

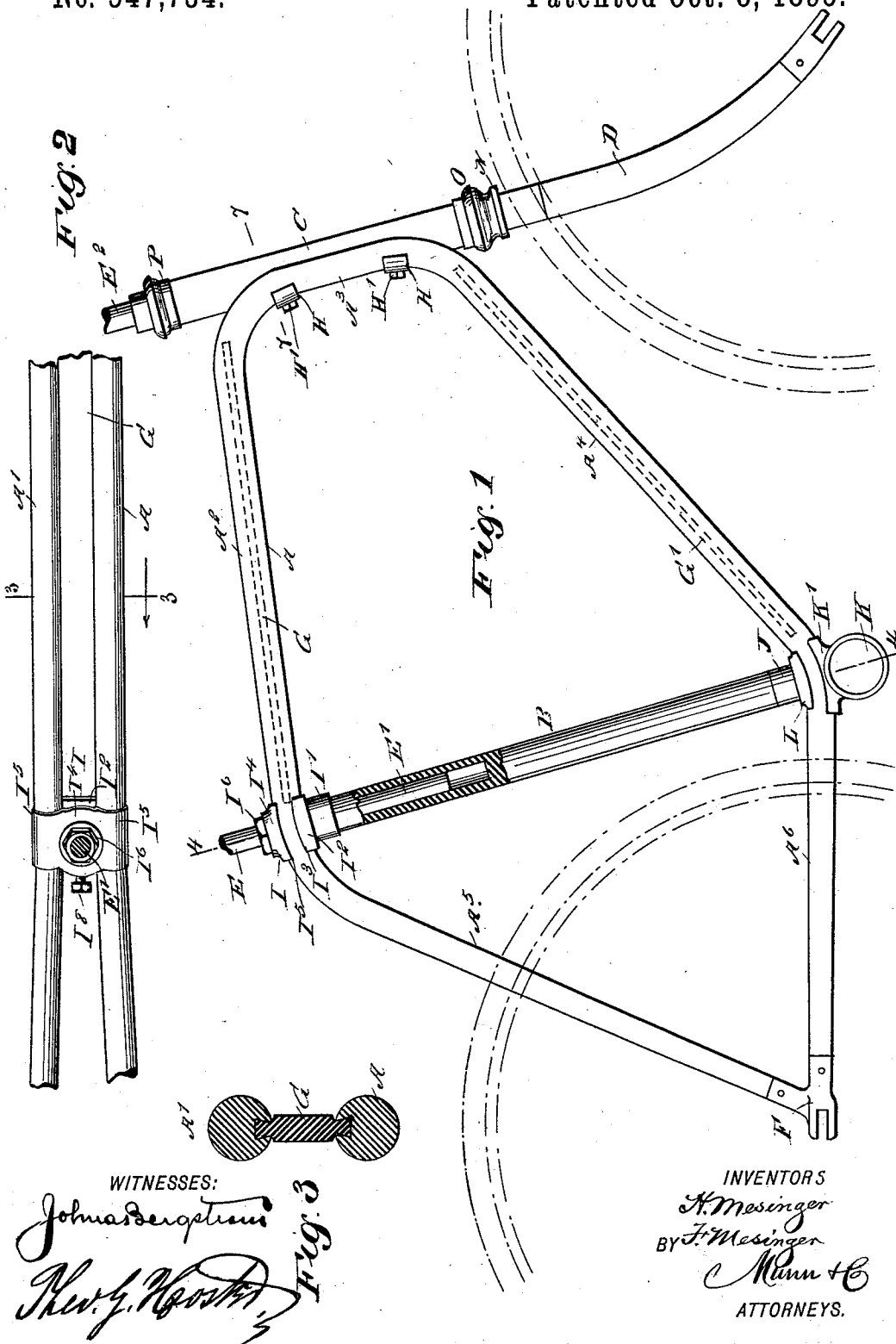
(No Model.)

