

(No Model.)

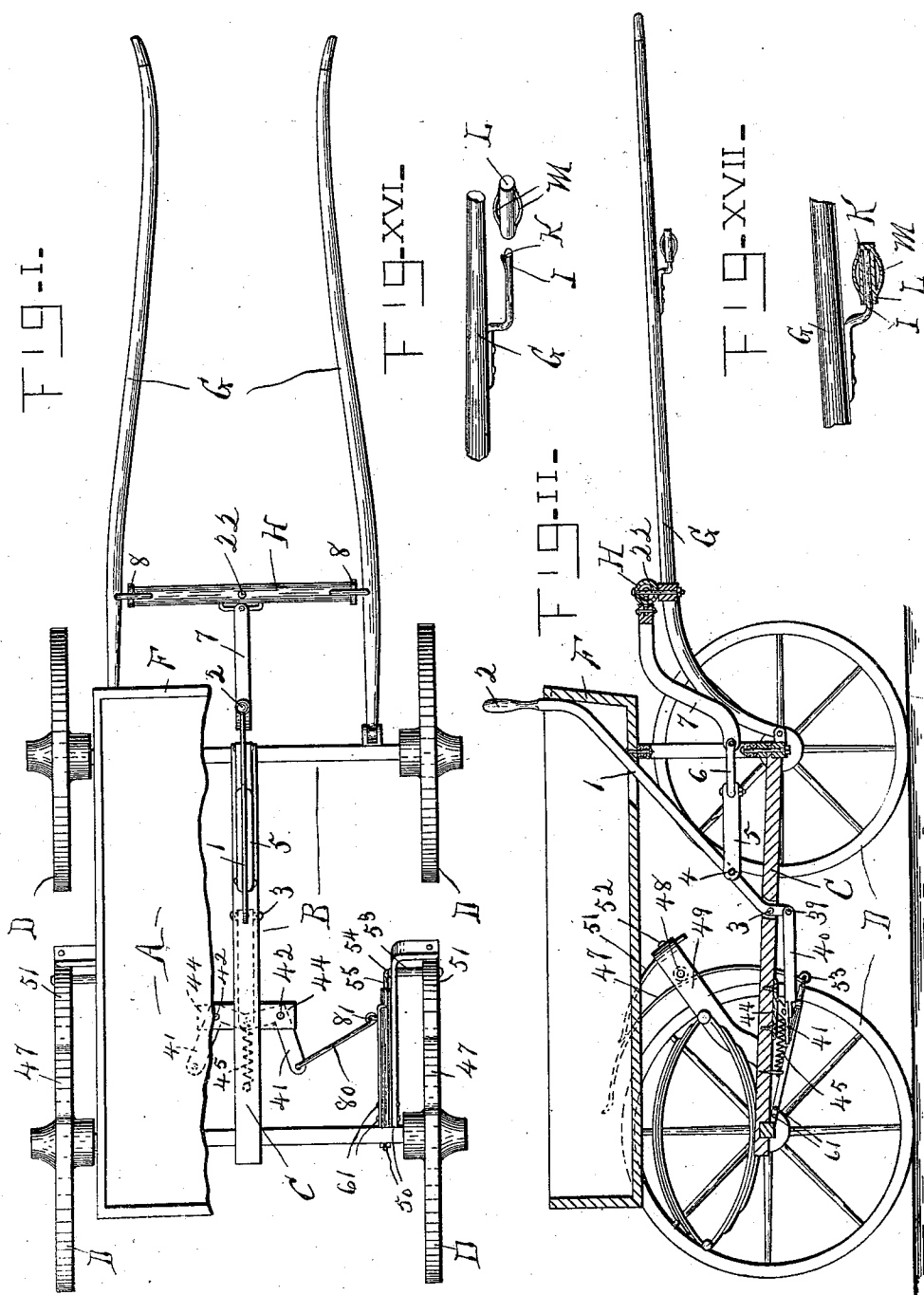
3 Sheets—Sheet 1.

J. LECHNER.

COMBINED TRACE RELEASER, HOLDBACK, AND BRAKE.

No. 558,288.

Patented Apr. 14, 1896.



WITNESSES:

C. Schoruck,
L. F. Weisburg

INVENTOR.

