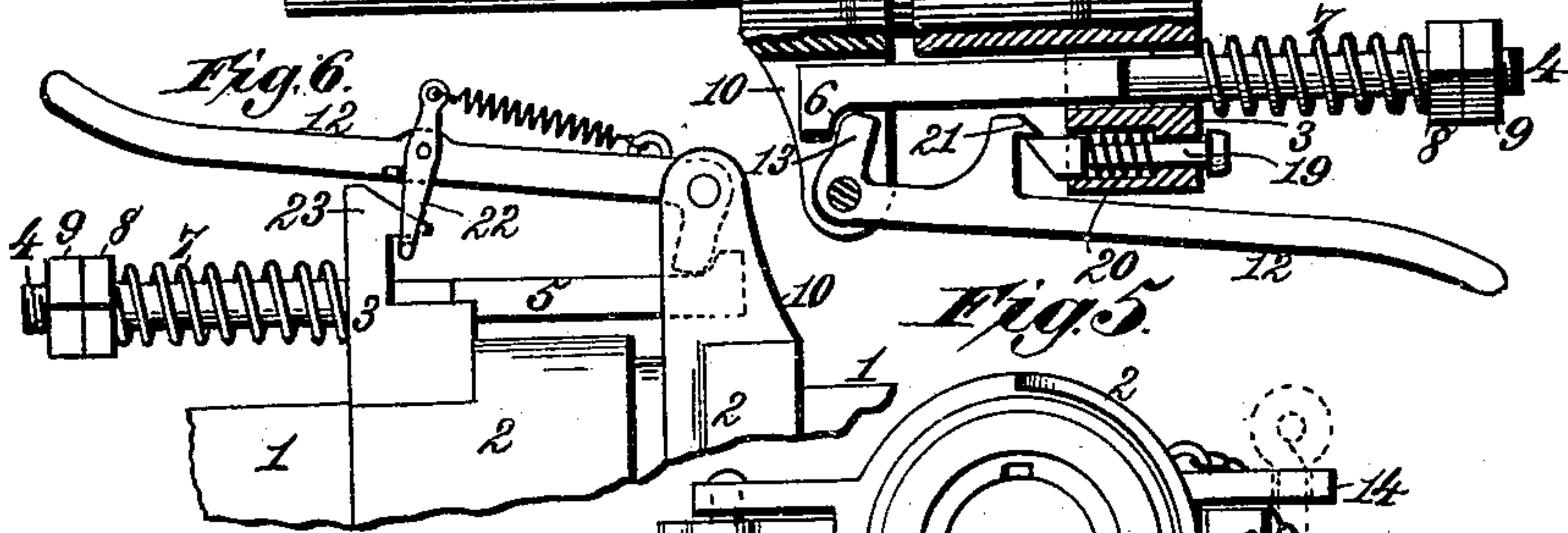
*Fig. 3.*



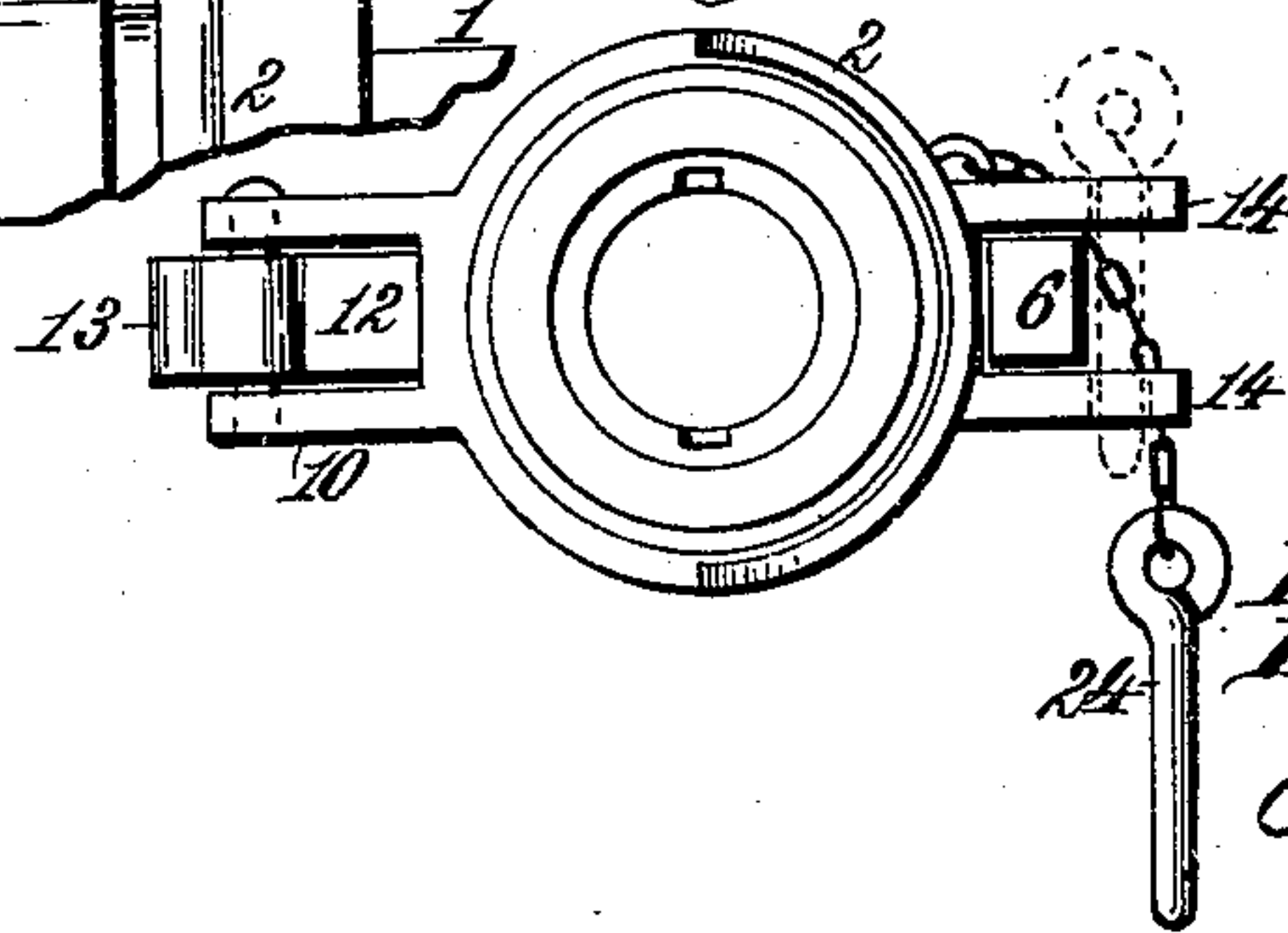
*Fig. 4.*



*Fig. 6.*



*Fig. 5.*



*Witnesses:*  
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*Inventor:*

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# UNITED STATES PATENT OFFICE.

EDWIN A. LELAND, OF BROOKLYN, NEW YORK, ASSIGNOR TO LEONARD RICHARDSON, OF SAME PLACE.

## BRAKE-HOSE COUPLING.

SPECIFICATION forming part of Letters Patent No. 420,810, dated February 4, 1890.

Application filed December 5, 1889. Serial No. 332,673. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN A. LELAND, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Brake-Hose Couplings, of which the following is a specification.

My invention relates to certain improvements in that class of brake-pipe couplings shown and described in an application for Letters Patent filed by me upon the 23d day of November, 1889, Serial No. 331,831.

It is the purpose of my present invention to provide simple means whereby the coupling heads or sections may be drawn together with the required force and locked under a constant tension which is sufficient to produce a tight joint. In order to provide an operative and practical coupling it is necessary that the means whereby the required power is exerted should be of the simplest character, capable of instantaneous operation, and easily, positively, and quickly locked without the exercise of special skill, experience, or attention on the part of the operator. It is also highly essential that a construction be provided whereby, upon the breaking apart of the train or upon the uncoupling of any two of the cars, the draft upon the hose produced by the separation of the cars shall automatically disengage the locking devices and instantly release the coupling-heads, allowing the latter to separate. It is one purpose of my invention, therefore, to provide extremely simple and positive means for accomplishing these results. It is my purpose, also, to provide and combine with the coupling-levers by which the coupling-sections are forced together, automatic and positive locking devices operated by that action of the said levers required to effect the coupling action and released by the strain upon the hose caused by pulling apart or separating the cars.

