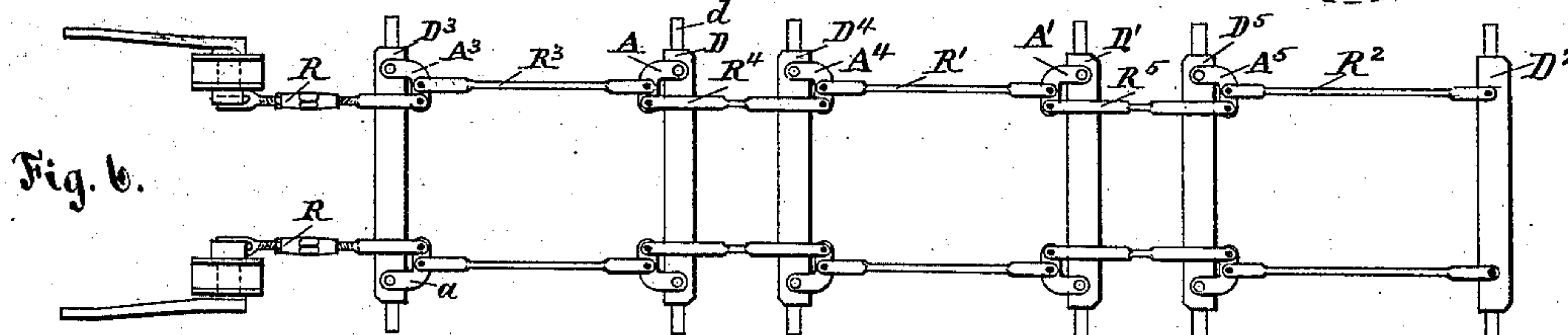
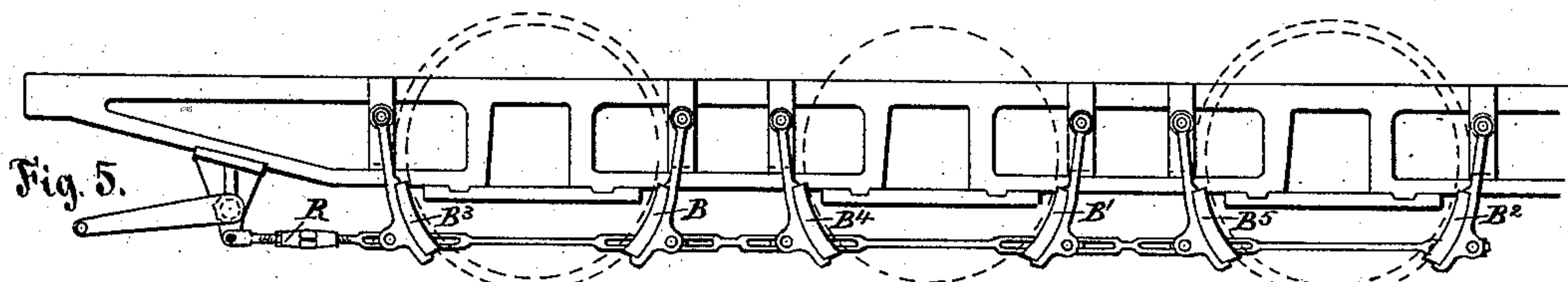
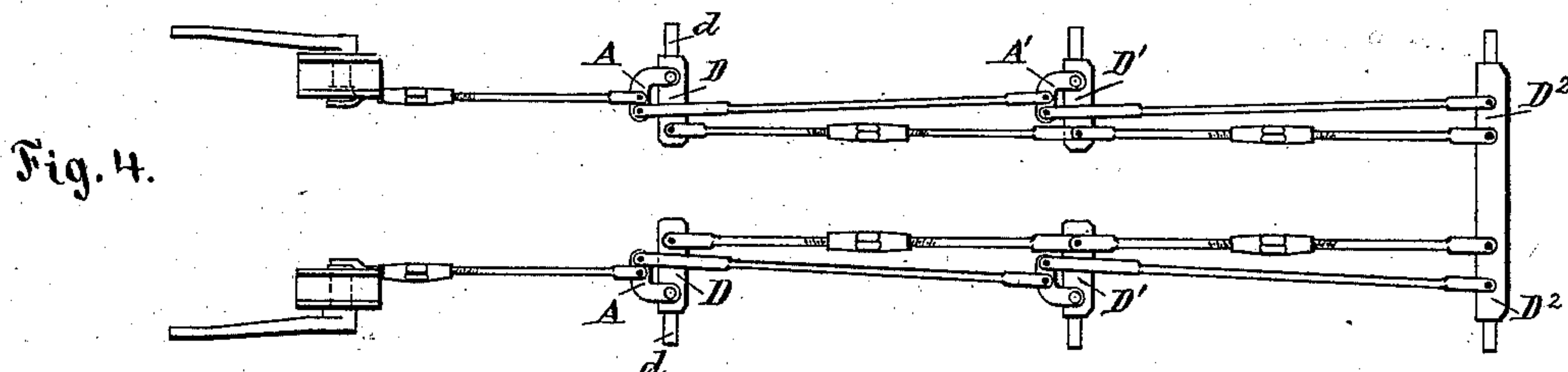
