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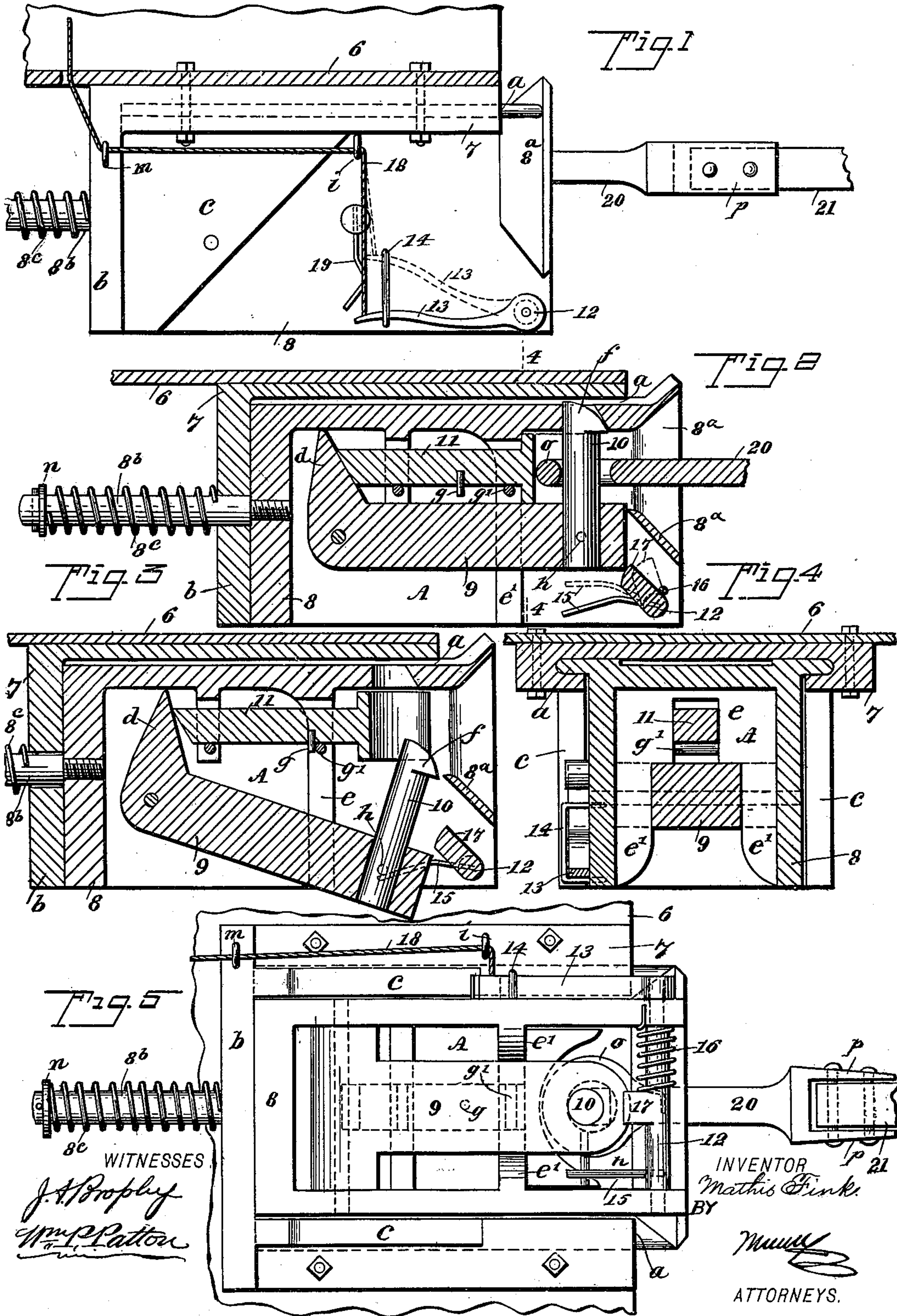
Patented May 30, 1899.

