

(No Model.)

M. E. DUNBAR.
FOLDING BICYCLE CRATE.

No. 576,098.

Patented Feb. 2, 1897.

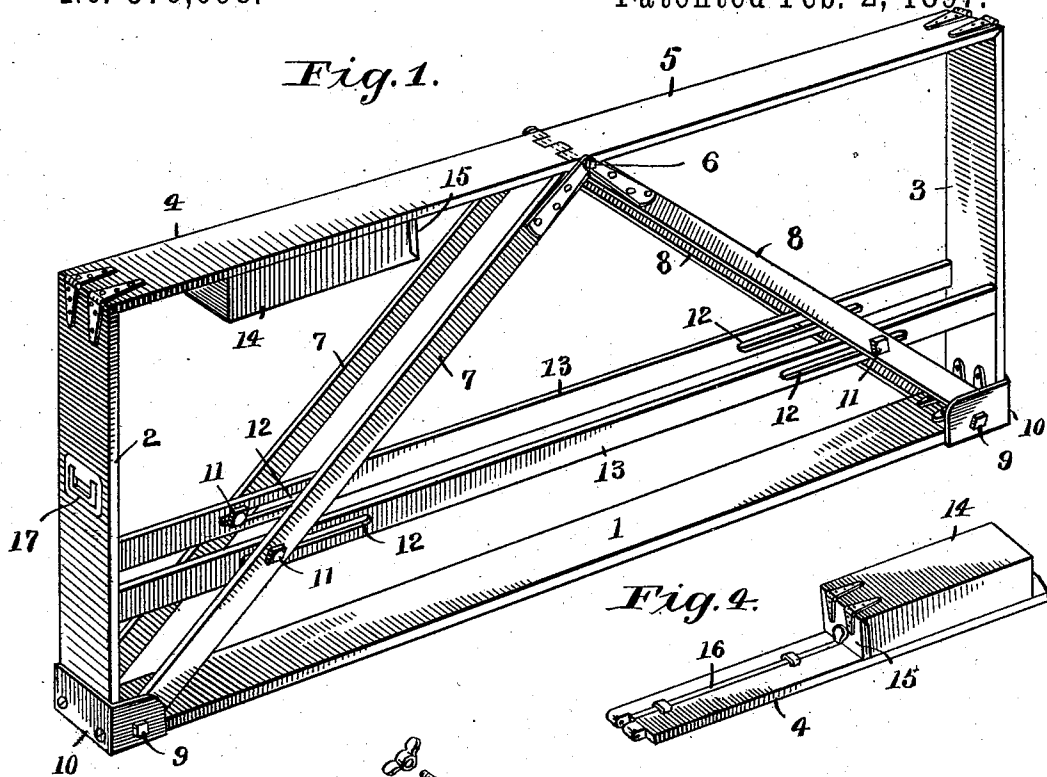
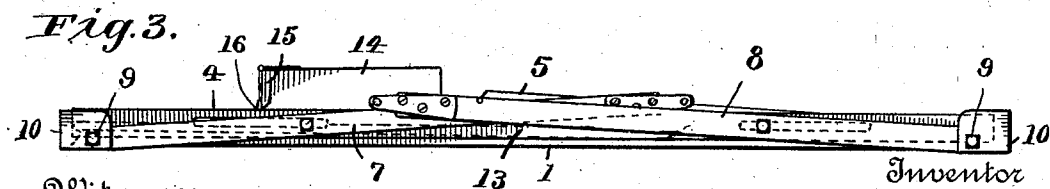
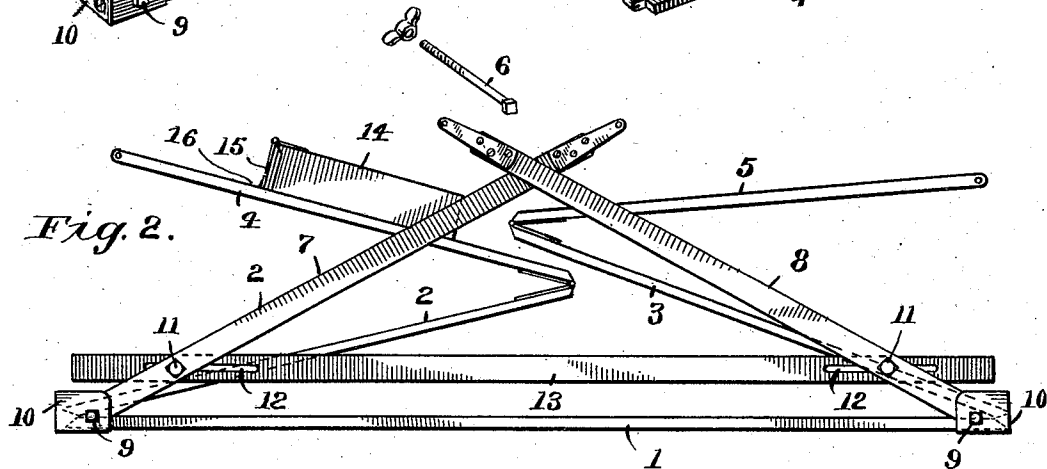
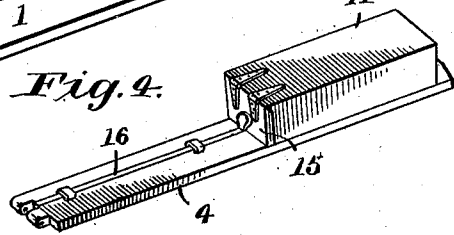


