No. 841,786. PATENTED JAN. 22, 1907.

W. E. KIDDER.

SLEIGH ATTACHMENT FOR CHILDREN'S CARRIAGES.

APPLICATION FILED APR. 22, 1905.

4 SHEETS—SHEET 1.

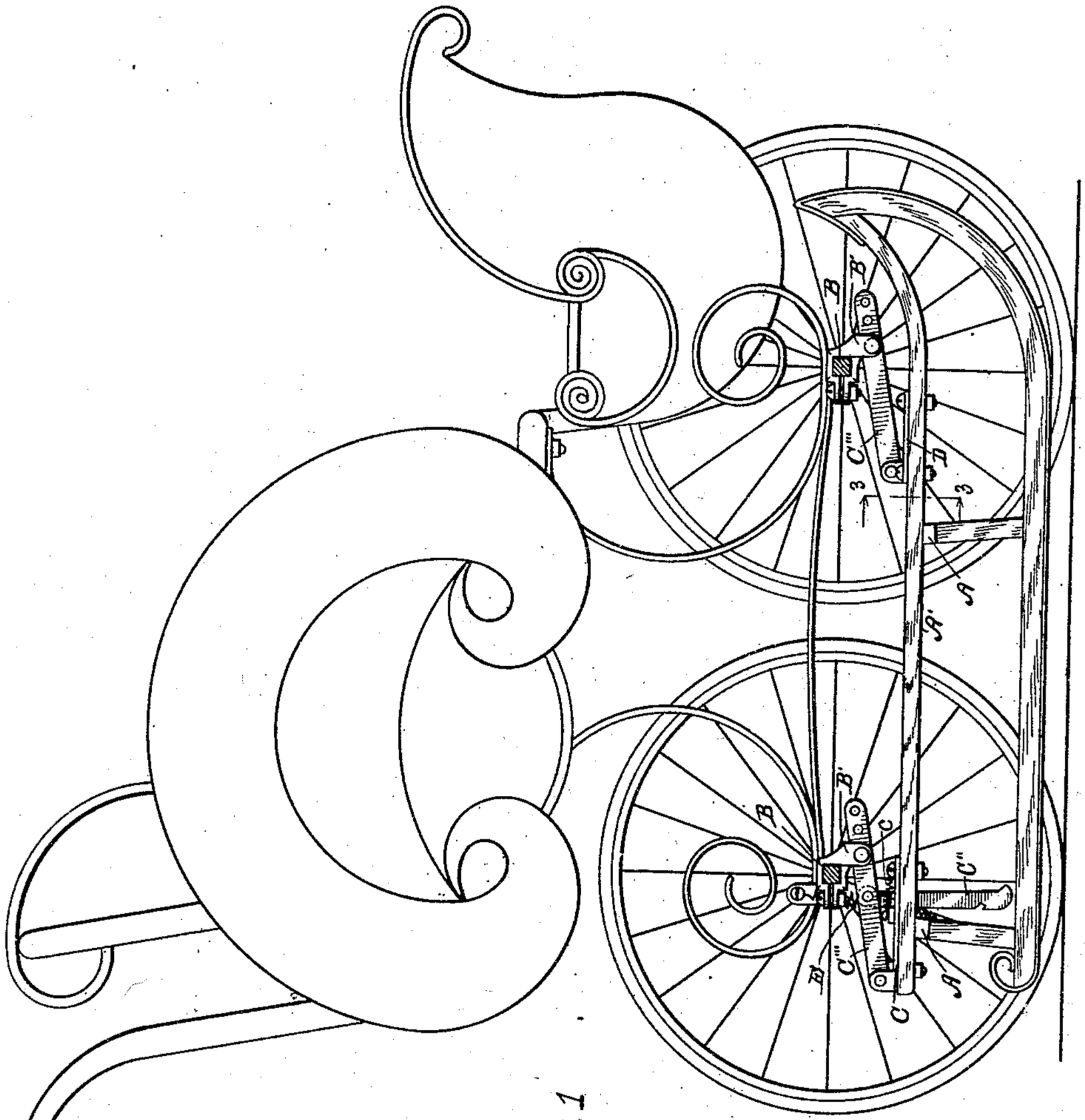

Fig. 1.

