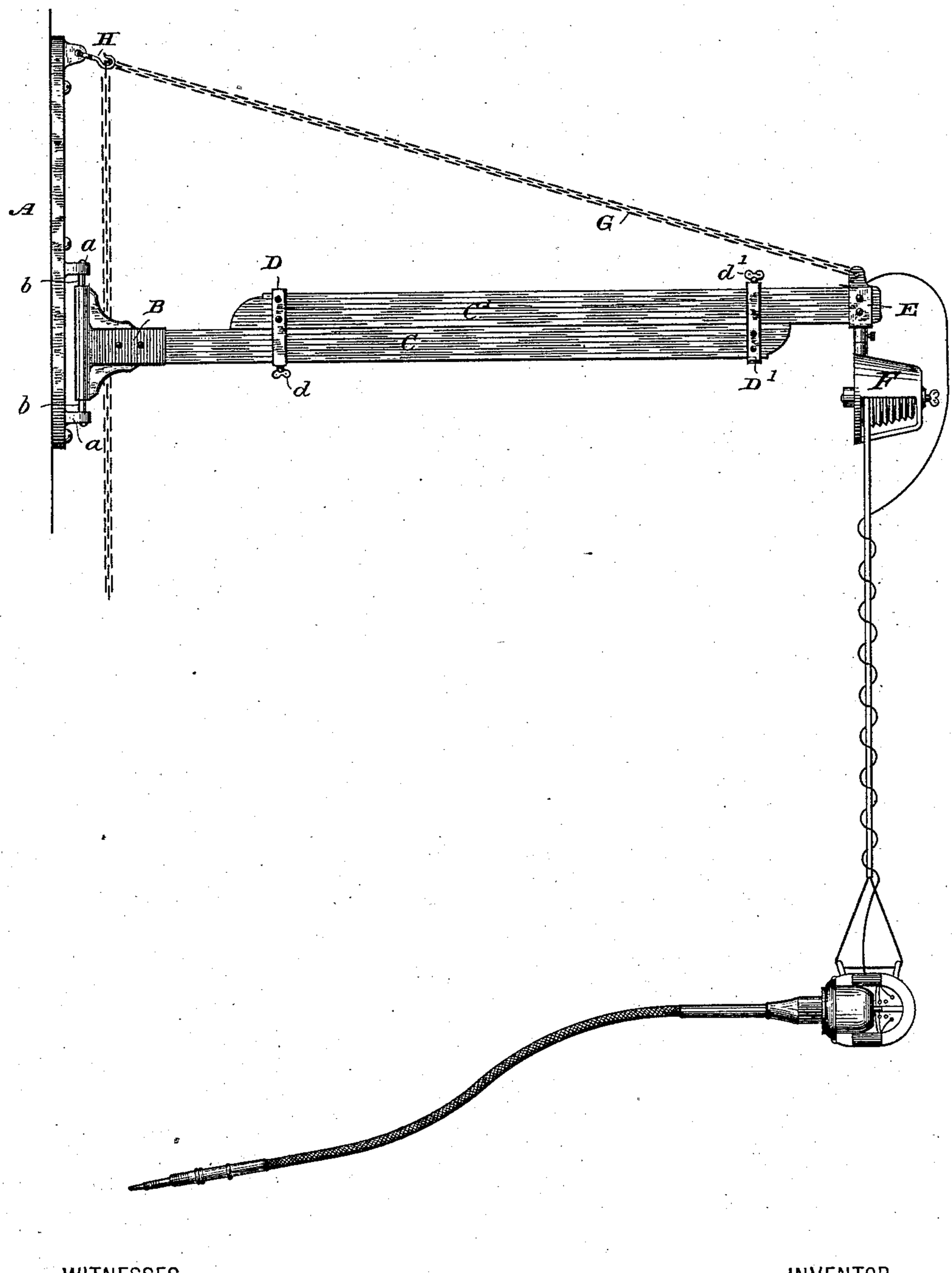
(No Model.)

W. A. JOHNSTON.

DENTAL ENGINE SUSPENSION BRACKET.

No. 286,704. Patented Oct. 16, 1883.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM A. JOHNSTON, OF CLIFTON, N. Y., ASSIGNOR TO THE S. S. WHITE DENTAL MANUFACTURING COMPANY, OF PHILADELPHIA, PA.

DENTAL-ENGINE SUSPENSION-BRACKET.

SPECIFICATION forming part of Letters Patent No. 286,704, dated October 16, 1883.

Application filed March 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. JOHNSTON, of Clifton, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Cranes or Brackets for Suspension Dental Engines, &c., of which the following is a specification.

My invention relates more particularly to cranes or brackets from which either the whole of a dental engine or the hand-piece thereof is suspended, so as to be freely movable in different directions to enable the operating-tool to be directed to different points to do the work required. Such suspension-engines are well known in the art.

