J. A. BORLAND & L. BENACK.

HORSE DETACHER.

APPLICATION FILED FEB. 25, 1908.

928,843. **Patented July 20, 1909.**

2 SHEETS—SHEET 1.

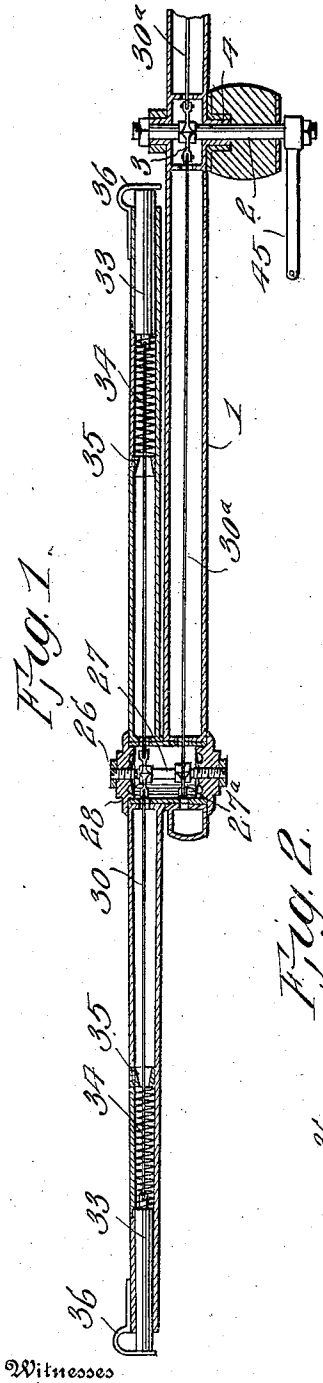

Fig. 1.

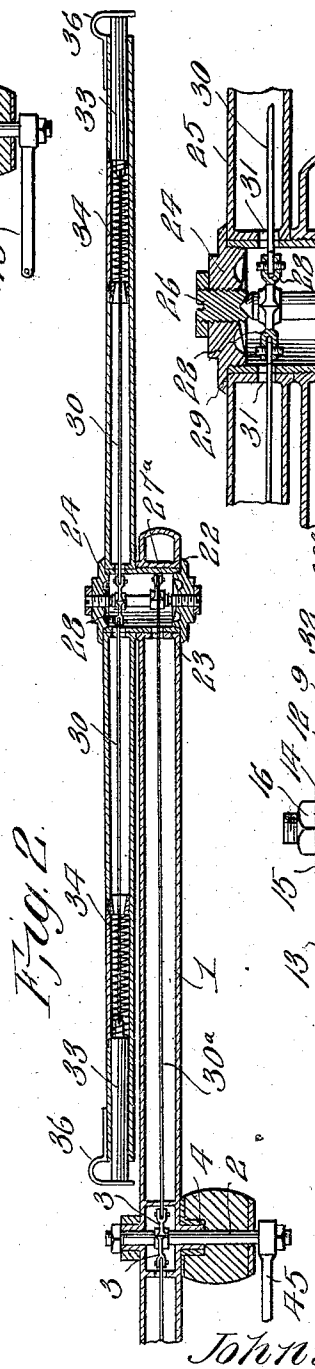

Fig. 2.