Witnesses:
Edith A. Feller
E. Marie Jackson

Inventor,
William E. Kidder
By Chapfell & Earl
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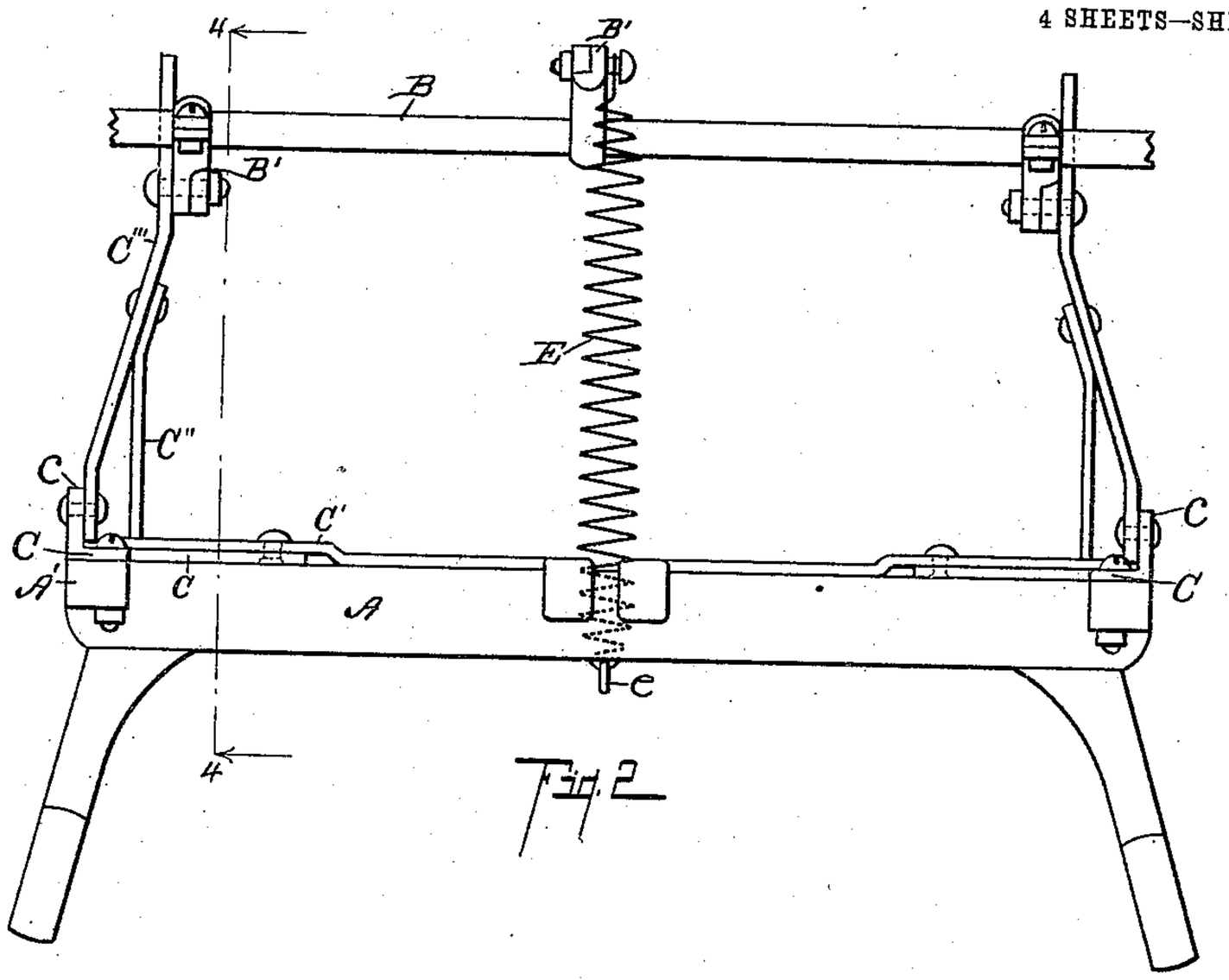

Fig. 2

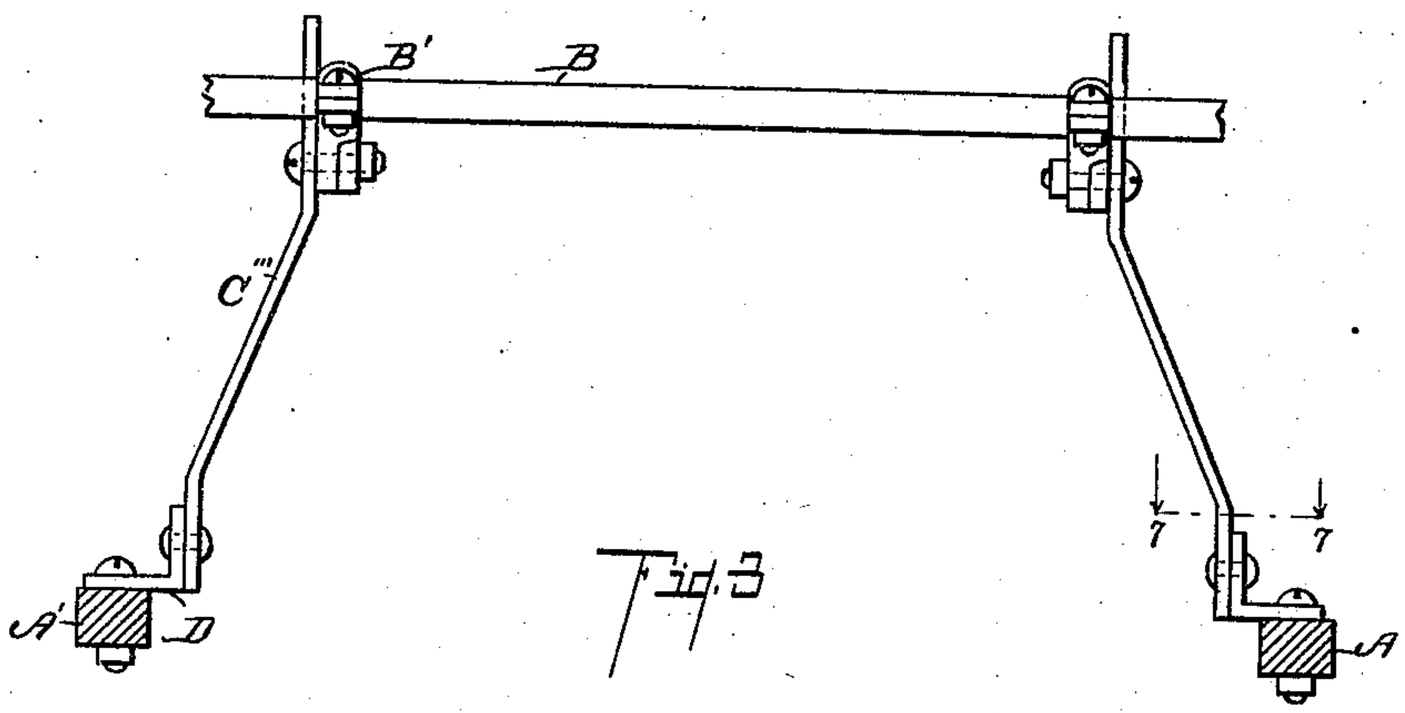

Fig. 3

Witnesses:

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4 SHEETS—SHEET 3.

