No. 737,146. PATENTED AUG. 25, 1903.

S. RIEGEL.

HORSE DETACHER.

APPLICATION FILED MAY 25, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

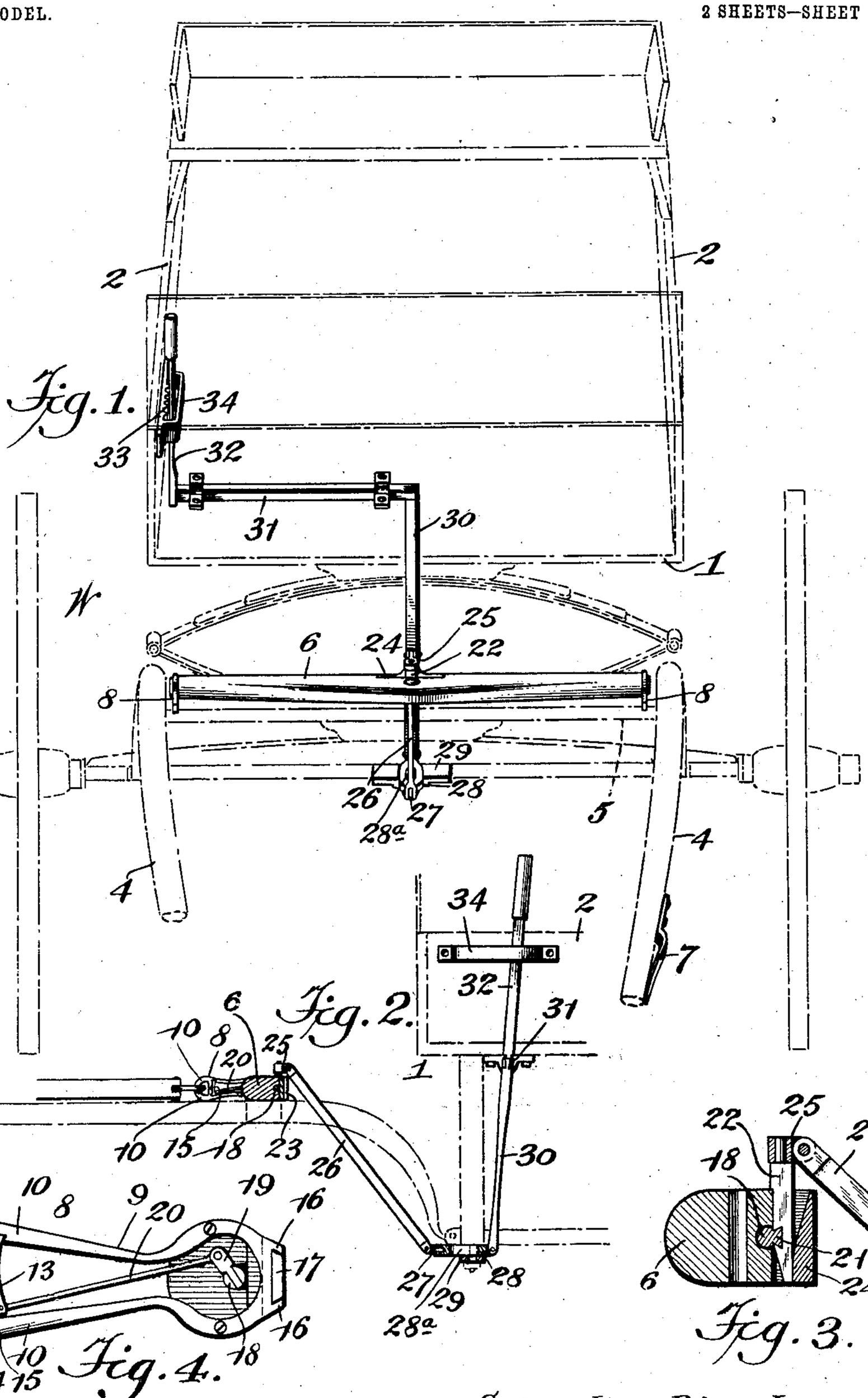


Fig. 1.

