No. 711,336. Patented Oct. 14, 1902.

H. M. McGREW.

SECURING ROD FOR END GATES.

(Application filed Mar. 10, 1902.)

(No Model.)

Fig. 1

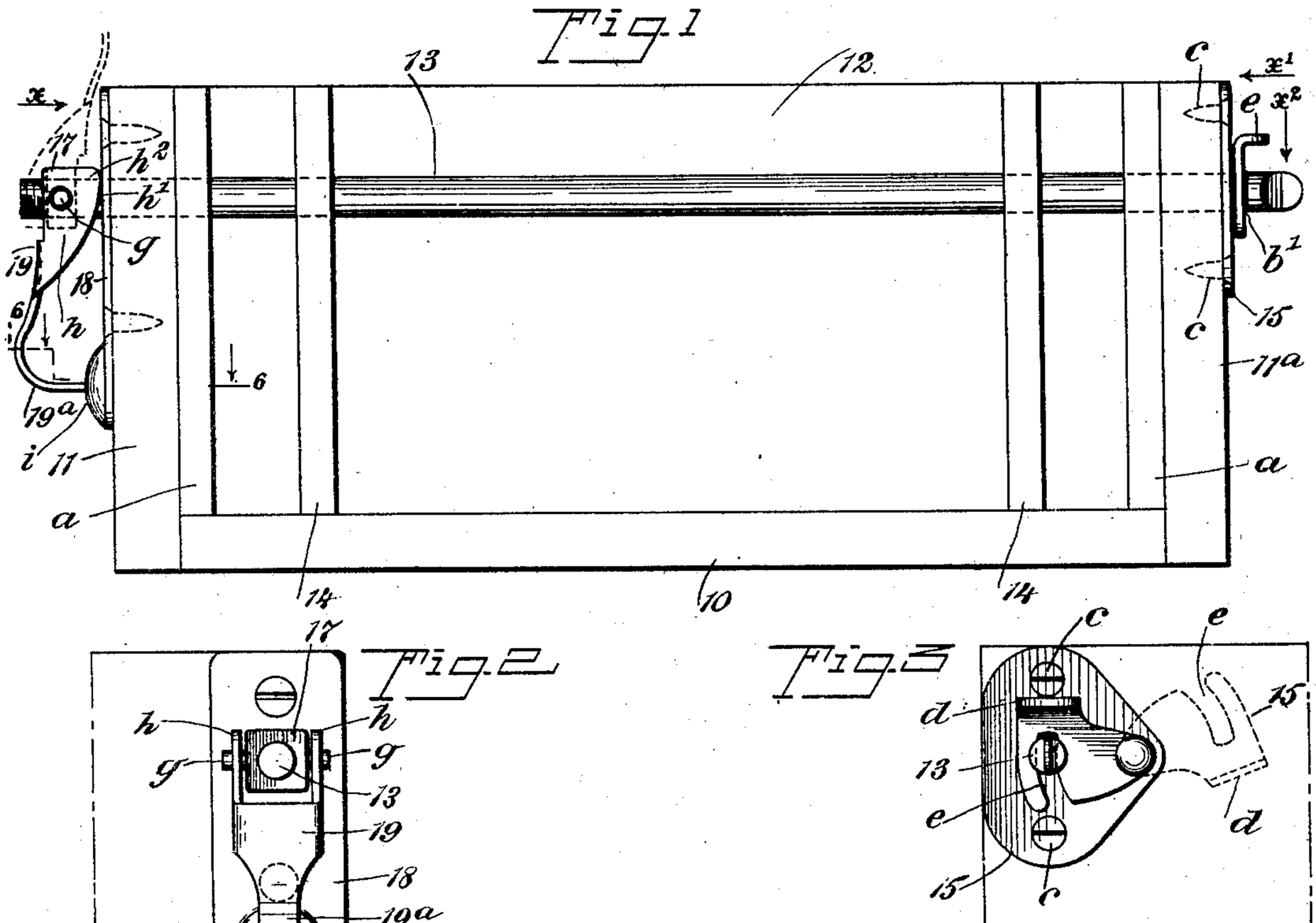


Fig. 2

Fig. 3

Fig. 4

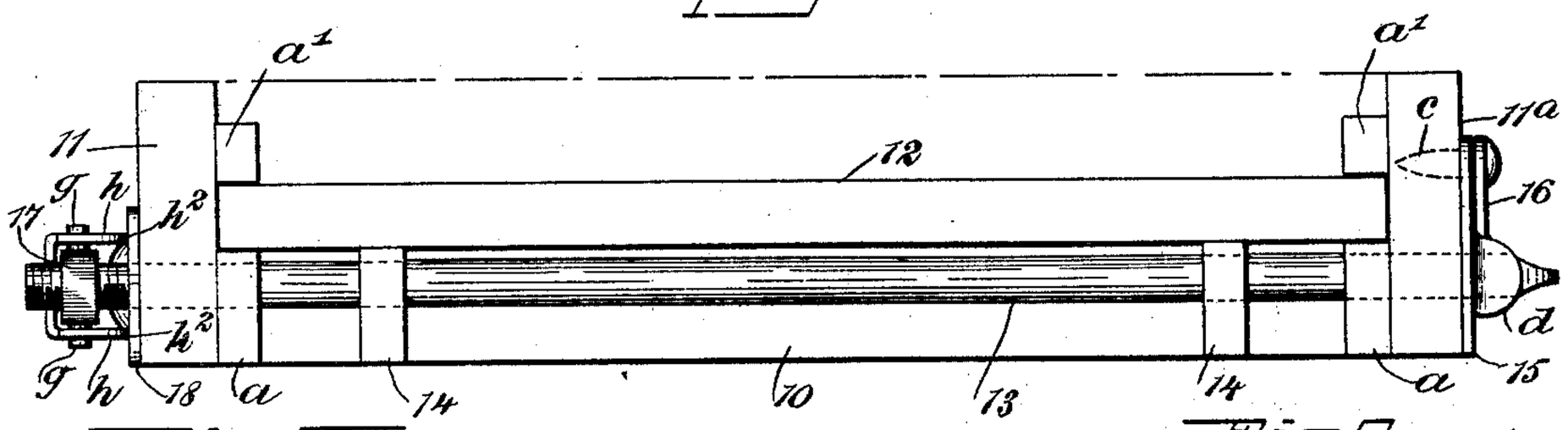


Fig. 5

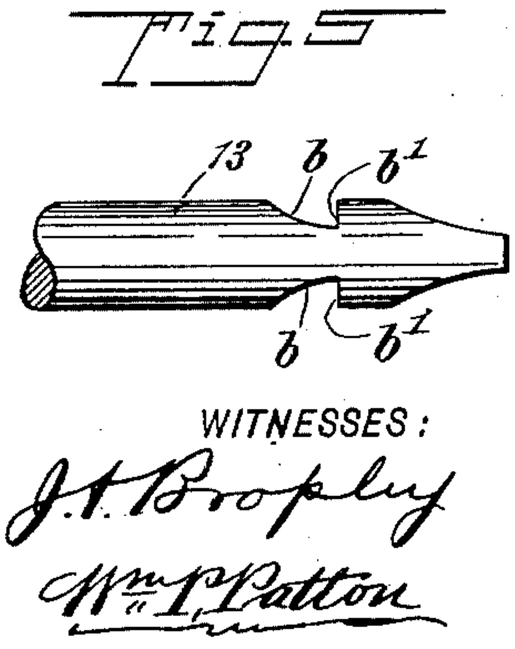
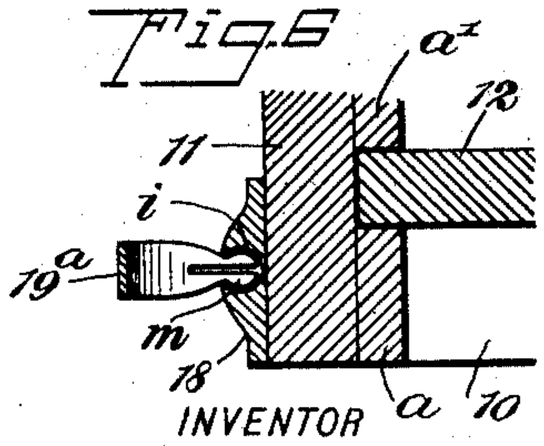


Fig. 6



WITNESSES:

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SECURING-ROD FOR END-GATES.

SPECIFICATION forming part of Letters Patent No. 711,336, dated October 14, 1902.

Application filed March 10, 1902. Serial No. 97,662. (No model.)

To all whom it may concern:

Be it known that I, HORACE MILO MCGREW, a citizen of the United States, and a resident of Pickrell, in the county of Gage and State of Nebraska, have invented a new and Improved Securing-Rod for Wagon End-Gates, of which the following is a full, clear, and exact description.

