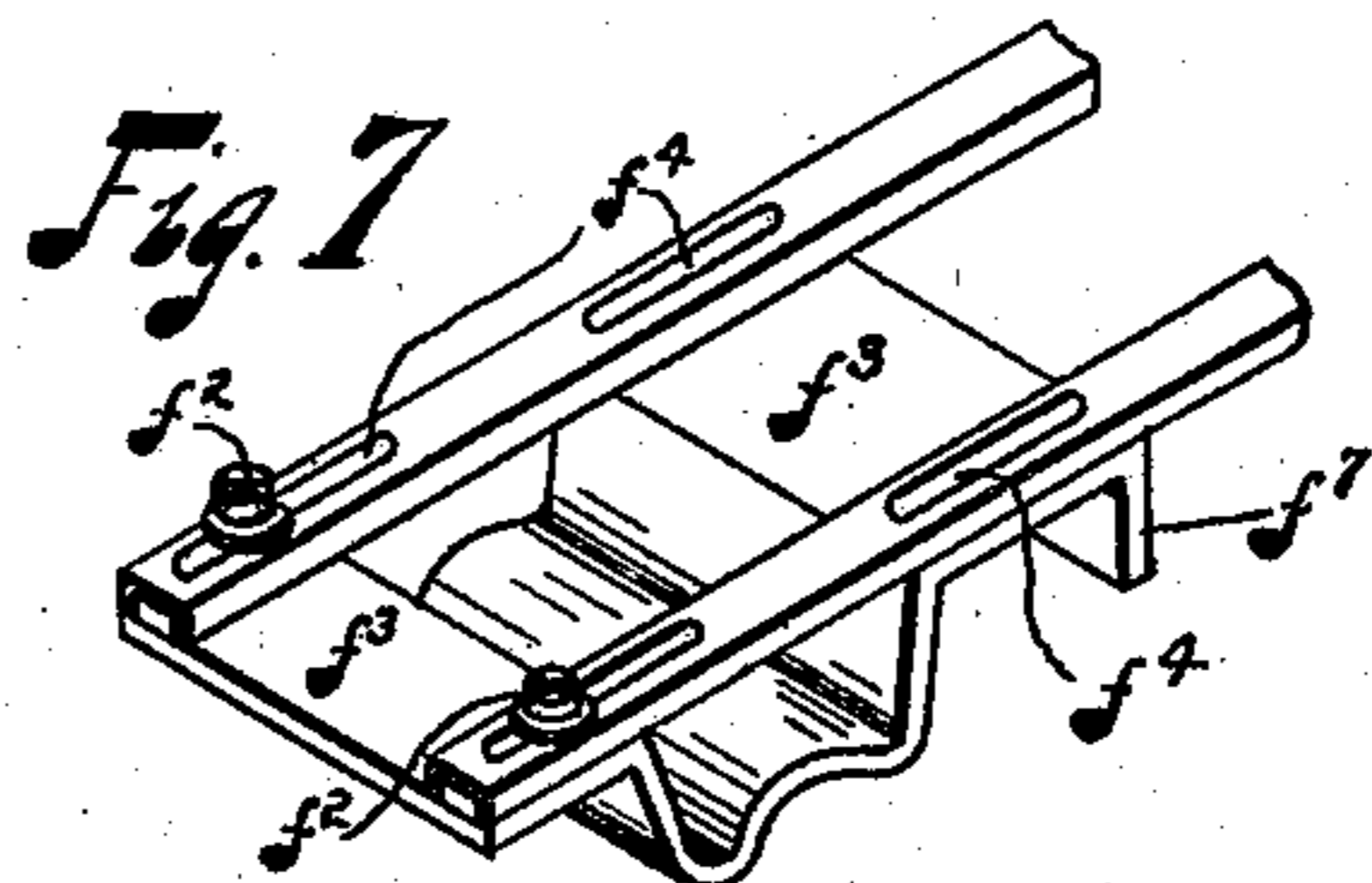