M. FINK.

COUPLING AND DRAFT CUSHIONING DEVICE.

(Application filed Jan. 25, 1899.)

(No Model.)



UNITED STATES PATENT OFFICE.

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COUPLING AND DRAFT-CUSHIONING DEVICE.

SPECIFICATION forming part of Letters Patent No. 626,154, dated May 30, 1899.

Application filed January 25, 1899. Serial No. 703,358. (No model.)

To all whom it may concern:

Be it known that I, MATHIS FINK, of Chaska, in the county of Carver and State of Minnesota, have invented a new and Improved
5 Coupling and Draft-Cushioning Device, of which the following is a full, clear, and exact description.

This invention relates to means for connecting a traveling power device with the load to
10 be drawn, and has for its object to provide a simple practical device for the purpose indicated, which will be conveniently connectible with the source of power, that may be a portable steam-engine, such as a traction-engine,
15 or horses attached to a draft-truck, and also to the movable load, which may be a heavy threshing-machine, a hay-loading device, or any other transferable load that is to be drawn by the motive agent.

20 Furthermore, it is an object of the invention to so construct the coupling device that a spring-cushion will be introduced between the motive agent, such as a traction-engine, and the load it is to pull, whereby the inertia of the heavy load will be gradually overcome and danger of injuring or breaking the
25 coupling device be obviated.

The invention consists in the novel construction and combination of parts, as is hereinafter described and claimed.
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Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

35 Figure 1 is a side view of the device, illustrating its application. Fig. 2 is a sectional side view of the same, showing working parts in coupled adjustment. Fig. 3 is a sectional side view showing the working parts in uncoupled adjustment. Fig. 4 is a transverse
40 sectional view substantially on the line 4-4 in Fig. 2, and Fig. 5 is a reversed plan view of the coupling device.

In the drawings showing an embodiment
45 of my invention as applied to a traveling motor, such as a traction-engine, 6 indicates a portion of the rear platform of the motor whereon the coupling device is held for service. Upon the lower side of the platform 6 is
50 secured a guideway 7, adapted to slidably support the body or draw-head 8 of the coupling

tion *a*. (Best shown in Fig. 4.) The bracket-like guideway 7 comprises a top plate, from which depend the rear wall *b* and two side
55 braces *c*, all formed integral with the top plate, thus providing a strong light support for the coupling proper. The draw-head 8 is box-like in form, having parallel sides, an integral end wall, and an integral top plate, and
60 an opening to the chamber *A* of the draw-head extends throughout the bottom of the draw-head to give freedom of action to the details located within the same.

A locking-dog is provided as a main work-
65 ing part, consisting of an elongated and preferably rectangular body-piece 9, from which upwardly projects an abutment *d* at its rear end, said abutment having a rearwardly-inclined front wall. The dog 9 is pivoted in the
70 draw-head 8, and is thus held free to rock below a horizontal plane, but is prevented from excessive upward movement by contact with the upper edge of the vertically-slotted partition-wall *e*, in which the dog may vibrate,
75 said wall being located near the longitudinal center of the draw-head, and, as shown in Fig. 4, has the inner corners of its depending spaced members *e'* rounded to afford clearance to the dog-body for its free rocking
80 movement.

A coupling-pin 10 is projected from the upper side of the dog 9 near its front end, and on its free upper end a downwardly and forwardly sloped lip or head *f* is formed, and
85 this end of the pin will enter an aperture in the top plate of the draw-head also having a sloped front wall that will contact with the sloped face of the lip or head and arrest the upward movement of the pin, this position
90 of said pin disposing the body of the dog 9 in a horizontal plane, as shown in Fig. 2.

A receiving-throat is formed on the front end of the draw-head 8, having four flaring walls 8^a, and the lower wall thereof is so positioned that its higher inner edge will be at
95 or near the vertical center of the chamber in the draw-head, as indicated in Figs. 2 and 3.