2 Sheets—Sheet 1.

H. & F. MESINGER.
BICYCLE FRAME.

No. 547,734.

Patented Oct. 8, 1895.



WITNESSES:

John Messinger
Rev. J. Messinger

Fig. 3

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(No Model.)

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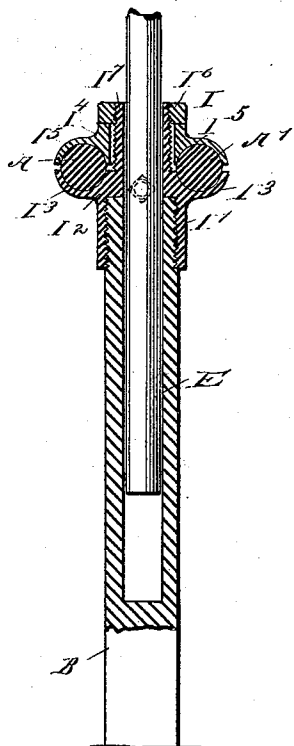
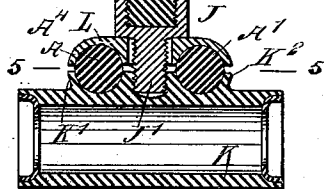


Fig. 4



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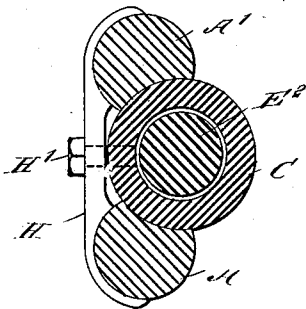


Fig. 7

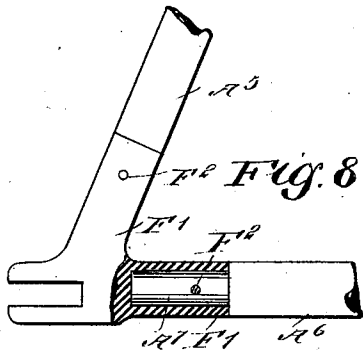


Fig. 8

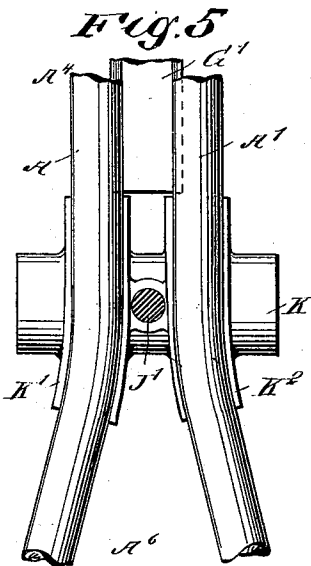


Fig. 9

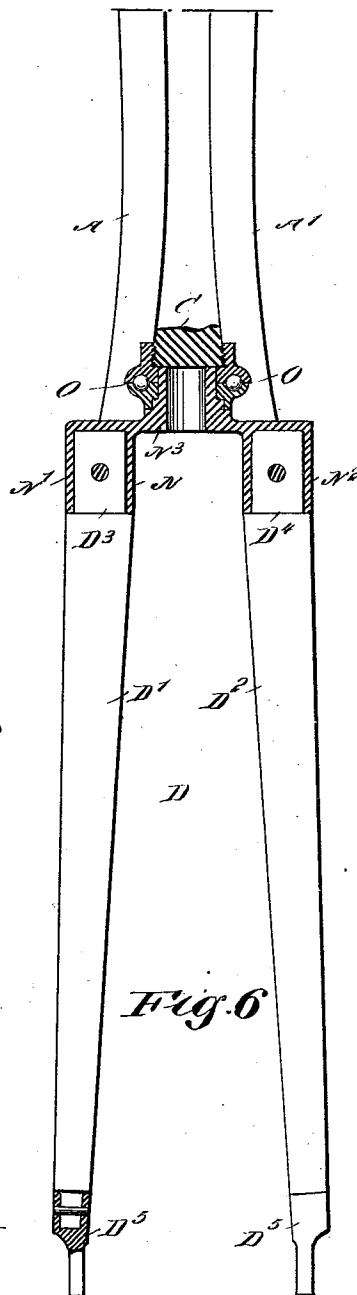


Fig. 10

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UNITED STATES PATENT OFFICE.