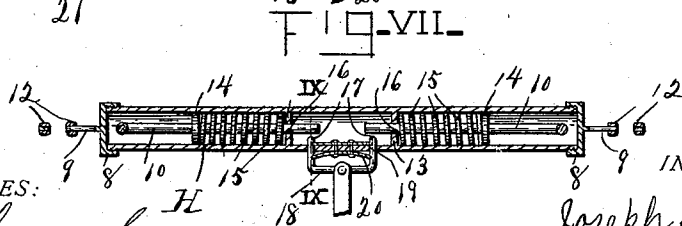
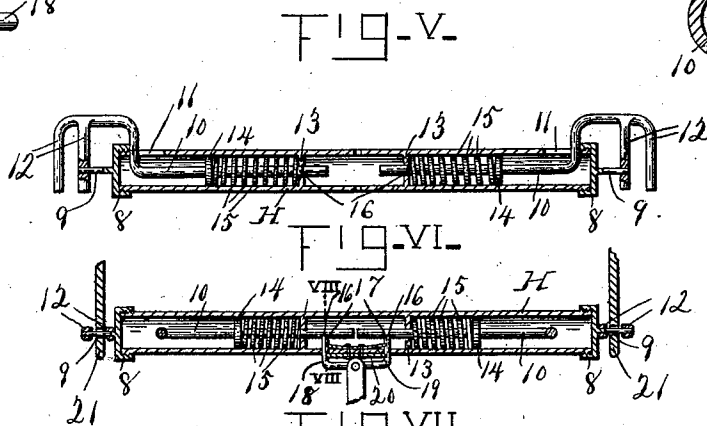
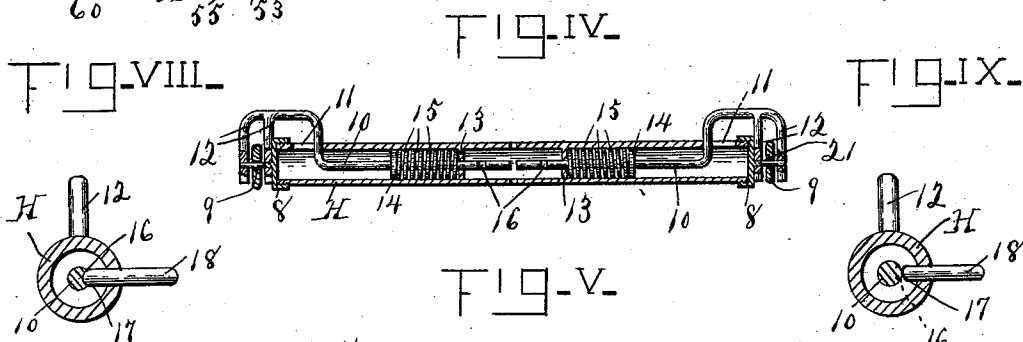
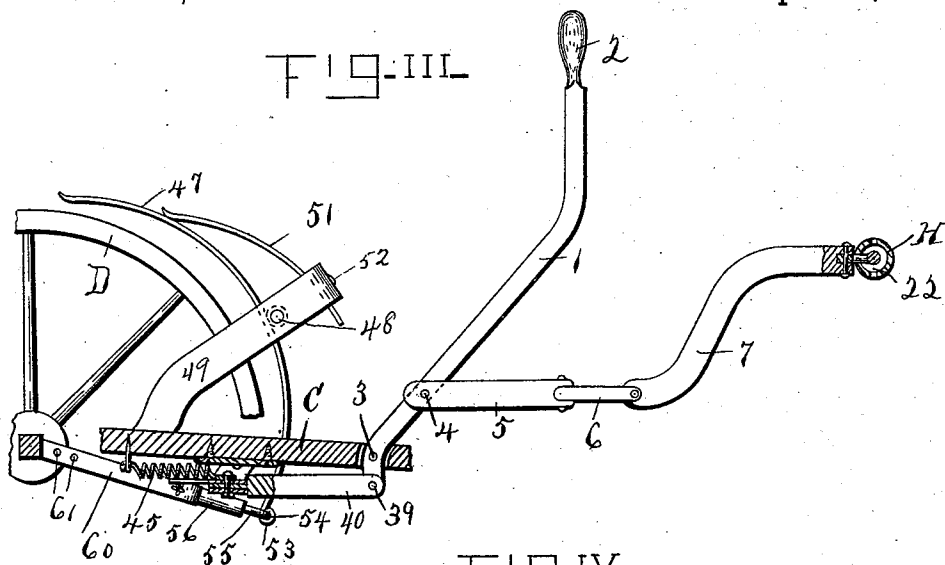
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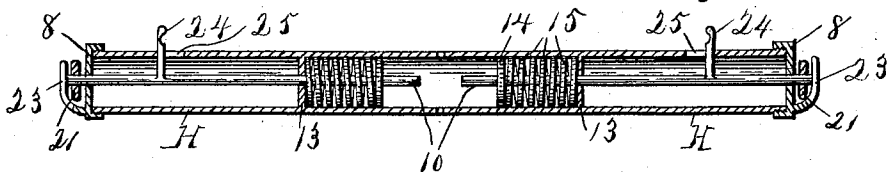