A pusher-bar 11 is adapted to slide longitudinally in the draw-head 8 above and near
100 to the dog 9, which bar is forked at the front end to permit the pin 10 to move freely therein. The rear end of the pusher-bar 11 may be sloped to have contact with the sloped front

face of the abutment d , so that the rocking depression of the dog 9 will push the bar 11 forward a short distance, which is defined by the impinge of the depending lug g , that projects from the pusher-bar upon a transverse support g' for said bar, as indicated in Fig. 3.

A rock-shaft 12 is journaled at its ends in the side walls of the draw-head 8, one of said ends being projected outside of the wall it is journaled in, and upon said extension of the rock-shaft a rock-arm 13 is secured, which trends rearwardly adjacent to the side wall of the draw-head, passing loosely through the guard-loop 14, which projects from said side wall. A lifting-arm 15 extends rearward from the rock-shaft 12 and projects below a stud h , that is a short lateral projection from the front portion of the rocking dog 9, the lifting-arm being depressed by the tension of the torsion-spring 16, which is mounted upon the rock-shaft and has its ends respectively secured to said shaft and to the side wall of the draw-head 8, the stress of this torsion-spring also serving to normally hold the rock-arm 13 seated upon the lower end of the guard-loop 14, as shown in Figs. 1 and 4. A short rest-block 17 projects from the rock-shaft 12 in an upward and rearward direction, so as to be adapted to support the front end of the dog 9 when the latter is rocked into a level position, as shown in Fig. 2.

From the free end of the rock-arm 13 a flexible connection 18, which may be a cord or chain, extends up to loosely engage a support i , and thence to another support m , from which the flexible connection passes through the platform 6 for its convenient manipulation by the occupant of said platform. A detent-spring 19 depends from the side wall of the draw-head 8, and from its form is adapted to engage and temporarily hold the rock-arm 13 inclined upwardly and rearwardly, as indicated by dotted lines in Fig. 1.

A draw-bar 8^b projects rearwardly and loosely through an orifice in the depending wall b of the guideway 7, having a strong coiled spring 8^c mounted thereon, said spring having its ends respectively in contact with the wall of the guideway and with a washer n held in place on the rear end of the draw-bar by a cross-pin or equivalent means.

A coupling-link 20 is provided to detachably connect a threshing-machine, a hay-loading apparatus, or any other heavy movable load mounted on wheels or runners with the portable engine that is to pull such a load. As shown, the coupling-link 20 comprises a bar of suitable length having a ring-eye o at one end and a pair of spaced clip-plates p formed on the opposite end, the latter being designed for a bolted attachment upon the end of a draft-pole 21, that is projected from the machine or other movable load that is to be hauled by the engine having the coupling thereon.

In effecting a coupled connection of the engine-platform 6 with the draft-pole 21 the lat-

ter is directed toward the flared mouth of the draw-head 8, and the draft-engine is then moved rearward so as to enter the ring end o of the coupling-link 20 within the draw-head. It is to be understood that the dog 9 has been dropped into the inclined position shown in Fig. 3 before an attempt is made to effect a coupled engagement of the power with the load, this being readily accomplished by pulling on the flexible connection 18, so as to lift the rock-arm 13 and move the rest-block 17 forwardly and away from the front end of the rockable dog 9, the detent-spring 19 then serving to retain the rock-arm lifted against stress of the torsion-spring 16, a subsequent relaxation of draft strain on the flexible connection after the dog has fallen permitting the torsion-spring to return the rock-arm to its normal lowered position. The depression of the dog 9 moves the pusher-bar 11 forward until the depending lug g thereon strikes against the transverse supporting-bar g' , which will prevent the dog from falling an improper degree, the stud h by impinging upon the lifting-arm 15, as indicated by dotted lines in Fig. 3, coacting to stop the fall of the rocking dog. The fall of the dog 9 into an inclined position gives to the coupling-pin 10 a forward inclination and disposes the sloped surface on its head f , substantially in the same inclined plane with that of the lower cross-wall of the throat of the draw-head. Upon a forcible insertion of the ring end o of the coupling-link 20 into the mouth of the draw-head 8 said end will strike upon the curved base of the forked end of the pusher-bar 11 and slide the bar rearwardly, which will correspondingly rock the dog 9 upwardly at the forward end, passing the pin 10 through the ring end o and thence into the aperture made to receive it in the top plate of the draw-head, thus effecting a coupled connection of the engine with the shaft-pole 21 by means of the coupling-link 20. The rocking movement of the dog 9 into a horizontal position will permit the rest-block 17 to rock into a rearwardly-inclined position after the dog has passed above said rest-block, the tension of the torsion-spring 16 causing the rest-block to assume such an inclination, which is limited by the contact of the rock-arm 13 upon the lower end of the guard-loop 14. The rest-block 17 is now loosely engaged with the lower forward corner of the dog 9 and sustains it level and the pin 10 in coupled position.