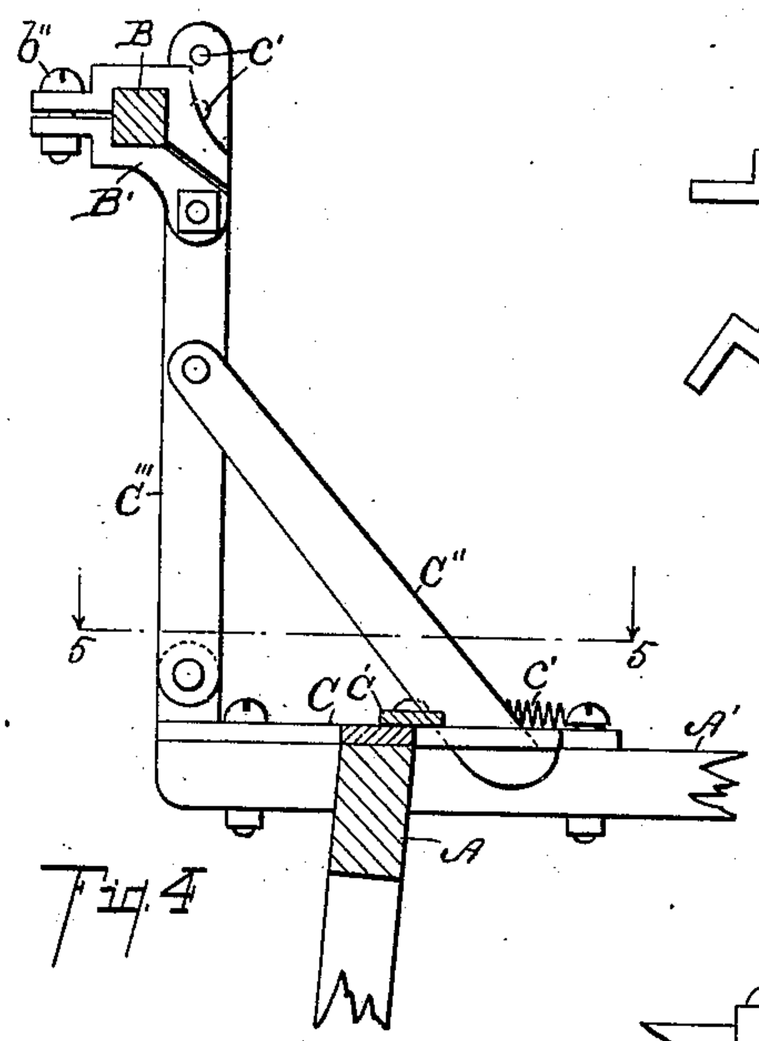

Fig. 4

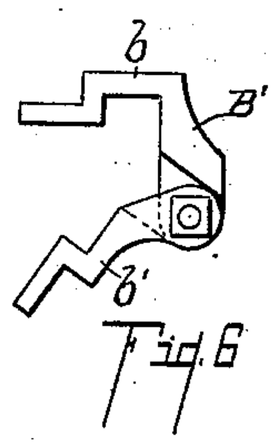

Fig. 6

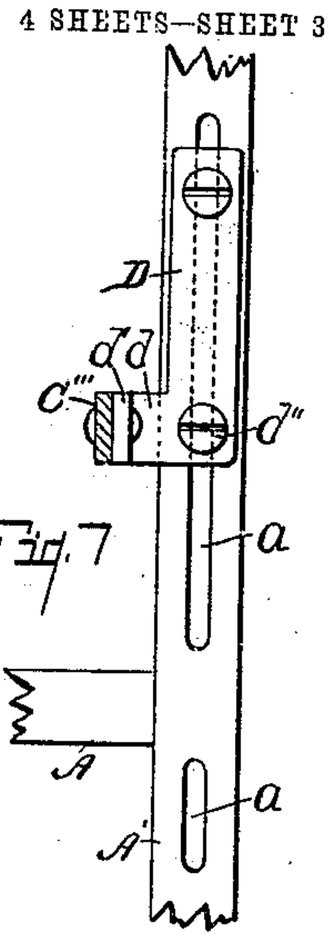

Fig. 7

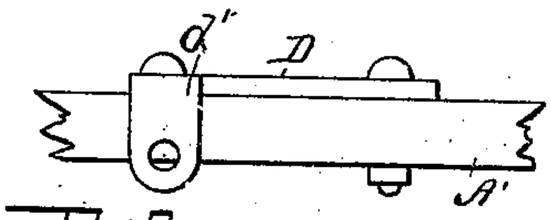

Fig. 9

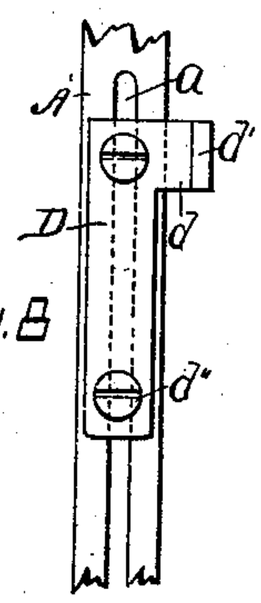

Fig. 8

Fig. 5

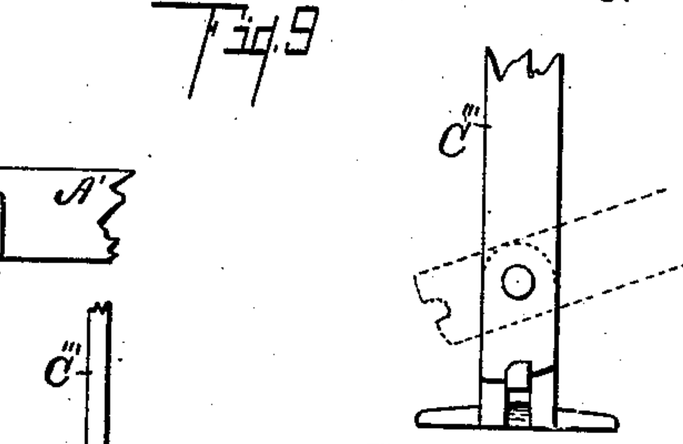

Fig. 11

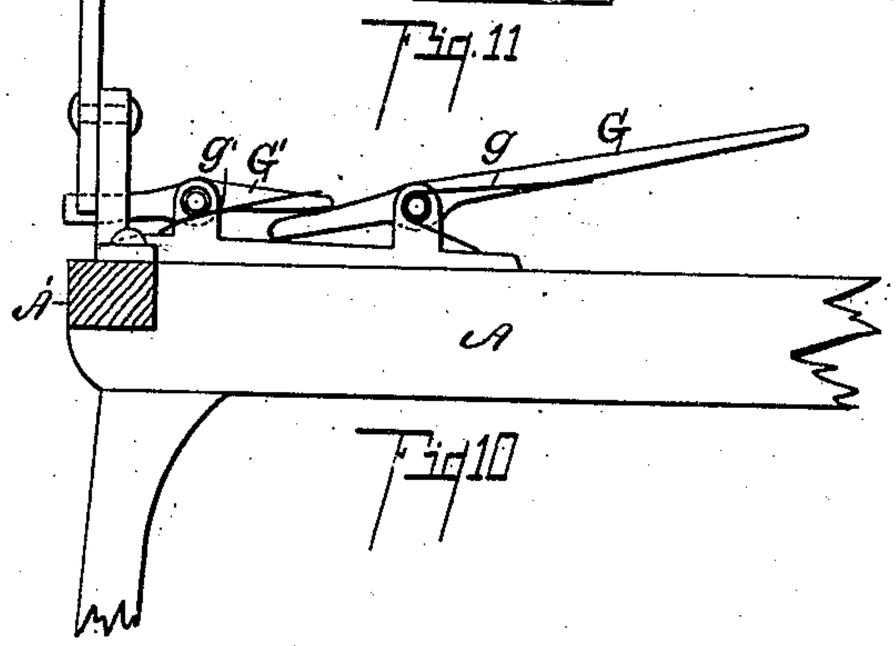

Fig. 10

Witnesses:

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E. Marie Jackson

Inventor,

William E. Kidder

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Att'y.

No. 841,786. PATENTED JAN. 22, 1907.

W. E. KIDDER.

SLEIGH ATTACHMENT FOR CHILDREN'S CARRIAGES.

APPLICATION FILED APR. 22, 1905.

