(No Model.)

F. S. BRADLEY & J. P. LAVIGNE.

CLUTCH MECHANISM FOR STAPLE STITCHING MACHINES.

No. 442,477. Patented Dec. 9, 1890.

Fig. 1.

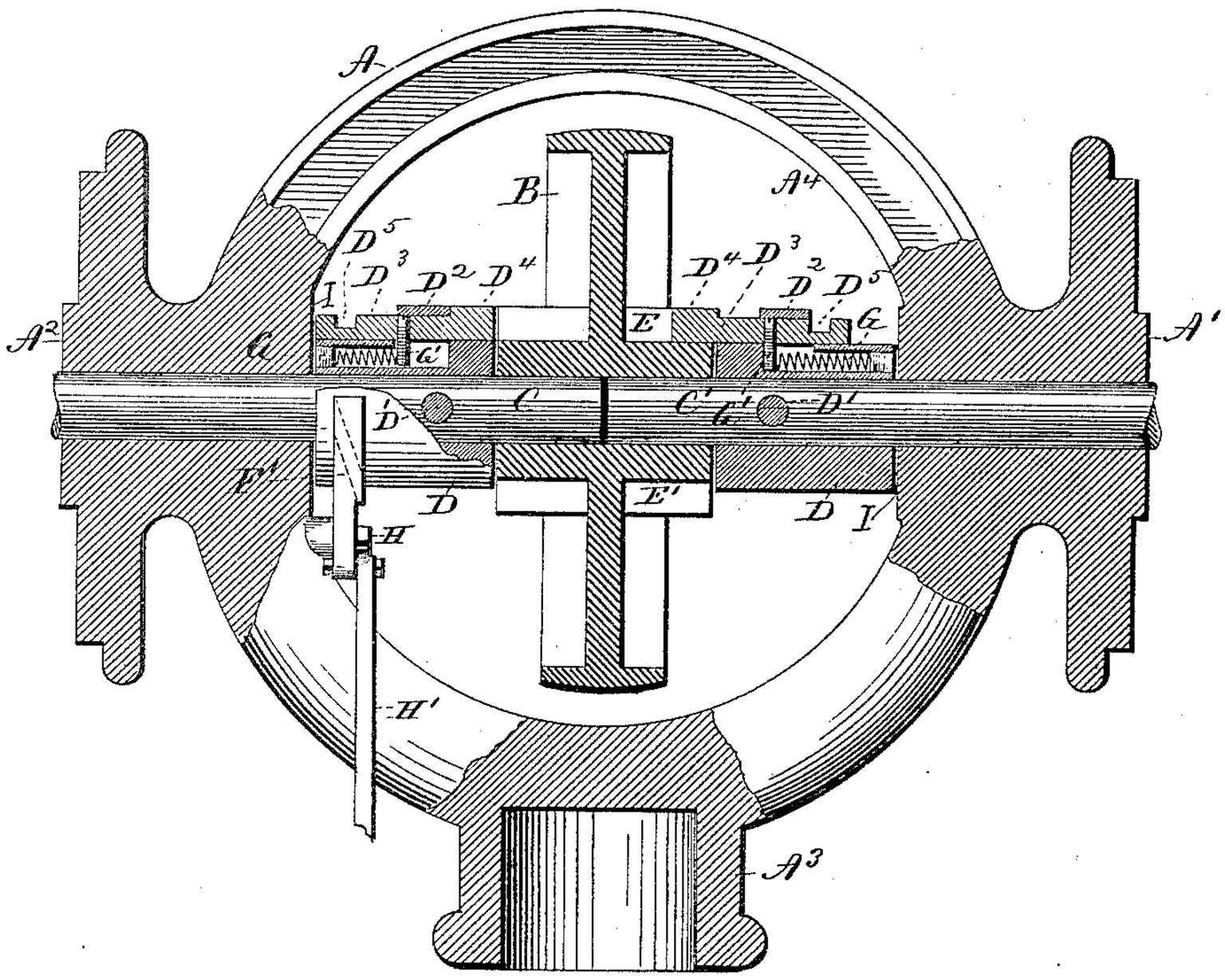
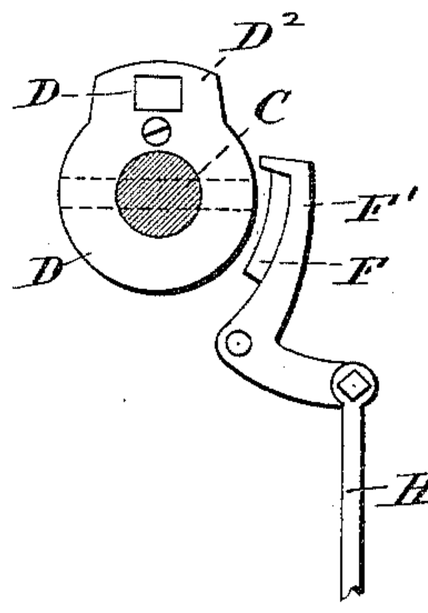


Fig. 2.



Witnesses
L. C. Shumway
L. D. Kelley.

Frank S. Bradley
and Joseph P. Lavigne
By Attys. Inventors
Earle & Seymour

UNITED STATES PATENT OFFICE.

FRANK S. BRADLEY AND JOSEPH P. LAVIGNE, OF NEW HAVEN, CONNECTICUT.