Fig. 2.

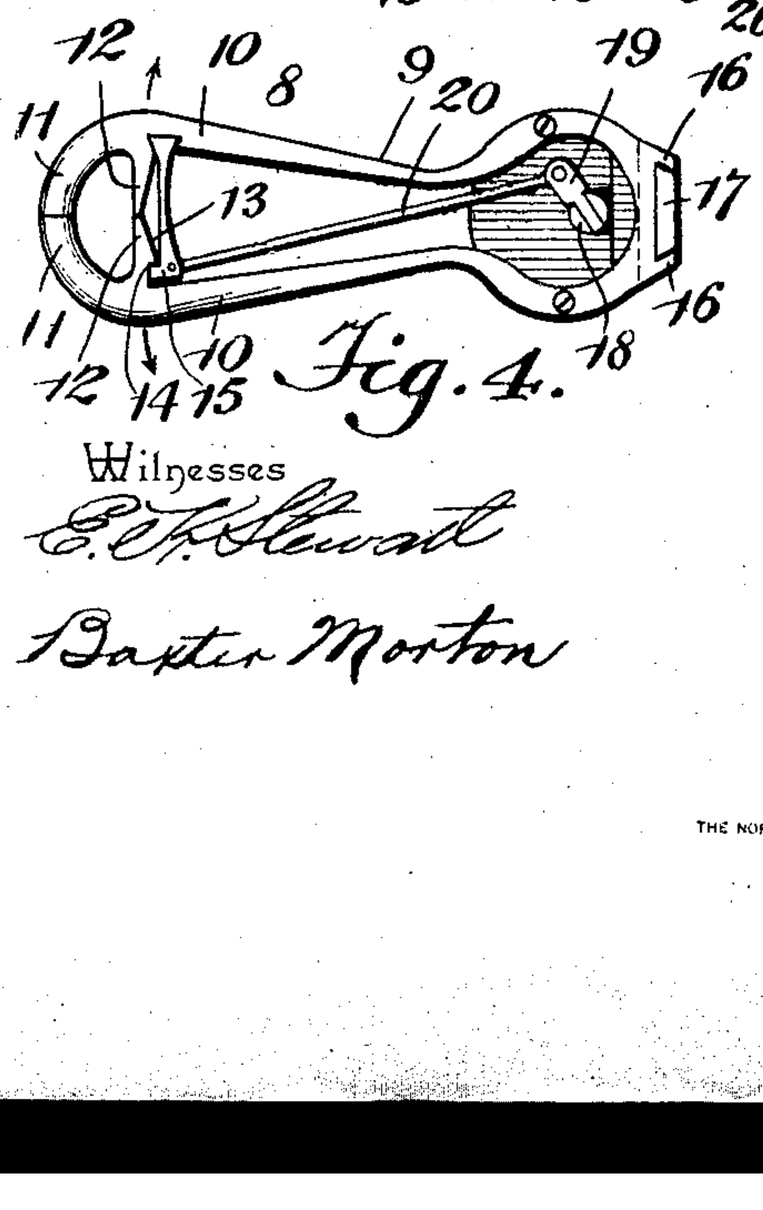


Fig. 4.