4 SHEETS—SHEET 4.

Fig. 12

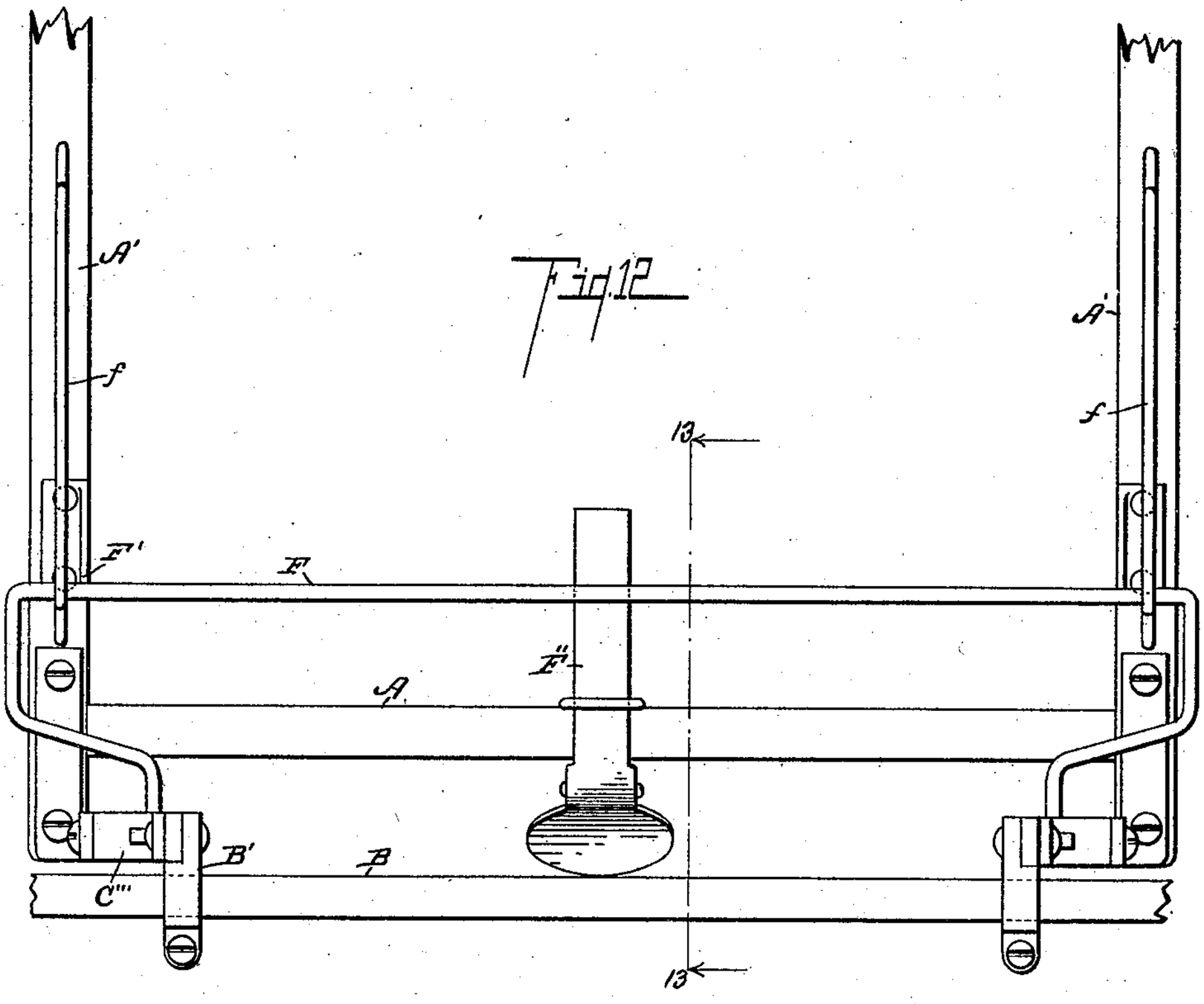
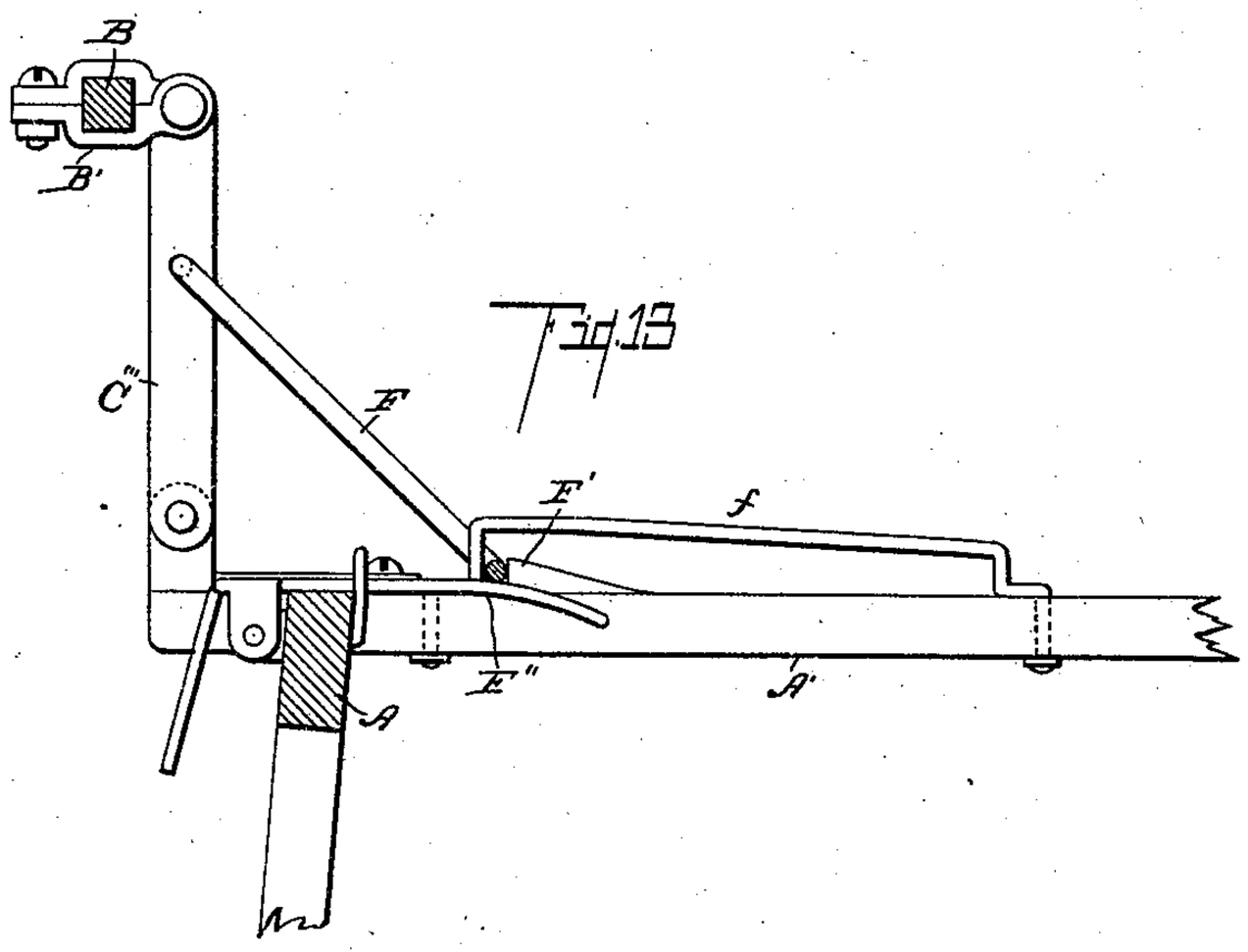


Fig. 13



Witnesses:

Ethel A. Seller

E. Marie Jackson.

Inventor,

William E. Kidder

By Chappell & Earl

Att'ys

UNITED STATES PATENT OFFICE.

WILLIAM E. KIDDER, OF KALAMAZOO, MICHIGAN.

SLEIGH ATTACHMENT FOR CHILDREN'S CARRIAGES.

No. 841,786. Specification of Letters Patent. Patented Jan. 22, 1907.

Application filed April 22, 1905. Serial No. 256,897.

To all whom it may concern:

Be it known that I, WILLIAM E. KIDDER, a citizen of the United States, residing at the city of Kalamazoo, county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Sleigh Attachments for Children's Carriages, of which the following is a specification.

This invention relates to improvements in children's carriages. It relates particularly to an improved sleigh attachment therefor.

The objects of this invention are, first, to provide an improved sleigh attachment for children's carriages which may be attached and adjusted to various styles and sizes of carriages now in common use; second, to provide an improved sleigh attachment for children's carriages by means of which the same may be quickly and easily converted from a wheeled vehicle to a sleigh, or vice versa; third, to provide an improved sleigh attachment for children's carriages which is comparatively light in weight and is at the same time very strong and rigid; fourth, to provide an improved sleigh attachment for children's carriages which is comparatively simple and economical in structure, at the same time is attractive in appearance and durable in use.