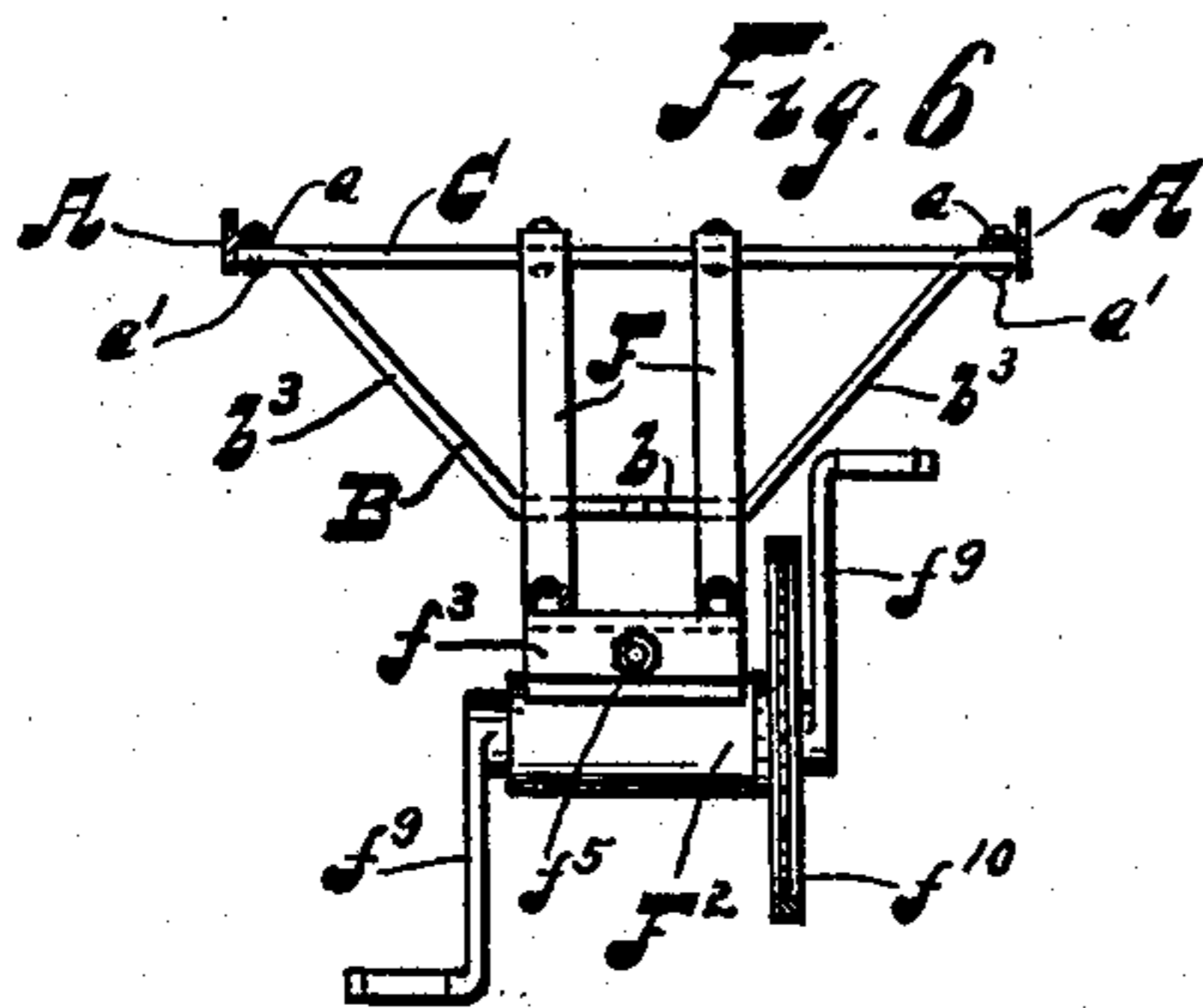