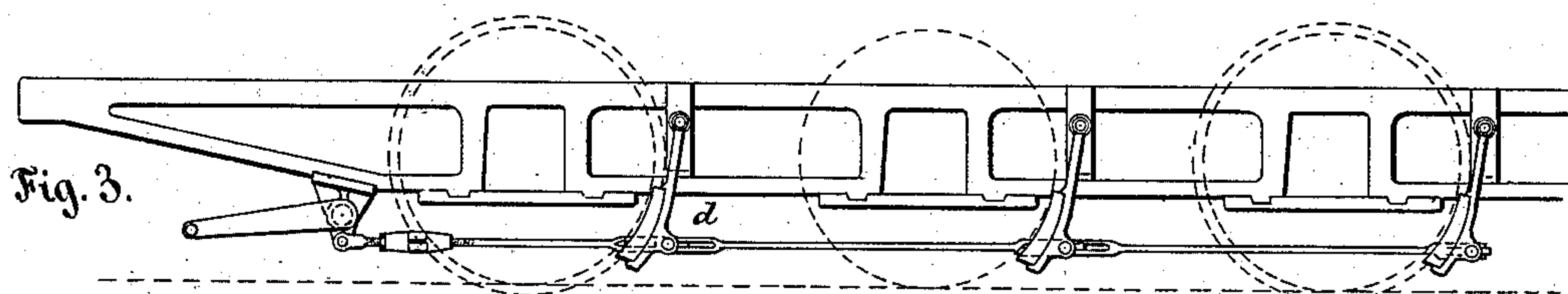
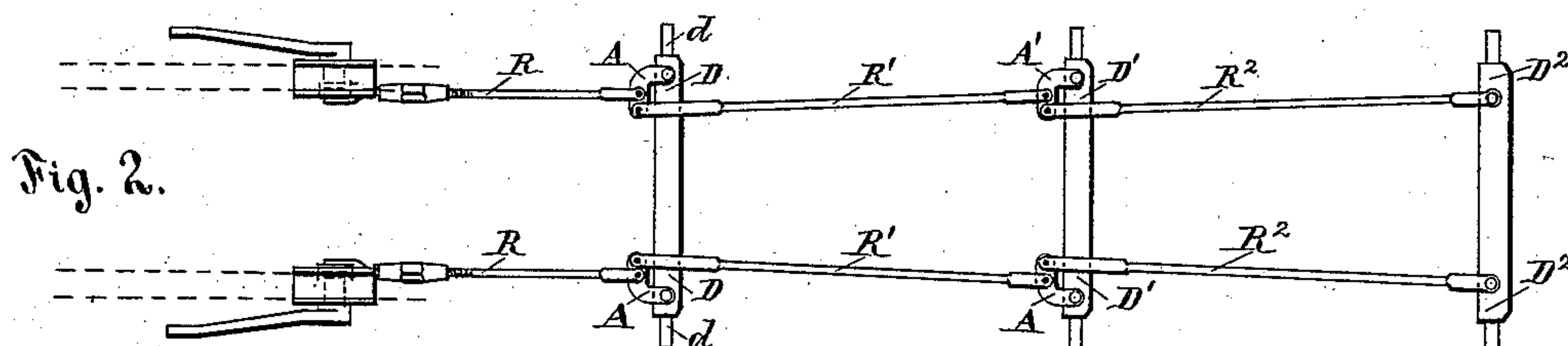
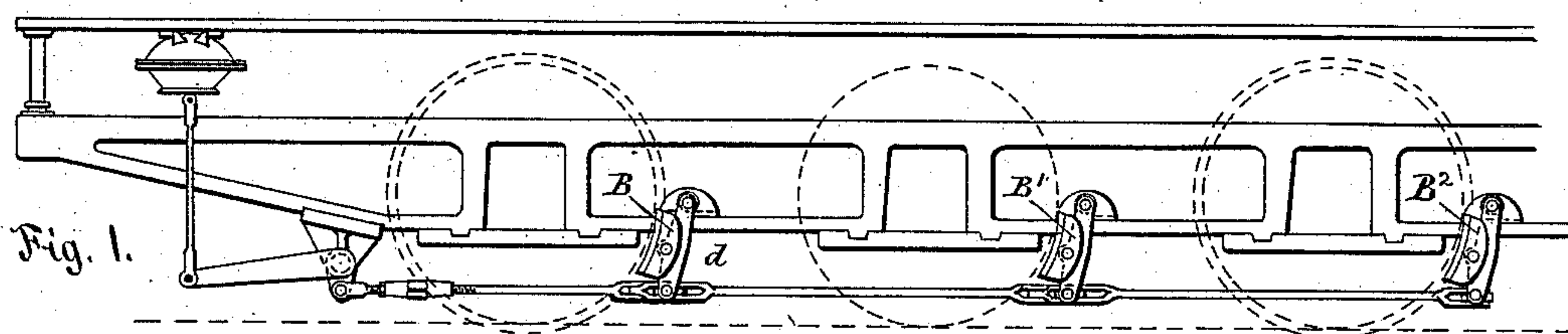


