

(No Model.)

G. TOWNSEND.
HORSE DETACHER.

No. 566,946.

Patented Sept. 1, 1896.

Fig. 1.

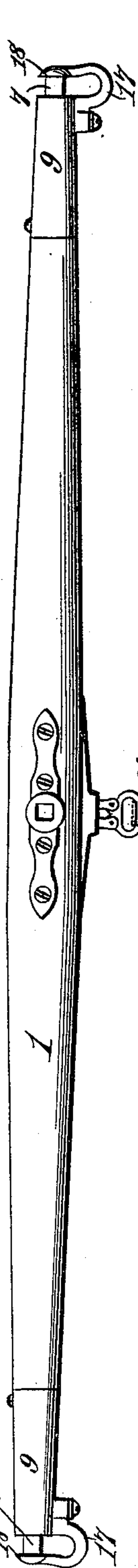


Fig. 2.

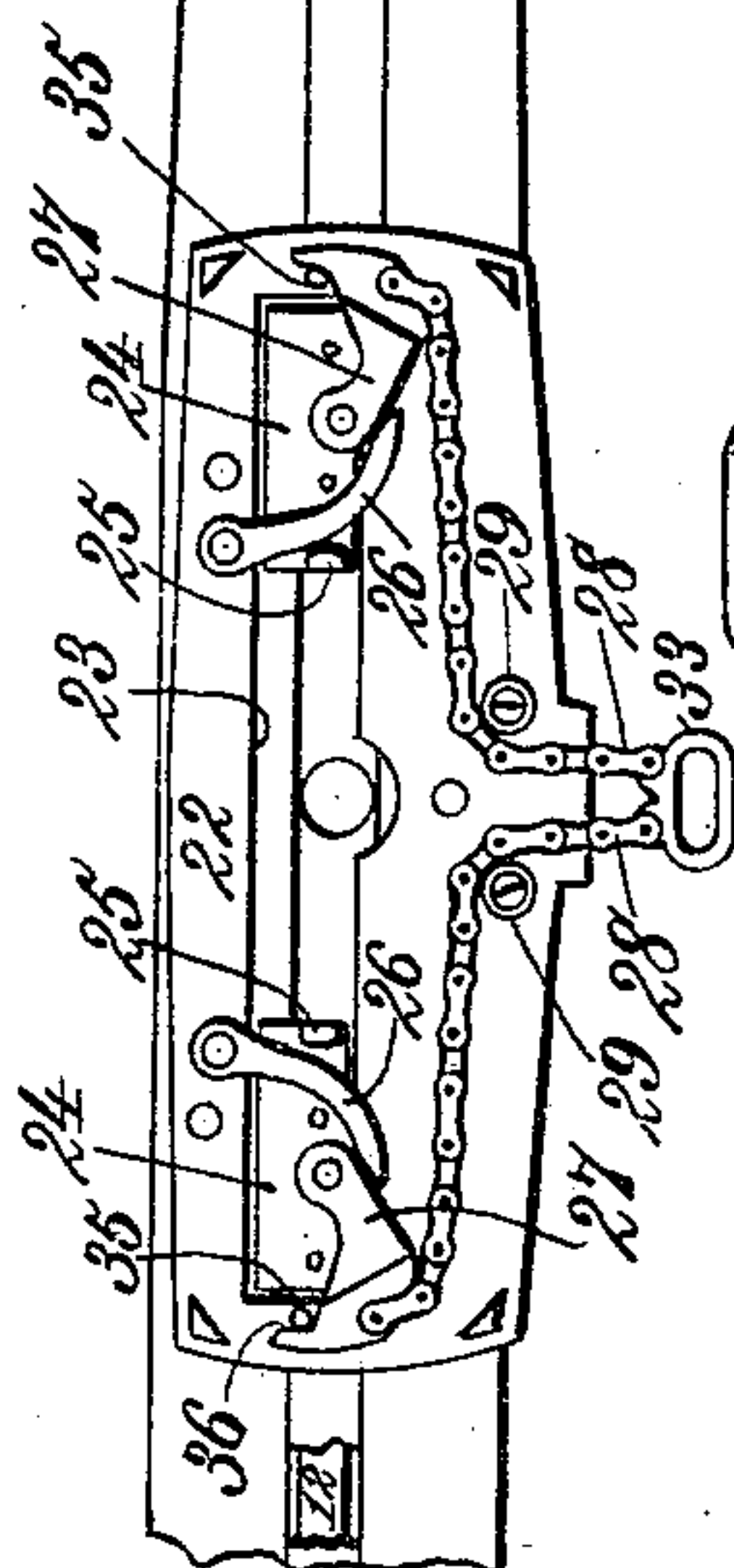


Fig. 3.