It will be evident from the foregoing description that the pull of the draft-engine having the improved coupling device on it will first be imposed upon the cushion-spring 8^b , which by its gradual compression will absorb any sudden shock incident to the overcoming of inertia of heavy load strain, so that the movable load may be started with safety to the engine and coupling that connects it to the load it is to draw. When the load is to be uncoupled from the source of power that has moved it, this may be effected quickly by

pulling upon the connection 18, so as to rock the rest-block 17 away from the dog 9, which which will permit the weight of said dog to actuate it, resulting in the inclination of the dog and lowering of the pin 10, so as to release the coupling-link 20, and it should here be mentioned that the heft of said dog must be sufficient to rock it positively as soon as it is free to fall into an inclined position and is arrested in the manner hereinbefore explained. Furthermore, when the flexible connection 18 has been pulled to lift the rock-arm 13, if this is done gently, the comparatively weak detent-spring 19 will temporarily hold the rest-block 17 away from the end of the dog 9; but a quick jerking action applied to the cord 18 after the dog has fallen will permit the force of the torsion-spring 16 to instantly return the rock-arm to its normal lowered position.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a draw-head chambered in its body, and means for slidably supporting said draw-head on a motor-platform, of a weighty dog pivoted near one end in the draw-head, a vertical coupling-pin on the front end of said dog, a spring-actuated rock-shaft in the draw-head forward of the dog, a rest-block on the rock-shaft adapted to support the dog and pin elevated, an arm on the rock-shaft, adapted to carry the dog when it falls into an inclined plane, and means for rocking the shaft and removing the rest-block from the dog to permit its descent by gravity.

2. The combination with a slidable spring-cushioned draw-head chambered in its body,

of a weighty dog pivoted near its rear end in the draw-head chamber, a vertical coupling-pin on the front end of the dog, a spring-actuated rock-shaft journaled in the walls of the draw-head forward of the dog, a rearwardly-inclined rest-block on the rock-shaft, a rock-arm on one end of the rock-shaft, a guard-loop on the draw-head, wherein the rock-arm vibrates and seats to limit the rearward inclination of the rest-block, said block engaging the dog to hold it and the coupling-pin elevated, and means for raising the rock-arm for the release of the dog and pin.

3. The combination with a longitudinally-slidable and spring-cushioned draw-head, chambered in its body, a weighty dog pivoted near its rear end in the draw-head chamber, a coupling-pin projecting upward from the front end of the dog and having a sloped upper end adapted to enter an orifice formed in the top of the draw-head, and a slidable pusher-bar forked at its front end to straddle the coupling-pin, and contacting at the rear end with an abutment on the rockable dog, of a spring-actuated rock-shaft in the draw-head forward of the dog, a projection on the rock-shaft adapted to support the dog and pin elevated, means to rock the shaft for a release of the dog and pin so that they may fall into an inclined plane by gravity, and a coupling-link with which the coupling-pin will engage when said link is pressed into the draw-head and slides the pusher-bar rearwardly.

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Witnesses:

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V. J. GREINER.