(No Model.)

A. P. MASSEY & E. NORMAND.
BRAKE.

No. 402,092.

Patented Apr. 23, 1889.



Witnesses:

H. C. Manning.
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Inventors:

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UNITED STATES PATENT OFFICE.

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BRAKE.

SPECIFICATION forming part of Letters Patent No. 402,092, dated April 23, 1889.

Application filed January 4, 1889. Serial No. 295,417. (No model.)

To all whom it may concern:

Be it known that we, ALBERT P. MASSEY, a citizen of the United States, and ELIE NORMAND, a subject of the Dominion of Canada, both residing at Watertown, in the county of Jefferson and State of New York, have invented an Improved Brake, of which the following is a specification, reference being had to the accompanying drawings making a part hereof, in which—

Figure 1 is a partial side view of a locomotive, showing an apparatus embodying our invention, in which each brake-block is pinned near the middle of the pendent lever which carries it. Fig. 2 is a plan of Fig. 1, certain parts being omitted for clearness, and also a plan of Fig. 3. Fig. 3 is a side elevation like Fig. 1, except that the brake-block is secured to its pendent lever in a different way. Fig. 4 is a plan of a modification, in which the middle portions of the brake-beams shown in the other figures are dispensed with. Figs. 5 and 6 are a side elevation and plan illustrating our invention with two brakes on each wheel.

