

No. 656,585.

Patented Aug. 21, 1900.

H. C. PETERS.

LOOPER MECHANISM FOR SEWING MACHINES.

(No Model.)

(Application filed Nov. 18, 1896. Renewed Jan. 17, 1900.)

2 Sheets—Sheet 1.

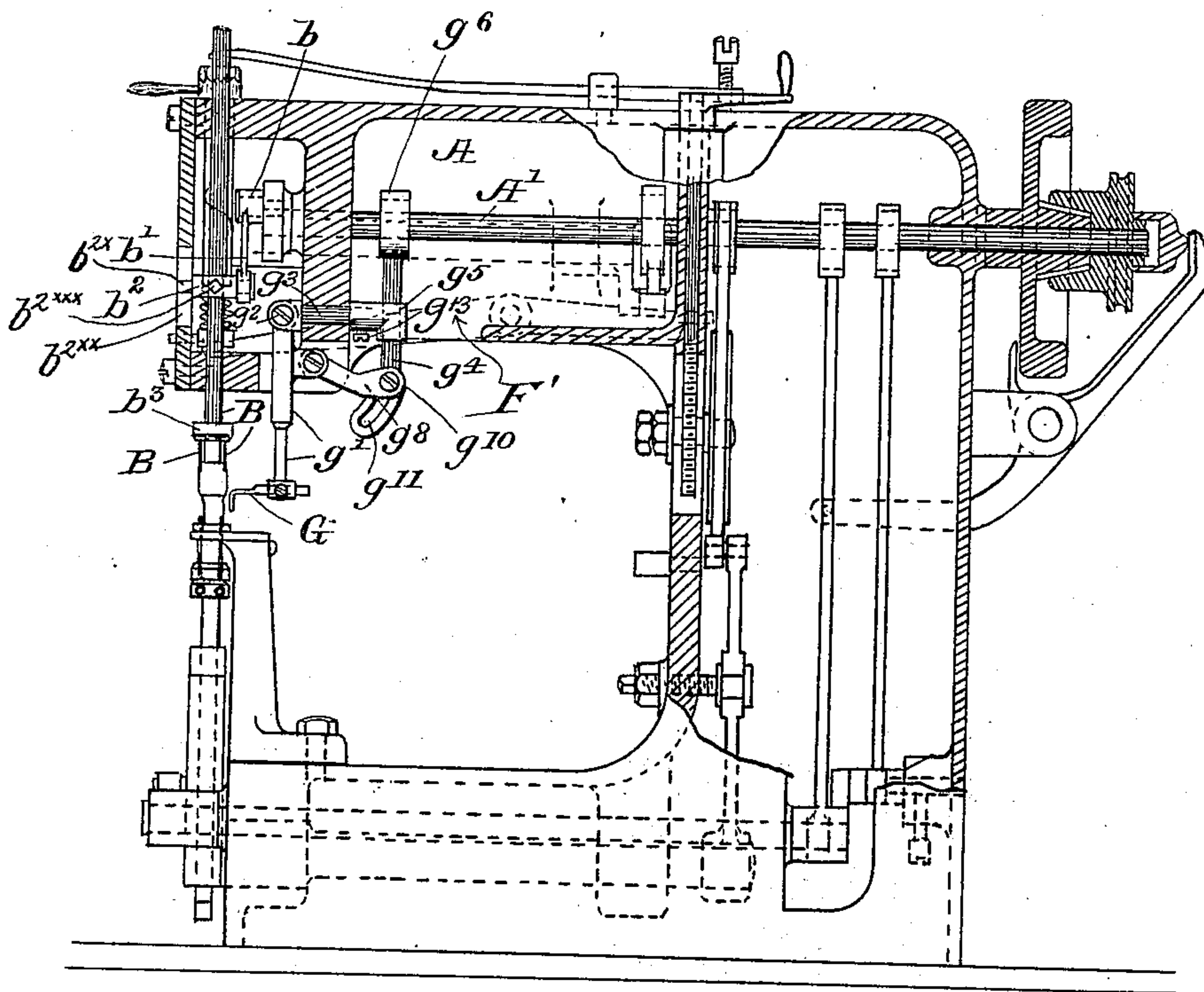


Fig. 1.

WITNESSES:

A. D. Brown.
Fred C. Dorr.

INVENTOR
Heben C. Peters
BY *Black & Nottingham*
ATTORNEYS.