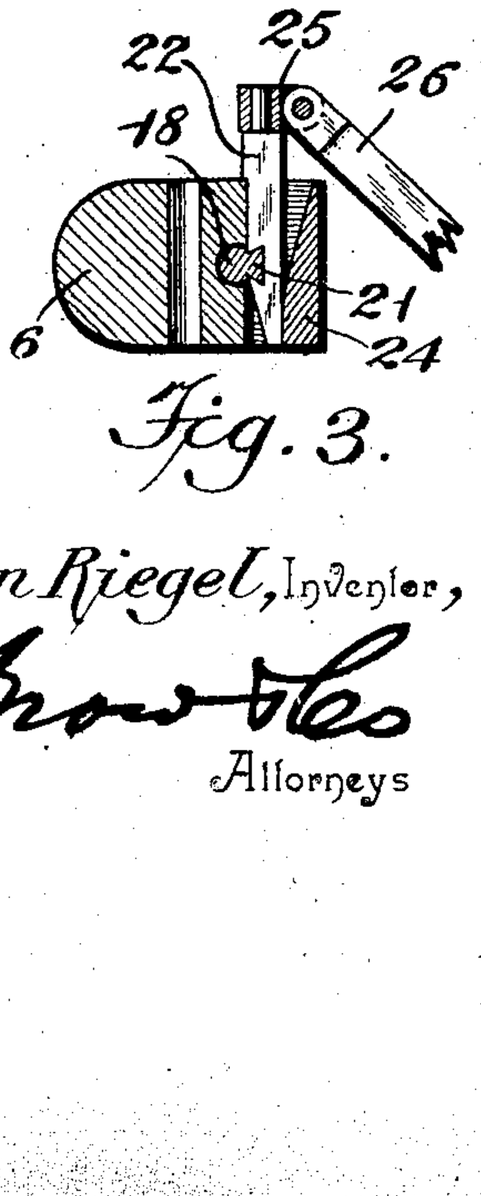


Fig. 3.

Witnesses
E. F. Stewart
Baxter Morton

Sebastian Riegel, Inventor,
by Church & Co
Attorneys

No. 737,146. PATENTED AUG. 25, 1903.

S. RIEGEL.

HORSE DETACHER.

APPLICATION FILED MAY 25, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

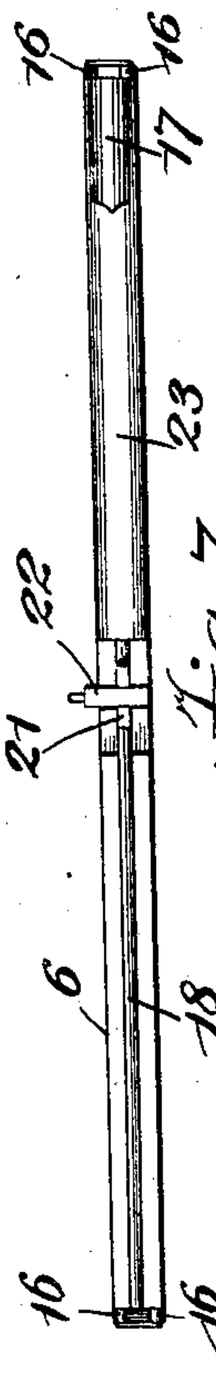
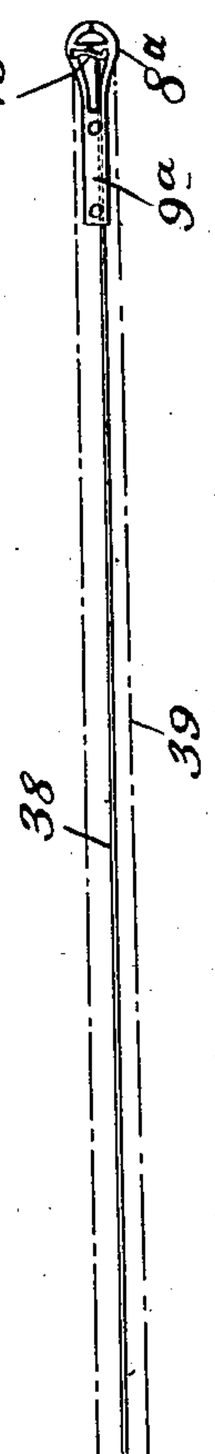


Fig. 7.