HENRY MESINGER AND FREDERICK MESINGER, OF NEW YORK, N. Y.

BICYCLE-FRAME.

SPECIFICATION forming part of Letters Patent No. 547,734, dated October 8, 1895.

Application filed December 27, 1894. Serial No. 533,095. (No model.)

To all whom it may concern:

Be it known that we, HENRY MESINGER and FREDERICK MESINGER, subjects of the Emperor of Germany, residing at New York city, in the county and State of New York, have invented a new and Improved Bicycle-Frame, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved bicycle-frame which combines lightness with durability and can be cheaply manufactured.

The invention consists in certain parts and details and combinations of the same, as will be hereinafter fully described, and pointed out in the claims.

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

Figure 1 is a side elevation of the improvement with parts in section. Fig. 2 is a plan view of part of the improvement with the saddle-post in section. Fig. 3 is an enlarged cross-section of the improvement on the line 3 3 of Fig. 2. Fig. 4 is an enlarged cross-section of the brace or stay for carrying the saddle-post and crank-shaft bearing. Fig. 5 is a sectional plan view of the crank-shaft bearing and part of the frame, the section being taken on the line 5 5 of Fig. 4. Fig. 6 is an enlarged sectional front elevation of the front-wheel fork and head. Fig. 7 is an enlarged sectional plan view of the head and frame on the line 7 7 of Fig. 1; and Fig. 8 is an enlarged sectional side elevation of the bearing for the rear wheel, parts being in section.

The improved bicycle-frame is made principally of two pieces of wood A and A', bent to conform to the usual diamond-shape of bicycle-frames, the said two pieces being arranged parallel one to the other between the stay B and the head C, the two pieces forming the top part A², the front end A³, and the bottom A⁴ between the said stay and head. The ends of the pieces A and A' are spread apart to form the forks A⁵ and A⁶ for the rear wheel, the reduced ends A⁷ of each piece A or A' being fastened in sockets F' of the bearing F for the axle of the rear wheel. The reduced ends A⁷ are secured in place by pins F², passing through the sockets, as plainly indicated

in Fig. 8. The pieces A and A' at the top A² of the frame are united with each other by a plate G, having dovetailed sides fitting into corresponding V-shaped grooves arranged in the adjacent sides of the pieces A and A', as will be readily understood by reference to Figs. 2 and 3. A similar plate G' connects the pieces A and A' with each other at the bottom A⁴ of the frame, as indicated in Fig. 1. (See also Fig. 5.)

The stay B is connected at its upper end by a clip I with the pieces A and A' at the rear ends of the top A², and for this purpose the stay B, which is made hollow and likewise of wood, screws at its upper end into a socket I', formed with a transverse plate I², recessed on top, as at I³, to form bearings for the pieces A and A'. (See Fig. 4.) A similar plate I⁴ is formed at its under side with recesses I⁵ to engage the pieces A and A' directly above the recesses I³ of the plate I². The plate I⁴ is provided with a central aperture and is engaged at its top by the under side of a nut I⁶, screwing on the threaded tube I⁷, forming part of the plate I² and projecting centrally from the top thereof, as will be readily understood by reference to Fig. 4. This tube I⁷ passes loosely through the plate I⁴, and when the nut I⁶ is screwed down upon the plate I⁴ the latter is firmly pressed onto the pieces A and A', and at the same time the plate I² is drawn onto the pieces to make a firm connection between the pieces and the stay B.

