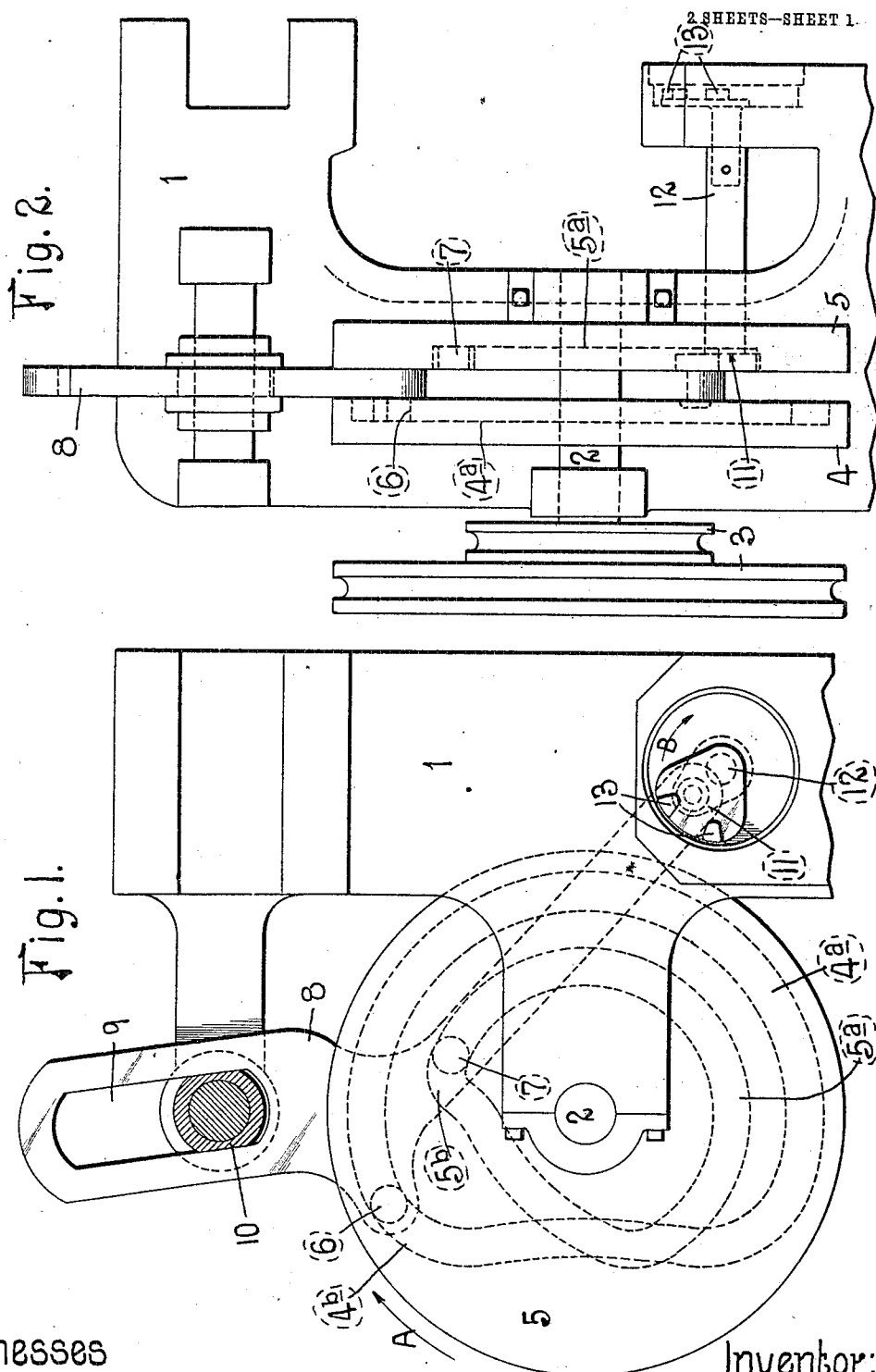


No. 837,283.

PATENTED DEC. 4, 1906.

G. L. CORCORAN.
SHUTTLE ACTUATING MECHANISM.

APPLICATION FILED FEB. 1, 1906.