CLUTCH MECHANISM FOR STAPLE STITCHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 442,477, dated December 9, 1890.

Application filed October 6, 1890. Serial No. 367,179. (No model.)

To all whom it may concern

Be it known that we, FRANK S. BRADLEY and JOSEPH P. LAVIGNE, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Clutch Mechanism for Staple Stitching-Machines; and we do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1 a view, partly in side elevation and partly in vertical section, of an open frame-head provided with driving-connections constructed in accordance with our invention; Fig. 2, a detached view, partly in side elevation and partly in transverse section, of one of the clutch mechanisms shown in the preceding figure.

Our invention relates to an improvement in that class of staple stitching-machines in which independent stitching mechanisms are applied to the opposite sides of a head containing driving-connections with which the said mechanisms may be coupled for independent or simultaneous operation, the object being to simplify the said driving-connections.

With this end in view our invention consists in an open frame-head adapted to have two independent stitching mechanisms applied to its opposite sides, respectively, of two independent driving-shafts journaled in the said head in line with each other, a driving-pulley running loosely on the adjacent ends of the said shafts, and two clutch mechanisms respectively combined with the said shafts for coupling the same with the driving-pulley.

Our invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

As herein shown, the open frame-head A is circular in general outline and provided at its opposite sides with heads A′ and A^2 for the respective attachment of the two independent stitching mechanisms, which are not shown, and at its lower end with a socket A^3, by means of which it is attached to the lower portion or standard of the machine-frame. The interior opening A^4 of the head is circular in general outline, and receives the driving-pulley B, which is loosely mounted upon the adjacent inner ends of the driving-shafts C C′, which are journaled in the head in line with each other, their inner ends being brought very nearly together, so as to virtually form a continuous bearing for the driving-pulley, and their outer ends being projected through and beyond the heads A′ and A^2 aforesaid for connection with the independent stitching mechanism which they actuate. Each of the said shafts C and C′ is provided with a clutch mechanism for coupling it with the driving-pulley B. These clutch mechanisms may be of any approved construction. As herein shown, each comprises a combined clutch and cam D, rigidly secured by a pin D′ to its appropriate driving-shaft, and provided with a projecting cam-lug D^2, which is longitudinally chambered to receive a spring-actuated clutch-pin D^3, the inner end of which is provided with a head D^4, which, when projected, is engaged by either one of two lugs E or E′, formed upon the adjacent side of the driving-pulley B, the opposite side whereof is provided with corresponding lugs for engagement with the spring-actuated clutch-pin of the other clutch mechanism, which duplicates that now being described. The opposite end of the said clutch-pin projects beyond the outer end of the said lug D^2, and is provided with a groove D^5, which, as the cam is rotated, engages with the lower end of an inclined rib F, formed upon the inner face of the bell-crank clutch-lever F′, and arranged so that as the cam revolves it will withdraw the clutch-pin and disengage the head D^4 thereof from whichever one of the two lugs E or E′ of the driving-pulley with which it may be engaged. A spring G, located in a chamber formed in the cam and connected with the clutch-pin by a pin G′, is provided for automatically projecting the clutch-pin inwardly into position for engagement by the lugs E and E′ of the driving-pulley. The said bell-crank lever is hung from the head A on a stud H, and is connected by an operating-rod H′ with a treadle, which is not shown, the clutch-pin being released for re-engagement with the lugs of the driving-pulley by depressing the

treadle, whereby the clutch-lever is entirely withdrawn from engagement with the grooved end of the said pin. The driving-pulley, it will be noted, is interposed between the two parts D, which prevent it from lateral displacement upon the ends of the driving-shafts C and C′, the outer ends of the said parts D running against flat faces I, formed for them in the head A.

Under the described construction it will be seen that either or both of the driving-shafts, and hence the independent stitching mechanisms, may be coupled with the driving-pulley for actuation therefrom by a proper manipulation of the independent clutch mechanisms.

It is apparent that the form of the head A and the particular construction of the clutch mechanisms may be changed without departing from our invention. Thus the frame might be made different in form and in more than one piece. We would therefore have it understood that we do not limit ourselves to the exact construction and arrangement of parts shown and described, but hold ourselves at liberty to make such changes and alterations as fairly fall within the spirit and scope of our invention.

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

1. The combination, with an open frame-head adapted to have two independent stitching mechanisms applied to its opposite sides, respectively, of two independent driving-shafts journaled in the said frame-head in line with each other, a driving-pulley loosely mounted upon the adjacent inner ends of the said shafts, and two independent clutch mechanisms respectively combined with the shafts for coupling them with the pulley, substantially as described.

2. The combination, with an open frame-head adapted to have two independent stitching mechanisms applied to its opposite sides, respectively, of two independent driving-shafts journaled in the said head in line with each other, a driving-pulley loosely mounted upon the inner ends of the said shafts, and two clutch mechanisms respectively combined with the shafts for coupling them with the pulley, and each consisting of a combined clutch and cam, a spring-actuated clutch-pin for engagement with lugs on the pulley, and a bell-crank clutch-lever, substantially as described.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

FRANK S. BRADLEY.
JOSEPH P. LAVIGNE.

Witnesses:
GEORGE D. SEYMOUR,
FRED C. EARLE.