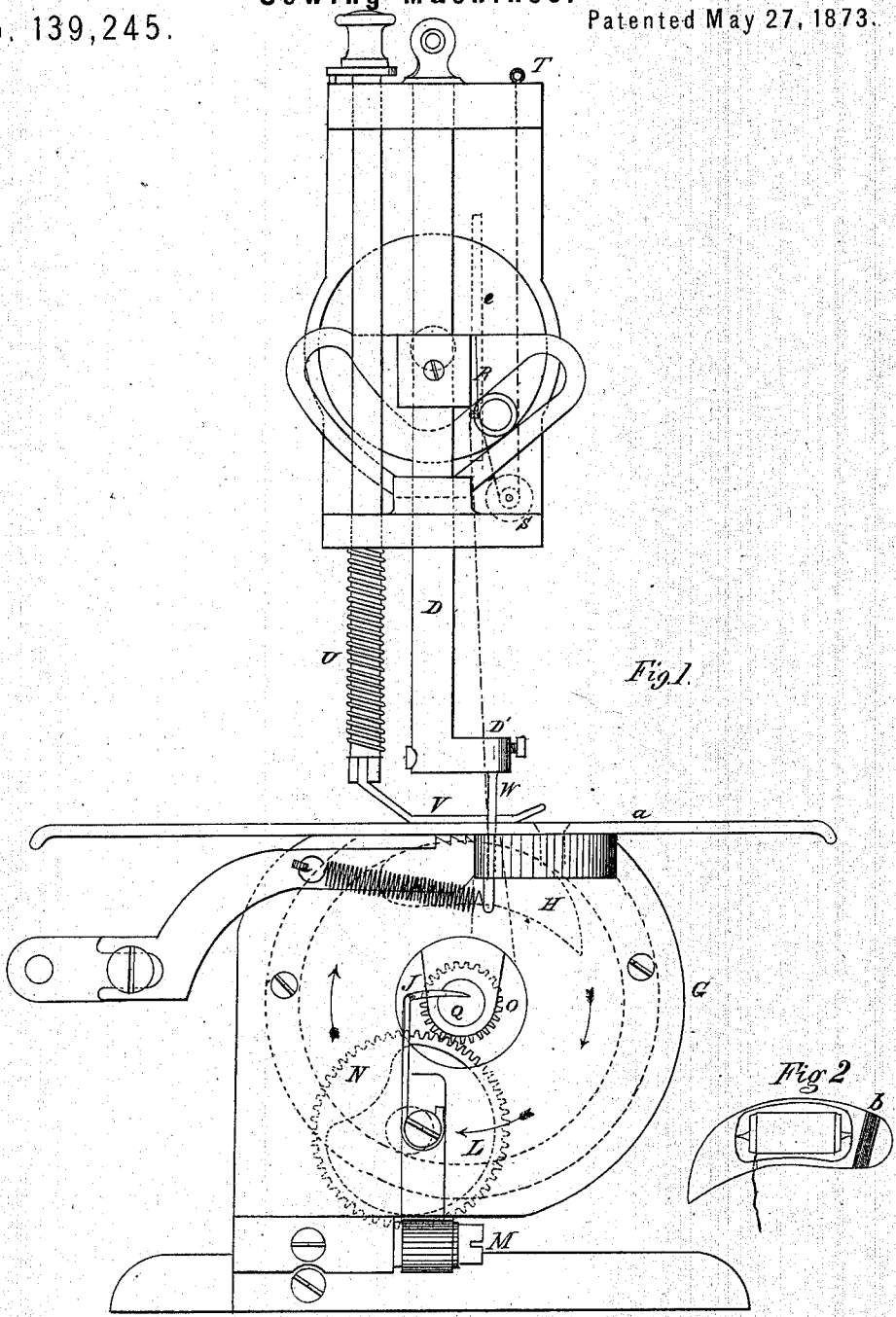


2 Sheets--Sheet 1.

T. HENDERSON & W. G. WRIGHT.
Sewing-Machines.

No. 139,245.

