

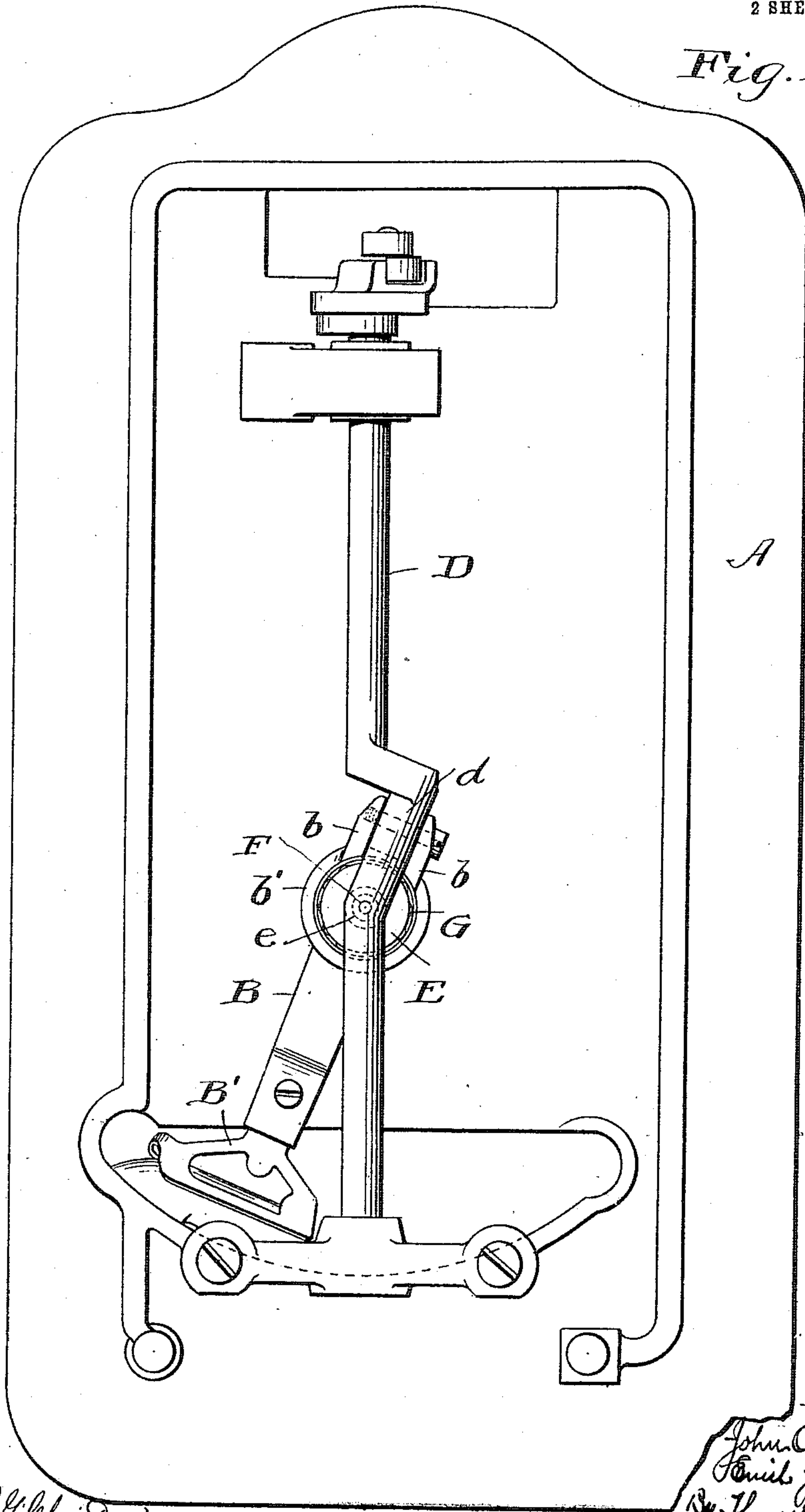
J. O. HUFFMAN & E. J. LAUFFER.
RECIPROCATING SHUTTLE SEWING MACHINE.
APPLICATION FILED APR. 25, 1910.

995,539.