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a. j. McCauley
Lenore Wilson

Inventor:
George L. Corcoran
by *Baker & Cornwall* Att'y's.

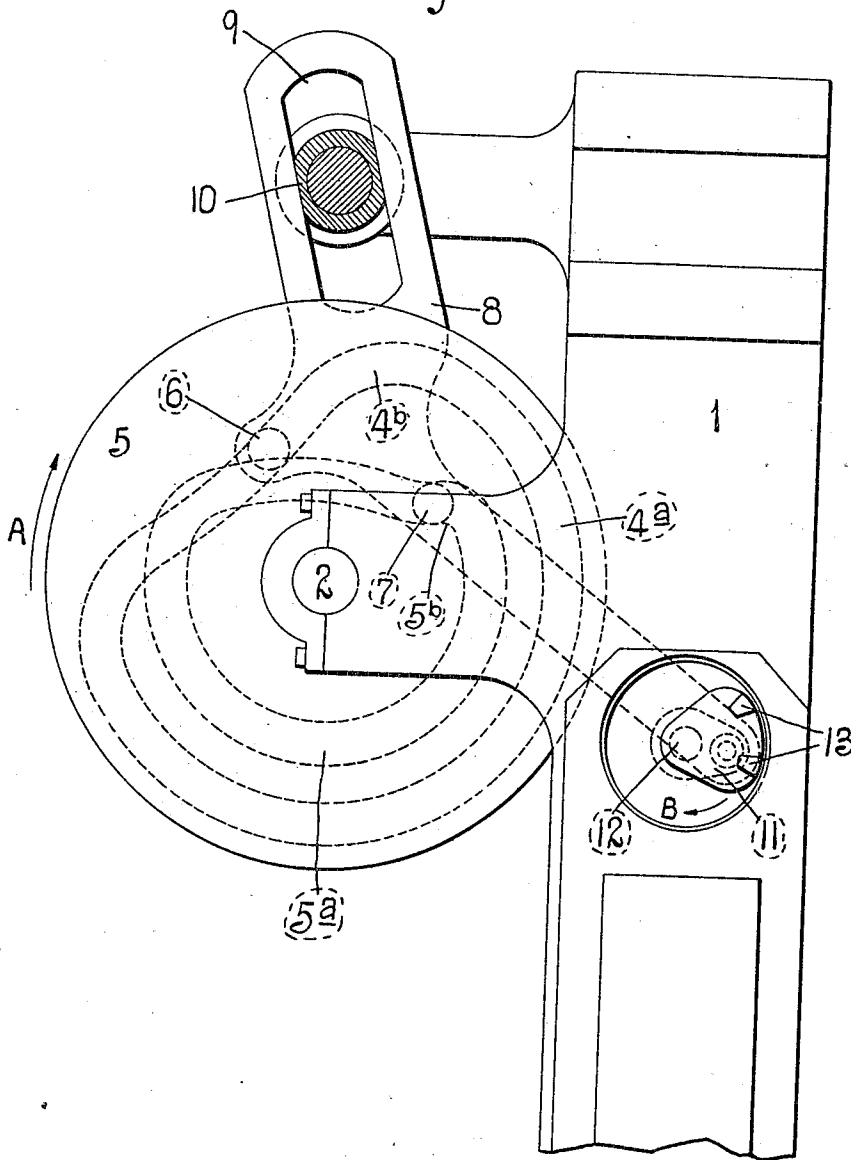
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2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE L. CORCORAN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO CHAMPION
SHOE MACHINERY COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION
OF MISSOURI.

SHUTTLE-ACTUATING MECHANISM.

No. 837,283.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed February 1, 1906. Serial No. 299,017.

To all whom it may concern:

Be it known that I, GEORGE L. CORCORAN, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Shuttle-Actuating Mechanisms, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevational view of my improved shuttle-driving mechanism. Fig. 2 is a side elevational view. Fig. 3 is a view similar to Fig. 1, showing the parts in a changed position.

This invention relates to a new and useful improvement in shuttle-driving mechanisms for sewing-machines, and particularly to that type of sewing-machines employing waxed thread and which are used on leather goods, such as shoes and harness.