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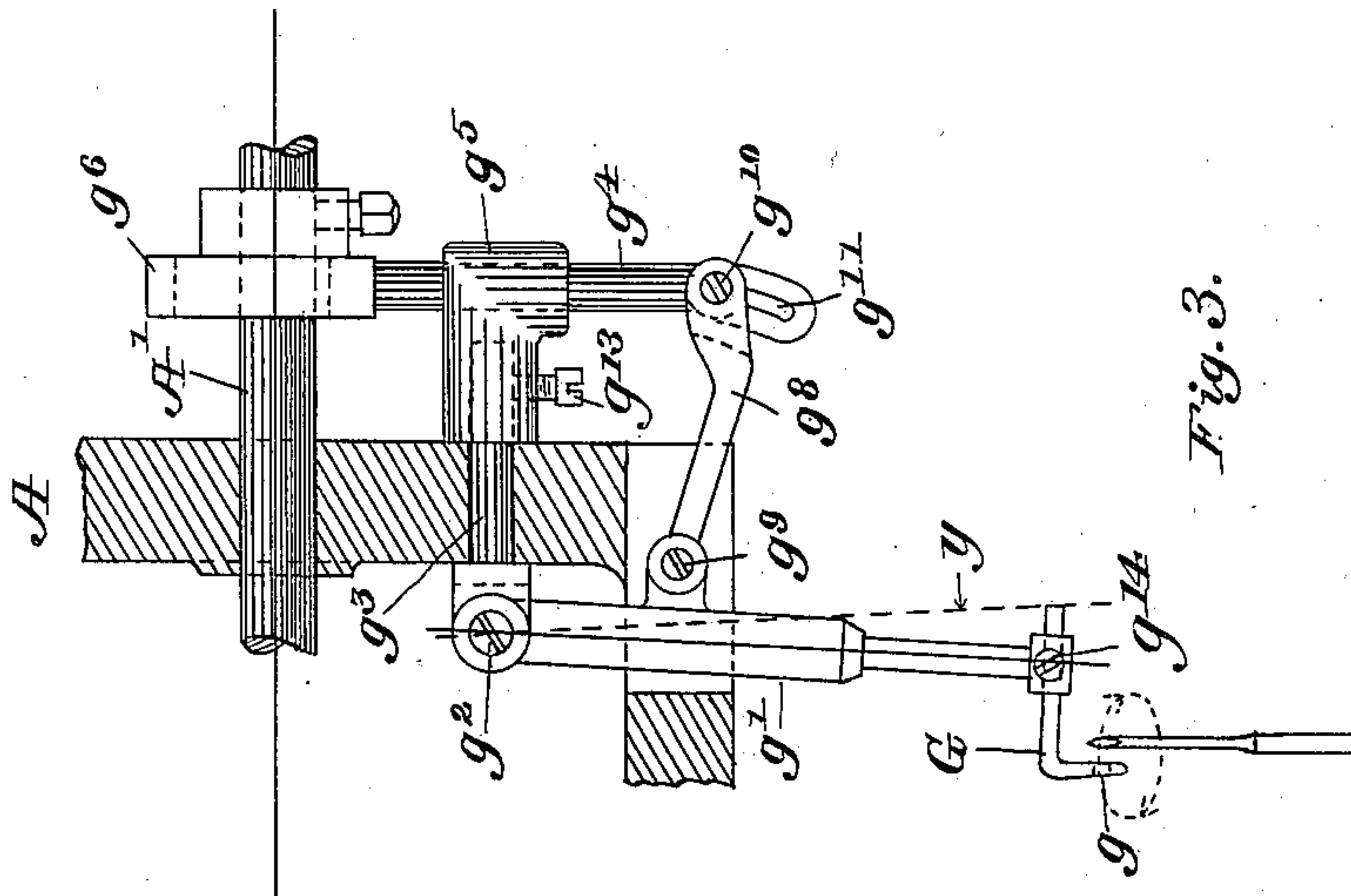


Fig. 3.