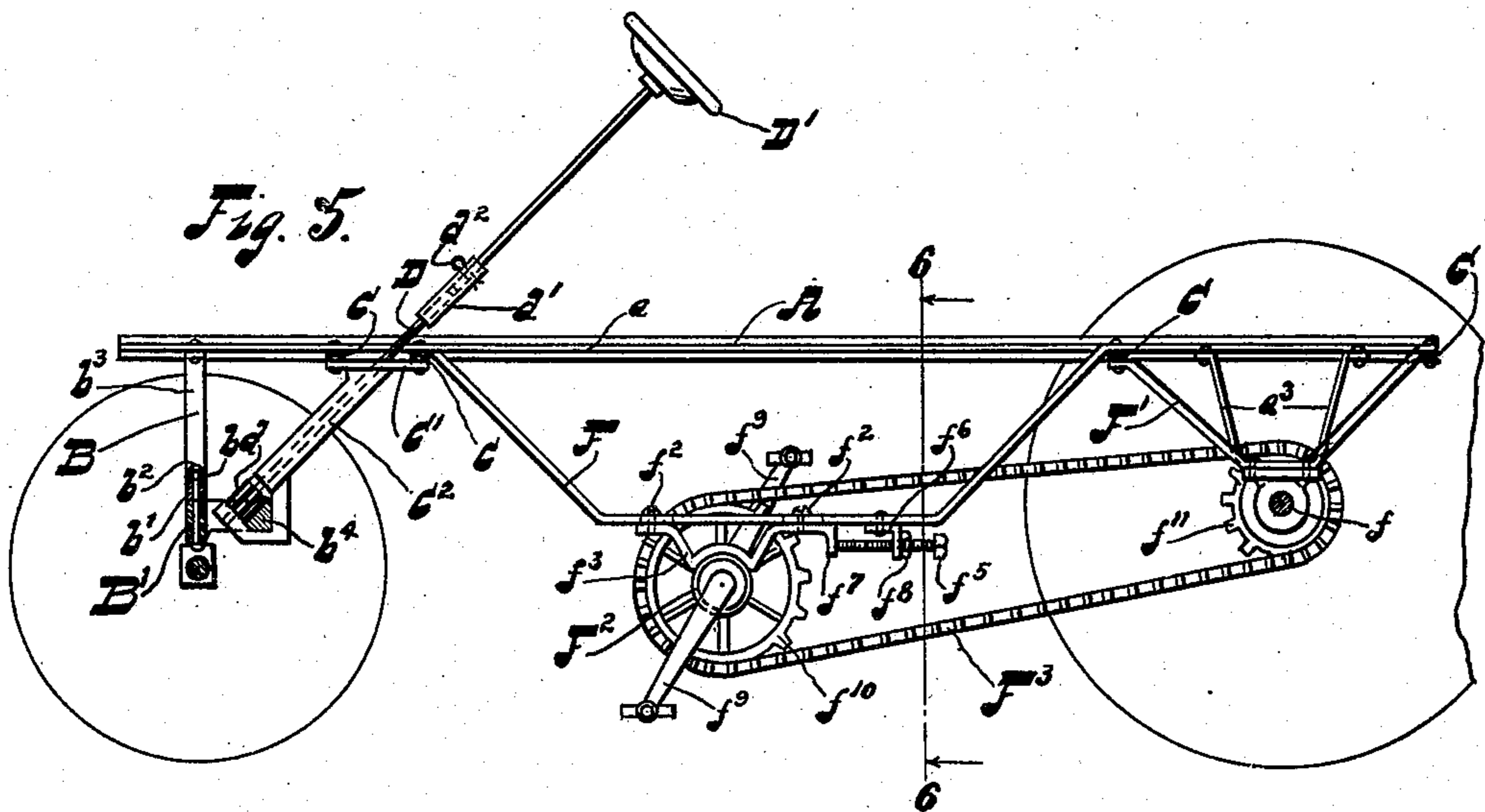