Further objects and objects relating to structural details will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined, and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawings, which form a part of this specification, in which—

Figure 1 is a side elevation view of a structure embodying the features of my invention, the carriage-wheels being removed from one side to show the arrangement of the parts. Fig. 2 is an enlarged detail rear elevation view of my improved sleigh attachment, the same being shown in connection with an axle. Fig. 3 is an enlarged detail transverse sectional view taken on a line corresponding to line 3 3 of Fig. 1. Fig. 4 is an enlarged detail vertical sectional view taken on a line corresponding to line 4 4 of Fig. 2, showing the arrangement of the locking means. Fig. 5 is a detail sectional view taken on a line corresponding to line 5 5 of Fig. 4. Fig. 6 is a side elevation view of one of the clips B′, the members being shown in their open position. Fig. 7 is an enlarged detail sectional view taken on line 7 7 of Fig. 3, showing the relation of the side plates D to the side rails A′ of the sleigh. Fig. 8 is a detail plan view showing the plate D in a reversed position from that shown in Fig. 7. Fig. 9 is a detail side elevation view showing the plate D in an inverted position. Fig. 10 is an enlarged detail view showing a modified construction of the locking means. Fig. 11 is an elevation view of the locking means appearing in Fig. 10 removed from the sleigh. Fig. 12 is a detail plan view of a further modification of the locking means. Fig. 13 is a detail longitudinal view taken on a line corresponding to line 13 13 of Fig. 12.

In the drawings similar letters of reference refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines.

Referring to the drawings, it will be noted that I have shown my improved sleigh attachment in combination with a child's carriage of the well-known design having what is termed "automobile running-gears." I desire here to remark that the same is applicable to the various styles of carriages in common use, and this will fully appear from the detailed description of the parts to follow.

The sleigh A is preferably made up in skeleton form of suitable runners, knees, and benches, and side rails A′. The sleigh is preferably made of wood. Toward the rear end of the side rails A′ are secured plates C, having upwardly-projecting ears, to which the rear supporting-links C‴ of the sleigh are pivotally secured. These plates C are preferably T-shaped, and the inwardly-projecting arm thereof rests upon and is secured to the rear bench. The plates thus secured also serve as braces for the sleigh. Toward the forward ends of the side rails are plates D, having laterally-projecting arms *d* thereon, which arms are provided with transversely-projecting ears *d*′, to which the front supporting-links C‴ of the sleigh are secured. The plates D are adjustably secured to the side rails A′ by bolts *d*″, which are arranged through longitudinal slots *a* therein.

The upper ends of the supporting-links C‴ are secured to the axles B by clips B′. These clips B′ are of peculiar construction and are

made up of two members *b* and *b'*, which co-act to embrace the axle when secured together by the bolts *b''*. The members *b* and *b'* are each provided with projecting portions at one side, by which they are pivotally secured together. The pivot by which they are secured together also serves as a means for securing the links C''' thereto. The links are thus connected to the axle, so that the axles serve as a stop to limit their forward movement. (See Fig. 4.) The links C''' are bent or inclined inwardly, as clearly appears in Figs. 2 and 3, and thus formed they serve as lateral braces for the sleigh. By thus connecting the sleigh to the axle it may be swung up out of operative position, as is illustrated in Fig. 1, or down to elevate the wheels, as desired. The sleigh is elevated and held in its elevated position by the coiled spring E, one end of which is secured to the rear axle by a clip B' and the other end of which is secured to the rear bench of the sleigh by means of a suitable screw-eye, as *e*. The sleigh is locked in its operative position by means of catches C', which are pivoted on the inwardly-projecting arms of the plates C. (See Fig. 5.) These catches are adapted to engage suitable notches in the braces C'' of the rear link C'''. These braces are pivoted to the rear links, and their lower ends are arranged through slots in the plates C. (See Figs. 4 and 5.) When the sleigh is in its operative position, the catches C' engage the notches in these braces, and thus lock the parts in position.

The catches C' are provided with springs *c'*, which hold them normally forward, so that they automatically engage. The catches C' are conformed to project rearwardly beyond the rear bench of sled, (see Figs. 2 and 5,) in which position they may both be engaged by the foot of the operator. The pressure thereon releases the braces C'', thereby permitting the spring E to draw the sleigh up out of its operative position. When it is desired to throw the sleigh down into its operative position, it may be accomplished by the operator placing his foot upon the rear bench of the sleigh and pulling rearwardly and upwardly on the handle of the carriage. When the sleigh is in its operative position, it is automatically locked, as has been described. It is therefore evident that the operator can manipulate the structure to convert it from a sleigh to a carriage, or vice versa, without stooping.

In the modified construction shown in Figs. 10 and 11 the braces C'' are dispensed with and the lower end of the rear links C''' are notched. A pawl G' is arranged to engage this notch when the sleigh is in its operative position. A spring *g'* is provided for this pawl. The pawl is disengaged by means of a lever. This lever is provided with a spring *g*. The structure shown in detail in Figs. 4 and 5, is, however, preferred, on account of its superior strength and simplicity.

In the modification shown in Figs. 12 and 13 a bail-like brace F is substituted for the braces C'', this bail being common to both rear links. Upwardly-projecting stops F', adapted to engage the bail F when the sleigh is in its operative position, are secured upon the rails A'. Guards *f* are provided for the bail F. The locking-bail F is released by means of the foot-lever F''. The parts all clearly appear in Figs. 12 and 13 of the drawings.

Having referred to the parts in detail, I will now point out how they may be adjusted to fit varying styles and sizes of carriages.

It will be noted that the links C''' are provided with a plurality of perforations, so that their length may be adjusted according to the diameter of the wheels of the carriage. Further adjustments to accommodate wheels of varying diameter may be had by inverting the clips B', which are of peculiar construction to permit of this.

As the diameter of the forward wheels is often less than that of the rear wheels, a greater range of adjustment is required than for the rear adjustments. This is provided for by the peculiar construction of the plates D, which may be inverted, if desired. The plates D are also adjustable longitudinally on the side rails A', so that the structure may be readily applied to the carriages of varying lengths.

Owing to the fact that carriages in use have different lengths of axle, particularly in the forward axle, and also owing to the fact that the springs are adjusted thereto in varying relations, it is necessary to provide a structure which may be adjusted to meet these requirements. This is accomplished in my structure. The plates D may be turned end for end, which brings the attaching-arms thereof on the outside of the rails, if desired, or they may be transposed. It is evident that the clips B' may be adjusted to any position.