The object of my invention is to give a wide range of movement to the engine or suspended portion thereof by suspending it from an extensible and swinging crane or bracket; and, furthermore, to so organize such a crane or bracket as to take the strain, or the greater portion thereof, due to the weight of the engine from the swinging pivotal connection of the crane or bracket.

The subject-matter claimed is first fully described, and then particularly pointed out at the close of the specification.

A wall-plate, A, may be fastened to the window-frame or other suitable support by means of screws or other fastenings. This plate A is provided in this example with two lugs, *a a*, perforated to receive the pivots *b b* of a crane-plate, B, which has the capacity of swinging or turning freely horizontally on its pivotal connection. Rigidly fastened to said crane-plate, so as to project horizontally, is an arm, C, preferably of some light but strong wood, and fitted upon the top of this arm C is another arm, C′, also preferably of the same character, (although it will be of course optional whether the arms are made of wood or otherwise.) The arm C′ is fitted to slide endwise upon the top of the arm C in this example, and is held in place by two clamp-connections, D D′, in the form of loops. The clamp-connection D is rigidly fastened (for instance, by screws) to the rear end of the extensible arm C′. Its lower end, which surrounds the arm C, is fitted with a set-screw, *d*, which may be tightened or loosened, as desired. The clamp-loop D′ is fastened in a similar manner to the arm C, while its upper loop end, which encircles the arm C′, is also provided with a set-screw, *d′*, which may be tightened or loosened, as desired. By this manner of connecting the arms C and C′ by the clamp-connections D D′, any extension of the arm C′ upon the arm C carries the clamp-connection D with it; and this is desirable, in order to have a secure and firm double clamp-connection between the two arms, whatever their longitudinal relation may be, the outer clamp-connection, D′, not being movable by reason of its fixture to the arm C.

It will be readily understood that to extend the bracket it is only necessary to loosen the set-screws *d d′*, slide the arm C′ to the position desired, and tighten the screws, when the two arms will be rigidly locked together.

Fastened upon the outer end of the extensible arm C′ is a connection, E, consisting, in this example, of a ring or frame fitted upon the end of the arm C′ and fastened by screws or otherwise. The lower end of this connection is socketed, for example, and provided with a set-screw, whereby the object to be suspended from the bracket may be readily connected therewith. In this example a fusee, F—such as commonly employed in suspension dental engines—is attached to the connection E, and from this fusee the dental engine or hand-piece thereof is suspended in a well-known way, so as to be vertically adjustable. When the engine is in use there is more or less additional strain put upon the outer end of the swinging extensible bracket from which the engine is suspended.

In order to relieve the pivotal connection at the inner end of the bracket from the strain, or a part of it, due to the weight of the engine at the outer end, and of the additional strain due to the use of the engine, I provide a supplemental or additional support, G, for the outer end of the bracket-arms; and this supplemental support I prefer to be in the form of a chain or cord, (a chain preferred,) the outer end of which is connected with a loop on top of the connection or frame E, while the chain is extended backward and attached in this instance to the upper end of the wall-plate A by means of an attaching device, H,

consisting, preferably, of a hinged or pivoted hook, over the hooked end of which any one of the links of the chain may be passed in order to fasten the chain in a taut condition, so as to give support to the outer end of the bracket, as clearly shown in the drawings. This attaching device H is preferably secured to an extension of the wall-plate A, and is also preferably in the same vertical line as the pivots of the crane-plate B, so that the free swinging horizontal movement of the bracket is not interfered with, while its outer end is effectually supported to take the strain from the pivots of the crane-plate.

In adjusting the bracket the set-screws are loosened, the chain detached from the attaching device, and the arm C′ adjusted to the desired position. The set-screws are then tightened to clamp the two arms firmly together, while the outer end of the bracket is then lifted slightly and the chain hooked up so as to be taut, and thereby take the weight from the arms, as before explained.

The suspension of an engine or the hand-piece thereof from my improved swinging and extensible bracket is very advantageous in the working of the engine.

The particular suspension-engine shown in the drawings is that patented to E. T. Starr, October 25, 1881, No. 248,809, and that engine is particularly described in said patent.

The right is reserved to file another application, with claims to any and all patentable matter disclosed herein but not claimed, and the reservation is not lessened or affected by making and cancellation of claims in the prosecution of the present case. Said subsequent application will be duly filed as a continuation of the present case.

I claim as my invention—

The combination of the extensible bracket-arms, the clamp-connection between said arms, the horizontally-swinging crane-plate at the inner end of one of said arms, and the adjustable chain or support connected with the outer end of the other of said arms, substantially as described, whereby the horizontal movement and extension of the bracket is readily effected while, when in their working position, the bracket-arms are rigidly and steadily supported by the supplemental supporting chain and the clamp-connection between the arms.

In testimony whereof I have hereunto subscribed my name this 7th day of March, A. D. 1883.

WILLIAM A. JOHNSTON.

Witnesses:
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