The saddle-post E is fitted to slide in the tube I⁷ and is adapted to pass into the hollow stay B, and the post is fastened in place after the desired height of the saddle is obtained by a set-screw I⁸, screwing in one side of the plate I².

On the lower end of the stay B screws a socket J, provided with the reduced threaded end J', screwing into a tapped aperture in the bearing K for the crank-shaft. This bearing K is provided on its top with two recesses K' and K², adapted to receive the pieces A and A', respectively, at the junction of the bottom A⁴ with the fork A⁶. A clip-plate L engages the top surfaces of the pieces A and A' directly above the recesses K' and K², and this clip-plate is held and pressed in position by the lower end of the

socket J as the threaded end J' thereof screws into the bearing K. (See Fig. 4.)

The front end A³ of the frame is fastened by clips H to the head C, which latter is made of metal and is hollow for the passage of the handle-bar post E², as indicated in Fig. 2. The adjacent sides of the pieces A and A' at the front A³ are gouged out to fit onto the head C, as will be readily seen by reference to Fig. 7, and the clip H, in engaging the inner faces of the pieces A and A', holds the same in contact with the head C, each clip being secured in place by a set-screw or bolt H', screwing in the head, as indicated in Fig. 7.

The fork D, held on the lower end of the head C, is made of two wooden prongs D' and D², formed at their upper ends with the reduced portions D³ and D⁴, respectively, fitting into sockets N' and N² of a plate N, connected by a ball-bearing O with the lower end of the head C. (See Fig. 6.) The lower ends of the forks D' D² carry the usual bearings D⁵ for the axle of the front wheel. The upper end of the head C is provided with the usual ball-bearing P.

It will be seen that by the construction described the principal members of the frame are made of two pieces of wood united by suitable metallic joints and clips, so that a frame is produced that combines durability with lightness, at the same time giving all the required strength.

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

1. A bicycle frame made of two pieces of material bent to the desired shape and arranged parallel one to the other, the ends of the pieces being spread apart to form the fork for the rear wheel, a bearing for the crank shaft connected with the said pieces at the bottom of the frame, a stay or brace connected at its lower end with the said bearing, a plate to which the upper end of the said brace is secured, the plate being provided with recesses to receive the parallel pieces of material at the top of the frame, a clip plate engaging the pieces of material opposite the said recesses, and means for securing the said clip plate in position, substantially as shown and described.

2. A bicycle frame made of two pieces of wood bent to the desired shape and arranged parallel one to the other, the ends of the pieces being spread apart to form the fork for the rear wheel and the top and bottom portions of the frame being provided with a plate extending longitudinally between the parallel pieces, a stay or brace made of wood and connected at its lower end with the said pieces of wood at the bottom of the frame, a plate provided with a socket in which screws the upper end of the said brace, the said plate being provided on its upper surface with recesses to receive the said pieces of wood at the top of the frame, a clip plate engaging the pieces of wood opposite the said recesses, a threaded tube extending upward from the plate and passing loosely through the said clip, and a nut screwing on the said tube and engaging the top of the clip plate, substantially as shown and described.

3. A bicycle frame, comprising two pieces of material arranged parallel one to the other and bent to the desired shape, a bearing for the crank shaft provided with recesses on its top adapted to receive the parallel pieces at the bottom of the frame, a clip plate engaging the pieces at the top opposite the said recesses, a socket having a reduced portion passing through the said clip plate and screwing into the said bearing, the socket resting on the top of the plate, and a stay or brace connected to the top portion of the frame and having its lower end secured in the said socket, substantially as described.

4. A bicycle frame, provided with two pieces of wood arranged parallel one to the other and bent to an approximately diamond shape, a brace made of wood, a plate in which screws the upper end of the said brace, the plate being provided with recesses for the reception of the said pieces of wood at the top of the frame, a clip plate engaging the pieces of wood opposite the said recesses, and a nut abutting on top of the said clip plate and screwing on a threaded tube projecting from the base plate, substantially as shown and described.

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FREDERICK MESINGER.

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