FIG. X.

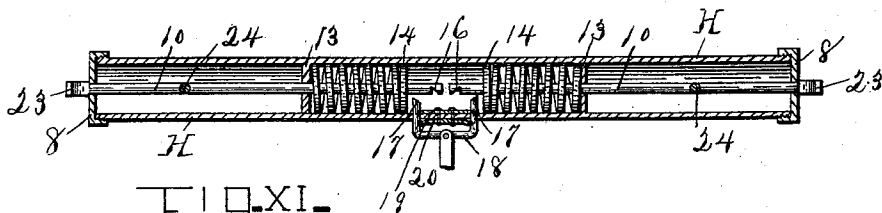


FIG. XI.

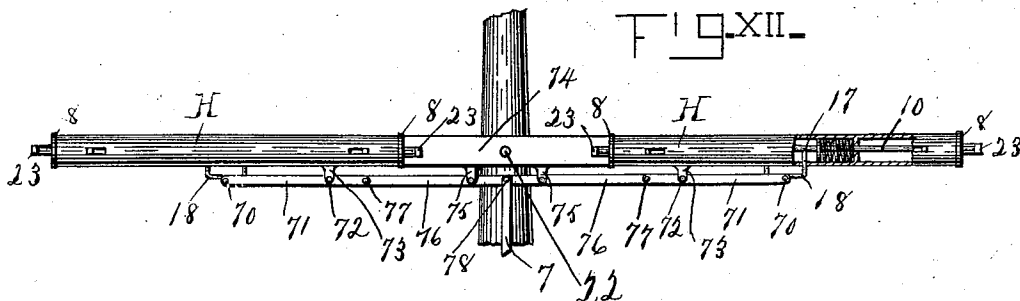


FIG. XII.

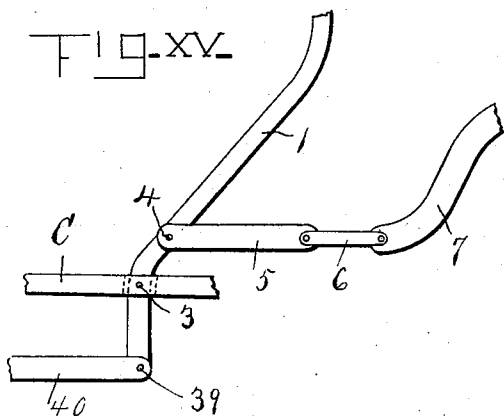


FIG. XV.

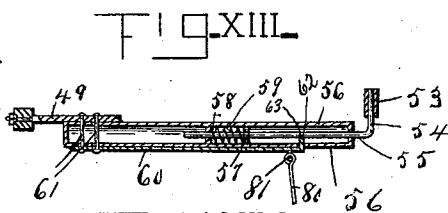


FIG. XIII.

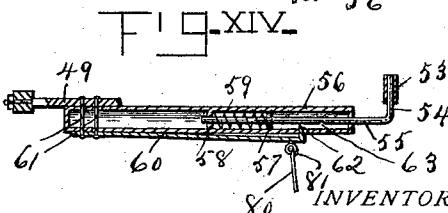


FIG. XIV.

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UNITED STATES PATENT OFFICE.

JOSEPH LECHNER, OF OSWEGO, NEW YORK.

COMBINED TRACE-RELEASER, HOLDBACK, AND BRAKE.

SPECIFICATION forming part of Letters Patent No. 558,288, dated April 14, 1896.

Application filed December 30, 1895. Serial No. 573,775. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH LECHNER, a citizen of the United States, residing at Oswego, in the county of Oswego and State of New York, have invented a new and useful Combined Trace-Releaser, Holdback, and Brake; and I do hereby declare that the following, in connection with the accompanying drawings, is a full, clear, and exact description of the invention.