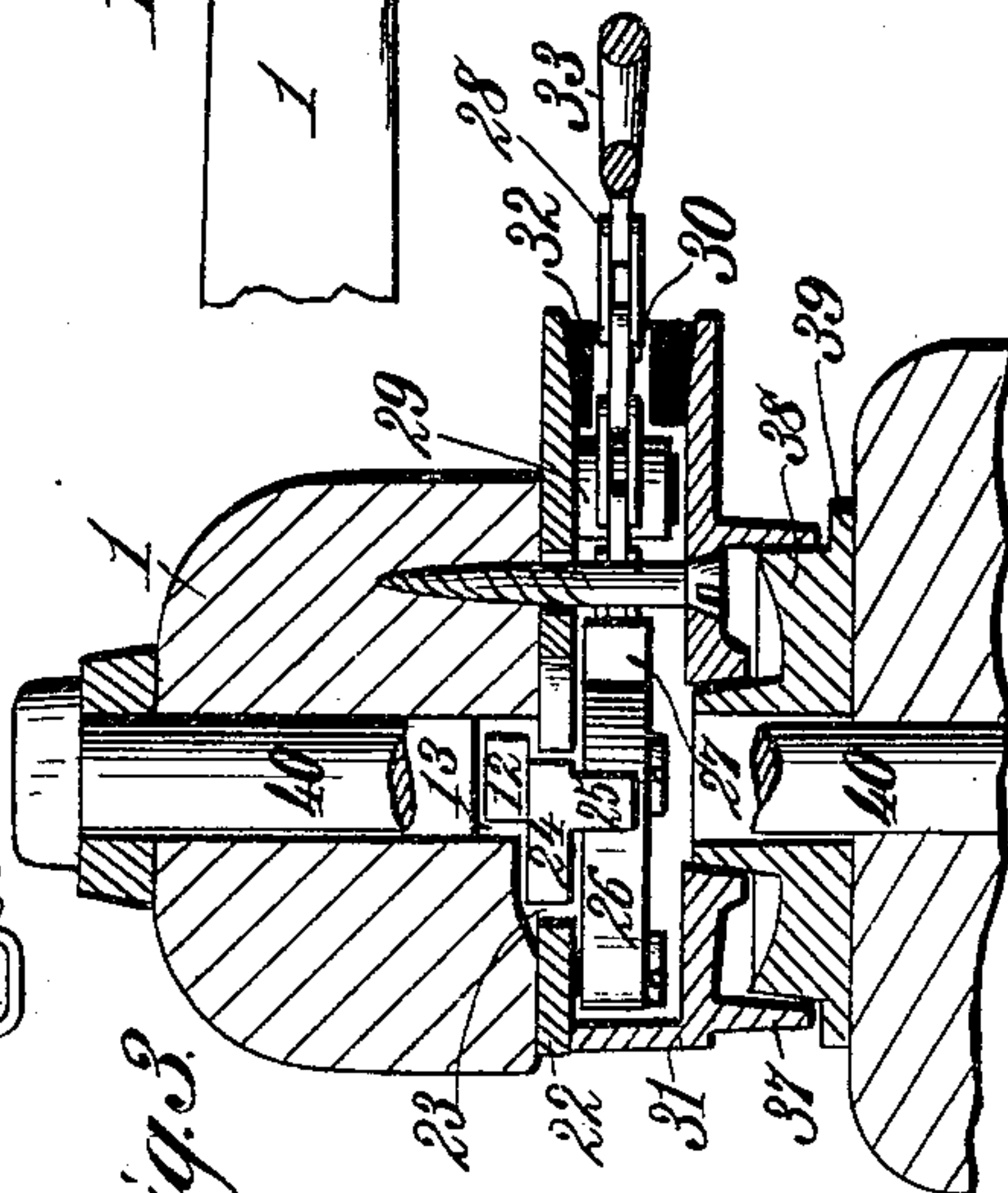


Fig. 4.