Patented June 20, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



E. B. Gilchrist.
H. B. Sullivan. } *Witnesses.*

Inventors
John O. Huffman
Emil J. Lauffer
By Thurston & Davis
Attorneys

J. O. HUFFMAN & E. J. LAUFFER.
 RECIPROCATING SHUTTLE SEWING MACHINE.
 APPLICATION FILED APR. 26, 1910.

995,539.

Patented June 20, 1911.

2 SHEETS—SHEET 2.

Fig. 2.

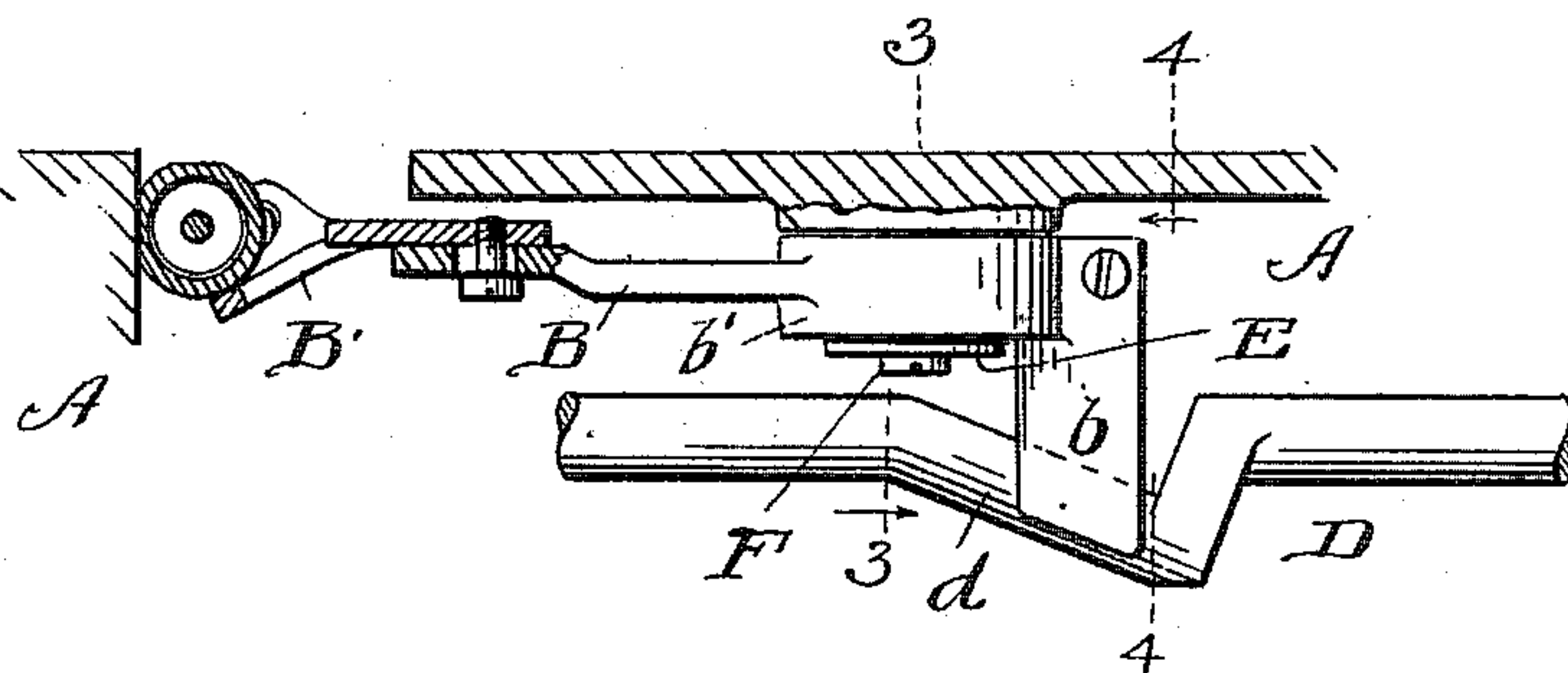


Fig. 3.