The invention consists in the several novel features of construction and new combinations of parts hereinafter fully described, and then definitely pointed out in the claims following this specification.

To enable others skilled in the art to practice my said invention, I will proceed to de-

scribe the same in detail, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of the brake-hose coupling embodying my invention. Fig. 2 is an end elevation of one member of the same. Fig. 3 is a side elevation of the other member. Fig. 4 is a plan view of a coupling, showing a modified construction. Fig. 5 is an end elevation showing a further modification. Fig. 6 is a detail view showing a modification of the automatic locking device shown in Fig. 4.

In the said drawings, the reference-numeral 1 denotes the telescoping ends of the train-pipes, although I may use in place thereof any ordinary flexible or rigid coupling-section of pipe. Upon the extremities of these pipes 1 are mounted the coupling-heads 2, which in their essential features resemble those shown in the Letters Patent granted me the 30th day of July, 1889, No. 408,116, and in my pending application filed November 23, 1889, as already mentioned. These parts being fully shown and described therein, no repetition of that description is now necessary.

Upon the side of one of the coupling-heads is formed a radially-projecting lug 3, having an opening, in which lies the spindle 4 of a coupling-bar 5, the forward end whereof projects beyond the extremity of the coupling-head and is provided with an outwardly-projecting foot 6.

Upon that portion of the spindle 4 which projects in rear of the lug 3 is a powerful spiral spring 7, confined by an adjustable nut 8 and jam-nut 9, the end of said spring resting against the rear face of the lug 3. A similar lug is formed upon the opposite side of the other coupling-head and provided with a similar coupling-link and spring.