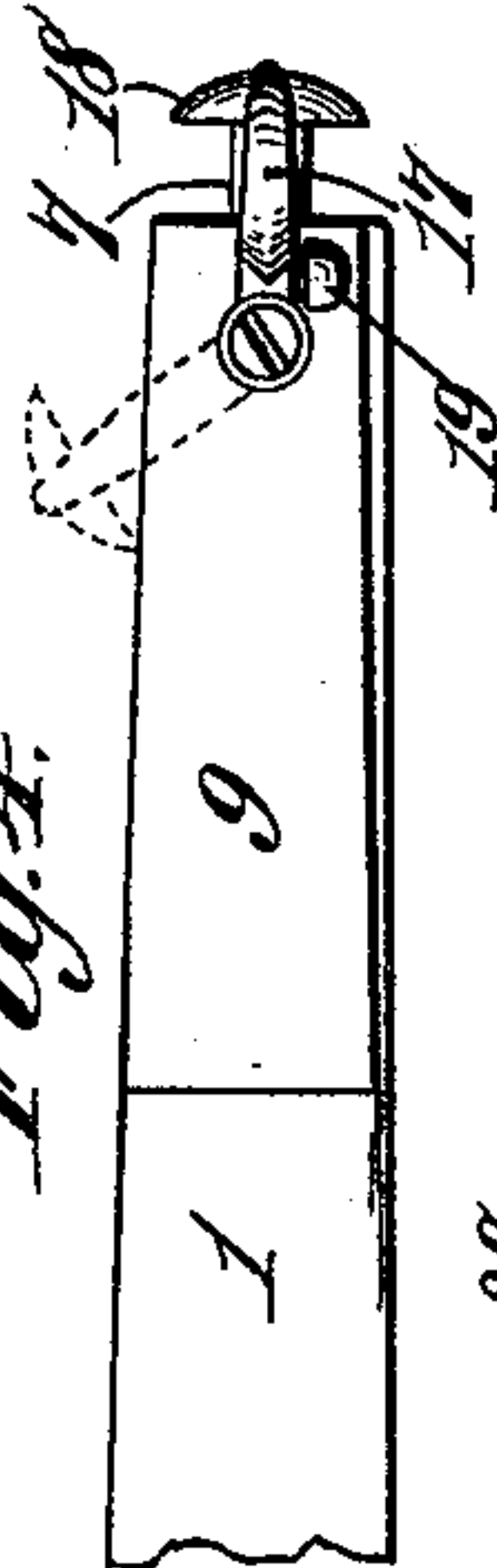


Fig. 5.