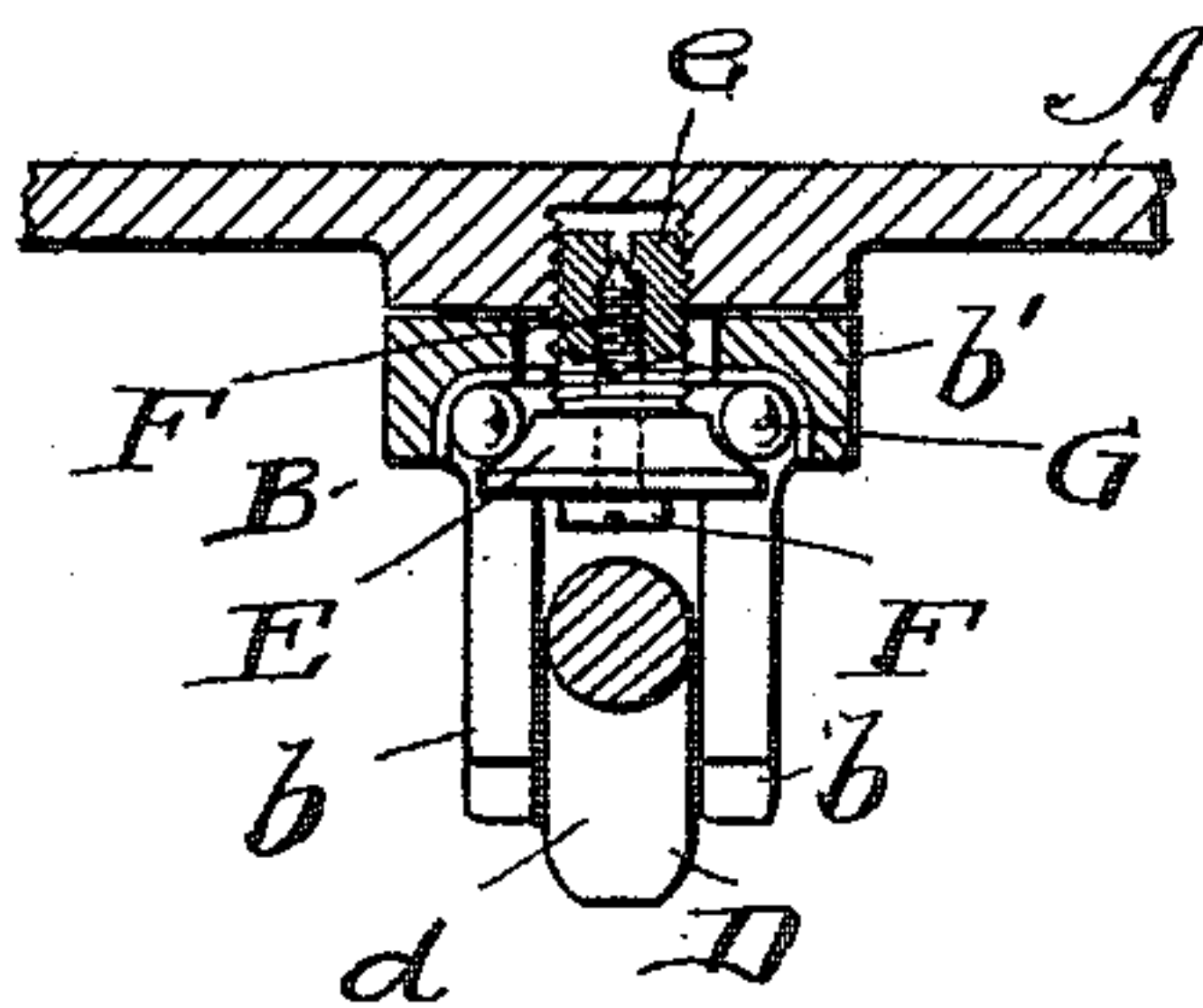
