(No Model.)

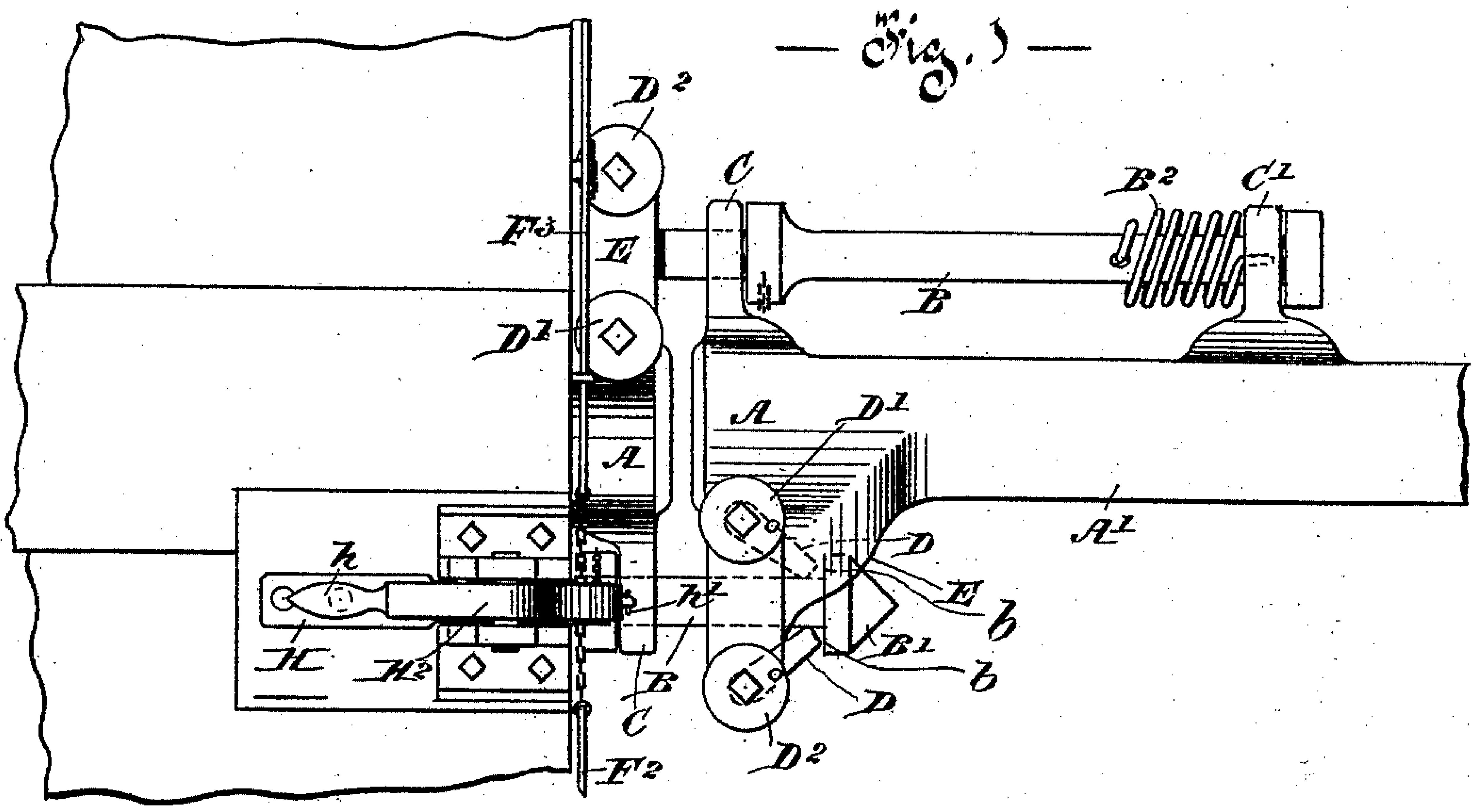
2 Sheets—Sheet 1.

