

(No Model.)

W. J. McTIGHE.
CAR COUPLING.

No. 257,359.

Patented May 2, 1882.

Fig. 1.

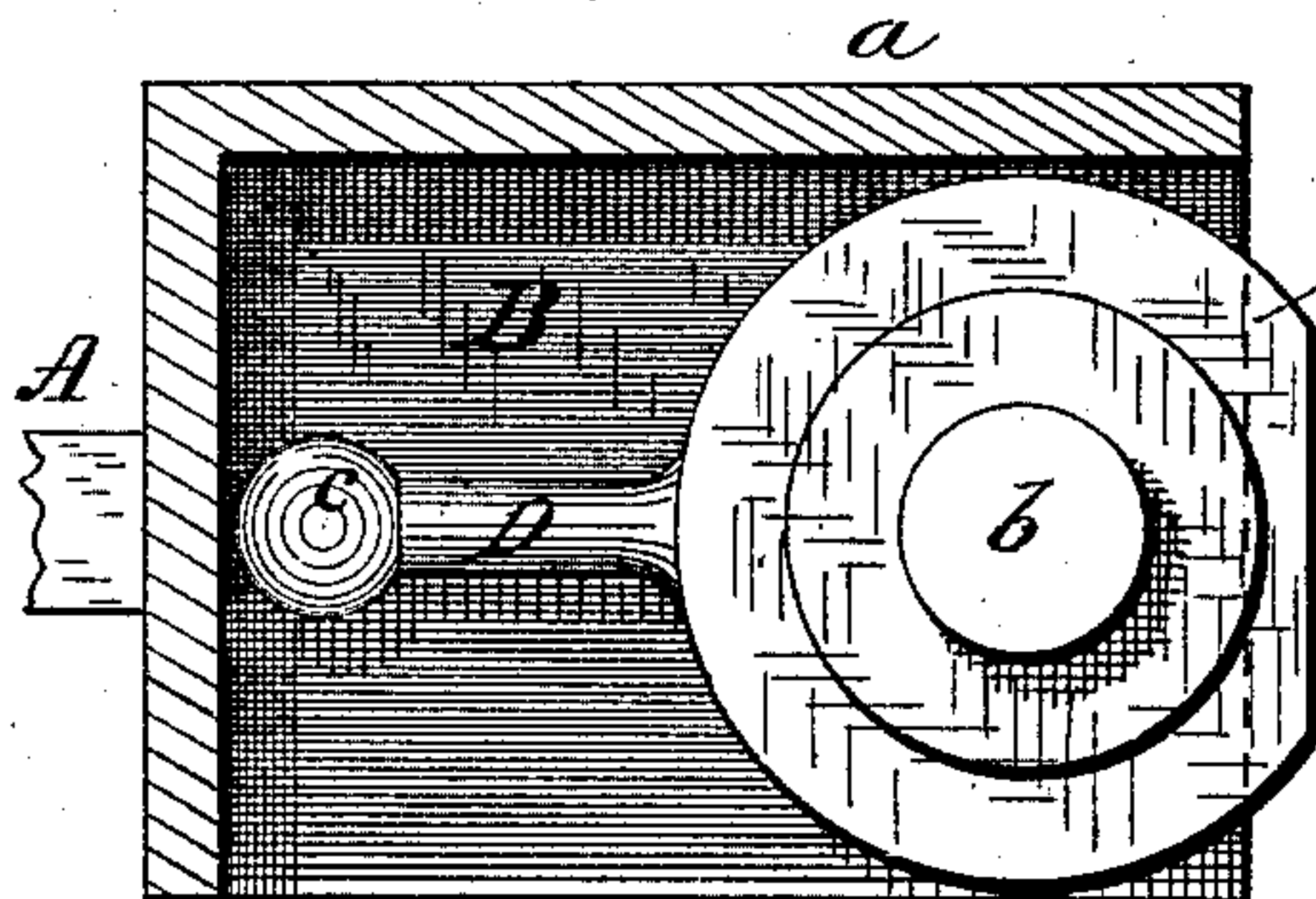


Fig. 2.