By my improved construction and arrangement of parts I secure a sleigh attachment which is comparatively economical to produce and which is very rigid and durable and is attractive in appearance. It is very convenient to operate and may be operated by minimum of power. It is, as has been pointed out, capable of being attached to various styles of vehicles in common use and, if desired, may be quickly removed or attached to the vehicle. The sleigh is supported so that when in its elevated position it does not in any way interfere with the manipulation of the vehicle.

I have illustrated and described my invention in detail in the form preferred by me. While I have shown two modifications, I am

aware that it is capable of very great modification in structural details without departing from my invention.

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

1. The combination with a carriage running-gear having front and rear axles, of a skeleton sleigh comprising runners, knees, benches, and side rails, the said side rails having longitudinal slots therein toward their forward ends; plates having projecting ears thereon, secured toward the rear ends of said rails; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said rails by bolts arranged through the said slots therein; inwardly-inclined links pivotally secured to said plates, the said links having a plurality of holes in their upper ends; axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivoted; forwardly and downwardly projecting arms or braces pivoted to the said rear links, arranged through suitable slots in said rear plates; catches adapted to engage said braces when said sleigh is in its operative position, pivoted on said rear plates; suitable springs for said catches; and a spring for elevating the said sleigh connected thereto and to the said running-gear, all coacting for the purpose specified.

2. The combination with a carriage running-gear having front and rear axles, of a skeleton sleigh comprising runners, knees, benches, and side rails, the said side rails having longitudinal slots therein toward their forward ends; plates having projecting ears thereon, secured toward the rear ends of said rails; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said rails by bolts arranged through the said slots therein; inwardly-inclined links pivotally secured to said plates, the said links having a plurality of holes in their upper ends; axle-clips comprising pivotally-connected members, said members coacting to engage the said axles and having projecting body portions to which said links are pivoted; forwardly and downwardly projecting arms or braces pivoted to the said rear links, arranged through suitable slots in said rear plates; catches adapted to engage said braces when said sleigh is in its operative position, pivoted on said rear plates; and a spring for elevating the said sleigh connected thereto and to the said running-gear, all coacting as specified.

3. The combination with a carriage running-gear having front and rear axles, of a skeleton sleigh comprising runners, knees, benches, and side rails, the said side rails having longitudinal slots therein toward their forward ends; plates having projecting ears thereon, secured toward the rear ends of said rails; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said rails by bolts arranged through the said slots therein; links pivotally secured to said plates; axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivoted; forwardly and downwardly projecting arms or braces pivoted to the said rear links, arranged through suitable slots in said rear plates; catches adapted to engage said braces when said sleigh is in its operative position, pivoted on said rear plates; and a spring for elevating the said sleigh connected thereto and to the said running-gear, all coacting for the purpose specified.

4. The combination with a carriage running-gear having front and rear axles, of a skeleton sleigh comprising runners, knees, benches, and side rails, the said side rails having longitudinal slots therein toward their forward ends; plates having projecting ears thereon, secured toward the rear ends of said rails; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said rails by bolts arranged through the said slots therein; links pivotally secured to said plates; axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivoted; forwardly and downwardly projecting arms or braces pivoted to the said rear links, arranged through suitable slots in said rear plates; catches adapted to engage said braces when said sleigh is in its operative position, pivoted on said rear plates, all coacting for the purpose specified.

5. The combination with a carriage running-gear having front and rear axles, of a skeleton sleigh comprising runners, knees, benches, and side rails, the said side rails having longitudinal slots therein toward their forward ends; plates having projecting arms thereon, secured toward the rear ends of said rails; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said rails by bolts arranged through the said slots therein; links pivotally secured to said plates; axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivoted; forwardly and downwardly projecting arms or braces pivoted to the said rear

links, arranged through suitable slots in said rear plates; catches adapted to engage said braces when said sleigh is in its operative position, pivoted on said rear plates, all coacting for the purpose specified.

6. The combination with a carriage running-gear having front and rear axles, of a skeleton sleigh comprising runners, knees, benches, and side rails, the said side rails having longitudinal slots therein toward their forward ends; plates having projecting ears thereon, secured toward the rear ends of said rails; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said rails by bolts arranged through the said slots therein; inwardly-inclined links pivotally secured to said plates, the said links having a plurality of holes in their upper ends; axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivoted; means for locking said sleigh in its operative position; and a spring for elevating the said sleigh connected thereto and to the said running-gear, all coacting for the purpose specified.

7. The combination with a carriage running-gear having front and rear axles, of a skeleton sleigh comprising runners, knees benches, and side rails, the said side rails having longitudinal slots therein toward their forward ends; plates having projecting ears thereon, secured toward the rear ends of said rails; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said rails by bolts arranged through the said slots therein; links pivotally secured to said plates; axle-clips comprising pivotally-connected members, said members coacting to engage the said axles and having projecting body portions to which said links are pivoted; means for locking said sleigh in its operative position; and a spring for elevating the said sleigh connected thereto and to the said running-gear, all coacting for the purpose specified.

8. The combination with a carriage running-gear having front and rear axles, of a skeleton sleigh comprising runners, knees, benches, and side rails, the said side rails having longitudinal slots therein toward their forward ends; plates having projecting ears thereon, secured toward the rear ends of said rails; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said rails by bolts arranged through the said slots therein; inwardly-inclined links pivotally secured to said plates, the said links having a plurality of holes in their upper ends; axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivoted; means for locking said sleigh in its operative position, all coacting for the purpose specified.

9. The combination with a carriage running-gear having front and rear axles, of a skeleton sleigh comprising runners, knees, benches, and side rails, the said side rails having longitudinal slots therein toward their forward ends; plates having projecting ears thereon, secured toward the rear ends of said rails; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said rails by bolts arranged through the said slots therein; links pivotally secured to said plates; axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivoted; means for locking said sleigh in its operative position, all coacting for the purpose specified.

