

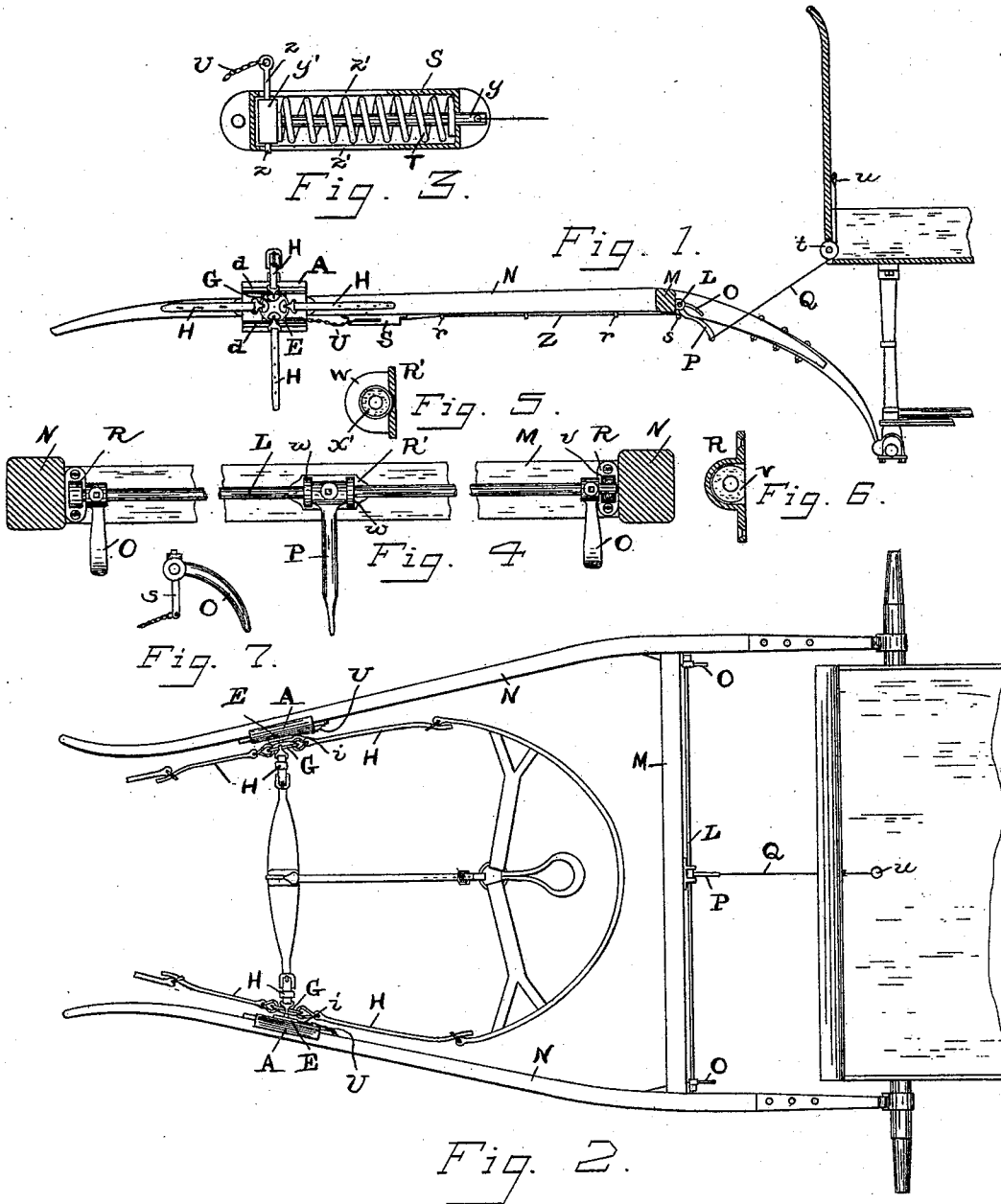
(No Model.)

2 Sheets—Sheet 1.

J. E. NORWOOD.
HORSE DETACHER.

No. 498,685.

Patented May 30, 1893.



Witnesses:—

J. C. Mattson
J. Parker Davis.

Inventor:—

John E. Norwood.