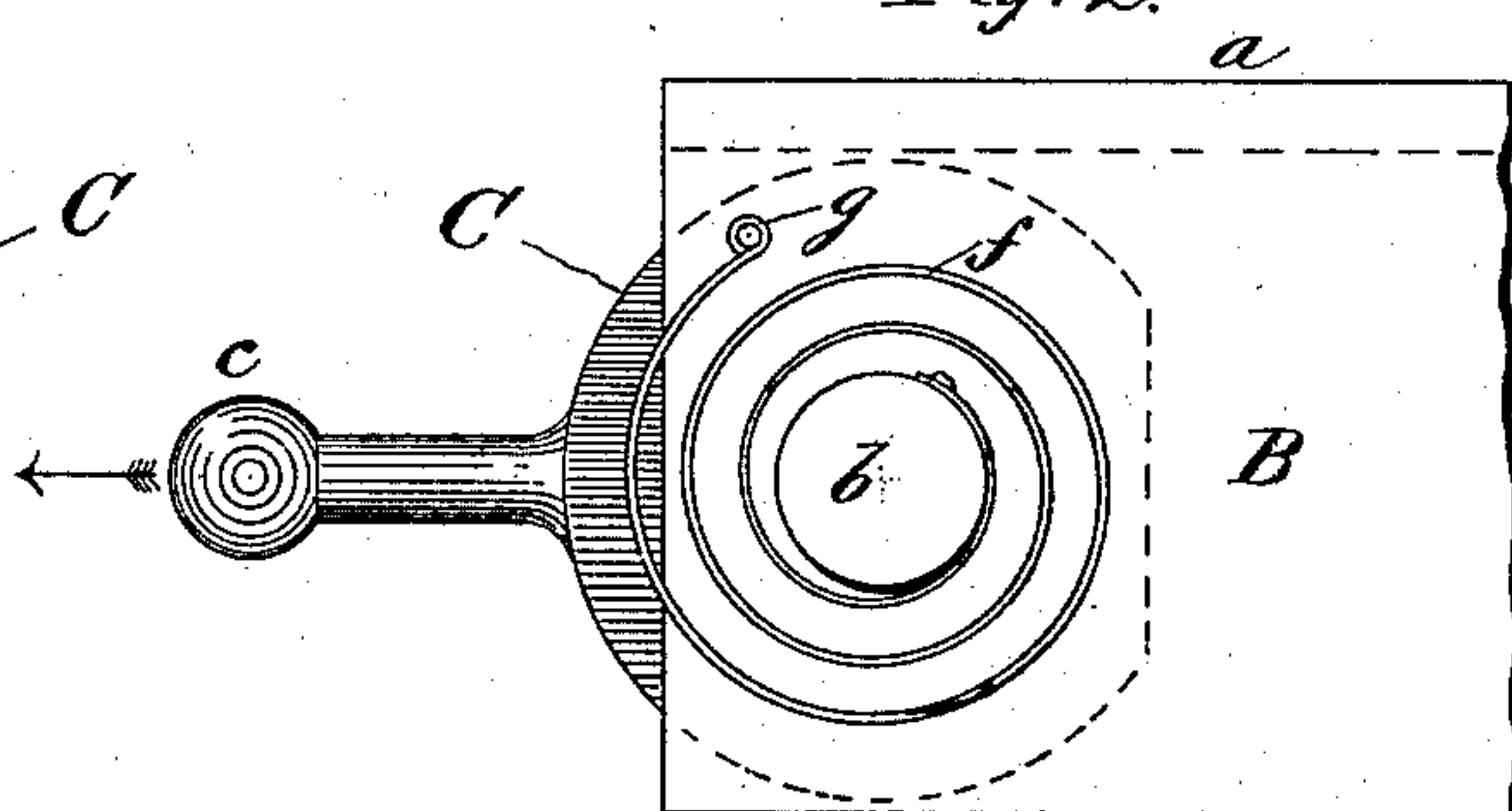


Fig. 3.

