H. & J. LOMAX.

Sewing-Machines.

No. 151,406. Patented May 26, 1874.

Fig. 4

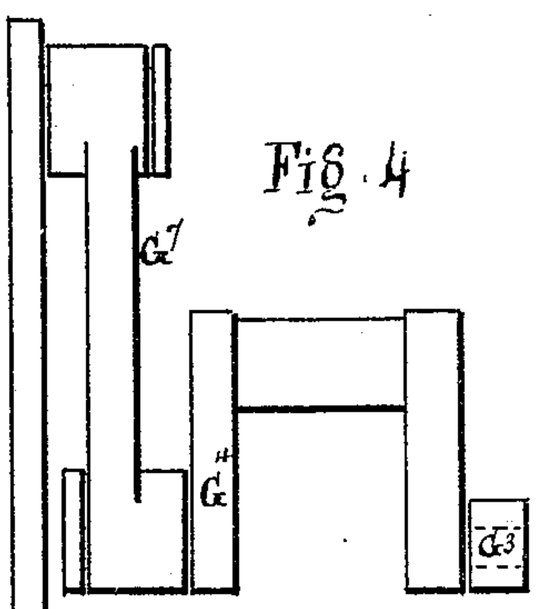

Fig. 2.

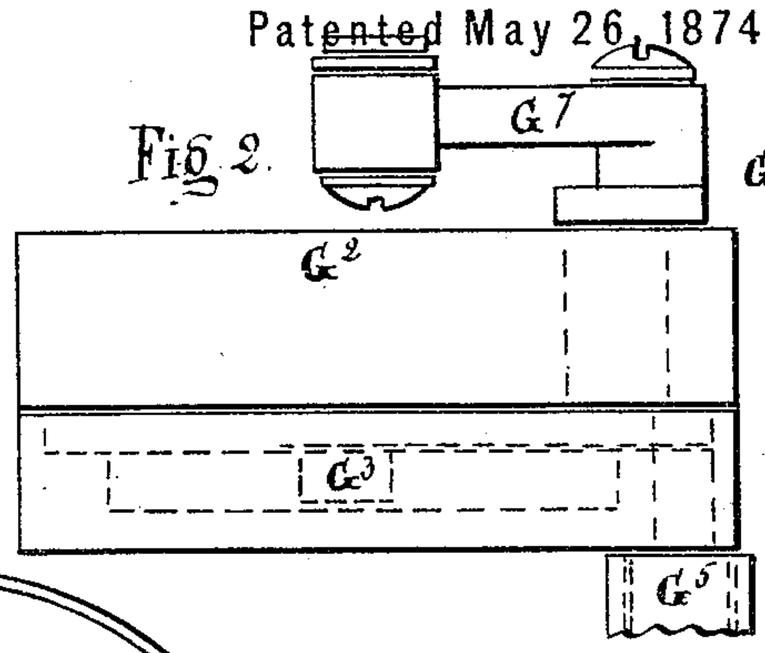

Fig. 3.