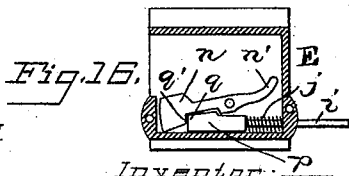
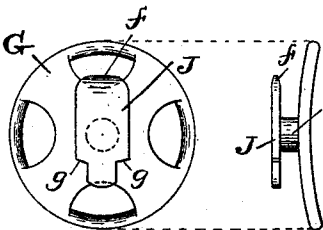
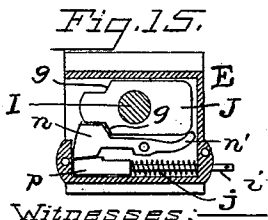
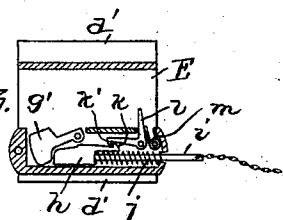
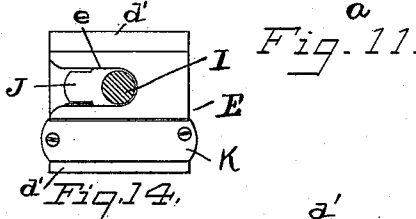
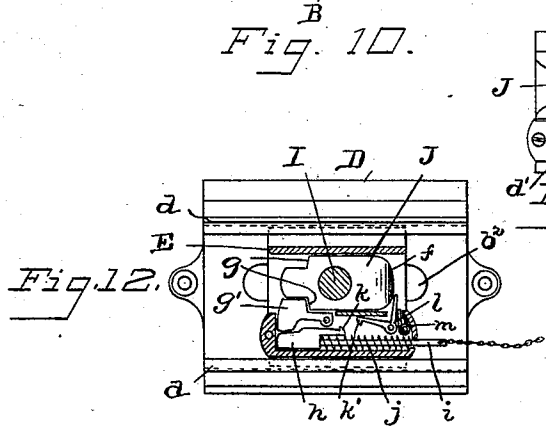
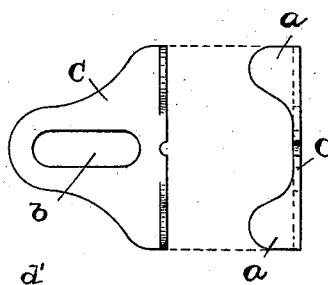
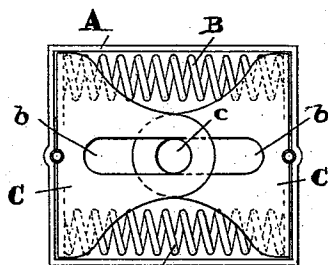
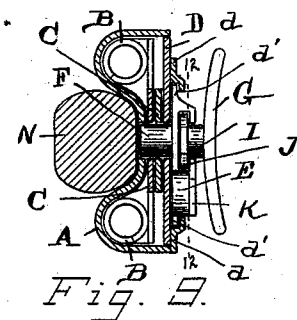
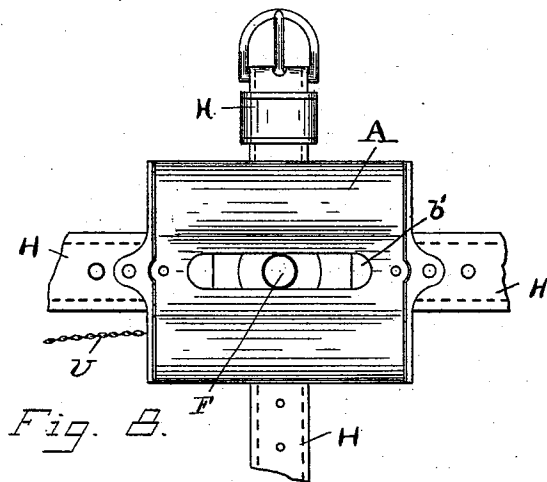
By Chas B. Mann

Attorney

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Fig. 17

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UNITED STATES PATENT OFFICE.

JOHN E. NORWOOD, OF SYKESVILLE, MARYLAND.