The object of my invention is to provide a simple and effective means whereby in cases of runaway the horse or horses may be easily and quickly detached from the vehicle, and at the same time the brakes may be applied to the wheels.

It consists, essentially, of a hollow whiffletree containing two rods forced outwardly by the action of compressed springs. On the ends of the whiffletree are outwardly-extending pins, which span the hooks or clips on the ends of the rods when said rods and hooks are pushed inwardly by the hand against the action of a spiral spring. Spring-catches are provided for engaging with notches on these rods and for holding them in their inward position against the action of the spiral springs. The holdback-straps are each attached to a sleeve held in position by the action of a spring on a forwardly-extending pin secured on the shaft. I also provide a brake or brakes normally forced down upon the wheels by springs, but retractable and retained in said retracted position by spring-catches. A lever or brake handle is arranged conveniently to the hand of the driver, journaled to the reach or to some part of the carriage-frame, and connected by intermediate mechanism both to the spring-catch on the whiffletree and to the spring-catches retaining the retracted brakes. The brake-handle acts the part of a double lever and when drawn back releases the retracted brake and simultaneously releases the horse from the whiffletree, the horse by his own action releasing the holdback-straps. The connections are so attached to the lever at varying distances from the fulcrum as to permit the brakes to be set immediately before or, if preferred, immediately after the releasing of the horse.

My invention will be better understood by reference to the accompanying drawings, in

which the same letters and figures indicate the corresponding parts in all the views.

Figure I is a top plan view of a vehicle provided with my invention, the wagon-box being broken away. Fig. II is a longitudinal vertical section of the same. Fig. III is an enlarged view of a portion of Fig. II. Figs. IV to XI are sectional views of my peculiar whiffletree, showing the means by which the traces are attached thereto and the manner of releasing them. Fig. IV is a longitudinal vertical section of the whiffletree, showing the clips retained in their inward position against the action of the springs. Fig. V is a similar section, the spring-catch having been withdrawn and the clips forced outwardly by the action of the spring. Figs. VI and VII are longitudinal sections taken at right angles to Figs. IV and V, respectively. Fig. VIII is a cross-section on line VIII VIII of Fig. VI, and Fig. IX is a similar cross-section on line IX IX of Fig. VII. Fig. X is a longitudinal section of a modification of my whiffletree corresponding to Fig. IV, and Fig. XI is a view of the same at right angles to Fig. X, corresponding to Fig. VII. Fig. XII shows a construction by which my peculiar whiffletree may be used with a pole and pair of horses. Fig. XIII is a longitudinal section of the device for holding the brakes retracted. Fig. XIV is a view of the same showing its position when the brake is released. Fig. XV illustrates a modification of the arrangement of handle and connecting-bars. Fig. XVI is an isometric view of the holdback-sleeve detached from its sustaining-pin. Fig. XVII is a longitudinal section of the same in position.

A indicates the wagon-box; B, the frame; C, the reach; D, the wheels; E, the dashboard; G, the shafts, and H the whiffletree. To the reach at 3 is pivoted the lever 1, having the handle 2, to which is pivotally connected at 4 the bar 5, connected by the link 6 to the arm 7, by means of which the spring-catch on the whiffletree is retracted. The whiffletree H is preferably composed of a tube having its ends closed by screw-caps 8, provided with outwardly-extending pins 9. In the hollow whiffletree are arranged the rods 10, bent at right angles near their ends to extend out through slots 11 and having on their

outer ends the clips or hooks 12. In the interior of the whiffletree-tube is a fixed stop 13, perforated to permit the rod to pass through, between which stop and the collar 14 on rod 10 is arranged a spiral spring 15, tending to force outwardly the rod 10 and its hook 12. Rods 10 are provided with notches 16, with which engage the ends 17 of the spring-catch 18, forced inwardly by springs 19 and 20, either one or both of which may be used.

21 indicates the trace, and 22 the king-bolt. In Figs. X and XI, I have shown a simple modification of my whiffletree in which the screw-cap 8, covering the end thereof, is provided with the outwardly-extending and forwardly-opening hook 23. The rod 10 is here straight, its outer end extending outwardly through a hole in the cap. The fixed stop 13 and the collar 14 on rod, having the spring 15 retained between them, are here reversed so as to force rod inwardly. When the trace 21 is to be attached to the vehicle, the rod is forced outwardly by means of the handle or thumb-piece 24, extending outwardly through the slot 25, the end of the rod thus spanning the hook-opening and engaging the trace. In this position the end 17 of the spring-catch 18, forced inwardly by the springs 19 and 20, engages with the notch 16 and holds the rod 10 in its outward and trace-engaging position.