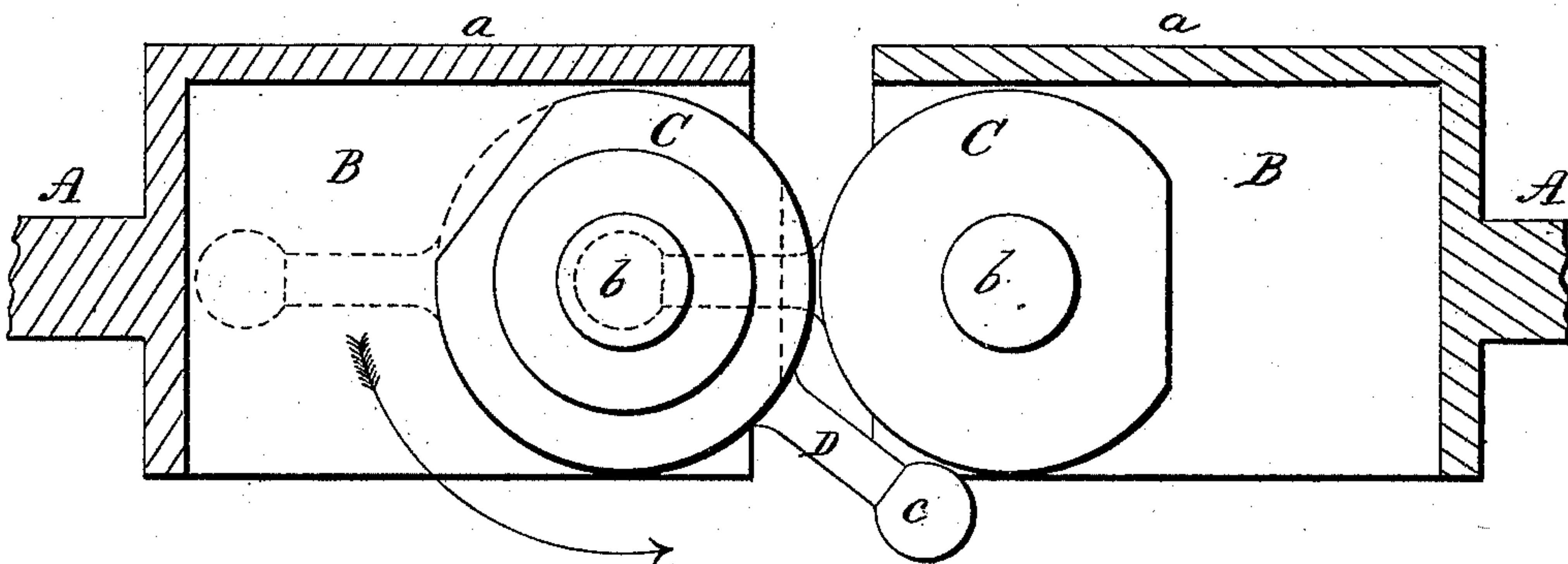


Fig. 4.