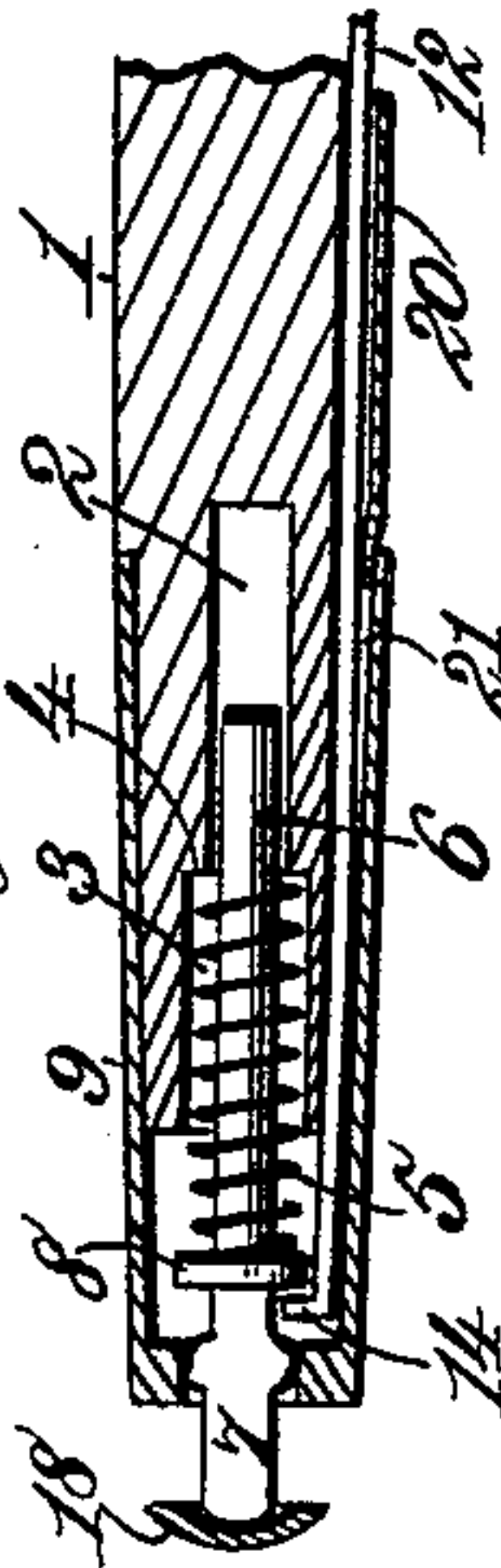
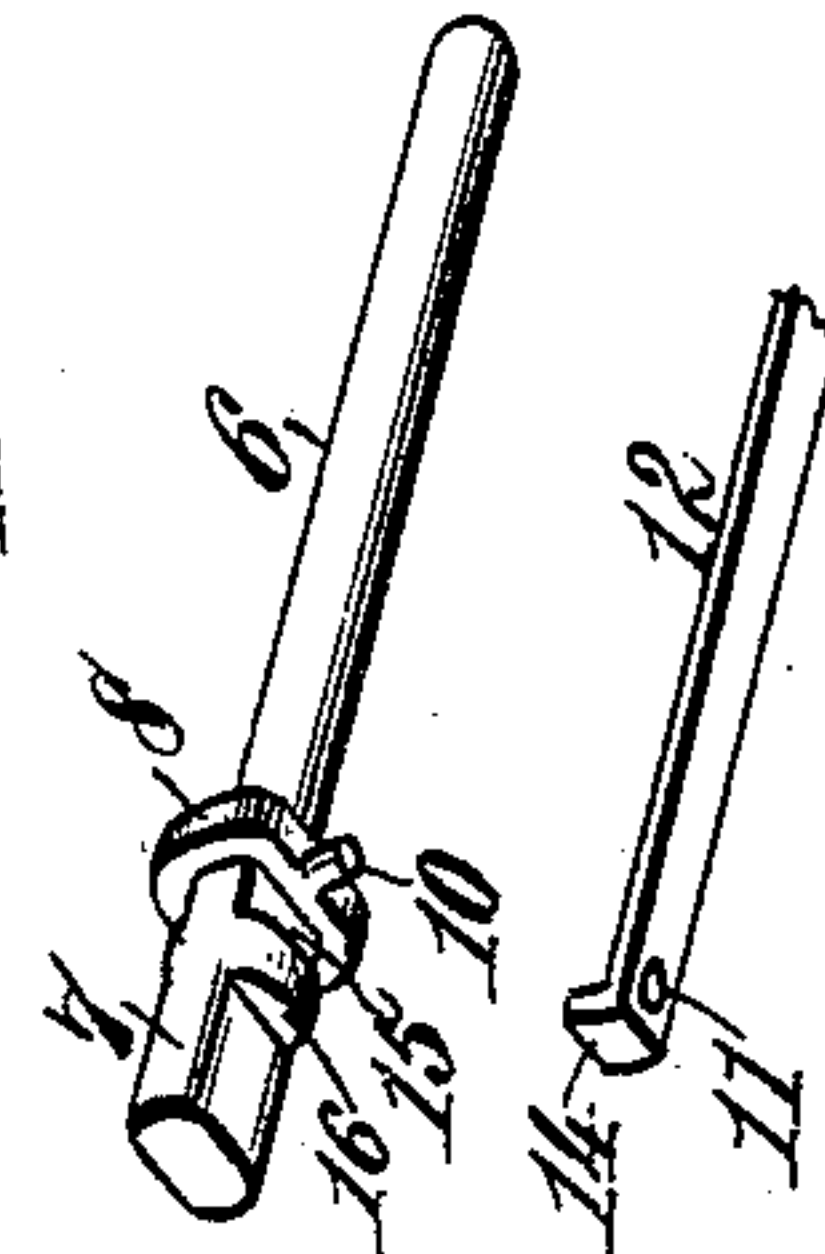


Fig. 6.