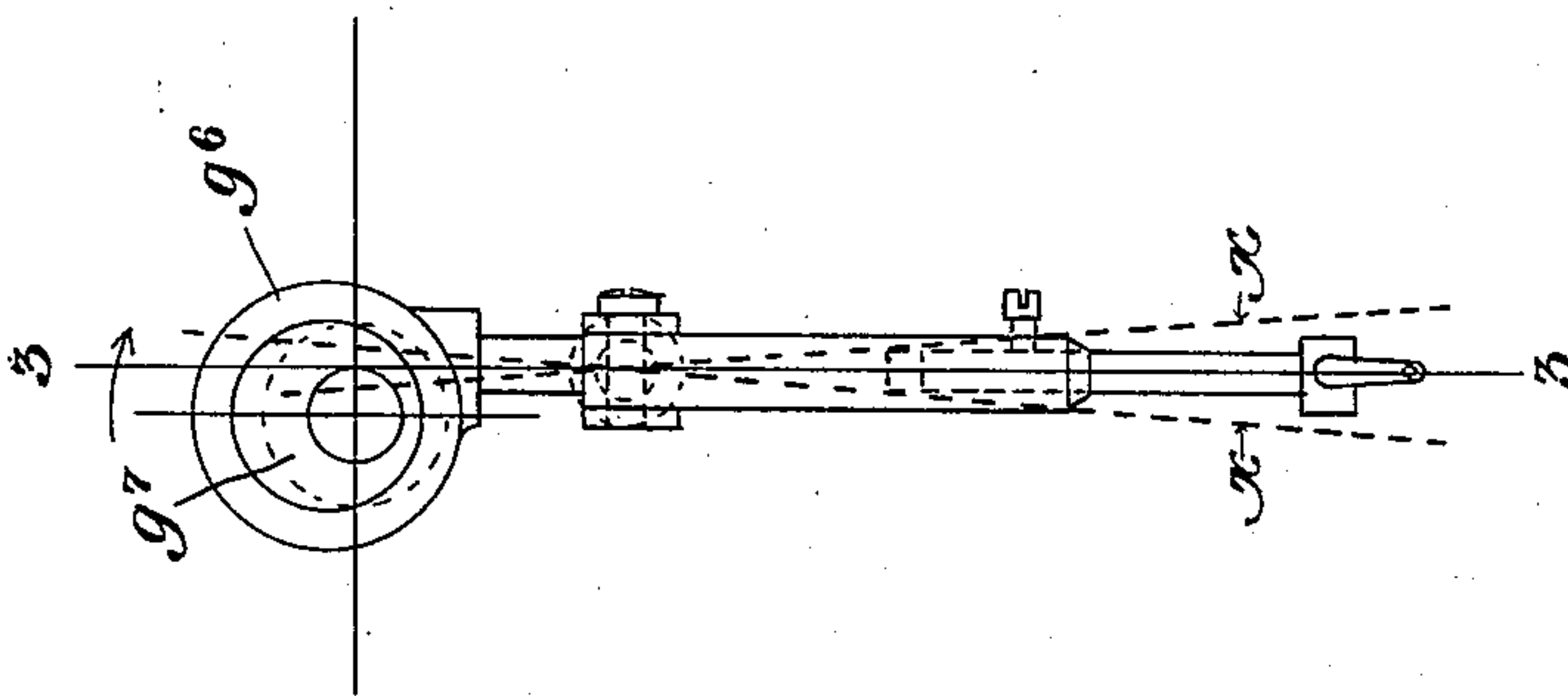


Fig. 2.

WITNESSES:

A. D. Brown.
Fred E. Dorr.

Heber C. Peters INVENTOR

BY *Reed & Frothingham*
ATTORNEYS,

UNITED STATES PATENT OFFICE.

HEBER C. PETERS, OF BOSTON, MASSACHUSETTS.

LOOPER MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 656,585, dated August 21, 1900.

Application filed November 18, 1896. Renewed January 17, 1900. Serial No. 1,758. (No model.)

To all whom it may concern:

Be it known that I, HEBER C. PETERS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Sewing-Machines, of which the following is a specification.

Referring to the accompanying drawings, Figure 1 is a side elevation, partly in vertical central section, of one form of sewing-machine embodying my invention. Fig. 2 is a front elevation of my new thread-actuating mechanism. Fig. 3 is a side elevation of said thread-actuating mechanism, the supporting portion of the frame being partly in section.

The object of my invention is to produce a high-speed waxed-thread sewing-machine which is suitable for use in stitching in one line and which is economical and simple in construction and highly advantageous in use because of its increased speed and simplicity.

The most important feature of my invention consists in a new and useful combination of parts whereby the endwise and lateral movements of a bar mechanically connected to a driving-shaft are utilized to move a thread-guide around the vertical path of a needle.

In the drawings which illustrate the principle of my invention and the best mode now known to me of applying that principle, A is the frame, and A' the main or driving shaft.

B is the awl-bar, which is actuated by the following mechanism: Crank *b* on shaft A' has a link *b'*, connected with a sleeve or collar *b²* on the awl-bar B, this collar being preferably adjustable as heretofore. Awl-bar B is provided with the usual carrying-head *b³*, and the collar *b²* on the awl-bar is provided with a projection *b^{2*}*, which projects into slot *b^{2**}* and keeps the awl-bar from turning, the collar *b²* being made fast on awl-bar B by the usual set-screw *b^{2***}*.