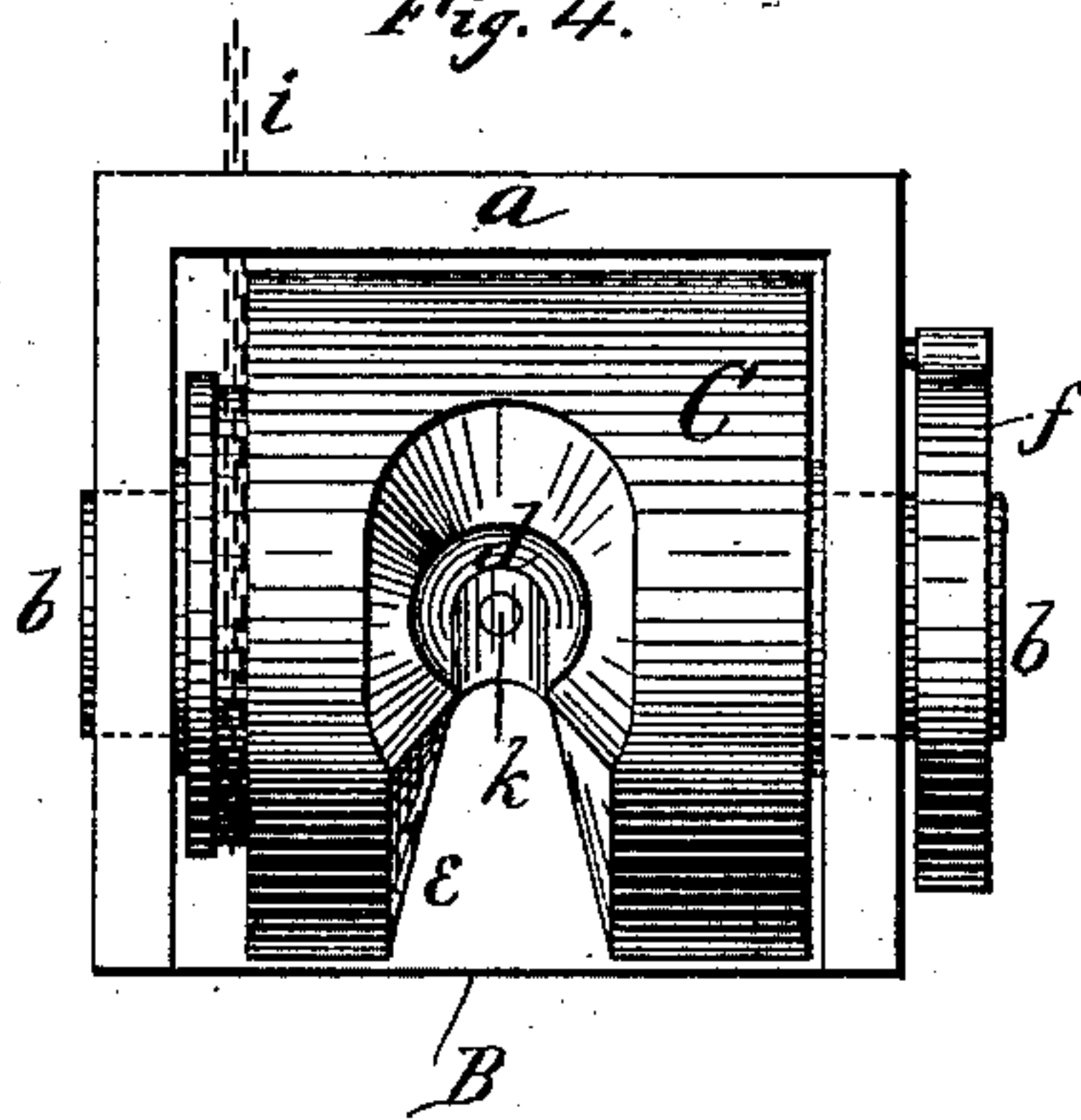
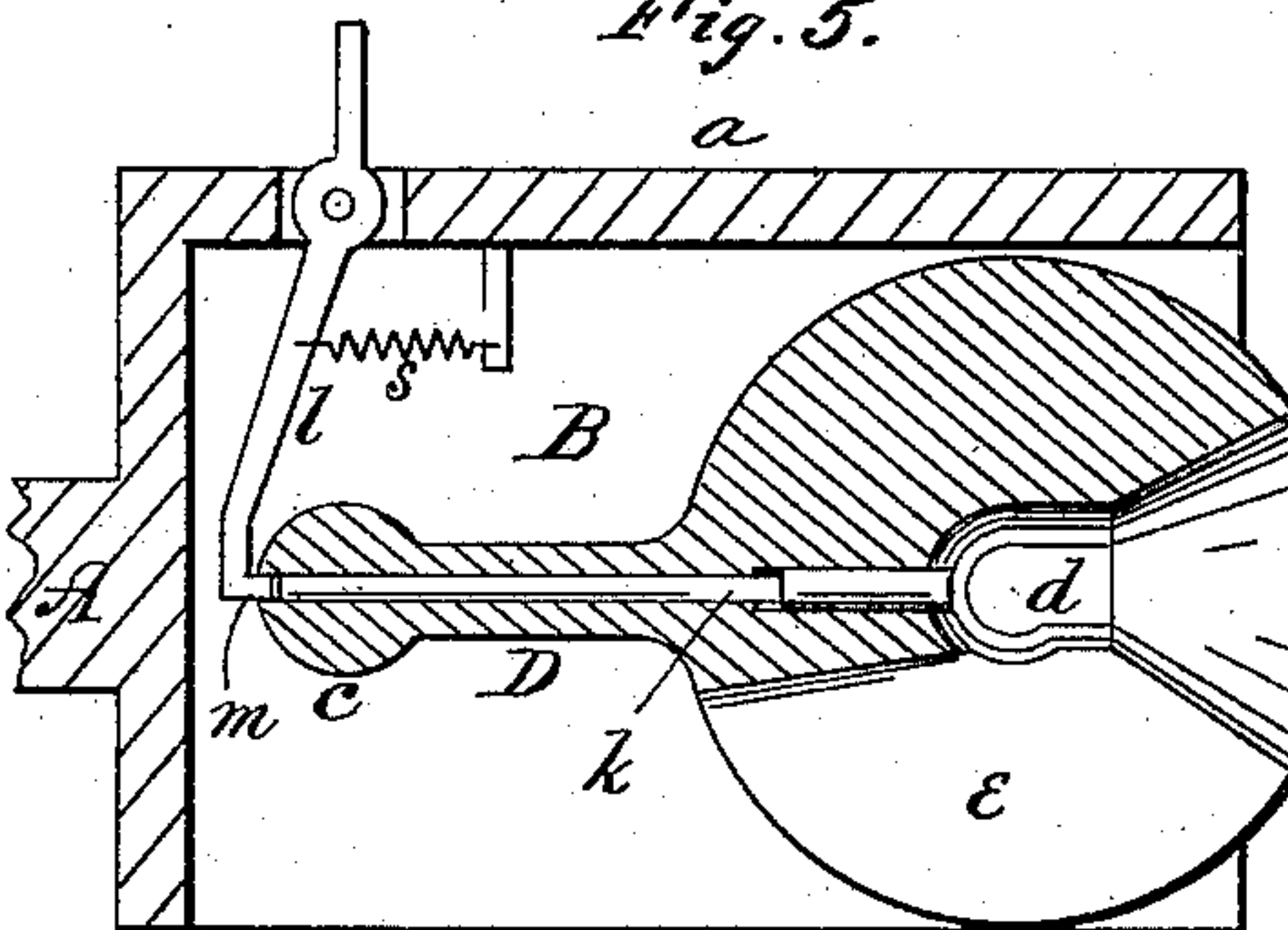