HORSE-DETACHER.

SPECIFICATION forming part of Letters Patent No. 498,685, dated May 30, 1893.

Application filed March 29, 1892. Renewed December 16, 1892. Serial No. 455,357. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. NORWOOD, a citizen of the United States, residing at Sykesville, in the county of Carroll and State of Maryland, have invented certain new and useful Improvements in Horse-Detaching Appliances for Vehicles, of which the following is a specification.

This invention relates to an appliance for facilitating attaching and detaching horses to and from vehicles, and has for its object to provide a construction which will dispense with traces, whiffle-trees, and shaft-tugs, and greatly simplify the process of hitching and unhitching, and which may be operated by the occupant of the vehicle to release the horse in case of a run-away.

To this end the invention may be said to consist in the novel features of construction and combinations of parts hereinafter described.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 shows a longitudinal section through a pair of shafts and the front portion of a vehicle provided with my improved appliance. Fig. 2 shows a top view of the same parts and also shows the harness. Fig. 3 shows an enlarged detail section view of a retracting spring and case which is secured to the shaft. Fig. 4 shows an enlarged detail rear view of a rock-shaft and attached parts located behind the cross-piece connecting the shafts, the latter being shown in cross-section; the right-hand end-bearing of the rock-shaft is shown in section. Fig. 5 shows an enlarged cross-section of the central bearing for the rock-shaft. Fig. 6 shows a section of one of the end-bearings for the same. Fig. 7 shows a side view of one of the trip-levers or triggers mounted on the rock-shaft. Fig. 8 shows an elevation of the detaching appliance which is secured to the shaft, looking at the outer side of the same. Fig. 9 shows a cross-section of the same and the shaft to which it is secured. Fig. 10 shows a view from the inner side with the lid or cover-plate removed. Fig. 11 shows two views of one of the sliding spring-held plates located in the case of the detaching appliance. Fig. 12 shows a view of the detaching appliance taken from

the inner side with the lock-case cover cut off on the line 12—12 of Fig. 9 and the parts in said case in locked adjustment. Fig. 13 shows a similar view of the lock-case with the parts in the release position. Fig. 14 shows an elevation of the said case with the shank of the attaching-ring in section. Fig. 15 shows a similar view to that seen in Fig. 12 of a lock-case containing another form of lock. Fig. 16 shows another similar view of this different construction with the parts in the release position. Fig. 17 shows two views of the ring for attachment of the harness.

In carrying out my invention I secure one of the detaching appliances to each shaft at the point where the tug usually has position. Each of such appliances is constructed as follows: A case, A, is constructed to fit the inner side of the shaft and contains a pair of spiral springs B, disposed longitudinally within it. A pair of overlapping plates, C, have position over these springs and are each provided with lugs, *a*, which fit against the opposite ends of the springs whereby the latter hold the plates at opposite ends of the case. These plates have longitudinal slots, *b*, which are adapted to register with each other. In the normal position of the plates the overlapping ends of these slots form a circular central opening, *c*. The case has a slot, *b'*, in its outer side having the length of the two slots, *b*, approximately. A lid or cover-plate, D, is fitted over the inner side of the case and suitably secured and this lid also has a longitudinal slot, *b*², registering with the slot, *b'*, in the outer side of the case. This lid carries a pair of parallel strips, *d*, forming slide-ways for a box or case, E, which fits against the said lid and has flanges, *d'*, at opposite sides engaging the said slide-strips. The case, E, carries a stud, F, projecting from its inner side and fitting through the slot, *b*², circular opening, *c*, formed by the slots of the overlapping plates, C, and the slot, *b'*. The said case is open through longitudinally, and formed with a cover at one side which is slotted from one end back to the center as seen at, *e*, Fig. 14.

The harness connection is by a ring, G, to which straps, H are joined by means of snap-hooks, which straps connect with the breeching, breast-strap or collar, belly-band, and

saddle, respectively, as will be seen by reference to Figs. 1 and 2. The ring, G, has a short shank, I, and on the end of the same a flat slide-head, J, which fits into the case, E, the shank, I, engaging the slot, *e*, as seen in Fig. 14. The entering end, *f*, of this slide-head is rounded on the corners and tapered to facilitate its ready insertion, and the opposite end is made with shoulders *g*, at opposite sides.