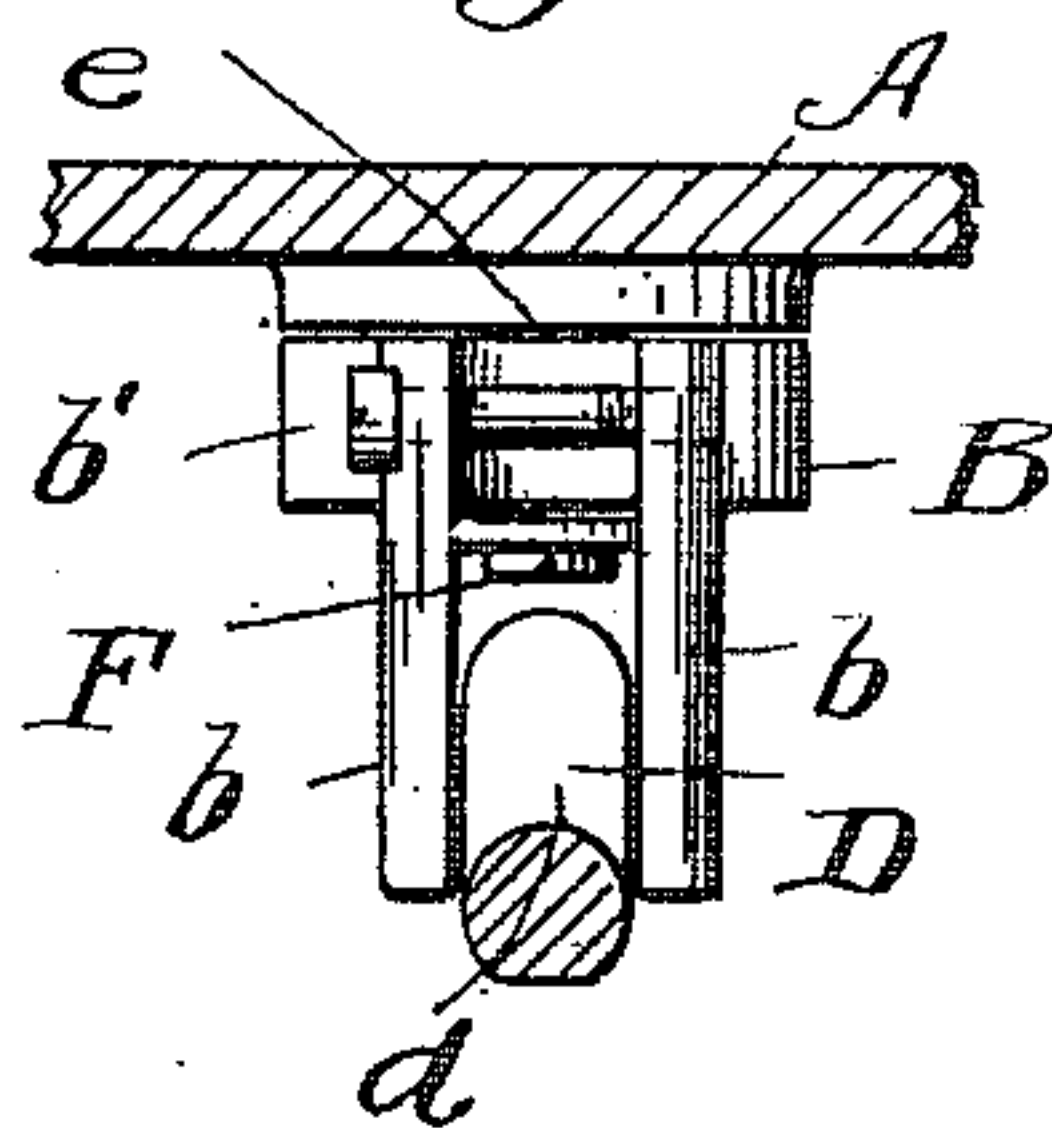