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM J. MCTIGHE, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-FOURTH TO GILBERT T. RAFFERTY, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 257,359, dated May 2, 1882.

Application filed March 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. MCTIGHE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 shows the draw-head broken to illustrate the rotary coupler set to receive the bar of another car. Fig. 2 is a side elevation of a draw-head about to couple to that shown at Fig. 1. Fig. 3 shows two coupled together. Fig. 4 is a front view of my improvement set for coupling. Fig. 5 is a longitudinal vertical section of Fig. 4.

This invention relates to car-couplings; and it consists in the novel construction and combination of parts, as hereinafter described and claimed.

Primarily my improvement consists in a rotary block or coupler journaled in the draw-head and capable of being turned to different angles of revolution, at one angle constructed to receive and at another angle provided with a bar having an enlarged or ball head. The ball-ended bar or nose of one coupler enters a cavity in the other, and the latter is then sufficiently rotated, being circumferentially slotted to prevent the withdrawal of said nose unless the receiving-coupler be brought back to the first-mentioned position.

More particularly my invention is as follows:

A is the usual draw-bar of the car, to which I attach in any suitable way the draw-head B, which I prefer to make with the solid top *a*, as shown. The bottom is open. In the draw-head B, I journal a massive coupling-block, C. The block C has the heavy journals *b* bearing in the sides of the draw-head B, and is provided with the nose-bar D, having the ball end *c*, as shown. The parts D *c* may be integral with the part C, as shown, or made separate and attached in a suitable manner. At a point

about opposite diametrically in the block C from the bar D, I form a radial cavity or recess, *d*, of a diameter equal to or slightly larger than the ball *c* on bar D, having its inner end spherical and coincident with the axis of revolution of block C. A circumferential slot, *e*, is formed in the block C, extending from the recess *d* around nearly to the base of bar D and opening into the central cavity formed at the end of recess *d*. The mouth of recess *d* is made divergent or bell-shaped, as shown at Fig. 5. One of the journals *b* extends out laterally through the draw-head B, and has attached to it the inner end of a coiled spring, *f*, whose outer end is attached by a pin or screw, *g*, to the draw-head B. The spring *f* is so adjusted as to normally hold the coupling-block C in the position shown by Fig. 2—i. e., with the bar D projecting out horizontally in front of the draw-head—and if the block C be revolved, upon releasing it the spring *f* will carry it back to the said normal position.