A. DINGWALL.

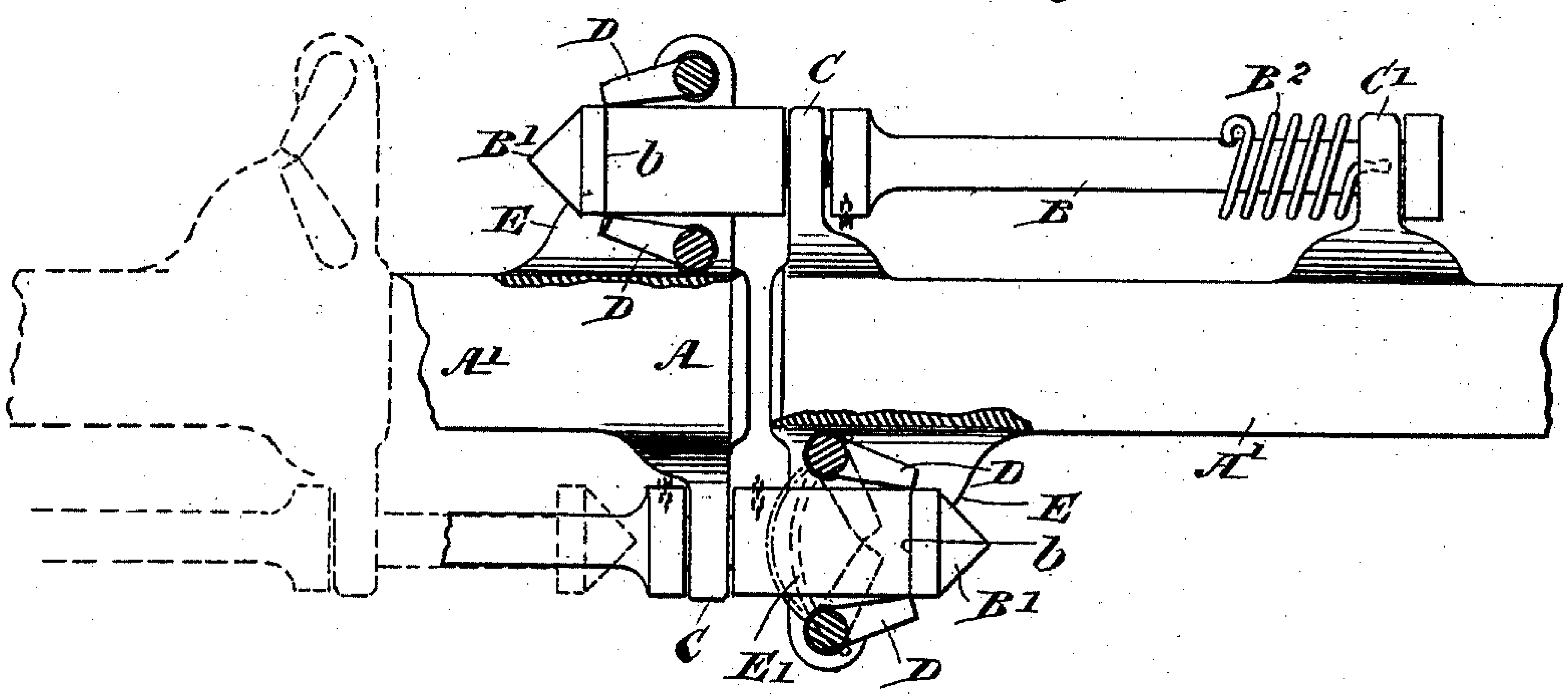
CAR COUPLING.

No. 497,121. Patented May 9, 1893.

— Fig. 1 —



— Fig. 2 —



Witnesses

Inventor

By his Attorney

(No Model.)