This invention relates to means for detachably securing in place the rear end-gate of a wagon-body, and has for its object to provide novel details of construction for a securing-rod that adapt it for very convenient application and removal and afford means for adjusting the length of the rod to conform with the width of the wagon-body it is applied upon.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a rear end view of a wagon-body, an end-gate thereon, and the improvement applied to secure the end-gate in position. Fig. 2 is a side view of a rear portion of the wagon-body and details of the invention thereon seen in direction of the arrow x in Fig. 1. Fig. 3 is a like view of the other side of the wagon-body and of features of the improvement seen in direction of the arrow x' in Fig. 1. Fig. 4 is a plan view of the rear portion of the wagon-body and of the improvements thereon. Fig. 5 is an enlarged detached plan view of an end portion of the securing-rod seen in the direction of the arrow x^2 in Fig. 1, and Fig. 6 is a sectional plan view of details substantially on the line 6 6 in Fig. 1.

The wagon-body shown to illustrate the application of the invention is of the well-known box type, comprising a floor or bottom wall 10 and two parallel sides 11 11^a, between which the end-gate 12 is held to slide vertically in the usual way by a loose engagement between the spaced cleats a a', that are secured in pairs on the inner surface of each side piece of the body near its rear end. The cleats a that are at the ends of the sides 11 11^a have suitable width for perforations to be formed oppositely therein, which are of sufficient diameter to permit the securing-rod 13 to be passed endwise loosely therethrough, as indicated by dotted lines in Figs. 1 and 4.

To connect the rod 13 with the end-gate 12, so that it will hold said end-gate seated upon the bottom 10 when the securing-rod is in position, two bracket-blocks 14 are secured upon the rear side of the end-gate, preferably at an equal distance, respectively, from each cleat a, these bracket-blocks each having a transverse perforation therein which alines with the perforations in the cleats a and the side-boards 11 11^a, so that the rod 13 may be readily inserted endwise through the parts mentioned and if held from displacement serve to keep the end-gate in place.

The features of improvement consist in the following novel details that are formed on and also connected with the ends of the rod 13 and rear end portions of the sides 11 11^a, whereby the rod 13 is adapted for secure retention in engagement with the sides and end-gate and for very convenient removal, as occasion may require. Near one end of the rod 13 two notches b are oppositely formed, which provide locking-shoulders b', that are alined with each other and are at a short distance from the end of the rod, which is preferably flattened somewhat, as shown in Fig. 5, to facilitate its insertion and so that the rod may be easily adjusted in proper position to receive the hook, hereinafter described. On the outer surface of the side-board 11^a a wear-plate 15 is secured by screws c, as indicated in the drawings, or, if preferred, rivets may be employed instead of screws, said plate having a perforation therein through which the tapered end portion of the rod 13 may pass freely. A keeper-hook 16, having a lip d formed on it above the slot e therein, is pivoted by one end on the wear-plate 15, and the relative construction of parts is such as will permit the slot e to receive the reduced body of the end portion of the securing-rod 13 at the notches b, so that the hook-jaws may bear upon the shoulders b' and hold the rod from longitudinal movement when the rod is in position for service as a securing medium for the end-gate 12. Obviously in case the rod 13 is to be moved endwise the latched engage-

ment of the keeper-hook 16 may be released by the manipulation of the lip *d*, so that the hook may be disposed as shown by dotted lines in Fig. 3. At the other end of the rod 13 a screw-thread is cut, and the rod has such a length as will permit the threaded portion thereof to project a suitable distance exteriorly of the side-board 11 when the keeper-hook 16 is engaged with the notches *b* at the opposite end of the rod. A nut-block 17 is threaded to screw on the threaded end of the rod 13, and on the nut-block two trunnions *g* are oppositely formed or secured, as shown in Fig. 4. Upon the outer surface of the side-board 11 a bracket-plate 18 is secured, which is perforated to permit the free insertion of the rod 13 therethrough. A cam-plate 19 is provided, which is in substantially U shape, having two parallel wings *h*, that project from the upper portion of the body and have opposite perforations formed therein, said perforations loosely receiving the trunnions *g*, whereby the cam-plate is held to rock upon the nut-block 17, and also is rendered adjustable toward and from the bracket-plate 18. The side edges of the wings *h* nearest to the bracket-plate 18 have convex form and slope away from said plate, essentially as shown in Fig. 1, their points nearest thereto being at and near their upper edges, these edges *h'* serving as cam-plates, and to facilitate their operation their upper corners h^2 are convexly rounded, as shown in Figs. 1 and 4. Near the lower end of the bracket-plate 18 a cupped indentation *i* is formed therein, which may be widened into globular form inside of its open mouth, as represented in Fig. 6. From the lower portions of the cam-edged wings *h* the body of the cam-plate 19 is reduced in width and is curved downward and laterally, as shown in Fig. 1, thus providing a resilient arm 19^a, which projects toward the cupped formation *i* when the cam-plate is adjusted to engage the cam edges of the wings *h* with the bracket-plate 18. The free extremity of the arm 19^a is preferably formed with a circular-edged head *m* thereon, that is rendered laterally compressible by slitting it longitudinally, as shown in Fig. 6, and it will be seen that the head *m* may be locked within the cupped indentation *i* if pressed toward and into said indentation.