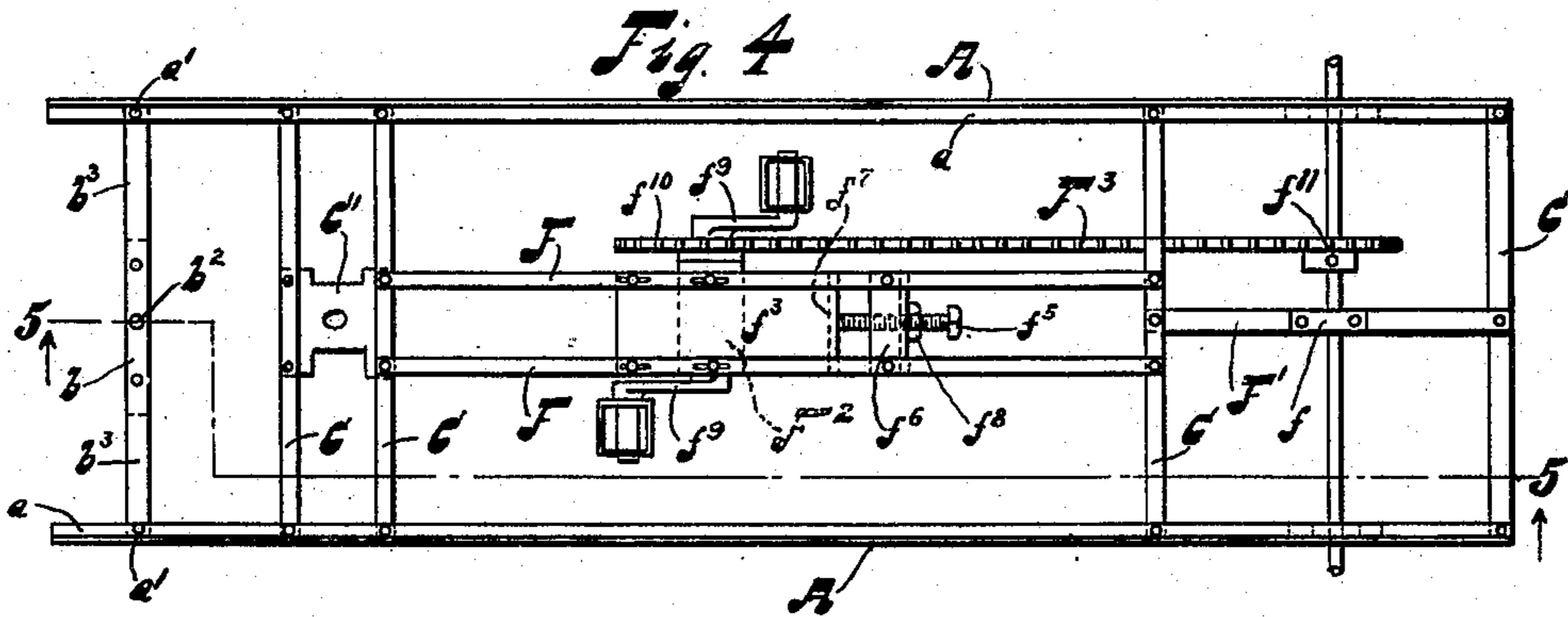