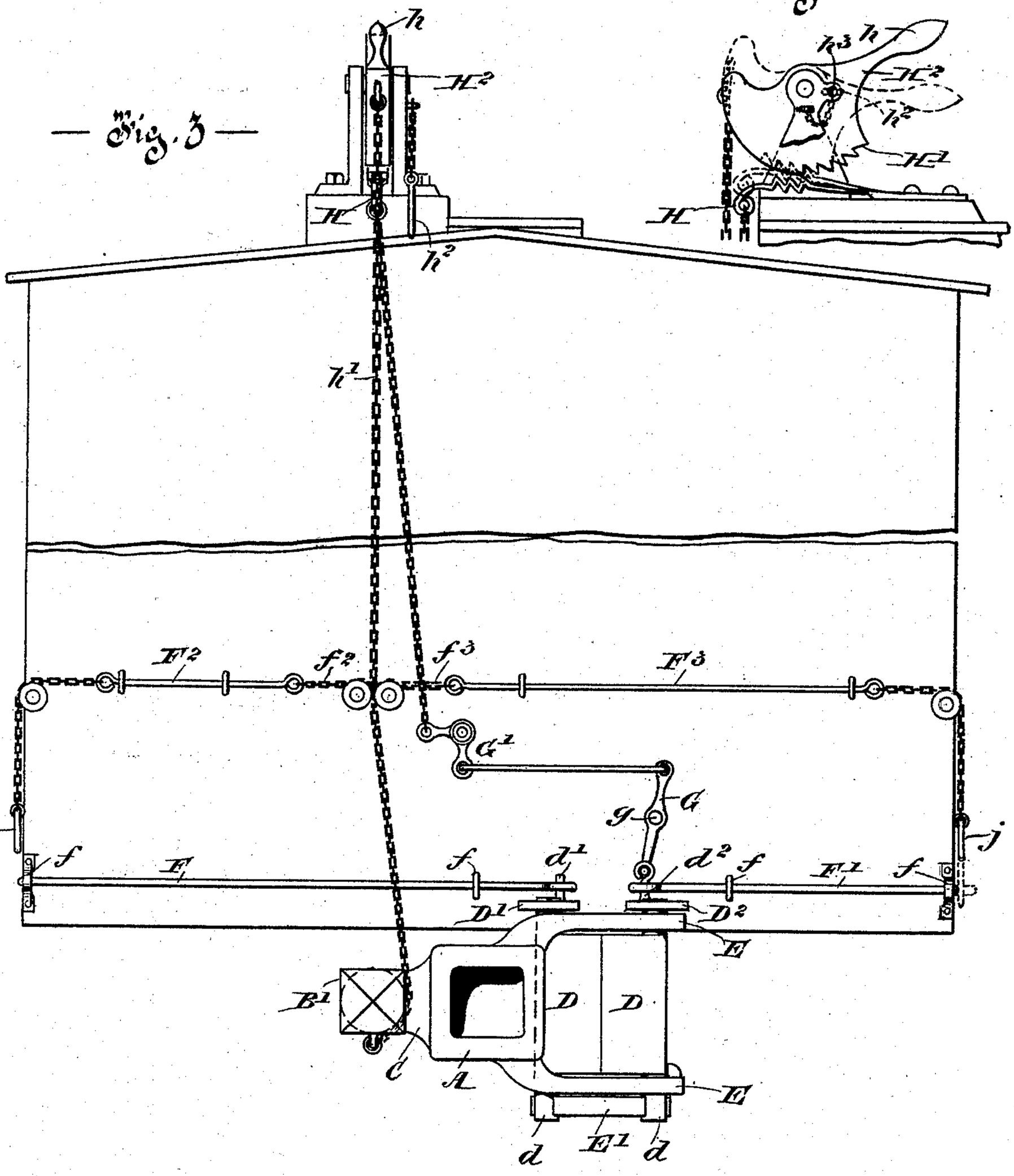
2 Sheets—Sheet 2.

A. DINGWALL.

CAR COUPLING.

No. 497,121. Patented May 9, 1893.

— Fig. 3 —



— Fig. 4 —

Witnesses
Fred. W. McLeod
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UNITED STATES PATENT OFFICE.

ALEXANDER DINGWALL, OF MONTREAL, CANADA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 497,121, dated May 9, 1893.

Application filed September 22, 1892. Serial No. 446,640. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER DINGWALL, of the city of Montreal, in the district of Montreal and Province of Quebec, Canada, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare that the following is a full, clear, and exact description of the same.

This coupler is of the arrow-head character and distinguished by a construction which calls for a rotary head and a flexible holder on each draw bar which may or may not include the usual head for link and pin purposes.

For full comprehension however of the invention, reference must be had to the annexed drawings, forming a part of this specification in which like symbols indicate corresponding parts and wherein—

Figure 1 is a plan showing a coupling effected and the parts in their drawing positions the top of a car and connections for operating the coupler being shown in part on the one hand and the like parts omitted on the other. Fig. 2 is a similar view to Fig. 1 of the same parts only with the heads and holders in uncoupled position, the dotted lines showing them apart, and Fig. 3 a face view of the coupler and end of the car with parts in readiness for coupling, and Fig. 4 a detail side view, partly broken away, of apparatus for uncoupling from the top of a car.

I have shown my invention in combination with the usual draw head A on the draw bar A′ for link and pin coupling but it will be readily seen that other forms of central pivotal drawbars could be used.

On one side of a central drawbar, such as A′, a bar B with arrow-shaped head B′ is journaled near its forward end and at its rear end in bracket bearings C C′ projecting from the side of the drawbar A′, while on its opposite side a pair of gates D D are vertically pivoted at one side or flatwise in and between upper and lower arms E E projecting from the top and bottom of the drawbar A′, the pivotal axes, in the form of spindle ends *d d*, of the gates being located toward the inner and outer ends of the arms E E and projecting through same. The gates are of such a width that, when their free ends or sides are impelled toward each other by a bow spring E′ connected with their lower projecting spindle ends *d d*, they meet centrally and present a beveled recess for the more ready entry of the arrow head B′. The formation of the head B′ of the bar B provides two shoulders *b b* which when the bar is held in its normal position by the spring B^2 encircling the bar B and having its ends connected respectively with it and the bracket C′, are adapted to bear on the free ends of the gates D D after the head has been passed through them and the draft is on. In order to uncouple it is necessary to rotate the bar B until its top and bottom plain sides are parallel with the free sides or edges of the gates D D of the opposite coupler, the rotation of the bar serving to spread the gates apart and to allow of this being done from the top or either side of the cars the following mechanism is used:

On each of the upper projecting spindle ends *d d* of the gates D D are mounted horizontal crank disks D′ D^2 connected by pins *d′* d^2 with the inner ends of horizontal sliding rods F F′ (carried in suitable eyes *f f* along the face of the car body) and the disk D^2 being further connected by the same pin d^2 with the lower end of a lever G pivoted at *g* to the face of the car. The upper end of this lever is connected through rod and chain connections G′ with the free projecting end of a spring bar H on top of the car adapted to engage the ratchet-edged portion H′ of a grooved segment H^2 axially mounted over the spring bar and provided with a suitable handle *h*, a chain *h′* being taken from such segment down to and partially around the bar B so that when pulled upon it will rotate the bar the required distance as before mentioned. The sliding rods F F′ act in conjunction with other rods F^2 F^3 and chain connections f^2 f^3 also leading to and connected with the bar B whereby upon either of the rods F^2 F^3 being drawn upon it will rotate the bar B and as it is necessary to hold it in its reversed position on one car until the same action has been performed on the other, eyes or rings *j j* are attached to the ends of the rods F^2 F^3 so that when either is drawn out the required distance the eye can be slipped over the projecting end of the corresponding rod F or F′ and thereby held until

by the withdrawal of the heads from the gates D D these latter are impelled together by the spring E′ and the rods through their connection with the disks D′ D² drawn inward with the result that the rod connection F² or F³ is freed and the bar B allowed to resume its normal position ready for coupling. In uncoupling from the top of the cars, the segment H² on the first car after being operated to rotate the head of such car is held in position by a pin h^2 passed through an eye h^3 in the disk and bearing against the rear of the standards in which such segment is mounted, this being necessitated because the spring bar H of this car is not free to engage the segment until the head of the second car is rotated which will have the effect of spreading the gates of the first car and so operating its lever G to free the spring bar and allow it to engage the segment. After the rotator head of the second car is rotated by operating its segment (the spring bar of which is free to act) the pin h^2 is removed from the segment of the first car and upon the heads being withdrawn from the holders the closing of the gates will through the connections G′ disengage the spring bars of each car from the segments and allow the rotatory heads to resume their normal position for coupling.

It will be noticed that the depth of the gates D D (forming what I term the holders) is such as to insure the automatic coupling of the heads of cars at different levels and while I have shown special means whereby uncoupling can be effected in part automatically from the top or sides of the car it will be quite apparent that other devices such as a chain attached to the bar B and carried over a pulley on the front of the car and provided with a ring to be held on a hook temporarily would suffice in many cases.

What I claim is as follows:

1. In a car coupler, the combination of two drawbars each of which carries on opposite sides a coupling head and a holder for a like head; each of the said heads being rotatory, of arrow-head form and having like butting shoulders on two sides thereof; and each of the said holders being in the form of two vertically pivoted gates, extending above and below the level of said heads and normally held with a yielding resistance at approximately right angles to each other to form a recess for the reception of the coupling head, the free ends of such gates being adapted to engage the butting shoulders of said head when inserted in the holder, and the said head upon its rotation acting to free itself from said gates as set forth.

2. In a car coupler, the combination with the car body and a draw-bar carrying on opposite sides a rotatory coupling head and a holder in the form of vertically pivoted gates with means for holding them closed, of a pivoted segment mounted on the top of the car body and having its edge partially grooved and ratchet-toothed, a spring toothed bar adapted to engage said ratchet teeth, a flexible connection between said segment and the rotatory bar, a lever pivoted on the front of the car body, crank connection between one end of such lever and one of said holder gates, connections between the other end of said lever and said spring bar, and means for temporarily locking said segment as set forth.

3. In a car coupler, the combination with the car body and a drawbar carrying on opposite sides a rotatory coupling head and a holder in the form of vertically pivoted gates with means for holding them closed, of an upper and lower pair of sliding rods carried horizontally on the front of the car body, crank connections between the inner ends of said lower rods and the said gates, a flexible connection between the inner ends of said upper rods and the rotatory bar and means for drawing outward and effecting a slipping connection of the outer ends of said upper rods with the outwardly projected outer ends of the lower rods whereby upon an inward movement of these latter such upper rods will be released as set forth, and means for holding them closed, as set forth.

Montreal, September 14, 1892.

ALEXANDER DINGWALL.

In presence of—

FRED. J. SEARS,

WILL P. MCFEAT.