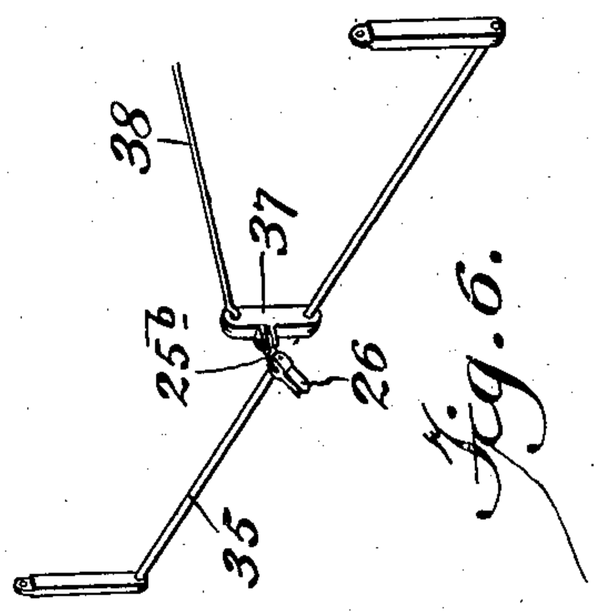


Fig. 6.

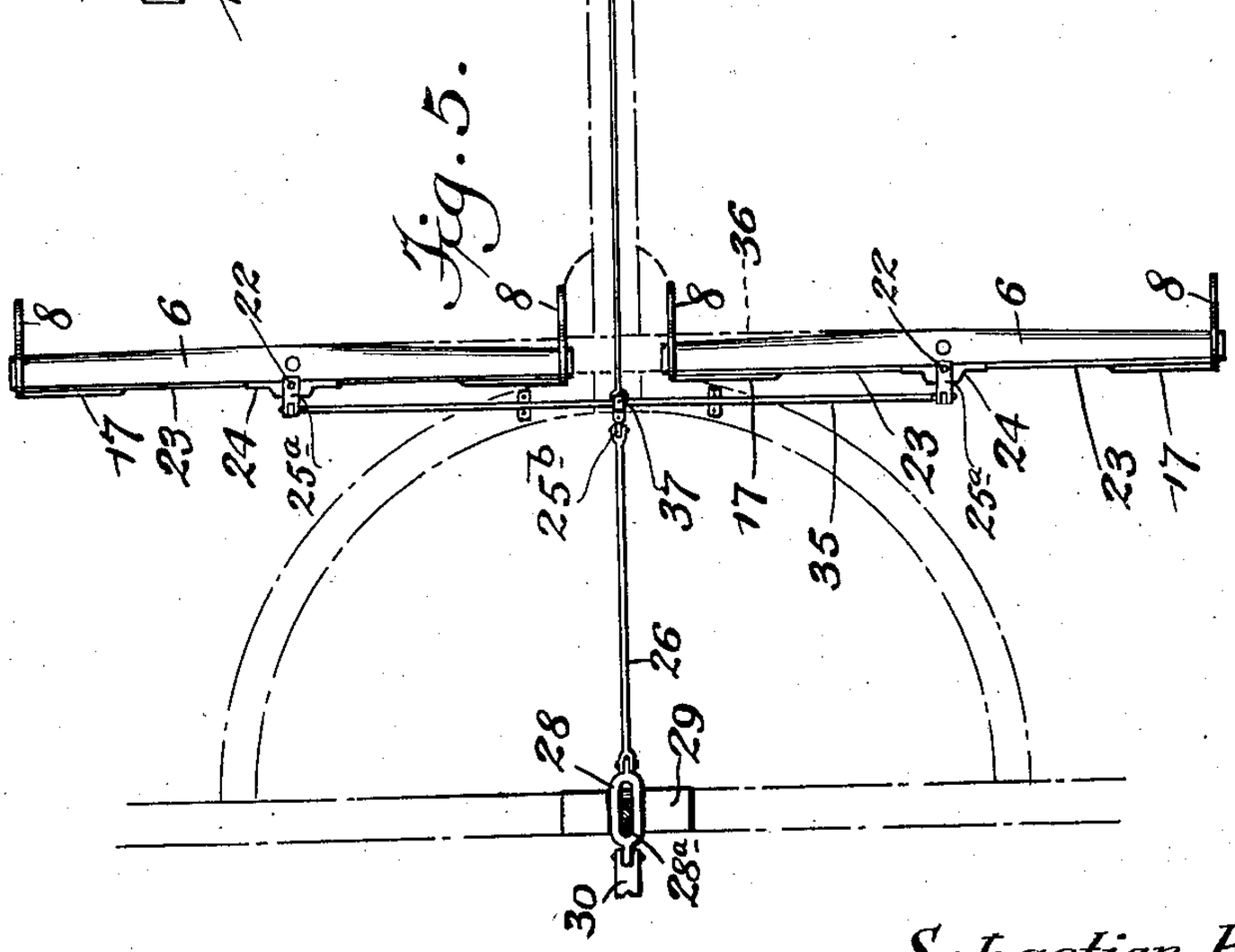


Fig. 5.