No. 858,661.

PATENTED JULY 2, 1907.

S. D. & H. T. LATTY.
FRAME FOR PEDALED VEHICLES.
APPLICATION FILED MAY 21, 1906.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

SAMUEL D. LATTY AND HENRY T. LATTY, OF CLEVELAND, OHIO.

FRAME FOR PEDALED VEHICLES.

No. 858,661.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed May 21, 1906. Serial No. 317,867.

To all whom it may concern:

Be it known that we, SAMUEL D. LATTY and HENRY T. LATTY, both citizens of the United States, residents of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Frames for Pedaled Vehicles, of which the following is a specification, the principle of the invention being herein explained and the best mode in which we have contemplated applying that principle, so as to distinguish it from other inventions.

Our invention relates to improvements in vehicles, especially in children's wagons of the increasingly popular pedaled or automobile type; and it has particular reference to the construction of the frames of such wagons, the object being to provide a frame that will be light and compact and that will at the same time possess the desirable characteristics of strength and durability. Aside from the general features of our improved frame structure, we desire to call attention to the support provided for the propelling mechanism where such mechanism comprises a crank and chain, and also to the means employed to brace the rear axle against the strain imposed thereon where this method of propulsion is employed. To the accomplishment of the foregoing and other related ends, said invention consists of means hereinafter fully described and specifically set forth in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings: Figure 1 represents a vertical longitudinal cross-section of a frame embodying certain of our improved features and adapted to a link and pedal propelling gear; Fig. 2 is a plan view of such frame divested of both the propelling and steering gear; and Fig. 3 is a vertical transverse cross-section of the same taken on the line 3—3, Fig. 2. Fig. 4 is a plan view of a frame similar to that illustrated in Fig. 1, but adapted to the crank and chain type of propulsion; Fig. 5 is a vertical longitudinal cross-section of said frame taken on line 5—5, Fig. 4, such propelling gear and the support therefor appearing in side elevation; Fig. 6 is a vertical transverse cross-section of the same taken on the line 6—6, Fig. 5; while Fig. 7 is a perspective view of a detail that enters into the support for the propelling gear.

Our improved frame is shown in its simplest form in Figs. 1 to 3, inclusive, where the type of propulsion illustrated is that of the lever and crank. In the remaining figures of the drawings such frame is shown with the additional features in place that adapt it to the crank and chain type of propulsion. In neither case do we show the body, however; for while, as will hereinafter appear, one of the objects sought in the con-

struction of such frame is to facilitate the mounting of the body thereon, the design of the body, in itself, is quite immaterial. Automobile effects are at present favored, and in the more elaborate wagons the frame is modeled very closely upon the lines at present prevailing in automobile construction. The base of our frame, then, upon which the body, whatever its outward form is designed to rest, is made up of two side-members A formed of T bars, Figs. 1, 2, 4 and 5, disposed parallel with each other, the tongues *a* of such bars being turned inwardly and lying in the same plane, Figs. 3 and 6. Near their forward ends side-members A are joined by a transverse truss-member B, Figs. 3 and 6 preferably formed of strap iron and bent into the shape clearly shown in the figures named. The intermediate horizontal portion *b* of truss-member B is reinforced by a short bar *b'* that slidably rests upon the front truck B' of the vehicle to which it is secured by a king bolt *b²*; while the outer end portions of such truss-member's arms *b³* are angled to coincide with the plane of the tongues *a* of side-members A, and are securely attached to the under side of the same as by rivets *a'*. The portions of side-members A lying to the rear of such forward truss B are joined together by a series of cross-bars C of which in the simplest form of the frame, Fig. 2, there are three and in the other form of frame, as shown in Fig. 4, there are four, the addition, however, of the fourth cross-bar disturbing in no wise the arrangement of the three bars common to both forms. Cross-bars C are preferably made of shallow channel iron, Figs. 1 and 5, and as in the case of truss-member B, they are attached to the under side of the tongues *a* of such side-members. The first two of these cross-bars are disposed immediately to the rear of truss-member B and only a short distance apart, and their central portions are joined by a plate C' of H shape that is securely riveted to their under sides. Formed integral with plate C' is a pendent hollow stud C² that projects forwardly into proximity with the center of forward truck B' and forms a bearing for a steering shaft D. The lower end of such steering shaft is provided with a pinion *d* that engages an annular rack *b⁴* extending rearwardly from truck B' whereby it is obvious the latter may be readily turned in either direction by appropriate rotation of shaft D.