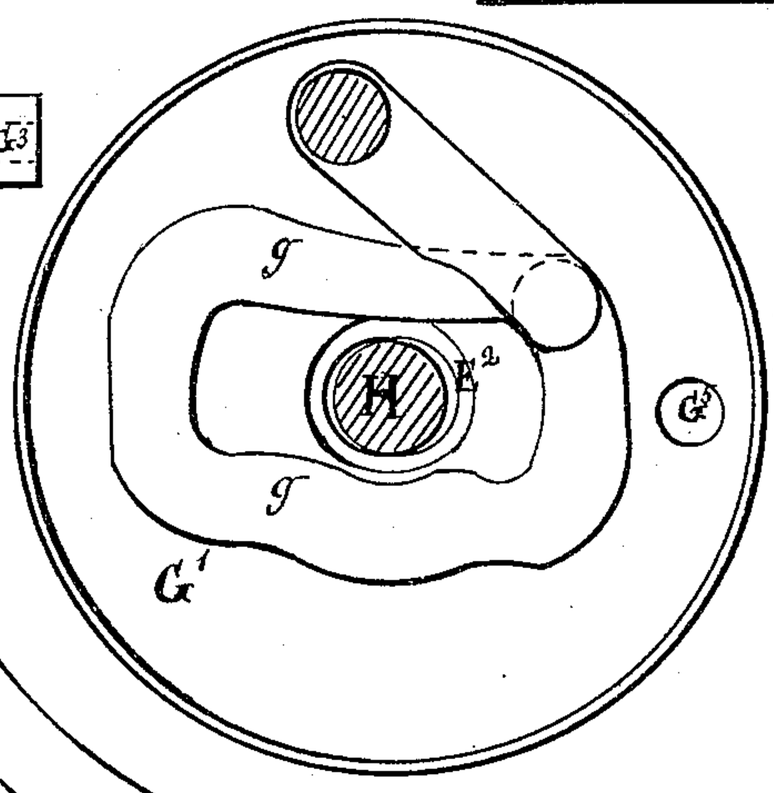

Fig. 1

Witnesses.
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their attys

UNITED STATES PATENT OFFICE.

HENRY LOMAX AND JOSEPH LOMAX, OF OVER DARWEN, ENGLAND.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **151,406**, dated May 26, 1874; application filed July 19, 1873.

To all whom it may concern:

Be it known that we, HENRY LOMAX and JOSEPH LOMAX, of Over Darwen, in the county of Lancaster and Kingdom of England, machine-makers, have invented certain new and useful Improvements in Sewing-Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improved apparatus for imparting motion to the needle-bar by means of an oscillating cam and bowl connected by a double crank and stud with the ordinary link of the needle-bar. The oscillating cam is supported on a stud, and the driving-shaft is passed through an aperture in the said cam. On the driving-shaft is an eccentric, which imparts to the cam the oscillation required, so as to reduce friction on or in the cam-groove employed for actuating and timing the needle-bar.

Such being the nature and object of this our said invention, we will now proceed to describe the same in detail; and, in order that the same may be clearly understood, we have hereunto annexed one sheet of drawings, and have marked the same with figures and letters of reference, the same letter referring to the same part in the various views or figures.

Figure 1 is a side elevation. Fig. 2 is a plan of needle-bar and double crank and stud. Fig. 3 is a detail view of cam and stud on which it oscillates. Fig. 4 is a side elevation of the needle-bar and double link for actuating the same.

C is the ordinary driving-pulley, through which motion is imparted to the shaft B, and it is provided with a disk; and, by means of this shaft B and its disk, motion is transmitted to suitable shafts, under the cloth-plate, through their disks, and a triangular link, E, coupling the whole together in such a manner as to produce positive and unvarying speed, thus avoiding the use of gear-wheels. G is the needle-bar, connected by the ordinary link G^7 with a double crank and stud, G^4; and motion is imparted to such needle-bar G by means of the driving-pulley C and shaft B, having an eccentric, H, passing through an oblong aperture, E^2, formed in an oscillating cam, G^1, and disk G^2, carrying a double crank and stud, G^4, connected by link G^7 with the needle-bar G, and provided with a bowl, G^3, that enters the cam-groove *g* in the face of the oscillating cam G^1. This cam G^1 is supported eccentrically on a stud or pin, G^5, and is provided with a cam-groove, *g*, by means of which the connecting-link G^4 is actuated as the disk G^2 is revolved. The oscillating motion is imparted to the cam G^1 by means of an eccentric, H, affixed upon the driving-shaft B, causing such cam G^1 to oscillate freely on the stud or pin G^5, as shown by Fig. 3; and, by these means, the friction on or in the cam-groove employed for actuating and timing the needle-bar is greatly reduced. The construction of the double link is fully shown in Figs. 3 and 4, drawn full size.

What we claim, and desire to secure by Letters Patent, is—

The pivoted grooved cam G^1, operated by an eccentric on the shaft B, and the revolving disk G^2, in combination with the double crank-link G^4, link G^7, and needle-bar G, as and for the purposes described.

In testimony that we claim the foregoing we have hereunto set our hands this 21st day of March, 1873.

HENRY LOMAX.
JOSEPH LOMAX.

Witnesses:
C. DONHOE,
A. C. HALL.