The block C has a pulley-face, *h*, formed on it, and in this, which may be properly sprocketed in casting, I place a chain, *i*, which may then be carried up through the top *a* of the draw-head to a point at or near the top of the car and arranged with suitable devices, whereby the chain *i* may be operated to turn the block C in either direction. As these devices may be varied greatly, and are within the scope of ordinary mechanical skill, I do not particularly describe them. Suppose the cars to be coupled are represented by Figs. 1 and 2, and both are provided with my coupling devices above described. The couplings of both cars are in the normal condition shown in Fig. 2 and the brakeman is on the car belonging to Fig. 1. By means of the chain *i* he rotates the coupling-block C until it is in the position shown in Fig. 1, having the mouth of recess *d* pointed toward the approaching car. When the latter comes far enough its bar D passes in the recess *d* until its head *c* is at the central part of the recess, when, the coupling-block C, Fig. 1, being released, instantly flies into the position shown at Fig. 3, where its preparatory position is shown by dotted lines. This locked po-

sition is obtained by the bar D traveling around through the space of slot *e* until the ball *c* has solid metal abutments behind it to shoulder against and absolutely prevent its withdrawal.

5 In this position the coupling is in the condition of a ball-and-socket joint, and will permit of a free vertical oscillation; and by making the walls of slot *e* divergent, lateral play is freely allowed, so that the coupling thus effected so
10 securely still has the requirement of complete flexibility. To effect this rotation automatically for locking, I proceed as follows: I core out the bar D and ball *c* and place therein a small plunger, *k*, Figs. 4 and 5. In the draw-
15 head B, I pivot the lever *l*, having the spur *m* fitting freely into the end of the hole in the ball *c*, as shown. A retractile spring, *s*, is attached to lever *l*, so that when block C is brought around ball *c* pushes lever *l* backward
20 till spur *m* is in line with the plunger *k*, when the spring *s* forces the spur into the opening and restrains the block C from flying back to normal. This operation pushes plunger *k* forward slightly, so that its inner end projects
25 into the recess *d*. When the ball *c* of the approaching car strikes into recess *d* it impinges against the plunger *k* and causes its end to force the spur *m* out of its socket, and the restraint being thus removed, the block C in-
30 stantly revolves by the power of spring *f* and locks the ball *c* of the other car.

To uncouple, the brakeman has simply to operate the chain *i* and revolve that block which holds the head of the other block until
35 it arrives at the position as in Fig. 1. This action also sets the coupling-block ready for automatic locking again.

I do not confine the scope of my invention to the precise details herein described, as they
40 may be greatly modified without departing from the essence of the invention.

Many different modes of revolving the coup-

ling-blocks may be used instead of the chains above proposed. Likewise the lever *l* and de-
45 vices for setting and releasing the blocks may be modified without altering the invention itself.

I claim as my invention—

1. In a car-coupling, the rotary block C, journaled on a horizontal axis, and having the recess *d* and slot *e*, in combination with suit-
50 able means for rotating said block, substantially as described.

2. In a car-coupling, the rotary block C, journaled on a horizontal axis, and having slot *e*, opening into recess *d* and at a point about
55 opposite the recess *d* provided with ball-ended coupling-bar D, in combination with suitable means for rotating said block, substantially as described.

3. In a car-coupling, the rotary reversible
60 block C, provided at one side with the recess *d* and at the other side with ball-ended coupling-bar D, and having the slot *e*, in combination with a spring, *f*, and suitable means for locking or setting the block against the ten-
65 sion of said spring, substantially as described.

4. The combination of the draw-head B, block C, having recess *d*, slot *e*, ball-ended bar D, and journals *b*, and spring *f*, substantially
70 as described.

5. The combination of draw-head B, rotary coupling-block C, and chain *i*, substantially
as described.

6. The combination of draw-head B, coupling-
75 block C, journaled therein, and having plunger *k*, and spring-lever *l*, having spur *m*, substantially as set forth.

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

WILLIAM J. MCTIGHE.

Witnesses:

T. J. MCTIGHE,

THOMAS S. O'CONNOR.