The specific steering mechanism just described forms no part of the present application, being fully set up and claimed in our pending application, Ser. No. 289,013, filed November 25, 1905.

Shaft D is, for convenience in storing and shipping, made in two sections, the lower of which extends but a short distance above the level of the frame and is provided with a ferrule *d'*. Into this ferrule the upper section, which bears the steering wheel D', is designed to fit, a key *d²*, or other suitable means, serving to secure it thereto. Where a lever and crank propulsion E

is used, the levers are hung from the rearmost of the two cross-bars just described, a suitable clip *c* being provided for that purpose. The third of cross-bars *C* is disposed near the rear end of the frame and need not necessarily be made of channel iron as the others, since there is not nearly so much strain imposed upon it as upon them. Its manner of attachment, however, is the same. Adjacent to rear cross-bar *C* we provide bearings for the rear axle, such bearings being either formed in brackets *a*³ which may be either of the V-shape shown in Fig. 1, or of the form illustrated in Fig. 5.

Where the crank and chain method of propulsion is employed as has been previously indicated, certain additions are made to the structure just set forth, in order to adapt it to support the changed type of propelling gear. Clip *c* is, of course, omitted also, and a straight rear axle substituted for the one used with the lever and crank propulsion. The additions referred to comprise first of all the introduction of a fourth cross-bar *C* intermediate of the last two in the arrangement just described. Of the four cross-bars then present, the two intermediate ones are connected by two similar longitudinally disposed elongated truss-members *F*; and the two rear cross-bars, which should lie more closely together than the intermediate ones, are likewise connected by another longitudinally disposed but shorter truss-member *F'*, located directly in the rear of truss-members *F* and provided with a bearing *f* suitably placed to receive the rear axle of the vehicle. The horizontal portions *f'* of truss-members *F* are of course parallel and lie in the same plane. Near their forward ends such portions *f'* are longitudinally slotted and, by means of set screws *f*² passing through the slots, designated by *f*⁴, Fig. 7, a plate *f*³ of the general form clearly shown in Fig. 7 is adjustably secured to the under side of the horizontal portions *f'*. To more securely retain plate *f*³ in place than would be possible by the use of set screws *f*² alone, a longer and heavier set screw *f*⁵ is mounted in a clip *f*⁶ to the rear of such plate so as to extend forward into contact with a flange *f*⁷ thereon. A lock-nut *f*⁸ prevents set-screw *f*⁵ from turning, once it has been adjusted. To plate *f*³ is securely attached a hanger *F*² of any approved design and provided with pedaled cranks *f*⁹ and driving sprocket *f*¹⁰. A chain *F*³ connects such driving sprocket *f*¹⁰ with the driven sprocket *f*¹¹ upon the rear axle which of course is a live axle. Driven sprocket *f*¹¹ is mounted on such rear axle adjacent to the bearing *f*¹¹ that is provided by truss-member *F'*. The additional cross-bar *C*, as also the two longitudinally disposed truss-bars *F* are by preference made of channel iron, the propelling-gear support being thereby made much stronger and more rigid.

From the foregoing description of the construction of our improved vehicle frame, the advantages inherent therein should be readily apparent. In the first place by the use of T-bars in making the side members of such frame we secure increased weight sustaining capacity while still maintaining the structure light. The use of this material has the further advantage of permitting the attachment of all the fixtures, as transverse truss *B* and cross-bars *C*, to the under side of the tongue where they are out of sight, and at the same time leaves the upper side of such tongue free and unobstructed for the reception of the vehicle body. By the employment of channel iron in the making of cross-bars *C* and longitu-

dinal trusses *F* we impart a desirable degree of rigidity to those parts of the frame that have the greatest strain to withstand. The method in which the hanger *F*² is attached to such trusses, with the adjustability therein involved is another feature to which we would call attention, as is also the employment of truss-members *F'* to strengthen the rear axle against the pulling strain of the sprocket chain *F*³. By this last feature we make possible the use of a much lighter rear axle than would otherwise prove serviceable. All these several features unite to produce a frame possessing many desirable characteristics both from the standpoint of the manufacturer who seeks to build a frame with the least expenditure of material and labor, and of the user who desires lightness and durability in the product.