Two different locks for holding the slide-head in the case, are shown in the drawings.

The side of the case which contains the lock is covered by a removable lid, K, screwed on. The lock shown in Figs. 12 and 13 may be described as follows: A pivoted latch, *g'*, engages the shoulder, *g*, of the slide-head, J, and is held in such engagement by a sliding bolt, *h*, fitting behind it; this bolt has a stem, *i*, which extends out of the case and has a spiral spring, *j*, upon it, which spring holds the bolts behind the latch, *g'*; said bolt also has a projecting arm with a catch, *k*, at the end. A pivoted angle trip-lever, *l*, has a catch, *k'*, at one end to engage the catch, *k*, and one arm projecting into the slide-way of the head, J. The locking position of the parts is shown in Fig. 12 where the bolt, *h*, has position behind the latch, *g'*, and holds the latter in engagement with the shoulder, *g*, thereby preventing the withdrawal of the slide-head, J. To release the latter, the stem, *i*, is pulled out and the spring, *j*, thereby compressed, when a draft on the slide-head will push the latch, *g'*, out of its path; a spring, *m*, behind the trip-lever, *l*, will throw the catch, *k'*, of the latter into engagement with the catch, *k*, of the sliding bolt, whereby the latter is held, as seen in Fig. 13. When the head, J, is slid into the case its end, *f*, trips the lever, *l*, which frees the bolt, *h*, whereupon the latter, impelled by the spring, *j*, throws the latch, *g'*, behind the shoulder, *g*, and locks the slide-head.

In the construction shown in Figs. 15 and 16, a latch *n*, provided for engaging the shoulder, *g*, of the slide-head, is pivoted at the middle and has an arm, *n'*, projecting into the slide-way of the said head. A sliding bolt, *p*, is arranged as before to hold the latch in engagement with the slide-head shoulder, and upon withdrawing the same, the latch will be pushed out of the path of the slide-head by a draft upon the latch. In this case the bolt has a square corner, *q*, which locks behind a shoulder, *q'*, on the latch and is thereby prevented from pushing the latter out again, as illustrated in Fig. 16. Upon sliding in the head, J, it strikes the projecting arm, *n'*, and thereby throws the latch, *n*, out behind the shoulder, *g*, of the slide head, whereupon the bolt, *p*, springs behind the latch and holds it as before. In both constructions where the latch engages the slide-head shoulder, both are beveled to facilitate throwing the latch out of the path of said head.

The stems, *i*, of the sliding bolts of the two appliances secured to the shafts, are connect-

ed with wire-rods, Z, which run along the under sides of the shafts through suitable keepers, *r*, and a rock-shaft, L, is mounted on the rear side of the cross-piece, M, connecting the shafts, N, and has triggers, *s*, at opposite ends to which the rods, Z, are attached. The triggers have down-curved handles, O, by which they may be manipulated. An arm, P, is fixed on the rock-shaft at the middle of the same, and has a cord or chain, Q, attached to its extremity and thence carried up through the bottom of the vehicle over a suitable roller, *t*, and provided with a ring, *u*, at the end which may hang on a hook or pin inside the vehicle.

The end-bearings, R, of the rock-shaft, are each provided with an interior leather disk, *v*, in which the shaft journals to prevent rattling, and the central bearing, R', which comprises two ears, *w*, between which the arm, P, is mounted, has leather disks, *x'*, in sockets in the inner sides of said ears to serve as anti-rattlers in the same way.

The connection between the sliding rods, Z, and bolt-stems, *i*, is as follows: A box, S, is fastened under the shaft and contains a spiral-spring, T; a stem, *y*, passed through this spring has one end projecting from the box and connected with the rod, Z; at the opposite end the stem carries a slide-head, *y'*, against which the spring bears, and which is provided with projecting guide-pins, *z*, engaging slots, *z'*, in the box. One of these pins projects sufficiently to connect with a chain, U, which is attached to the bolt-stem, *i*.