Witnesses
C. F. Stewart
Baxter Morton

Sebastian Riegel, Inventor,
by Church & Co
Attorneys

No. 737,146. Patented August 25, 1903.

UNITED STATES PATENT OFFICE.

SEBASTIAN RIEGEL, OF PHILADELPHIA, PENNSYLVANIA.

HORSE-DETACHER.

SPECIFICATION forming part of Letters Patent No. 737,146, dated August 25, 1903.

Application filed May 25, 1903. Serial No. 158,705. (No model.)

To all whom it may concern:

Be it known that I, SEBASTIAN RIEGEL, a citizen of the United States, residing at Feltonville, Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Horse-Detacher, of which the following is a specification.

This invention relates to horse-detachers.

The object of the invention is to provide a simple and effective means for detaching the traces from the trace-hooks and for detaching the neck-yoke from the pole of a vehicle without its being necessary for the driver to leave his seat in the vehicle, thus enabling the driver to detach the horses instantly whenever it is desirable to do so, as when the horses start to run away.

A further object of the invention is to provide in apparatus of the class specified an improved type of detaching means in which the number of parts employed is relatively small and the operation of which will at all times be positive and reliable.

A further object of the invention is to provide a horse-detacher by means of which the traces may be detached from the whiffletrees and the neck-yoke detached from the pole simultaneously by a single movement of a lever within reach of the driver when on his seat in the vehicle and which may be operated at any time regardless of the position of the pole with reference to the vehicle.

In attaining the objects above stated I make use of the construction and combination of parts of a horse-detacher hereinafter described, illustrated in the accompanying drawings in two forms applicable to vehicles to be drawn by one or two horses, and having the novel features thereof specifically pointed out in the appended claims.

It is to be understood that while the two forms of the invention illustrated are those which are preferred and best adapted to meet the conditions under which the apparatus is ordinarily operated, I do not desire to be limited to the exact form, proportions, and mode of assemblage of the elements exhibited, but reserve the right to make such changes therein as do not depart from the spirit of the invention and lie within the scope of the appended claims.

In the drawings, Figure 1 is a view in perspective of a whiffletree with the horse-detacher associated therewith shown in solid lines and portions of a vehicle shown in dot-and-dash lines to indicate the mode of applying the horse-detacher thereto. Fig. 2 is a view, partly in section and partly in side elevation, of the horse-detacher and a whiffletree, portions of the vehicle connected therewith being shown in dot-and-dash lines. Fig. 3 is a detail view in section through the middle of the whiffletree. Fig. 4 is a detail end view of the whiffletree with the trace-hook and associated mechanism. Fig. 5 is a plan view of a tongue, doubletree, and whiffletrees with the horse-detacher associated therewith. Fig. 6 is a detail view in perspective of the supplementary rod and associated mechanism used in the detacher shown in Fig. 5. Fig. 7 is a detail view in rear elevation of a whiffletree as shown in Fig. 1 with a portion of the members covering the detacher-shaft removed.

In all of the above-mentioned figures corresponding parts are designated by the same characters of reference in the several views in which they appear.

Referring to the drawings for a more specific disclosure of the invention, W designates generally a wagon having my invention applied thereto.

1 designates the bed of the wagon-body; 2 2, the side walls of the wagon-body; 4 4, the shafts; 5, the cross-bar between the shafts; 6, the whiffletree pivotally mounted upon the cross-bar in the usual way, and 7 7 spring-fingers on the outside of the shafts, forming holdbacks.