Having thus described our invention in detail, that which we particularly point out and distinctly claim is:—

1. In a vehicle frame, the combination of side members formed of T-bars disposed parallel with each other, the tongues of said bars being turned inwardly and lying in the same plane; a transverse truss-member secured to said side-members near their forward ends, said truss-member consisting of a bar of strap iron and having the outer end portions of its arms angled to coincide with the tongues of the respective side-members and attached to the under sides of said tongues; cross-bars of channel iron, with the channels turned down, joining said side-members at suitable intervals, said cross-bars being likewise attached to the under side of the tongues of said side-members; and axle bearings for the rear axle attached to the under side of the tongues of said side-members.

2. In a vehicle frame, the combination of side members formed of T-bars disposed parallel with each other, the tongues of said bars being turned inwardly and lying in the same plane; a transverse truss-member secured to said side-members near their forward ends, said truss-member having the outer end portions of its arms angled to coincide with the tongues of the respective side-members and attached to the under side of said tongues; two cross-bars joining said side-members in the rear of said truss-member, said cross-bar being likewise attached to the under-side of the tongues of said side-members; a plate connecting the central portions of said two cross-bars, said plate being provided with a bearing adapted to receive a steering shaft; another cross-bar joining the rear ends of said side-members and attached thereto in the same manner as aforesaid cross-bars; and axle-bearings for the rear axle attached to the under side of the tongues of said side-members.

3. In a vehicle frame, the combination of side-members formed of T-bars disposed parallel with each other, the tongues of said bars being turned inwardly and lying in the same plane; a transverse truss-member secured to said side-members near their forward ends, said truss-member consisting of a bar of strap iron and having the outer end portions of its arms angled to coincide with the tongues of the respective side-members and attached to the under side of said tongues; two cross-bars of channel iron joining said side-members in the rear of said truss-member, said cross-bars being likewise attached to the under side of the tongues of said side members; a longitudinally disposed plate of H-shape connecting the central portions of said two cross-bars, said plate being provided with a bearing adapted to receive a steering shaft; another cross-bar of channel iron joining the rear ends of said side-members and attached thereto in the same manner as aforesaid cross-bars; and axle-bearings for the rear axle attached to the under side of the tongues of said side-members.

4. In a vehicle frame, the combination of side-members; a transverse truss-member secured to said side-members near their forward ends; cross-bars joining said side-members at suitable intervals; and pedaling-gear supporting means comprising a longitudinally disposed truss-member secured at opposite ends to two of said cross-bars respectively, a plate adjustably mounted upon the horizontal

portion of said truss-members, and a crank hanger attached to said plate.

5. In a vehicle frame, the combination of side-members; a transverse truss-member secured to said side-members near their forward ends; spaced cross-bars joining said side-members; and pedaling-gear supporting means comprising two similar longitudinally disposed, inverted truss-members secured at opposite ends to two of said cross-bars, respectively, said truss-members comprising intermediate horizontal portions; a plate adjustably mounted upon such horizontal portions; and a crank hanger attached to said plate.

6. In a vehicle frame, the combination of side-members; a transverse truss-member secured to said side-members near their forward ends; cross-bars joining said side-members at suitable intervals; two longitudinally disposed truss-members secured at opposite ends to two of said cross-bars respectively; a crank-hanger with crank and driving sprocket adjustably mounted upon the horizontal portions of said truss-members; and another longitudinally disposed truss-member located to the rear of said last-named truss-members and provided with a bearing for the rear axle.