In the operation of the apparatus the draft in pulling or backing comes upon the springs, B, through the stud, F, and plates, C, which slide past each other and these springs thus cushion the strain in starting, and also yield to the alternating motion of the horse's shoulders while traveling and thereby ease the same.

To unhitch the horse from the vehicle, the handles, O, are raised and the rods, Z, thereby drawn back which takes up the slack of the chains, U, compressing the springs, T, and draws the bolts of the locks releasing the slide-heads, J, as previously explained. The slide-heads, J, on the rings, G, are thus detached from the cases, E, and remain with the harness. In hitching-up, the slide-heads are slid into the cases, E, and automatically locked therein as heretofore described.

In case of a run-away, the occupant of the vehicle has simply to pull on the ring, *u*, which, through the cord, Q, and arm, P, turns the rock-shaft and thereby draws the bolts of the locks and releases the horse from the vehicle.

The object of interposing the retracting spring, T, and chain, U, is to prevent an accidental detachment of the horse, which might occur if the rods, Z, were directly connected with the releasing bolts.

It will be observed that my invention obviates the use of traces, whiffle-tree and shaft-tugs, and affords very convenient means for hitching and unhitching without the usual amount

of unbuckling of straps, thus greatly simplifying the operation. Moreover there are not the usual dangling strap-ends, and the objectionable rubbing of the traces against the horse's sides is absent. The ring, G, is concaved to conform to the convexity of the horse's side as seen in Fig. 17.

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

1. The combination of a case for attachment to the shaft; a pair of overlapping slide plates in said case; a spring holding said plates longitudinally distended; and a suitable connecting-piece to which the breeching and traces are joined, and which engages said two overlapping plates substantially in the manner described.

2. The combination of a case for attachment to the shaft; a pair of overlapping slide plates in said case and having registering longitudinal slots; a spring holding said plates longitudinally distended; and a suitable connecting-piece to which the breeching and traces are joined and which is provided with a stud engaging through the registering slots in the overlapping plates in the manner described.

3. The combination of a case to be secured to the shaft; a spring contained therein; a sliding box fitting against the exterior of the case in suitable slide-ways and having a stud projecting into the case and acted upon by said spring; a connecting piece for attachment of the harness, and having a slide-head to enter said box; and means for locking said slide-head therein.

4. The combination of a suitable case for connection with the shaft; a connecting piece for attachment of the harness and having a slide-head to enter said case; a pivoted latch in the case to engage and hold the slide-head; a sliding spring-bolt to hold said latch in engagement with the slide-head and to release the same upon being withdrawn, said bolt arranged to be held in its withdrawn position and automatically released upon the entrance of the slide head into the case.

5. The combination of a suitable case for connection with the shaft; a connecting piece for attachment of the harness and having a slide-head to enter said case; and a lock in the case comprising a pivoted latch to engage the slide-head, a sliding spring-bolt to hold it in engagement therewith and to release said slide-head upon being withdrawn, said bolt arranged to be held in its withdrawn position, and an arm projecting into the path of the slide-head and arranged to be moved by the latter to release the bolt.

6. The combination of a suitable case for connection with the shaft; a connecting piece for attachment of the harness and having a slide-head to enter said case; and a lock in the case comprising a pivoted latch to engage the slide-head, and having an arm projecting into the slide-way of the slide-head and arranged to be moved by said slide-head to throw the latch into engagement with the latter, and a sliding spring-bolt to hold the latch in such engagement.

7. The combination of the shafts; suitable cases for connection therewith; slide-pieces for attachment of the harness and entering said cases; locks for holding said slide-pieces in the cases and having releasing slide-bolts; a rock-shaft between the vehicle-shafts; triggers on said rock-shaft; suitable connections between the triggers and the sliding bolts of the locks; an arm on the rock-shaft; and a flexible connection between said arm and the vehicle.

8. The combination of a suitable case for attachment to the shaft; a slide-piece for attachment of the harness and entering said case; a lock for holding said slide-piece in the case having a releasing slide-bolt; a retracting spring; a flexible connection between the same and the lock-bolt; and a connection extending from the said spring to the vehicle.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN E. NORWOOD.

Witnesses:

JNO. T. MADDOX,
F. PARKER DAVIS.