At each end of the whiffletree 6 is rigidly secured thereto a trace-hook 8, consisting, preferably, of a loop 9, encircling a suitable reduced portion of the whiffletree and a pair of spring-arms 10, terminating in oppositely-disposed curved jaws 11 and having behind the jaws the oppositely-disposed lugs 12, the lower one of which is provided on its rear surface with an incline 13, terminating at its lower end in a shoulder 14, adapted to be engaged by a spring-latch 15, which is secured to the upper arm immediately behind the upper lug 12 and is provided in its lower end with a transversely-disposed lug adapted to engage the shoulder 14. The trace-hooks 8 are also preferably provided on the outer surface of

the loops 9 with rearwardly-projecting lugs 16, which engage with the reduced end of a plate 17, secured to the whiffletree on the back thereof near each end, as shown, and serve to prevent rotation of the trace-hooks upon the ends of the whiffletree. In addition to the plates 17 screws or other suitable fastening means are employed to attach the trace-hooks to the ends of the whiffletrees, as shown. The arms 10 of the trace-hooks are slightly resilient, and normally the jaws forming the forward terminals of said arms are held apart by the resiliency of the arms in order to facilitate the introduction between the jaws of the rings in which the traces terminate and also to cause said jaws to open to permit the withdrawal of the rings at the rear ends of the traces whenever the spring-latches 15 are withdrawn from engagement with the shoulders 14, provided on lower lugs 12 in the trace-hooks, thus insuring the release of the trace-rings whenever it is desired that the trace-rings be disengaged from the trace-hooks. When the trace-rings have been introduced between the jaws 11 and sufficient pressure has been applied to the traces to bring them into contact, the spring-latches 15 automatically engage with shoulders 14 and lock the jaws in closed position, thus securing the trace-rings in position until the latches 15 are withdrawn from engagement with shoulders 14 by means of mechanism which will presently be described. To prevent backward movement of the trace-rings between the arms 10 further than is desired, the lugs 12 are provided, as already stated, and are made of such length that when the jaws 11 come into contact the lugs 12, which are oppositely disposed, also contact. By means of the jaws 11 and lugs 12 a complete inclosure for each trace-ring is formed, which prevents any considerable movement within the trace-hook after the jaws thereof have been locked in closed position, as above explained.

The mechanism for releasing the latches 15 from engagement with shoulders 14, so as to permit the opening of the jaws 11 to release the trace-rings, comprises a rotatable rod 18, which extends longitudinally of the whiffletree in a channel provided for that purpose and is connected at its ends with the latches 15 and at the center with a system of levers and connecting-rods operated from the driver's seat in the vehicle. The rod 18 has disposed at right angles thereto at either end a short arm 19, which is rigidly associated with the rod in any desired manner and has pivotally mounted in its outer end a link or bar 20, which is attached at its forward end to one of the latches 15. In the middle the rod 18 has secured thereto in any suitable manner, as by means of a dovetail rib 21 and a corresponding undercut groove, an arm 22, formed with portions of its forward surface cut away both above and below the point of attachment to the rod 18, so as to permit as much freedom of movement as possible within a small opening. The arm 22 projects upward through an opening in the whiffletree, which lies just behind the pivot upon which the whiffletree turns, and is large enough to permit sufficient rocking movement of said arm to cause the rod 18 to turn in its channel sufficiently to withdraw the latches 15 from engagement with shoulders 14 through the agency of the arms 19 and the links or bars 20. The rod 18 is covered by means of plates 23, extending from points a short distance from the middle of the whiffletree to the ends, and by a plate 24, placed between the plates 23 and hollowed out on the surface adapted to contact with the rest of the whiffletree to permit sufficient freedom of movement of the parts covered by said plate. At the upper end the arm 22 terminates in a reduced portion which is encircled by one of the eyes of a double link 25, the other eye of which is engaged by a transversely-disposed pivot-pin in one end of a rod 26, thus forming a universal joint between the rod 26 and arm 22. The rod 26 extends rearwardly from the arm 22 and has at the rear end thereof another double link, 27, pivotally connected with the rod 26 and with the forward end of a slide 28, supported beneath the forward axle of the vehicle by a plate 29, which has a way formed therein for the reciprocation of the slide 28. Movement of the slide in the way provided for it is limited by the king-bolt of the vehicle, which extends downward through a slot 28^a, provided in the slide 28, and through a suitable opening in the plate 29, which supports the slide. At the rear end thereof the slide 28 is pivotally connected with the lower end of a spring-arm 30, the upper end of which is rigidly attached to a shaft 31, which is journaled in suitable supporting-brackets beneath the bed 1 of the vehicle. At the end of the shaft 31 adjacent to the side wall 2 of the vehicle there is rigidly attached thereto a spring-arm 32, by means of which the shaft 31 is rocked in its bearings and a swinging movement imparted to the spring-arm 30, thereby reciprocating the slide 28 in the way provided for it on plate 29 and imparting movement through the rod 26 to the arm 22 and rod 18, whereby the latches 15 are thrown out of engagement with hooks 14. The arm 30 is so shaped that it can spring forward or backward for purposes presently to be explained, and the arm 32, which forms the operating-lever, is so shaped that it can spring laterally in order to permit it to be thrown into and out of engagement with a rack 33, having a guide-loop 34, secured to the side wall of the vehicle, as shown. In connecting arms 30 and 32 with shaft 31 any preferred form of connection may be employed, but convenient forms are those shown, consisting in a dovetail tenon and groove for connecting the rod 30 with the shaft and mortise and tenon for connecting the operating-lever 32 with the shaft.