For the effective operation of the device when the rod 13 is to be locked in place after it has been inserted in the plates 18 and 15 and the keeper-hook 16 is made to engage the inserted end of the rod, as before explained, it is essential that the nut-block 17 be screwed upon the threaded end of the rod 13 sufficiently to adapt the convex cam edges *h'* and convex corners h^2 of the wings *h* to have rubbing contact upon the bracket-plate 18 when the arm 19^a is rocked downward. If the nut-block 17 is properly positioned, the action of the cam-plate 19 will draw upon the rod 13 and hold it against end play, and the nut-block may now be held as adjusted by the enforced insertion of the locking-head *m* within the socket or cupped indentation *i*. It is obvious that by a proper adjustment of the nut-block 17 compensation may be afforded for the wear of working parts and also for shrinkage of the body material.

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

1. The combination with a body, and an end-gate, of a continuous securing-rod insertible in said body, means for fastening the insertible end of said rod, and a locking-cam mounted on the other end of said rod and shiftable into locking engagement with the body, said cam being adjustable in the direction of the length of the rod.

2. The combination, with a body having sides, and an end-gate held to slide thereon and adapted to receive an insertible rod that also passes through the sides of the body, of a securing-rod, means for holding the insertible end of said rod so as to permit its release, a nut-block screwing on the opposite projecting end of the rod, a cam-plate held to rock on the nut-block and adapted to bear with its cam edge upon the adjacent side of the body, and means for releasably securing the cam-plate where adjusted.

3. The combination, with a body having sides, and an end-gate held to slide thereon, of a rod insertible in the wagon through the sides, a hook pivoted on one side of the body and adapted to interlock within notches formed in the insertible end of the rod, a nut-block screwing on the opposite end of the rod, a cam-plate having convex-edged wings and held to rock in the nut-block, a bent arm extended from the cam-plate, and a bracket-plate secured upon the adjacent side of the body having a cupped depression wherein the free end of the arm may be locked after the cam edges of the wings have enforced engagement with said bracket-plate.

4. In a device of the character described, the combination with the rod screw-threaded at one end, of a nut-block adjustable on said threaded end, a cam rockable on the nut-block and having two spaced wings convexed on their edges, and a bent arm provided with a locking-head on its free end.

5. In a device of the character described, the combination with the rod notched oppositely near one end, and a rockable keeper-hook adapted to engage within said notches, of a nut-block screwing upon the threaded opposite end of the rod, trunnions on said nut-block, a cam-plate rockable on the trunnions, a bracket-plate having a cupped depression, a bent arm on the cam-plate having a locking-head on its free end that may engage with the cupped depression, and cam-wings on the cam-plate which may bear upon the bracket-plate.

6. An end-gate-securing rod having at one end portion thereof an adjustable nut, and a locking device mounted on the nut and ad-

justable therewith to different positions on the rod.

7. An insertible end-gate-securing rod having its insertible end formed for the reception of a separate fastener, and another fastening device permanently attached to the other end portion of the rod and movable with the same in the insertion or withdrawal of said rod.

8. An end-gate-securing rod provided with a swinging latch having a spring-headed portion, combined with a socketed plate arranged to be frictionally engaged by said spring-headed portion of the latch.

9. The combination with an end-gate-securing rod, of a cam-latch attached to said rod, a yieldable split-arm movable with the latch, and a keeper-plate disposed in the path of the arm and adapted to hold the arm and the latch in their active positions.

10. The combination with an end-gate-securing rod, of a cam-latch pivotally connected to the rod and having an arm, and a keeper disposed in the path of the arm and engagable therewith to hold the latch in its active position.

11. The combination of a threaded end-gate-securing rod, a nut screwed thereon, a cam-latch pivoted to said nut and adjustable therewith, a yieldable arm on the latch, and a plate disposed in coöperative relation to the latch and having a keeper engageable with said yieldable arm to hold the latch in an active position.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HORACE MILO McGREW.

Witnesses:

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