Witnesses,
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UNITED STATES PATENT OFFICE.

GEORGE TOWNSEND, OF GREENVILLE CENTRE, NEW YORK.

HORSE-DETACHER.

SPECIFICATION forming part of Letters Patent No. 566,946, dated September 1, 1896.

Application filed November 27, 1895. Serial No. 570,263. (No model.)

To all whom it may concern:

Be it known that I, GEORGE TOWNSEND, a citizen of the United States, residing at Greenville Centre, in the county of Greene and State of New York, have invented new and useful Improvements in Horse-Detaching Devices for Whiffletrees, of which the following is a specification.

This invention relates to that class of whiffletrees in which provision is made for releasing the traces so as to instantly detach the horses in event of a runaway or other accident, or whenever it is desired that the animal shall be quickly detached from the vehicle.

It is among the objects of my invention to provide a double leverage for retraction of each of two normally spring-projected bolts connected to sliding rods or bars housed in the whiffletree, and on the outer ends of which spring-bolts the trace-eyes are placed.

Another object of the invention is the provision of pivotally-supported guard-clips to securely retain the traces on the projecting ends of the spring-bolts, the hinged or pivotal arrangement of said clips being designed to permit detaching the traces without retracting the rods and bolts, as in ordinary unhitching.

It is also an object of my invention to provide means for automatically locking the sliding rods and bolts in their normally outward-projecting position, so that they cannot be pushed inward from their outer ends, as by shocks or jars, or by any undue force in attaching the traces.

Other objects of the invention include provisions for its application to either single-trees or double-trees; an easy working of the several parts through flexible antifriction connections, and a thorough exclusion of dirt and moisture from the trace-detaching mechanism.

The invention consists in features of construction and novel combinations of devices hereinafter more particularly set forth.

In the annexed drawings, illustrating the invention, Figure 1 is a top plan of a whiffletree provided with my improved horse-detaching devices. Fig. 2 is an under plan of the same with part of the boxing and housing removed to disclose the double leverage for retracting the trace attaching and de-

taching devices. Fig. 3 is a central transverse section of the whiffletree. Fig. 4 is a rear view of one end of the whiffletree. Fig. 5 is a vertical longitudinal section of one end of the whiffletree, and Fig. 6 is a view of one of the trace-attaching bolts.

Referring to the drawings, it may be said that each end of the whiffletree 1 is provided with a bore 2 and counterbore 3, communicating at an internal annular shoulder 4, which forms the inner bearing for a spirally-coiled spring 5, surrounding the shank 6 of a sliding bolt 7, on which is formed an annular shoulder or collar 8 to provide an outer bearing for said spring. The length of the spring 5 is so proportioned with relation to the depth or extent of the counterbore 3 that the expansive force of the said spring will cause the outer end of the bolt 7 to be normally projected beyond the end of a ferrule 9, secured on the end of the whiffletree, and which constitutes a housing for the outer end of said bolt when retracted. In the innermost or retracted position of the bolt 7 its shank 6 is received in the bore 2 of the whiffletree and the spring 5 is compressed within the counterbore 3 between the shoulder 4 and collar 8, so that when the retracted bolt is released the reaction of the spring will cause the outer end of the bolt 7 to be projected beyond the ferrule 9 in readiness for attaching a trace. For easy attachment of the trace-eye and to prevent cutting the same the outer end of the bolt 7 is preferably somewhat rounded, as shown. On the under side of the bolt-collar 8 is a pin 10, engaged in an aperture 11 in the outer end of a bar or rod 12, placed in a longitudinal groove 13 in the under side of the whiffletree. The bar or rod 12 is capable of a sliding movement longitudinally, and it is provided on its outer end with an upward-turned hook or lug 14, engaging the bolt 7 at the outer side of the collar 8 and adapted to act thereon to retract the bolt, assisted by engagement of the pin 10 and aperture 11, which further act to prevent turning of the bolt on its axis. To facilitate engagement of the hook or lug 14 with the bolt 7, the latter is preferably provided, outside the collar 8, with a transverse groove or depression 15 to receive said hook or lug, as shown. The outer portion of the bolt 7

may be provided with a peripheral enlargement 16 to close the outer end of the ferrule 9 when the bolt 7 is in its normally-projected position, thus preventing the entrance of dirt and moisture. While I have only described one bolt 7 and its immediate connected parts, it will be understood, of course, that the same construction is employed at both ends of the whiffletree.