Patented May 27, 1873.



Inventors

Wm Bruce
W B Bruce } Witnesses

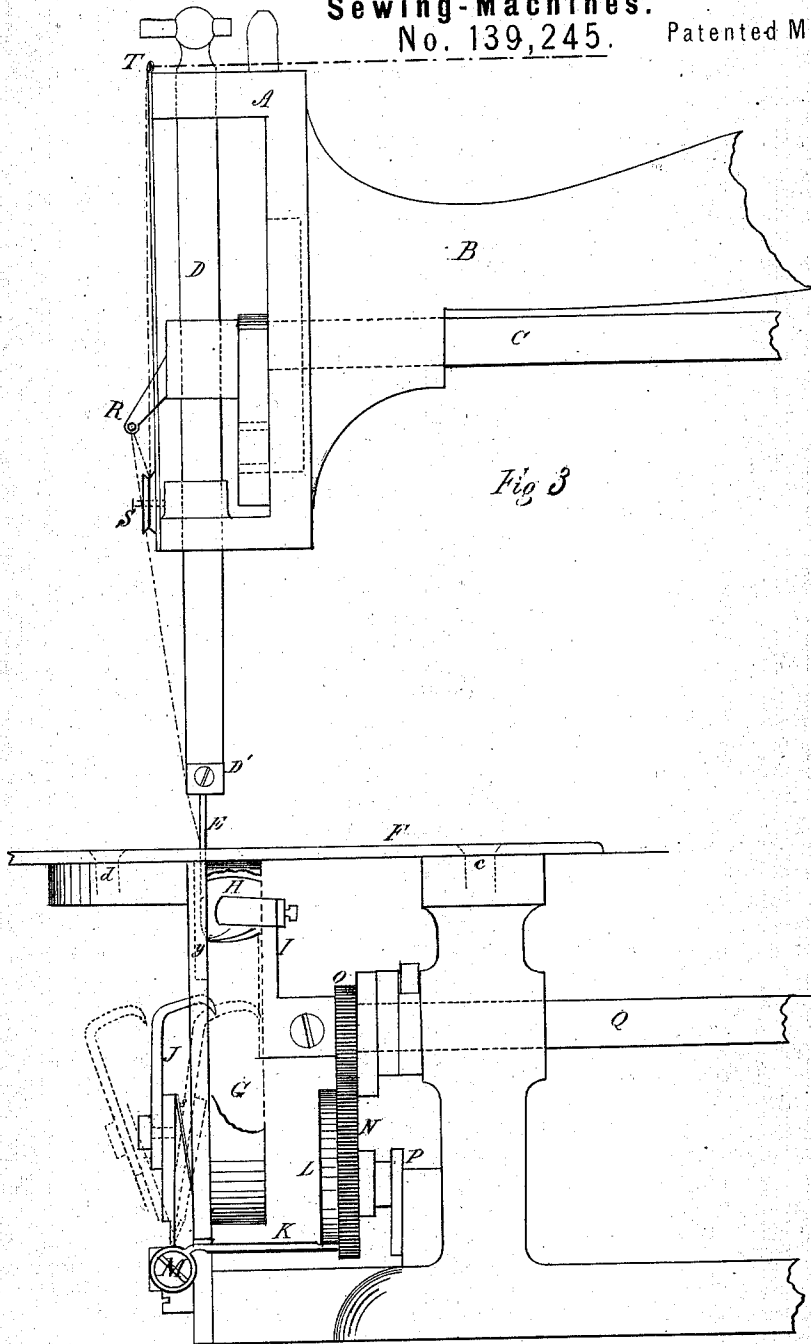
Thomas Henderson
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UNITED STATES PATENT OFFICE.

THOMAS HENDERSON AND WILLIAM G. WRIGHT, OF HAMILTON, CANADA.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **139,245**, dated May 27, 1873; application filed February 21, 1873.