7. In a vehicle frame, the combination of side-members; a transverse truss-member secured to said side-members near their forward ends; cross-bars joining said side-members at suitable intervals; two longitudinally disposed truss-members secured at opposite ends to two of said cross-bars respectively; a crank-hanger with crank and driving sprocket adjustably mounted upon the horizontal portions of said truss-members; aligned axle-bearings attached to said side-members near their rear ends; an axle mounted therein; a driven sprocket mounted on said axle intermediately of said bearings and in line with said driving sprocket; and a third longitudinally disposed truss-member, located to the rear of said last-named truss-members and provided with a bearing for the rear axle.

8. In a vehicle frame, the combination of side-members formed of T-bars disposed parallel with each other, the tongues of said bars being turned inwardly and lying in the same horizontal plane; a transverse truss-member secured to said side-members near their forward ends, said truss-member having the outer end portions of its arms angled to coincide with the tongues of the respective side-members and attached to the under side of said tongues; two cross-bars joining said side-members in the rear of said truss-member, said cross-bars being likewise attached to the under side of the tongues of said side-members; a plate connecting the central portions of said two cross-bars, said plate being provided with a bearing adapted to receive a steering shaft; two other cross-bars joining said side-members near their rear ends, and attached thereto in the same manner as aforesaid cross-bars; pedaling-gear supporting means suspended from the two intermediate cross-bars; and a longitudinally disposed truss-member secured at opposite ends to the two rear cross-bars and provided with a bearing for the rear axle.

9. In a vehicle frame, the combination of side-members formed of T-bars disposed parallel with each other, the tongues of said bars being turned inwardly and lying in

the same horizontal plane; a transverse truss-member secured to said side-members near their forward ends, said truss-member having the outer end portions of its arms angled to coincide with the tongues of the respective side-members and attached to the under side of said tongues; two cross-bars joining said side-members in the rear of said truss-member, said cross-bars being likewise attached to the under side of the tongues of said side-members; a plate connecting the central portions of said two cross-bars, said plate being provided with a bearing adapted to receive a steering shaft; two other cross-bars joining said side-members near their rear ends, and attached thereto in the same manner as aforesaid cross-bars; two longitudinally disposed truss-members secured at opposite ends to the two intermediate cross-bars, respectively; a crank-hanger and driving sprocket adjustably mounted upon the horizontal portions of said truss-members; and another longitudinally disposed truss-member located to the rear of said last-named truss-members and provided with a bearing for the rear axle.

10. In a vehicle frame, the combination of side-members formed of T-bars disposed parallel with each other, the tongues of said bars being turned inwardly and lying in the same horizontal plane; a transverse truss-member secured to said side-members near their forward ends, said truss-member having the outer end portions of its arms angled to coincide with the tongues of the respective side-members and attached to the under side of said tongues; two cross-bars joining said side-members in the rear of said truss-member, and cross-bar being likewise attached to the under side of the tongues of said side-members; a plate connecting the central portions of said two cross-bars, said plate being provided with a bearing adapted to receive a steering shaft; two other cross-bars joining said side-members near their rear ends, and attached thereto in the same manner as aforesaid cross-bars; two longitudinally disposed truss-members secured at opposite ends to the two intermediate cross-bars, respectively; a crank-hanger and driving sprocket adjustably mounted upon the horizontal portions of said truss-members; and a longitudinally disposed truss-member secured at opposite ends to the two rear cross-bars and provided with a bearing for the rear axle.

11. In a vehicle frame, the combination of side-members; a transverse truss-member secured to said side-members near their forward ends; two cross-bars joining said side-members in the rear of said truss-member; a plate connecting the central portions of said cross-bars, said plate being provided with a downwardly projecting boss provided with a bearing; a section of a steering shaft mounted in said bearing and provided with a ferrule at its upper end, said ferrule being adapted to receive and retain the other section of such steering shaft.

Signed by us, this 18th day of May 1906.

SAMUEL D. LATTY.
HENRY T. LATTY.

Attested by:

G. W. SAYWELL,
JNO. F. OBERLIN.