The mechanism by which the brakes are sustained and put into operation is best shown in Figs. I, II, III, XIII, and XIV. To the lower end of lever 1, at 39, is pivotally attached the connecting-bar 40, whose rear end is connected to one arm of the bell-crank 41, pivotally connected at 42 to a supporting-plate 44. By means of spring 45 the inner end of bell-crank is drawn rearwardly. The brake 47 is attached by pivot 48 to the brake-support 49, which is connected to the vehicle-frame at 50. To this support 49 is also attached by pin 52 the brake-spring 51, forcing the brake down on the wheel. At the opposite end of the brake is provided an eye 53, with which engages the end 54 of the rod 55, said end 54 being bent substantially at right angles to the main portion of the rod, which fits into a socket 56 and is provided with a collar 57. In the interior of the socket is arranged the stop 58, having a central hole to permit the passage of the rod 55. Between the collar 57 and the stop 58 is arranged a spiral spring 59, normally forcing the rod outwardly. When the rod is forced inwardly against the action of the spring, it is retained in its inward position by means of a spring-catch 60, attached by pins 61 to the socket 56, whose end 62 engages with notch 63 in the rod 55. Therefore when the rod 55 is released from the spring-catch 60, which is done by means of the lever 1, arm 40, bell-crank 41, and connection 80, attached to eye 81 on spring-catch 60, the rod 55 and the lower end 53 of the brake are forced outwardly and the brake is forced down on the wheel and set, to which end the brake-spring 51 coöperates.

To the shafts G is attached on each side a holdback-pin I, which is provided with a spring K. A sleeve L, preferably of metal, is fitted snugly to said hook and spring, so that when it is pressed into position the interior spring K exerts sufficient force to hold it firmly on the hook against any danger of its being shaken or knocked off. On its exterior the sleeve L is provided with one or more loops M M, to which the holdback-straps are attached.

Fig. XII shows the manner of applying my invention to a pole, so that it may be used for two horses. The construction of whiffletree here shown is that more fully illustrated in Figs. X and XI. The spring-catches 18 18, whose ends 17 17 engage with the rods 10 and hold them in their trace-engaging position, are pivoted at 70 to arms 71, which are sustained by pins 72 on supports 73, carried on eveners 74. On supports 75 are sustained arms 76 76, which are pivoted to arms 71 71 at 77 77, and at 78 both arms 76 76 are pivotally connected to arm 7. It will be evident that when connecting-arm 7 is drawn rearwardly by means of the lever the spring-catches 18 18 will be drawn out of engagement with the rods 10 10.

As shown in Fig. III, the distance from pivot 3 to pivot 4 is greater than from pivot 3 to pivot 39, so when the lever 1 is drawn back the horse will first be released from the vehicle and within an instant thereafter the brakes will be released and set.

In Fig. XV, I have shown a different arrangement, by means of which the brakes are set the instant before the horse is released, the distance here from fulcrum 3 to pivot 39 being greater than distance from fulcrum 3 to pivot 4. The single lever 1 with fulcrum at 3 acts in a double capacity. With reference to the whiffletree spring-catch it is a lever of the second class; with reference to the brake-retaining spring-catch, a lever of the first.

Operation: From this description the operation of my combined trace-releaser, holdback, and brake will be clear. The horse is attached to the vehicle by means of the engagement of traces 21 21 with pins 9 9 and clips 12 12, said clips on end of rods 10 10 being forced inwardly against action of springs 15 15 and held in inward position by spring-catch 18. At the same time the holdback-sleeves are pressed onto their sustaining-pins, where they are retained against accidental displacement by the action of the spring K, but when the holdback-straps are attached thereto may be easily drawn off thereby. The horse being so attached, the brakes are set in their retracted position, which is done by pressing rearwardly the lower end of each, which is connected to the bent rod 55. This rod being thus pushed inwardly into its socket, the end of the spring-catch 60 engages with the notch 63 and holds the rod in its inward position against the action of the spring 59, and