To all whom it may concern:

Be it known that we, THOMAS HENDERSON, of the city of Hamilton, in the county of Wentworth, in the province of Ontario and Dominion of Canada, and WILLIAM G. WRIGHT, of the same place, have invented certain Improvements in Sewing-Machines; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

Our invention consists in arranging within a circular race a shuttle, to which is imparted a continuous rotary motion, and with which is combined a thread-shifter, operated by suitable mechanism, whereby the shuttle-thread is moved to the right and left of the shuttle as the latter revolves in its race, by which arrangement the usual twisting and untwisting of the thread are prevented.

By reference to the annexed drawing it will be seen that, Figure 1, sheet I, is a front view of our improved sewing-machine. Fig. 2 is a top view of the shuttle. Fig. 3, Sheet II, is a side view of a portion of the machine.

A represents the head of the machine, B the arm broken off, C the shaft for driving the heart motion; D is the needle-bar, E the needle, F the cloth-plate, G the shuttle-race, constructed as shown, with the shuttle H at the top of it. I represents the shuttle-carrier, secured on the driving-shaft Q. On the same shaft is keyed a small pinion, O, and immediately below it is a larger gear, N, which is keyed to a shaft or spindle from the projection P, and which moves or revolves with one-half the speed of the upper pinion. Attached to the said pinion N is a cam, L, a side view of which is seen in Fig. 3, and a full front view in dotted lines in Fig. 1, the revolution of which imparts an oscillating movement to the hooked thread-shifter and take-up J, by means of the horizontal bar K pressing upward against it. The said thread-shifter is fastened to the base or bed of the machine by the screw M. One end of a small flat spring, s, is fastened to the race G, and its opposite end pushes out the thread-shifter, as shown in Fig. 1. The shuttle-thread is carried into a vertical groove, Y, in the shuttle-race. Prepared for it, and at each alternate

revolution of the shuttle, the cam L operates the hooked take-up, which catches the thread and draws it outward and slackens it again at the instant when necessary. The shuttle thus passes to the right and left of its own thread without injury to the twist of the thread.

The shuttle is held in the shuttle-race by the shuttle-carrier I, which is keyed on the end of the shaft Q. The peculiar form and construction of the shuttle are seen in Fig. 2, Sheet I; the top of it is of a circular form, to correspond with and fit the circular race G. It is threaded from the lower side. A curved portion of the shuttle-carrier enters the notch b in the shuttle and holds it securely in its place. The arrows show the direction of the shuttle. When it is necessary to remove the shuttle from the race for the purpose of threading the bobbins, &c., it may be taken out through an opening in the cloth-plate, which will be immediately over the top of the race and covered with a slide; or it may be taken out from the back of the race by removing a spring from the shuttle-carrier; or it may be removed from the front of the race and covering it with a slide.

The cloth-plate a is secured to the machine by two screws, c and d, so that it can be easily removed to clean the parts without interfering with any of the working machinery underneath it. None of the said parts are connected to the cloth-plate.

In order to keep the thread off the oil, we purpose to carry the thread from the spool to an eyelet, T, on the top of the head A; thence downward to the tension-washers S; thence upward to a projection, R, on the heart-motion, which slides in a slot, e, and from that to an offset, D', to the right on the bottom of the needle-bar D. The thread may be made to pass through a hole in the said offset or pass down by the side of it, as may be found convenient.

The advantages of our machine are: It runs smooth, without much vibration. The arrangement of the take-up or thread-shifter prevents the thread from untwisting.

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

1. A shuttle, H, arranged within the circular race G, and adapted to have a continuous rotary movement, combined and operating in connection with the thread-shifter J, substantially as described, whereby the shuttle-thread is moved to the right and left of the shuttle as the shuttle revolves in its race.

2. The shuttle H, circular race G, thread-shifter J, and spring s, in combination with

the cam L and gears N O, substantially as and for the purpose specified.

Hamilton, Canada, February 1, 1873.

THOMAS HENDERSON.
WILLIAM G. WRIGHT.

Signed in the presence of—

W. BRUCE,
W. B. BRUCE.