On the rear side of each ferrule 9, near its outer end, is attached a pivotal upwardly-swinging guard-clip 17, on the forwardly-curved end of which is carried a disk 18, that is preferably concaved on its inner face for close bearing contact with the extreme rounded end of the bolt 7, to which the trace is attached. When the pivotal guard-clip 17 is swung upward above the ferrule, the bolt 7 will be exposed to permit removing or attaching the trace or traces, and by swinging said guard-clip downward into bearing engagement with the end of the bolt the trace will be securely retained thereon. The spring-pressed bolt 7 gives inward slightly, as the rim of the concaved disk 18 bears against it in swinging the clip downward, but as soon as the center of the guard-disk is fully opposite the end of the bolt the latter will spring outward into close bearing engagement with said disk, thereby preventing the clip from being jolted upward. It will thus be seen that when the guard-clips 17 are swung down into operative position the traces will be securely retained in place. In order to prevent the pivoted guard-clip 17 from being swung downward below the whiffletree, stop-lugs 19 are provided on the rear of the ferrules.

For the purpose of preventing access of water, dirt, mud, or other extraneous matter, the sliding bars 12 and the groove that receives them are preferably housed in by metallic sheathing-strips 20, that may extend into the ferrules 9, each of which has on its under side a longitudinal groove or recess 21 to receive the outer end portion of one of said strips.

On the central under portion of the whiffletree is secured a base-plate 22, having a longitudinal slot 23 therein below the central portion of the groove 13, in which the rods or bars 12 are arranged to slide. To the inner end portion of each sliding bar 12 is preferably secured a plate 24, for which the slot 23 may serve as a guide. Each plate 24 or each bar 12 has at its inner end a downward-projecting lug 25 to serve as a bearing for a preferably curved lever 26, that is fulcrumed on the forward under portion of the slotted base-plate. On the underside of each sliding plate 24 is fulcrumed a lever 27, that bears on the end of one of the levers 26, fulcrumed to the base-plate. The two levers 27 are provided with actuating-chains 28, the outer end portions of which are converged and extended rearward between two antifriction guide-rollers 29, mounted on the rear under side of the base-plate. These chains 28 are extended

through an opening 30 in the rear side of a boxing 31, secured to the base-plate 22, and by which the described lever mechanism is housed. A rubber packing 32 may be inserted in the opening 30 to exclude dirt, dust, and moisture. At their outer ends the chains 28 are connected by a ring, loop, or clevis 33, to which is buckled one end of a strap 34, to be extended to the wagon or carriage for use in operating the lever mechanism of both sliding bolts simultaneously when it is desired to detach the traces quickly, as in the case of a runaway.

When there is no strain on the chains 28, the sliding bolts 7 will be in a normally-projected position under the action of the springs 5 thereon. While in this position the said bolts are automatically locked against inward movement. The locking of the bolts 7 and connected bars 12 is effected by means of studs 35, placed on the base-plate 22 in position to engage with recesses 36, one of which is provided in the front edge of each lever 27, so that when the chains 28 are released and the bolts 7 moved outward by their springs 5 the outward movement of the bars 12 will swing the levers 26 and 27 in a corresponding direction until the recesses 36 engage the studs 35 and lock the bolts 7 in their normally-projected positions. Being thus locked, the bolts 7 and bars 12 cannot be jolted backward to permit accidental release of the traces, and it will be impossible to displace the said bolts by exertion of any pressure thereon in attaching the traces. The plate 24 on each bar 12 serves as a stop against the end of the slot 23 to limit the outward movement of the bar 12 and its connected bolt. The manner of mounting the levers 26 and 27 and their connection with the sliding bars 12 afford a double leverage for each bar and connected bolt, whereby their operation is greatly facilitated. By drawing on the strap or connection 34 the chains 28 will be made to swing the levers 27 backward out of engagement from the studs 35, and in swinging rearward the said levers 27 will bear against the levers 26, so as to force them back against the lugs 25, and thereby retract the sliding bars 12 and attached bolts 7, so as to detach both traces simultaneously and release the horse from the vehicle. As soon as the lever mechanism is released the springs 5 will force the bolts 7 outward and the parts will automatically lock, as described.