Our invention relates to that class of brakes in which the power is applied through a double set of pull-rods and levers; and it consists in the combination of the lever with the brake-block by means of the brake-beam, which preferably connects two brake-heads, one at each end of the brake-beam, but which may of course be simply the end of a brake-beam, as in Fig. 4.

In the drawings, A is an equalizing-lever; B, a brake-block or brake-head, and D the beam which connects the equalizing-lever A with the brake-block B. This part D, in all the figures except Fig. 4, is shown as a brake-beam, and that is the preferred form in all cases where these beams can extend across the locomotive or car without inconvenience; but in some cases it is not desirable to have brake-beams across the locomotive, and in these cases some or all of the brake-beams have their middle portions omitted, as in Fig. 4, and their inner ends, therefore, must be anchored in some suitable way.

In Fig. 4 we have shown each of the beams D D' anchored to the beam D²; but it will be

obvious that this is a mere detail of construction, except that the beams D D' must of course be suitably anchored when they are made in two parts, as in Fig. 4, instead of in one single piece, as in the rest of the figures.

In some cases it is desirable to support the brake-blocks B B', &c., each upon a pendent lever, either as in Fig. 1 or as in Figs. 3 and 5, both constructions being equally well known, and when brake-blocks of either of these classes are used the journal *d* on the end of beam D passes through this pendent lever, as will be clear from the drawings. Where the brake-blocks B B', &c., are held each by a link, as is common and has long been well known, the journal *d* should of course pass through the brake-block.

In practice we prefer to apply the brakes to one side only of each wheel, as in Figs. 1, 2, 3, and 4; but it will be obvious that where a pair of brakes is desired for each wheel our invention is equally applicable, as in Figs. 5 and 6.

The novelty of our invention consists in the combination of the double set of pull-rods R R', &c., and levers A A', &c., with the brake-heads or brake-blocks B by means of the beams D, our main purpose being to provide an apparatus with a double set of pull-rods and levers, one set of pull-rods and levers for each side of the locomotive, which is simple, effective, and better adapted to stand the shocks and jars to which it is subjected than any other apparatus of this class known to us.

In operation, power is applied to the pull-rods R, as indicated on the left of Fig. 1, or in any other suitable way, and this power through levers A is applied to beam D, and through that to brakes B; but as soon as brakes B bring up against their wheel the power is applied through rods R' to levers A, and through levers A' to beam D', and through beam D' to brake-heads B'; and when brake-heads B' bring up against their wheel the power is applied through levers A' to rods R², and through those rods to beam D² and brakes B², although, as will be well understood by all skilled in the art, all the brakes act simultaneously, or practically so.

In Figs. 5 and 6 the power applied through rod R is applied to brakes B³ through levers A³ and beam D³, thence through rods R³ to levers A, and through levers A and beam D to brake-heads B, and from levers A through rods R⁴ to levers A⁴, through levers A⁴ and beam D⁴ to brake-heads B⁴, thence through rods R⁵, levers A⁵, and beam D⁵ to brake-heads B⁵, and thence through rods R² and beam D² to brake-heads B².

We are aware of Reissue No. 10,796 to Poor, dated January 11, 1887, and of Patent No. 386,148 to Massey, dated July 17, 1888, and disclaim all that is shown in them, for in neither is there any part at all resembling the beams D D', which are essential elements in our combinations.

What we claim as our invention is—

1. In combination, the double set of pull-rods R R', &c., the double set of levers A A', &c., the beams D D', &c., and the brake-heads B B', &c., all arranged and operating substantially as described.

2. In combination, the double set of pull-rods, the double set of levers, the beams, and the brake-heads, with the terminal beam D², and brake-heads B², that terminal beam being connected directly with the pull-rods, while the other beams in the system are connected with the pull-rods through the levers, all substantially as shown.

ALBERT P. MASSEY.

ELIE NORMAND.

Witnesses:

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A. H. ELDREDGE.