the brake is thus held free from the wheel, springs 59 and 51 both being compressed. When it becomes desirable to release the animal, the driver (with presence of mind) seizes the handle of the lever, which is arranged in a convenient position against the dashboard of the vehicle, and, drawing it toward him, withdraws the spring-catch on the whiffletrees, permitting the spiral springs to operate and to throw the rods and clips out of engaging position with the traces, and thus release the horse, which then escaping from the vehicle draws off the holdback-sleeves from their supporting-arms, the interior springs offering no positive resistance. Almost at the same instant the spring-catches by which the brake-retaining rods are held in their retracted position are withdrawn, the lower ends of the brakes forced outwardly and their upper ends forced downwardly, so as to engage the wheels and stop the vehicle. I consider it preferable, by the arrangement illustrated in Fig. XV, to set the brakes the instant before the horse is released, but as these two results are effected almost simultaneously by substantially one act the difference is not great.

Having thus fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. The combination of a trace-releaser, holdback and brake, consisting of a hollow whiffletree attached to the shafts, clips sustained thereon and rods reciprocating therein, said clips and rods adapted to coöperate to engage with the traces, springs arranged between stops in the interior of the whiffletree and collars on the rods, to force said rods out of their engaging position with the traces; a double spring-catch having ends arranged to engage with notches on said rods to hold said rods in their engaging position; holdback-sleeves fitted to forwardly-projecting pins and springs on the shafts for the attachment of the holdback-straps; a brake pivotally sustained near its middle on a support attached to the vehicle-frame; springs for forcing the shoe end of the brake into engagement with the vehicle-wheel; an eye on the opposite end of the brake, a rod engaging with said eye and sustained in a socket, a spring arranged between a stop and a collar for forcing said rod and the connected brake, both retained in a retracted position, out of said retracted position; a spring-catch engaging with a notch in the rod for holding said rod and brake in their retracted position; and a lever attached to the wagon-frame and having its handle arranged in a convenient position near the dashboard, said lever being connected by intermediate connections both to the whiffletree spring-catch and to one end of a bell-crank pivoted to the wagon-frame and having its other end connected to the brake-retaining spring-catch, substantially as described and shown.

2. In a combined trace-releaser, holdback and brake, a brake pivotally connected at or near its middle to a support attached to the vehicle-frame, a spring arranged to force the shoe end of said brake against the wheel, an eye at the opposite end of said brake, a rod engaging with said eye and sustained in a socket attached to the vehicle-frame, a spiral spring arranged between a stop in said socket and a collar on said rod for forcing said rod outwardly, a spring-catch engaging with said rod for holding it in its inward position against the action of said spring, said spring-catch being connected to a bell-crank, and said bell-crank connected by intermediate mechanism to a lever, by means of which said spring-catch may be drawn out of engagement, substantially as described and shown.

3. In a combined trace-releaser, holdback and brake, a brake pivotally supported near its middle on an arm attached to the vehicle-frame, a spring attached to the same arm for forcing the shoe end of the brake against the wheel, an eye at the opposite end of the brake, a bent rod engaging with said eye, for retracting said opposite end and holding said shoe end from the wheel, and a spring-catch for holding said rod in its retracted position, and means for withdrawing said catch, and releasing said rod and brake, substantially as described and shown.

4. In a combined trace-releaser, holdback and brake, the combination of brake 47 pivotally sustained at or near its middle 48 on a supporting-arm 49; spring 51 attached to the end of the same supporting-arm and forcing said brake against the wheel; a rod 55 having its outer end formed in a right-angle bend 54, engaging with an eye 53 on one end of said brake, said rod supported and reciprocating in socket 56 and normally forced outwardly by spring 59 arranged between collar 57 and stop 58; a spring-catch 60 attached to the exterior of said socket and having a bent end 62 adapted to engage with notch 63 on rod 55, and to hold said rod in its retracted position against the force of said spring 59; means for withdrawing said spring-catch and releasing said rod and brake, consisting of lever 1 pivotally supported on the wagon-frame, arm 40, bell-crank 41 pivotally connected to plate 44, link 80 connecting said bell-crank to eye 81 on said spring-catch 60; and spring 45 drawing rearwardly the inner end of said bell-crank, substantially as described and shown.

In witness whereof I have hereunto set my hand, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 6th day of November, 1895.

JOSEPH LECHNER.

Witnesses:

A. J. HAYES,
ALFRED WILKINSON.