There is provided on the under side of the boxing 31 a circle 37 for pivotally connecting with a similar circle 38 on a plate 39, that may be secured to the cross-bar of the thills. The whiffletree, the thill cross-bar, and the intermediate parts are centrally perforated for passage of a vertical bolt 40, on which the whiffletree pivots.

It is obvious that when a pole and double-tree are used the rear ends of two straps 34 may be connected by a ring or otherwise, or a crotched or bifurcated strap may be pro-

vided, and from the crotch, ring, or other connection there may be extended a single strap to permit simultaneous operation of the horse-detaching devices on both whiffletrees.

5 What I claim as my invention is—

1. The combination with a whiffletree having spring-projected sliding bolts mounted in its ends, means for retracting said bolts, and the ferrules secured to the ends of the whiffletree to house the outer ends of said bolts, of the upwardly-swinging guard-clips pivotally mounted on the rear sides of the ferrules and carrying concaved disks to engage the rounded outer ends of said bolts and retain the traces thereon, and stops located on the ferrules below and to the outside of the clip-pivots to limit the downward movement of the clip-disks, substantially as described.

2. The combination with a whiffletree having its ends provided with guard-clips, of the sliding bolts each provided with a collar and a pin thereon, springs for forcing said bolts outward for attachment of traces, longitudinally-sliding rods or bars, each provided with a hook to engage the collar on a bolt and an aperture to receive the pin thereon, and lever mechanism for operating said rods or bars to retract the trace-attaching bolts, substantially as described.

3. The combination with a whiffletree having its ends bored and its under side longitudinally grooved, and guard-clips on the ends of said whiffletree, of spring-pressed sliding bolts mounted in the bored ends of the whiffletree, longitudinally-sliding bars placed in the grooved under side of the whiffletree and engaged with said bolts, sheathing to exclude dirt and moisture from said bars, and lever mechanism for actuating said bars to retract the bolts and release the traces, substantially as described.

4. The combination with a whiffletree having guard-clips on its ends and provided with spring-pressed sliding bolts or rods to receive the trace-eyes, of a double leverage as 26, 27, connected with each sliding rod or bolt for retracting said rods or bolts, and flexible anti-friction connections through which to actuate said leverage mechanism, substantially as described.

5. The combination with a whiffletree hav-

ing guard-clips on its ends, and provided with spring-pressed sliding bolts to receive the trace-eyes, of longitudinally-movable bars engaged with said bolts, a double leverage as 26, 27, for each of said bars, automatic lever-locking means, and flexible antifriction connections through which to actuate said leverage mechanism for retracting the bolts, substantially as described.

6. The combination with a whiffletree having spring-pressed sliding bolts mounted in its ends, and longitudinally-sliding bars connected with said bolts, of plates mounted on the inner ends of said bars and each provided with a lug, a base-plate having a slot as a guide for the plates on said bars, levers fulcrumed on the base-plate and in bearing contact with said lugs, levers fulcrumed on the plates carried by said bars and in bearing contact with the levers on the base-plate, chains for actuating said levers from the wagon, and an automatic lock for the levers, substantially as described.

7. The combination with a whiffletree and its sliding bolts or rods for receiving the trace-eyes, of a double-leverage mechanism as 26, 27, for each sliding bolt or rod, chains for actuating said leverage mechanism, antifriction-rollers for said chains, boxing to inclose the leverage mechanism and provided at the rear with an opening for passage of the chains, and a rubber packing in said opening, substantially as described.

8. The combination with a whiffletree having guard-clips on its ends, and the sliding spring-pressed bolts to engage the traces, of the longitudinally-movable bars detachably connected with said bolts, lever mechanism for actuating said bars to retract the bolts, an automatic lock for said levers, flexible connections to actuate the levers, and a boxing inclosing the lever mechanism and provided with means for pivotally supporting the whiffletree, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE TOWNSEND.

Witnesses:

OLIVER H. BOGARDUS,
LEANDER W. HALLOCK.