Fig. 4.



Witnesses

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MILES E. DUNBAR, OF STOCKBRIDGE, MASSACHUSETTS.

FOLDING BICYCLE-CRATE.

SPECIFICATION forming part of Letters Patent No. 576,098, dated February 2, 1897.

Application filed April 15, 1896. Serial No. 587,690. (No model.)

To all whom it may concern.

Be it known that I, MILES E. DUNBAR, a citizen of the United States, and a resident of Stockbridge, in the county of Berkshire and State of Massachusetts, have invented certain new and useful Improvements in Folding Bicycle-Crates, of which the following is a specification.

My invention relates to new and useful improvements in crates, such as may be employed to protect bicycles during shipment from one place to another and during storage.

It is, first, an object of my invention to produce a crate of the above class which, when not in use, can be easily and quickly folded up without necessitating the removal of any parts thereof.

Second, it is an important object to construct said crate in such a manner as to have no detachable parts, but which shall consist of successive sections, all of which are hinged together, thus folding or expanding it more quickly, and whereby it will be more compact when in such folded position.

It is further a desirable and important object of my invention to so construct and assemble the several parts of my crate that it has but one point of union, and whereby all the parts are locked in place and firmly retained in an expanded position without the use of tools of any kind.

Finally, it is an object of my invention to provide means whereby the tool-box attached to the crate is automatically locked by the coupling of its sections together.

In addition to the above novel features I cheapen, simplify, strengthen, and improve the construction of crates of this class in a manner to produce a more desirable and saleable article than any now upon the market.

Upon the several figures of the accompanying drawings, forming a part of this specification, the same numerals of reference denote like or corresponding parts, and of which—

Figure 1 shows an expanded perspective view of my novel bicycle-crate complete. Fig. 2 shows a side view of my novel crate in a partially-folded position. Fig. 3 shows a side elevation of a complete folded crate. Fig. 4 is a detail perspective view of the tool-box and the connections for locking its door.