Upon each coupling-head, diametrically opposite the lug 3, is formed a bracket 10, having a forked extremity, within which is pivoted the end of a coupling-lever 12. This lever is provided with a toe 13, which projects inwardly, and by swinging said lever this toe may be engaged with the foot 6 and the spring 7, placed under strong tension, the lever-arm being turned in effecting this result, into approximate parallelism with the



axis of the coupling. To preserve the coupling links or bars 5 in suitable position, they are square and slide between the parallel outwardly-projecting arms of bracket 14, mounted on the coupling-heads, whereby they are prevented from turning, and the foot 6 on each is always turned outward.

Upon each coupling-lever 12 is formed a hook or catch 15, which projects inward at such a point that when the lever is swung inward or toward the coupling, this hook will pass between and its point will project beyond the pointed ends of the forked bracket 14. Pivoted upon this bracket is a latch 16, carrying a pin or bolt 17, which may be turned or swung into the open hook on the lever and hold the latter, as shown in Fig. 1. When this engagement takes place, the bolt will lie in the hook immediately behind the forked ends or points 14<sup>a</sup> of the bracket 14, which arrest its further pivotal movement. A lug 18 is formed on each latch 16 to facilitate its operation.

When this coupling is to be separated, the strain upon the pipes produced by drawing the cars apart will slightly separate the coupling-heads, compressing the springs 7 until the bolt 17 passes off the hook 15 on the lever, the latch being prevented from turning by the ends 14<sup>a</sup> of the bracket. The instant the latch is disengaged the tension of the springs 7 swings the coupling-levers outward through about one-half of a circle, against that section of pipe on which it is mounted.

I may substitute for the latch 16 an automatic lock shown in Fig. 4 and consisting of a latch-bolt 19, lying in a recess in an extension of the bracket or lug supporting the coupling-link. This latch-bolt is thrown outward by a spring 20, and its point is beveled to engage the beveled point 21 of the hook 15. As the lever swings inward, the engagement of these beveled surfaces retracts the latch-bolt until the hook has passed below it, whereon it shoots outward and locks the lever. I may substitute for this automatic device the construction shown in Fig. 6, in which a spring-actuated latch-yoke 22 is pivoted on the lever and adapted to snap under a hook 23, formed on the lugs 3, the outer face of the hook being beveled to automatically retract the latch-yoke. I may, however, use a simple bolt 24, suspended by a chain and adapted to enter openings in the brackets 14, where it engages the hook on the lever in the same way as the bolt 17.

The sliding spring-actuated latch may be mounted upon the lever and engage with a hook on the bracket, instead of the reverse construction shown in the drawings.

What I claim is—

1. In a brake-pipe coupling, the combination, with separable coupling-heads, of coupling-bars having springs which force the couplings together, coupling-levers by which said springs are placed under tension, and

locking devices holding said levers at the point where a maximum tension is exerted on the springs, said locking devices being released by the separation of the coupling-heads, substantially as described.

2. In a brake-pipe coupling, the combination, with separable coupling-heads, of coupling-bars arranged alternately on opposite sides thereof and movable longitudinally in lugs, coupling-levers pivoted on the opposite heads and having toes engaging said bars, springs on the latter placed under tension by the action of said levers, and fastening devices engaging open hooks or catches from which they are drawn by the separation of the coupling-heads, substantially as described.

3. In a brake-pipe coupling, the combination, with separable coupling-heads having alternately-opposing lugs, of coupling-bars movable longitudinally in said lugs and having outwardly-projecting feet, coupling-levers pivoted on the opposite coupling-heads and having toes engaging the feet on the coupling-bars, springs placed under tension by the action of said levers and drawing and holding the coupling-heads together, and automatic locking devices preserving the coupling engagement and engaging open hooks from which said locking devices are drawn by the separation of the coupling-heads, substantially as described.

4. In a brake-pipe coupling, the combination, with separable coupling-heads having lugs upon alternating opposite sides, of coupling-bars longitudinally movable in said lugs and having outwardly-projecting feet, coupling-levers pivoted upon the opposite heads and having toes engaging the feet of said bars, springs upon the latter placed under tension by the action of said levers, and spring-actuated latch-bolts having beveled ends engaging hooks formed on said levers, said hooks drawing out of engagement with the bolts by the separation of the coupling-heads, substantially as described.

5. In a brake-pipe coupling, the combination, with the separable heads mounted on the ends of the train-pipes, of coupling-bars movable in lugs 3 on said heads and provided with feet 6, springs 7, coiled on the spindles of said bars, coupling-levers 12, pivoted between formed brackets on the heads opposite the bars and having toes engaging the feet of the latter, and fastening devices mounted on brackets 14 on the heads and engaging open hooks 15 on the latter, drawing off said fastenings by the separation of the heads, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

EDWIN A. LELAND.

Witnesses:

CHAS. L. RICHARDSON,  
E. W. SQUIRES.