It will readily be seen that by means of the

construction as hereinbefore described it will always be possible, in the event of its becoming necessary or desirable, for the driver of the vehicle to release horses instantly from the shaft at any time by thrusting the upper end of arm 32 forward, thereby causing a rearward movement of the slide 28 with a consequent rearward movement of the upper end of arm 22 and arms 19, attached to the rod 18.

In order to prevent accidental disengagement of the latches 15 and shoulders 14, the arm 30 is made resilient, as above stated, and when the traces are connected with the trace-hooks the arm 32 will be thrust rearwardly far enough to throw the slide 28 forward as far as it will go and also to place the rod 30 under some tension, so that any shifting of the body of the vehicle forward, such as may occur with the yielding of the springs upon which it is supported, may not cause the retraction of the slide 28, with consequent disengagement of the latches 15 and shoulders 14.

In the form of the invention illustrated in Figs. 5 and 6 the arm 22 on each whiffletree is not attached directly to the links connected with the rod leading to slide 28, but instead arm 22 of each whiffletree is connected by means of a link 25^a to an arm on the end of rod 35, which is rotatably mounted at the back of the doubletree 36, and the rod 35 has an arm 37 midway between the ends thereof, which is connected by means of a link 25^b to rod 26. In this form of the invention there is also provided a rod 38, extending from arm 37 along the vehicle-pole 39 and connected at its forward end with a latch 15^a in a hook 8^a, which is mounted in the forward end of the pole and serves to hold the neck-yoke, as shown. The hook 8^a is not provided with a loop to encircle the end of the pole analogous to the loops 9 on the trace-hooks, but has instead a long shank 9^a, which is secured by means of screws to the pole.

In the form of the invention designed for attachment to vehicles having tongues and adapted to be drawn by two horses, the operation of the releasing devices is substantially the same as that of the releasing devices in the form of the invention designed for use on one-horse vehicles, with the exception that the movement of the operating-lever 32 serves in this form of the invention to release the traces from the trace-hooks and also to release the neck-yoke from the hook at the end of the pole. Detailed description of the operation of the releasing devices in the form of the invention last described is therefore regarded as unnecessary.

Having thus described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a horse-detacher, the combination of a trace-hook, comprising a pair of arms each terminating in a curved jaw, said jaws being oppositely disposed and adapted to come into contact, a lug upon each of said arms to the rear of the jaw at the forward end thereof, said lugs being oppositely disposed and adapted to contact when said jaws are closed, a shoulder provided on one of said lugs, a spring provided at the rear of the other lug and adapted to engage with said shoulder to lock said jaws together when closed, and means operative from the driver's seat on the vehicle for disengaging said latch.