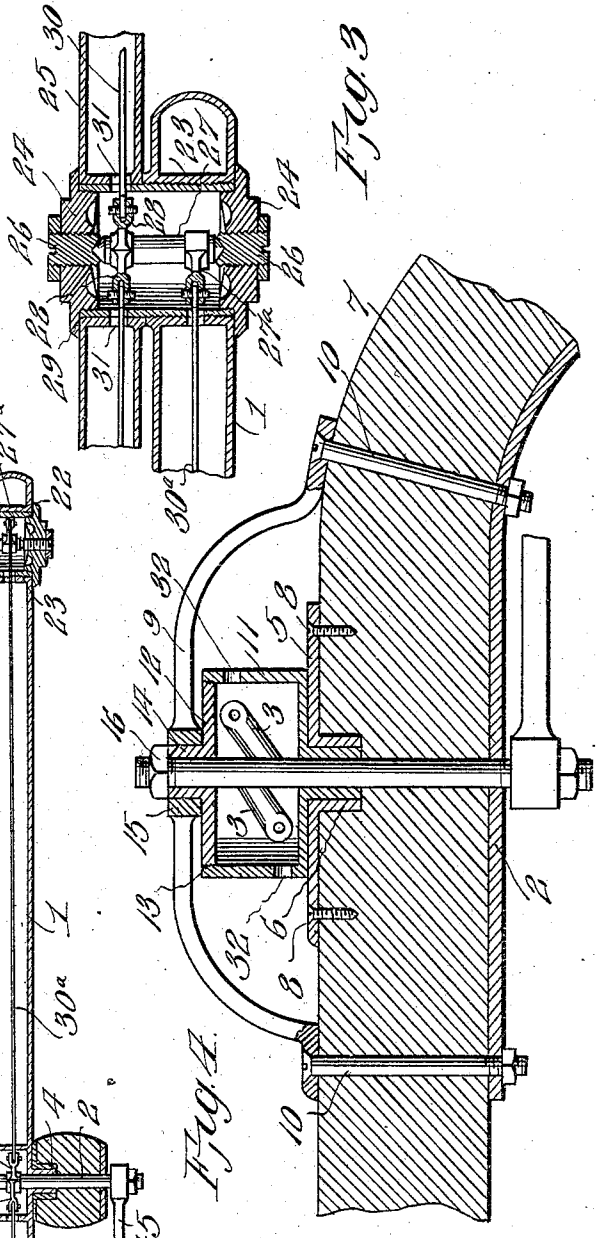

Fig. 3.

Fig. 4.

Witnesses

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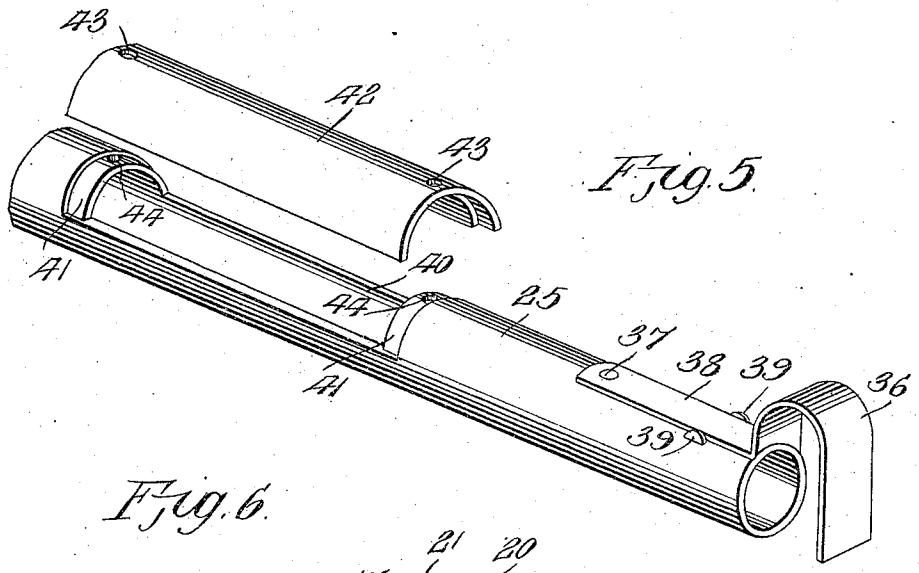


Fig. 5.

Fig. 6.

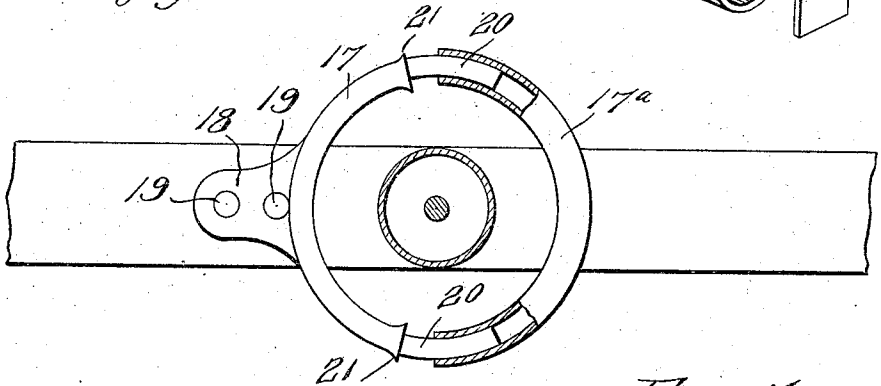
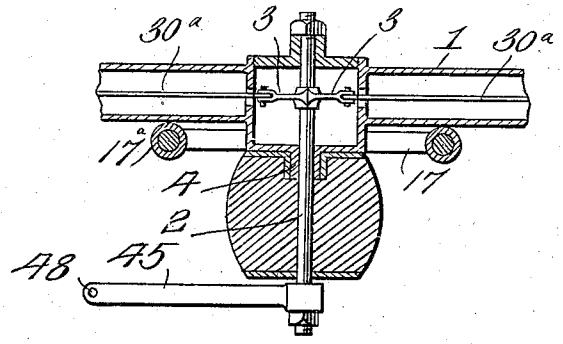