Referring to the numerals of reference

marked upon the drawings, 1 indicates the base; 2 and 3, vertical end pieces hinged to said base and adapted to fold inwardly. Said end pieces 2 and 3 in turn have hinged there-to top sections 4 and 5, respectively, which are adapted to fold outward upon said end pieces, as shown in Figs. 2 and 3, and wherein it will be observed that the section of one end lies beneath that of the other. The sections 4 and 5, which constitute the top of the frame, are united about midway thereof in any suitable manner, as, for instance, by splicing and the employment of a bolt 6, as shown, which passes through bores in said ends and serves to firmly retain the two together and also to engage and retain other parts, as will be later explained. The side pieces of the frame are also made foldable in a desirable and efficient manner, as will be next described. Said sides consist each of angularly-arranged braces 7 and 8, which are pivoted to the side of the base 1 near its opposite ends, as at 9. Said pivotal points, together with the hinging of the end pieces to said base, are protected by means of corner-irons 10, as clearly appear in the drawings. Said braces 7 and 8 are ironed upon their upper ends and provided with a hole through which the pin 6, before mentioned, passes, and which serves to fully clamp said side braces to the top in their respective positions. To these braces just described I slidably pivot, by means of bolts 11 and slots 12, a horizontal protecting-bar 13, which bar is of a length equal to the distance between the vertical end pieces, and consequently fits snugly there-between when the frame is expanded, thus rendering the crate more rigid and firm. Ow-ing to the pivotal sliding connection between the braces and the horizontal bar, the latter settles down closely upon the base-piece with the disconnecting and lowering of said braces, as will be apparent with reference to Figs. 2 and 3.

I attach a tool-box 14 to the under side of the top piece 4 of the crate and provide the inner end thereof with a hinged door 15, as clearly appears in Fig. 4. I further provide means for locking said door when the crate is expanded, which means consist in a slidable rod 16, having a head which normally abuts against the said door in a man-

ner to retain the same. Said rod is let into a suitable recess of the top piece 4 of the crate, and is provided with means for retaining it therein. The inner end of said rod is free to be engaged by the bolt 6 when the same is slipped into the holes of the connecting ends of the top pieces 4 and 5. For convenience in handling I provide upon the outer side of each of the vertical end pieces 2 and 3 a handle 17, which can be of any ordinary or preferred construction. By means of the above a wheel can oftentimes be shipped as baggage without additional cost.

The method of setting up or expanding my crate is very simple, and is as follows: The attendant first raises the sections 3 and 5 to the position shown in Fig. 1. He next raises the sections 2 and 4 of the opposite end and brings the connecting ends of the two parts together, then raises the braces 7 and 8 to their elevated positions, which parts would simultaneously raise the horizontal bar 13 by reason of the connection therewith, after which the retaining-bolt 6 is placed in position and the several parts firmly locked.

It will be apparent that the bolt 6 and its thumb-nut can readily be provided with a small bicycle-lock, whereby the crate can easily be locked during shipment. It is further obvious that the crate can be provided with curtains upon either side, or with a canvas covering, thereby protecting the finish of the wheel from dust or other injury. These, however, are immaterial.

I am aware that a bicycle-crate has been produced which is collapsible, but not foldable, by reason of the fact that essential parts thereof have to be first disconnected from the main frame, which may then be collapsed. Said construction is obviously objectionable, and in no sense forms any part of my invention.

My invention resides in the production of a crate having no detachable parts and which is a complete folding structure, and which, by reason of said simple construction, can be set up or folded in less than one minute's time.

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

1. A bicycle-crate consisting of a base having folding end and top pieces hinged thereto, in combination with side pieces, foldable in the vertical plane of said sides and connectible with said top, substantially as described.

2. A bicycle-crate substantially as herein shown and described, consisting of a base, end pieces hinged to said base, top pieces hinged to said end pieces, means for connecting said top pieces, side pieces foldable in their vertical plane and connectible with said top.

3. A bicycle-crate, consisting of a folding frame, comprising a base, end, and top pieces in combination with side braces hinged to said base and connectible with the top, longitudinal bars pivotally connected to said braces and adapted to fold therewith upon the base aforesaid.

4. A folding bicycle-crate comprising a base, end pieces hinged thereto and provided with a sectional top, connected together about midway of its length, braces hinged to the base and having their free ends adapted to register with the connection of the top pieces, means for locking said connecting top pieces and braces together.

5. A folding bicycle-crate, consisting of a frame comprising a base, end, and top sections, sides connected to said frame, a single means whereby the free ends of said frame and side pieces are united at a single point.

6. A folding bicycle-crate, consisting of a frame comprising a base, end and top pieces, sides connected to said frame, a tool-box attached to said frame, means whereby said box is locked simultaneously with the uniting of the free ends of the frame and side pieces.

Signed at Stockbridge, in the county of Berkshire and State of Massachusetts, this 8th day of April, A. D. 1896.

MILES E. DUNBAR.

Witnesses:

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