The principal object of the present invention is to simplify the construction of shuttle-driving mechanisms and so construct the parts that there will be a pause at the end of each revolution of the shuttle, the driving mechanism being in the form of a rotary cam or cams transmitting motion through a floating lever to the shuttle-driving shaft.

In the drawings, 1 indicates the framing of the machine, upon which are mounted the several moving parts, this framing being usually styled the "head-frame." Upon this is mounted a power-shaft 2, having grooved pulleys 3 upon its outer end for the reception of a belt, (not shown,) whereby power is transmitted to the shaft 2.

4 and 5 indicate cam-disks mounted on the shaft 2, which cam-disks are provided with side cam-grooves in their contiguous faces, in which operate rollers 6 and 7, respectively, carried by a floating lever 8, whose upper end is slotted at 9 and which is slidingly mounted upon a swivel-block 10, arranged upon the head-frame of the machine. The lower end of this floating lever is connected to a crank-arm 11 on the end of the shuttle-driving shaft 12, whose forward end is provided with a driving-head provided with pins 13 for engagement with the shuttle in a well-known manner.

Referring to Fig. 1, in which the arrow A indicates the direction of rotation of the cam-disks and the arrow B the direction of rotation of the shuttle, it will be observed that the rollers 6 and 7 are just ready to leave the concentric portions of the side cam-grooves of cam-disks 4 and 5. For purposes of distinction I will mark the concentric portion of the cam-groove in disk 4 as 4^a and of the disk 5 as 5^a. In view of the fact that the concentric portions of the cam-grooves have different radii, it will be obvious that a given point on the larger of the two will travel through a greater distance circumferentially than the smaller. Thus I designate the point 4^b, where the concentric portion of the groove merges into the irregular portion of the groove, as the "heel" of the cam 4. It will be obvious that this heel portion will cause the roller 6 to be depressed, while the roller 7, traveling in its cam-groove over the heel portion 5^b, will act as a fulcrum, and the lower end of the floating lever will start to drive the shuttle-shaft through its crank-arm, as shown in Fig. 3. The sliding connection between the upper end of the floating lever and the swivel-block provides a variable fulcrum for the floating lever, which insures the cam-grooves and the rollers 6 and 7 forcing the crank-arm to make a complete revolution, after which the rollers 6 and 7 can occupy the concentric portions of the cam-grooves and lock the shaft and its shuttle in a position of rest, thus providing the pause in the rotation of the shuttle, during which time the take-up mechanism operates to absorb the loop and set the stitch in conjunction with the operation of other parts working in time relation to the shuttle.

The power-shaft, of course, can be reversely rotated and impart a rotation opposite to the direction indicated by the arrows in the drawings

While I have shown the floating lever as being operated by two cam-disks having grooves in their adjacent side faces, I do not wish it to be understood that my invention is limited to this construction, as the means for actuating the floating lever could be constructed in various ways without departing from the spirit of my invention.

Having thus described the invention, what

is claimed as new, and desired to be secured by Letters Patent, is—

1. A shuttle-driving mechanism for sewing-machines comprising a single lever having a
5 variable fulcrum, means for transmitting the movements of said lever to the shuttle of the machine, and a plurality of rotating cam-surfaces in direct engagement with portions
10 of said lever and being so formed that the lever is actuated to cause the shuttle to make a complete revolution and come to a position of rest at each complete revolution of the
cam-surfaces; substantially as described.

2. In a shuttle-driving mechanism for sewing-machines, the combination with a power-
15 shaft and a shuttle-shaft, of a plurality of cams driven by the power-shaft, a lever con-

nected to the shuttle-shaft and being provided at its upper end with an elongated slot, a swivel-block projecting through the
20 slot in the lever to provide a variable fulcrum for same, and projections on said lever for co-operating with the cams on the power-shaft, said cams being so formed that the lever is
25 actuated to impart an intermittent rotary movement to the shuttle-shaft; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses,
this 29th day of January, 1906.

GEORGE L. CORCORAN.

Witnesses:

F. R. CORNWALL,
GEORGE BAKEWELL.