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

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HORSE-DETACHER.

No. 928,843. Specification of Letters Patent. Patented July 20, 1909.

Application filed February 25, 1908. Serial No, 417,656.

To all whom it may concern:

Be it known that we, JOHN ARCHIE BORLAND and LOUIS BENACK, citizens of the United States of America, residing at Mina, in the county of Esmeralda and State of Nevada, have invented new and useful Improvements in Horse-Detachers, of which the following is a specification.

This invention relates to horse detachers, and one of the principal objects of the same is to provide a reliable and efficient means for detaching the horses from a vehicle in case the horses should take fright and attempt to bolt or run away.

Another object of the invention is to provide a hollow or tubular steel doubletree and swingletrees and to inclose within the same the mechanism for detaching the horse from the vehicle whenever necessary.

Still another object of the invention is to provide means whereby the entire strain of the draft of the animals is taken from the detaching devices in order that the detaching devices may be operated smoothly and without impediment.

These and other objects may be attained by means of the construction illustrated in the accompanying drawings, in which,—

Figure 1 is a longitudinal section through one of the swingletrees and through a portion of the doubletree. Fig. 2 is a similar view through the other swingletree and through the other portion of the doubletree. Fig. 3 is a detail section of the devices for pivoting the swingletree to the doubletree, and showing the mechanism inclosed within the same for operating the detaching wires. Fig. 4 is a detail longitudinal section of a portion of the pole of the vehicle and showing the manner of pivoting the doubletree to the pole, said figure being made on an enlarged scale. Fig. 5 is a detail perspective view of one end of one of the swingletrees with the detaching mechanism removed therefrom. Fig. 6 is a plan view and partial section of the ring for limiting the vibratory action of the doubletree. Fig. 7 is a detail vertical section taken at the pivotal point on the doubletree.

Referring to the drawings for a more specific description of our invention, the numeral 1 designates the doubletree which consists of a hollow steel tube, pivotally connected to the tongue or pole 7 by means of a bolt or pin 2, said pin being provided with oppositely disposed inclined arms 3. The pin passes through a tubular nipple 4 which is seated in a wear plate 5 provided with a tubular nipple 6 seated in a socket in the tongue 7, said wear plate being secured to the tongue by means of screws 8. A curved brace 9 is secured by bolts 10 to the tongue or pole. The arms 3 are disposed in a casing 11, and a cover 12 for said casing is connected thereto by screw threads 13 and is provided with a boss 14 which passes through an eye 15 in the brace 9. The bolt or pin 2 is fitted with a nut 16 to hold the casing in place and to permit the doubletree to vibrate on said pin.

To limit the vibration of the doubletree a two-part ring shown in Fig. 6 is utilized. The male member 17 of this ring has a lug 18 bolted at 19 to the doubletree 1, while the female member 17^a is secured in any suitable manner to the tongue or pole 7. The female member 17^a is in the form of a semi-circular tube, and formed upon the ends of the male member 17 are curved projections 20 mounted to slide in the ends of said tube. Stops or shoulders 21 formed on the male member serve to limit the vibration of the doubletree in an obvious manner.

