P. DIEHL.

Sewing-Machine Shuttle.

No. 200,606. Patented Feb. 26, 1878.

Fig. 1.

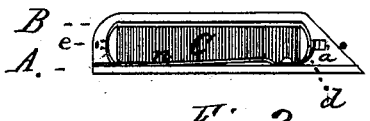


Fig. 2.

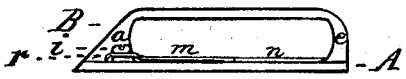


Fig. 3.

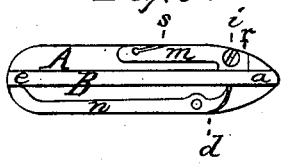
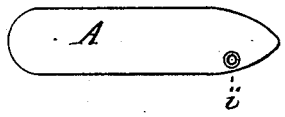


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

PHILIP DIEHL, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, OF NEW YORK, N. Y.

IMPROVEMENT IN SEWING-MACHINE SHUTTLES.

Specification forming part of Letters Patent No. **200,606**, dated February 26, 1878; application filed September 5, 1877.

To all whom it may concern:

Be it known that I, PHILIP DIEHL, of Elizabeth, in the county of Union and State of New Jersey, have made an invention of certain new and useful Improvements in Shuttles for Sewing-Machines; and that the following is a full, clear, and exact description and specification of the same.

My invention consists of a solid frame shuttle, which exposes the bobbin to view, and is without hinge or joint; also, of the combination of the said solid frame shuttle with devices for retaining the bobbin and for operating on the shuttle-thread, all as specified in the claims at the close of this description.

The accompanying drawings represent the mode in which I have embodied the invention in practice.

Figure 1 represents a top view of the said shuttle, with the thread-bobbin in place. Fig. 2 represents a view of the reverse side of the shuttle, with the bobbin removed. Fig. 3 represents a plan of the back of the same, with the bobbin removed. Fig. 4 represents a view of the front or sole of the shuttle.

The frame shuttle thus represented has a solid front plate, A, and a bail, B, connected solidly together, without any movable joint between the two. The space between the bar of the bail B and the plate A receives the thread-bobbin C, the butt *e* of the bail being socketed internally to receive one of the pivots of the bobbin, and the beak *a* of the bail being socketed laterally to admit the other pivot of the bobbin. The bobbin is kept in place by a spring, *d*, whose curved end laps over the socket in the beak of the bail. An extension of the same spring forms the thread-guard *n*, and its rear end, being free, permits the thread to be readily drawn beneath it. At the opposite side of the shuttle there is a tension-spring, *m*, which creates tension on the shuttle-thread by pressing it toward the plate A. This tension-spring has a guide-eye to center the delivery of thread, and a slot, *s*, extending from this guide-eye outward, enables the thread to be readily inserted in it, while the rear end of the tension-spring, being free, permits the thread to be readily passed beneath it and drawn into the guide-eye.

The guard *n* may be riveted solidly to the plate A of the shuttle; but the spring-tension *m* is connected with the plate A by means of an adjusting-screw, *i*, by moving which the tension can be varied.

In order that there may be a sufficient depth of screwed socket in which the stem of this adjusting-screw is held, the plate beneath the butt *r* of the spring-tension is thickened in the form of a boss, and the butt of the tension-spring is bent in a bow to straddle this boss.

The jointless frame shuttle may be formed of one piece of material, such as malleable iron; or the bail B and plate A may be punched separately out of steel, and riveted solidly together.

The peculiarity that the bail and plate are jointless or connected without any hinge-joint, that permits the bail to turn relatively to the plate, is a characteristic feature of the invention; and the construction of the shuttle on this system is a great advantage as compared with skeleton shuttle frames, in which the bail and plate are hinged together, as there are no joints to work loose by wear, and the first cost is reduced. On the other hand, as the shuttle is a mere frame, instead of a case or box, it may be made of light weight, and the bobbin is exposed to view so that the operator can note at any time the condition of the bobbin without removing the shuttle or having to open a case.

The plate of the shuttle, being without opening, presents a broad surface for wear at a place where the wear is always greatest.

I claim as my invention—

1. A solid frame shuttle for a sewing-machine, consisting, substantially as before set forth, of the jointless bail and plate, and means for detachably supporting the bobbin on the bail.

2. The combination, substantially as before set forth, of the jointless bail and plate frame shuttle with a spring-latch, to hold the bobbin to the bail.

3. The combination, substantially as before set forth, of the jointless bail and plate frame shuttle with the tension-spring to make tension on the shuttle-thread.

4. The combination, substantially as before set forth, of the jointless bail and plate frame shuttle, the tension-spring, and the thread-guard.

Witness my hand this 1st day of August, A. D. 1877.

PHILIP DIEHL.

Witnesses:
FRED. MAETSEHKE,
JAMES MEHAN.