10. The combination with a carriage running-gear having front and rear axles, of a sleigh having longitudinal slots therein toward its forward end; plates having projecting ears thereon, secured toward the rear end of said sleigh; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said sleigh by bolts arranged through the said slots therein; inwardly-inclined links pivotally secured to said plates, the said links having a plurality of holes in their upper ends; and axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivoted, for the purpose specified.

11. The combination with a carriage running-gear having front and rear axles, of a sleigh having longitudinal slots therein toward its forward end; plates having projecting ears thereon, secured toward the rear end of said sleigh; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said sleigh by bolts arranged through the said slots therein; links pivotally secured to said plates, the said links having a plurality of holes in their upper ends; and axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivoted, for the purpose specified.

12. The combination with a carriage running-gear having front and rear axles, of a sleigh having longitudinal slots therein toward its forward end; plates having projecting ears thereon, secured toward the rear end of said sleigh; plates having laterally-

projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said sleigh by bolts arranged through the said slots therein; inwardly-inclined links pivotally secured to said plates; and axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivoted, for the purpose specified.

13. The combination with a carriage running-gear having front and rear axles, of a sleigh having longitudinal slots therein toward its forward end; plates having projecting ears thereon, secured toward the rear end of said sleigh; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said sleigh by bolts arranged through the said slots therein; links pivotally secured to said plates; and axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivoted, for the purpose specified.

14. The combination with a carriage running-gear having front and rear axles, of a sleigh having longitudinal slots therein toward its forward end; plates having projecting ears thereon, secured toward the rear end of said sleigh; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said sleigh by bolts arranged through the said slots therein; inwardly-inclined links pivotally secured to said plates, the said links having a plurality of holes in their upper ends; and axle-clips to which said links are pivoted, for the purpose specified.

15. The combination with a carriage running-gear having front and rear axles, of a sleigh having longitudinal slots therein toward its forward end; plates having projecting ears thereon, secured toward the rear end of said sleigh; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said sleigh by bolts arranged through the said slots therein; links pivotally secured to said plates, the said links having a plurality of holes in their upper ends; and axle-clips to which said links are pivoted, for the purpose specified.

16. The combination with a carriage running-gear having front and rear axles, of a sleigh having longitudinal slots therein toward its forward end; plates having projecting ears thereon, secured toward the rear end of said sleigh; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said sleigh by bolts arranged through the said slots therein; inwardly-inclined links pivotally secured to said plates; and axle-clips to which said links are pivoted, for the purpose specified.

17. The combination with a carriage running-gear having front and rear axles, of a sleigh having longitudinal slots therein toward its forward end; plates having projecting ears thereon, secured toward the rear end of said sleigh; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said sleigh by bolts arranged through the said slots therein; links pivotally secured to said plates; and axle-clips to which said links are pivoted, for the purpose specified.

18. The combination with a carriage running-gear having front and rear axles, of a sleigh having longitudinal slots therein toward its forward end; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said sleigh by bolts arranged through the said slots therein; links pivotally secured to said plates, the said links having a plurality of holes in their upper ends; and axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivoted, for the purpose specified.

19. The combination with a carriage running-gear having front and rear axles of a sleigh having longitudinal slots therein toward its forward end; plates having laterally-projecting arms thereon, which arms are provided with laterally-projecting ears, adjustably secured to the said sleigh by bolts arranged through the said slots therein; links pivotally secured to said plates; and axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivoted, for the purpose specified.

20. The combination with a carriage running-gear having front and rear axles, of a sleigh; links pivotally secured to said sleigh; and axle-clips comprising pivotally-connected members, said members coacting to engage the said axles, and having projecting body portions to which said links are pivotally secured, for the purpose specified.

21. The combination with a carriage running-gear having front and rear axles, of a sleigh; links pivotally connected to said sleigh; axle-clips comprising pivotally-connected members, said members coacting to engage the said axles and having projecting body portions to which said links are pivoted; forwardly and downwardly projecting arms or braces pivoted to the rear links; inwardly-projecting lever-like catches adapted to engage said braces when said sleigh is in its operative position; and a spring for elevating the said sleigh, connected thereto and

to the said running-gear, for the purpose specified.

22. The combination with a carriage running-gear having front and rear axles, of a sleigh; links pivotally connected to said sleigh; axle-clips comprising pivotally-connected members, said members coacting to engage the said axles and having projecting body portions to which said links are pivoted; forwardly and downwardly projecting arms or braces pivoted to the rear links; inwardly-projecting lever-like catches adapted to engage said braces when said sleigh is in its operative position, for the purpose specified.

23. The combination with a carriage running-gear having front and rear axles, of a sleigh; links pivotally connected to said sleigh and to said axles; forwardly and downwardly projecting arms or braces pivoted to the rear links; catches adapted to engage said braces when said sleigh is in its operative position; and a spring for elevating the said sleigh, connected thereto and to the said running-gear, for the purpose specified.

24. The combination with a carriage running-gear having front and rear axles, of a sleigh; links pivotally connected to said sleigh and to said axles; forwardly and downwardly projecting arms or braces pivoted to the rear links; catches adapted to engage said braces when said sleigh is in its operative position, for the purpose specified.

25. The combination of a carriage; an operating-handle therefor arranged at the rear; a sleigh arranged beneath said carriage; links pivotally connecting said sleigh to said carriage whereby said sleigh may be swung upwardly and rearwardly out of operative position; a spring arranged to hold said sleigh normally upward; and an automatic catch for locking said sleigh in its operative position, having a foot-lever arranged to be engaged by the foot of the operator whereby the operator may release said catch and retain his hold upon the handle to ease the carriage onto its wheels, said sleigh being arranged so that the operator may press downwardly thereon with his foot and at the same time lift upwardly on the carriage-handle to draw said sleigh into its operative position, substantially as described.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

WILLIAM E. KIDDER. [L. S.]

Witnesses:
GEORGIA K. KIDDER,
L. M. BEARDSLEY.