On the outer ends of the doubletree interiorly screw-threaded sockets 22 are formed, and connected to each of these sockets is an exteriorly screw-threaded tube 23, the threads on the tube 23 fitting the threads on the sockets 22. Fitted into the opposite ends of the tube 23 is a cap 24, said cap having a threaded boss engaging interior threads in the tube 23. The tube 23 is smooth upon its exterior surface above the threads which engage the socket in the doubletree, and mounted to swing upon the smooth surface of the tube 23 is the swingletree 25. Extending through each cap 24 is a set screw bearing 26, said bearing being threaded and mounted in a threaded opening in the cap. The inner ends of the bearings 26 are recessed to receive the pointed end of a pin 27. The pin 27 is provided with oppositely disposed arms 28, and these arms are each provided with a bifurcated end in which is mounted a screw pin 29. The operating wires 30 for the detacher are connected to the bifurcated arm by means of the threaded pins 29, as shown more particularly in Fig. 3, said wires extending through registering openings 31 in the tube 23 and in the center of the swingletree. The operating wire 30^a which extends through the doubletree is also connected to

an arm 27ª formed on or connected to the pin 27. The wires 30ª extend through openings 32 in the casing 11 and are connected to the arms 3 formed on the pin 2. The wires 30 are connected to the arms 28, said wires extending through the swingletrees 25 and at their outer ends connected to sliding bolts 33. The sliding bolts 33 are projected outwardly by means of springs 34 seated in the swingletrees, and one end of said spring bearing against a stop 35 and the opposite end bearing against the inner end of the bolt 33. Hooks 36 at the ends of the swingletrees serve as stops for the projecting bolts 33. The traces are connected to the projecting ends of the bolts 33 within the hooks 36. The hooks 36 are pivoted at 37 to the swingletree 25, and upon opposite sides of the shank 38 of the hook 36 stops 39 are provided, thus permitting the hook 36 to be raised out of the way of the stops 39 and swing to the side whenever it is desired to attach the traces to the bolts 33.

In order to permit access to the spiral springs 34 the upper portion of the swingletree is cut away, as at 40, and provided with flanges 41. A cover 42 is fitted to the cut-away portion and is secured in place by means of screws passing through holes 43 in the cover and holes 44 in the flanges 41. A lever 45 is rigidly connected to the lower end of the pin 2 and is provided with a hole 48 for a wire leading to the vehicle where a hand or foot lever is provided for operating the same.

We may provide a suitable brake for stopping the wheel after the horses have been detached from the vehicle.

With slight changes our device may be used with single-horse vehicles.

The operation of our invention may be briefly described as follows: When the animals have been properly connected to the swingletrees, and the wire leading from the lever 45 is connected to a suitable operating lever in the vehicle, should the horses become unruly and start to run away, a movement of said lever 45 would draw the wires 30ª inwardly and rotate the pins 27 to pull upon the wires 30 and retract the bolts 33 against the tension of the springs 34 to let the traces drop and free the animals from the vehicle, as will be understood.

Many changes may be made in the details of construction without departing from the spirit and scope of our invention as defined in the appended claims.

Having thus described the invention, what is claimed as new, is:—

1. A horse detacher comprising a tubular steel doubletree, a pin for connecting said doubletree to a vehicle pole, arms formed on said pin, a lever connected to said pin, tubular swingletrees, sockets and tubes for pivotally connecting said swingletrees to said doubletree pins in said tubes, arms on said pins, said swingletrees each having spring mounted bolts therein, a wire connected to each of the arms of said doubletree pin, each of said wires extending through the doubletree and connected to one of the arms of the corresponding swingletree pin, and wires connected to the other arms of said swingletree pin for withdrawing the bolts in the swingletree to release the traces.

2. In a horse detacher, the combination of a tubular doubletree, a pin passing through said doubletree to connect the same to the pole, a lever on said pin, arms formed on said pin, a wire connected to each of said arms, swingletrees pivoted to the ends of said doubletree, pins mounted to rotate at the pivotal point of said swingletrees, arms on said pins, a wire connected to one of the arms of each swingletree pin and to one of the arms of the doubletree pin, a wire connected to each of the other arms of the swingletree pin, and a spring bolt seated in each end of said swingletree, said wires being connected to said bolts.

3. In a horse detacher, a hollow doubletree, hollow swingletrees pivoted to said doubletree and provided with sliding bolts in the ends thereof, a pin for connecting said doubletree to the pole, arms extending from said pin, wires connected to said arms and extending through slots in said doubletree, pivot pins for said swingletrees, arms connected to said pins, said wires being connected to some of said arms, wires connected to the other arms and to the sliding bolts, and means for rotating said pins for retracting the bolts and releasing the traces.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN ARCHIE BORLAND.
LOUIS BENACK.

Witnesses:
FLETCHER TOLBERT,
JAMES A. MURRAY.