2. In a horse-detacher, the combination with a whiffletree of trace-hooks at the ends of the whiffletree each comprising a pair of oppositely-disposed jaws, a latch for locking said jaws when closed, a rod extending longitudinally of said whiffletree and mounted for rotation, an arm at each end of said rod, connections between said arms and said latches, and means operable from the driver's seat on the vehicle for rotating said rod and causing the disengagement of said latches.

3. In a horse-detacher, the combination with the whiffletree, of trace-hooks at the ends of the whiffletree each hook comprising a pair of oppositely-disposed jaws, a latch adapted to lock said jaws when closed, a rod extending longitudinally of the whiffletree and mounted for rotation, an arm rigidly secured at each end of said arm, connections between said arms and said latches, a central arm also rigidly secured to said rod and means for swinging said central arm to rock said rod and release said latches.

4. In a horse-detacher, the combination with a whiffletree of trace-hooks at the ends thereof each comprising a pair of oppositely-disposed jaws, a latch adapted to lock said jaws when closed, a rod extending longitudinally of the whiffletree and mounted for rotation thereon, arms rigidly secured to said rod at the ends thereof, connections between said arms and said latches, a central arm also rigidly secured to said rod, a slide mounted for reciprocation on the forward axle of the vehicle, a universally-jointed connection between said slide and said central arm, and means for reciprocating said slide.

5. In a horse-detacher, the combination with a whiffletree, trace-hooks provided at the ends of said whiffletree each comprising a pair of oppositely-disposed jaws, a latch adapted to lock said jaws when closed, a rod extending longitudinally of the whiffletree and mounted for rotation therein, arms rigidly secured on said rod at the ends thereof, a central arm also rigidly secured to said arm, a shaft rotatably mounted beneath the bed of the vehicle-body, an operating-arm projecting upward from said shaft, and connections between said shaft and said central arm, whereby the rotation of said shaft will rock said central arm.

6. In a horse-detacher, the combination with a whiffletree, of trace-hooks comprising a pair of oppositely-disposed jaws, latches adapted to lock said jaws when closed, a rod disposed longitudinally of said whiffletree and mounted for rotation thereon, arms rigidly attached to said rod at the ends thereof, connections between said arms and said latches, a central

arm also rigidly attached to said rod, a slide mounted for reciprocation on the forward axle of the vehicle, universally-jointed connections between said slide and said central arm, a shaft rotatably mounted beneath the bed of the vehicle-body, a spring-arm rigidly attached to said shaft and pivotally connected with said slide, and means for rotating said shaft.

7. In a horse-detacher, the combination with a doubletree and a pair of whiffletrees, of a pair of trace-hooks on each of said whiffletrees, each of said hooks comprising a pair of oppositely-disposed jaws, and a latch adapted to lock said jaws when closed, means for releasing the latches provided on each whiffletree, a rod rotatably mounted on the doubletree, connections between the rod on the doubletree and the latch-releasing devices on each whiffletree, and means operable from the driver's seat on the vehicle to rotate the rod on the doubletree.

8. The combination with a tongue, of a neck-yoke hook provided at the forward end thereof and comprising a pair of oppositely-disposed jaws, a latch adapted to lock said jaws when closed, a rod connected with said latch and extending longitudinally of the tongue, and means operable from the driver's seat on the vehicle for drawing said rod rearward and releasing said latch.

9. In a horse-detacher, the combination with a tongue, of a neck-yoke hook at the forward end of said tongue, said hook comprising a pair of oppositely-disposed jaws and a latch adapted to lock said jaws when closed, a rod slidably mounted in said tongue and connected with said latch, a doubletree, whiffletrees associated with said doubletree, trace-hooks mounted on each of said whiffletrees each hook comprising a pair of oppositely-disposed jaws and a latch adapted to lock said jaws when closed, means provided on each of said whiffletrees for releasing said latches, a rod extending longitudinally of said doubletree and connecting with the latch-releasing means on the whiffletree, and with the slidable rod on said tongue, and means for rotating the rod on said doubletree.

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

SEBASTIAN RIEGEL.

Witnesses:
JOSEPH OSCHELL,
ANTON LAUFER.