Fig. 4.



Witnesses:
 E. B. Gilchrist.
 H. R. Sullivan

Inventors
 John O. Huffman
 Emil J. Lauffer
 By Thurston & Kwis
 Attorneys

UNITED STATES PATENT OFFICE.

JOHN O. HUFFMAN AND EMIL J. LAUFFER, OF CLEVELAND, OHIO, ASSIGNORS TO THE
WHITE SEWING MACHINE COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF
OHIO.

RECIPROCATING-SHUTTLE SEWING-MACHINE.

995,539.

Specification of Letters Patent. Patented June 20, 1911.

Application filed April 25, 1910. Serial No. 557,365.

To all whom it may concern:

Be it known that we, JOHN O. HUFFMAN and EMIL J. LAUFFER, citizens of the United States, and residents of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Reciprocating-Shuttle Sewing-Machines, of which the following is a full, clear, and exact description.

This invention relates to the reciprocating shuttle carrier of a sewing machine, the mounting thereof and the mechanism for imparting to it a smooth reciprocatory movement,—the object of the invention being to construct and combine said parts in such manner that they shall be efficient and durable and relatively of low cost.

The invention is shown in the accompanying drawings, and is hereinafter described and definitely pointed out in the claims.

In the drawing, Figure 1 is a bottom plan view of a sewing machine head, and so much of the mechanism, carried thereby, as has to do with the present invention. Fig. 2 is a front view of the parts constituting the present invention, some of said parts being sectioned. Fig. 3 is a vertical sectional view in the plane of line 3—3 on Fig. 2; and Fig. 4 is a vertical sectional view on line 4—4 of Fig. 2.

Referring to the parts by letters, A represents the bed plate of a sewing machine head; and D represents a driven shaft mounted in suitable bearings on the under side of said bed plate, and extending lengthwise of the head—that is to say from left to right. Those familiar with this art will understand that a shaft located in the position stated is generally found in reciprocating shuttle sewing machines. It is driven by various kinds of mechanism, well known, and therefore it has not been thought necessary to show the driving mechanism. It will be understood also that this shaft has certain other functions to perform besides merely driving the shuttle carrier, as, for example, the operation of the feed bar,—which parts, however, not being concerned in the present invention, are not shown.

B represents the shuttle carrier which lies between the shaft D and the bed plate A and is pivoted to the latter on a vertical axis which intersects the horizontal axis of the shaft D. The left end of the shuttle car-

rier is fashioned to form a support or seat for the shuttle, and this may be an independent piece as B' fixed to the arm B. At the right side of the pivot of the shuttle carrier, the latter is provided with two depending rigid fingers; and these embrace the peculiar inclined or elbow crank pin *d* of the shaft D. The use of the elbow crank has several advantages over the ordinary crank whose pin is parallel with the axis of the shaft,—and among those advantages the following may be mentioned, viz. The fingers may be rigidly fixed to the shuttle carrier, which would not be possible if the crank were of the ordinary sort; the shaft may be placed nearer the bed plate than it could if the crank were of the ordinary sort; and finally the frictional wear of the fingers on the crank is distributed lengthwise of the crank for a distance greater than the mere width of the fingers.

The pivotal connection between the shuttle carrier and the bed plate of the machine consists of an annular cup *b'* formed on the shuttle carrier, said cup forming one part of a ball raceway. The cone E, which forms the other part of said raceway, has a threaded shank *e* which passes through a hole in the cup *b'* and screws into the bed plate A. The upper part of this threaded stem is longitudinally slitted. There is also a hole extending from the lower end of this cone piece upward to the slitted part thereof and the inner end of this hole is conical, as shown in Fig. 3. A screw F is screwed into this hole; and, after the cone E has been set to the proper position to form a suitable raceway for the balls G, this screw F is screwed in and the upper split stem *e* is spread so as to lock it against rotation in the bed plate. This cone is, therefore, the piece upon which the shuttle carrier is supported through the medium of the anti-friction balls G. As these or the raceway surfaces wear the screw F may be unscrewed a little and the cone E adjusted, and then locked again by screwing in screw F.

Having described our invention, we claim:

1. In a sewing machine, the combination of a bed plate, and a shuttle carrier having an integral ball raceway cup, a cone having a threaded stem which is screwed into the bed plate and forms with said cup a ball race, and balls mounted in said race, said

carrier having at one end a seat for the shuttle, and at its other end two rigidly attached and downwardly extended fingers, with a rotatable shaft having an elbow crank which lies between and in contact with said two fingers,—said shaft being arranged below the shuttle carrier with its axis intersecting a prolongation of the axis of said shuttle carrier.

10 2. In a sewing machine, the combination of a bed plate, and a shuttle carrier having an integral ball raceway cup, a cone having a threaded stem which is screwed into the bed plate and forms with said cup a ball
15 race, and balls mounted in said race, said cone member having a hole extending from its lower end upward into the threaded stem, said threaded stem being slitted from its up-

per end downward, a conical ended screw screwing up into said cone member, two 20 fingers fixed to said cup and extending downward therefrom, and an elbow crank shaft rotatably mounted in bearings on the under side of the bed plate and arranged to have its horizontal axis intersect the verti- 25 cal axis of the shuttle carrier, said shaft having an elbow crank which is embraced by the two fingers on the shuttle carrier.

In testimony whereof, we hereunto affix our signatures in the presence of two wit- 30 nesses.

JOHN O. HUFFMAN.
EMIL J. LAUFFER.

Witnesses:

H. R. SULLIVAN,
E. L. THURSTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