The thread-controller mechanism in its present form consists of a guide G, having one or more eyes *g*, through which the thread passes, and a tang *g'*, loosely-jointed at *g²* to a rocking shaft *g³*, which is mounted in frame A. The hinge or joint at *g²* is at right angles to the lengthwise axis of rocking shaft or thread-guide support *g³*, so that guide G moves in the direction of the lengthwise axis

of the rocking support *g³*, and rocking of said support *g³* moves the guide transversely to the lengthwise axis of said shaft. Thread-guide support *g³* is attached to a laterally-swinging and endwise-moving bar *g⁴*, which passes freely through an opening in the butt-end piece *g⁵* of support *g³* and is actuated from a rotary shaft, preferably from the main shaft A'. The bar *g⁴* is connected with main shaft A', preferably by eccentric-sleeve *g⁶* and the eccentric *g⁷*, fast on shaft A'. The to-and-fro movements of the guide G—that is, its movements in the plane of the lengthwise axis of the rocking support *g³*—are obtained by a link *g⁸* from the guide-tang *g'* to the bar *g⁴*, the link *g⁸* being loosely jointed to the guide-tang at *g⁹* and connected to the bar *g⁴* at *g¹⁰*. The sidewise movement of bar *g⁴* gives a sidewise or lateral motion through the rocking support *g³* to the guide G, and the endwise movement of bar *g* (due to the rotation of the eccentric *g⁷* or other contrivance) gives the to-and-fro motions to the guide G through the link *g⁸*. As it is frequently desirable to vary the to-and-fro movements or throw of thread-guide G, it is desirable that the connections at *g¹⁰* of link *g⁸* with bar *g⁴* should be made adjustable, and I consequently prefer to form bar *g⁴* with a slot *g¹¹*, in which the pintle of the preferred joint connection *g¹⁰* is adjustable, this pintle being preferably a screw through link *g⁸* and slot *g¹¹*. The dotted lines *x* in Fig. 2 indicate limits of lateral throw of guide-tang *g'*, and the dotted line *y* in Fig. 3 shows one limit of the back throw of the guide-tang *g'*. The butt-end piece *g⁵* is in effect a part of support *g³*, for the back end of shaft *g³* is socketed in the butt-end piece *g⁵* and the two parts fixed rigidly together by set-screw *g¹³*, for example. The making of the support *g³* thus practically in two pieces instead of prolonging the shaft *g³* rearwardly and passing bar *g⁴* through a hole throughout the rearward extension of the shaft *g³* is merely for mechanical convenience. It is preferable, but not necessary, to make guide G and its tang *g'* in two pieces and to make the guide portion adjustable at *g¹⁴* in its tang *g'*.

The advantages of my new thread-actuating mechanism are that all universal joints

are dispensed with, such joints being mechanically objectionable and to be avoided, if possible. When the angle referred to is acute, as shown, the downward motion of bar g^4 pulls the guide nearer the needle, the simultaneous lateral movement of the guide carrying it around the needle, the return or upward movement of bar g^4 and the reverse lateral movement of the guide-carrier completing the movement of the carrier G around the needle and compelling carrier G to travel through its circular or elliptical path in the direction in which it starts.

I prefer to couple the link g^8 and bar g^4 so that the main shaft may be run clockwise—that is, with the top of the shaft going to the right and downwardly as one sits in front of the machine. Reference to the arrows in Figs. 2 and 3 will illustrate this mode of operation. The advantage of running the main shaft clockwise in machines having this type of thread-actuating mechanism is that it is much more convenient for the ordinary operator to start the balance-wheel by a downward pull toward himself than it is to start the wheel by pushing it away.

What I claim is—

1. In a sewing-machine, the combination of a hooked or barbed needle and its operating mechanism with a driving-shaft; an end-wise and laterally movable bar operatively connected with said driving-shaft; a rocking thread-guide support; a thread-guide loosely jointed to said rocking support; and a link from said thread-guide to said bar.

2. In a sewing-machine, the combination of a hooked or barbed needle and its operating mechanism with a driving-shaft; an end-wise and laterally movable bar operatively connected with said driving-shaft; a rocking thread-guide support; a thread-guide loosely jointed to said rocking support; and a link loosely jointed to said thread-guide and adjustably connected to said bar.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 17th day of October, A. D. 1896.

HEBER C. PETERS.

Witnesses:

EDWARD S. BEACH,
E. A. ALLEN.