C. W. ANDERSON.

LOOM-SHUTTLE.

No. 188,460. Patented March 20, 1877.

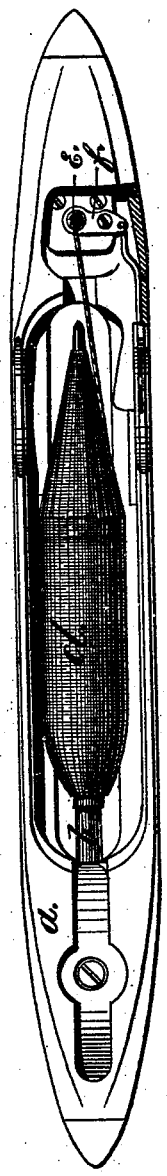

FIG. 1.

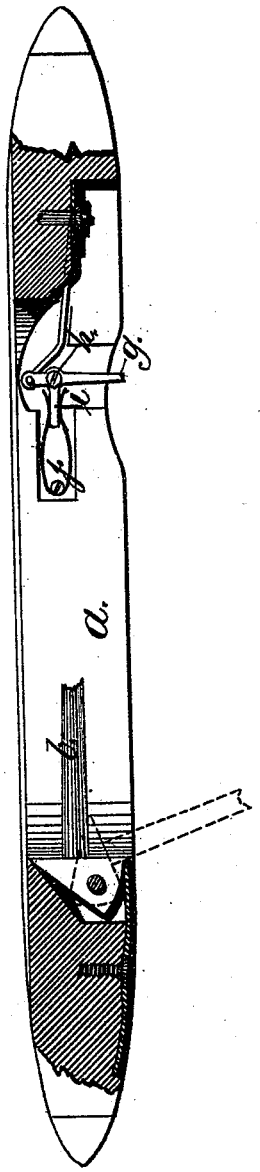

FIG. 2.

WITNESSES.

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CHARLES W. ANDERSON, OF PAWTUCKET, RHODE ISLAND.

IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. **188,460**, dated March 20, 1877; application filed July 26, 1876.

To all whom it may concern:

Be it known that I, CHARLES W. ANDERSON, of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Loom-Shuttles; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a view of my improved loom-shuttle, showing the cop on the skewer, and the thread passing forward to the yarn-eye, and also the detecter, by which the yarn is broken when the warp-threads are not properly raised or lowered. Fig. 2 is a side view, partly in section, of my improved loom-shuttle, the plate covering the detecter stop-motion being shown removed, so as to exhibit the parts of the mechanism.

This invention consists in the peculiar arrangement of a detecter with a loom-shuttle, so that when any threads of the warp are not properly raised, or when loose threads adhere to the warp, the arm of the detecter will come in contact with such obstruction and the mechanism break the yarn, when the loom will be stopped by the shuttle stop-motion now used on looms, so that if any of the warp-threads break, or are not sufficiently raised, or a loose thread becomes attached to the warp, or any other irregularity in the warp takes place, the detecter will break the yarn, and the stop-motion will at once stop the loom.

All the weaving of imperfect cloth will thus be prevented, all the time and labor in picking out will be saved, and the loom will become more efficient and automatic.

In the drawings, *a* is the shuttle proper. *b* is the skewer, and *d* the cop of yarn. E is the yarn-eye, through which the yarn passes. Over the yarn-eye the vibrating arm *f*, provided with an eye, is secured, so that when the arm is moved forward or backward beyond the eye the yarn is firmly held, and as the shuttle is moving through the loom, is caused to break, which breaks will usually take place outside the yarn-eye.

The arm *f* is connected by a wire with the lower end of the detecter-arm *g*, which is hinged at *h*, and provided with an arm, *i*, on which the spring *j* presses, so as to maintain the detecter-arm *g* in a vertical position.

I do not wish to confine myself to this exact method of operating the detecter-arm, as it is obvious that the arm *g* may be hinged at its lower end, and the wire connecting the arm *f* with the same be hinged above; or the detecter-arm may be made to slide in a groove, and provided with springs, by means of which it is made to return to its normal position.

The shuttle is shaped as shown in the drawings, so that while the detecter-arm does not extend above the average height of the same, it does extend above the shuttle at the place where it is secured.

The detecter-arm must be light, and the spring arranged to yield freely, and still hold the arm, so that the draw of the shuttle will not affect the same, while even a loose piece of yarn coming in contact with the detecter-arm will break the thread and release the shuttle stop-motion, and thus stop the loom.

It frequently happens that one or more warp-threads in a loom break and become entangled. Shuttles as at present constructed pass through such obstructions, and where one weaver attends four, six, or more looms, considerable bad cloth is at times woven, which, as soon as discovered, must be picked out by hand and the warp carefully cleaned. This requires time and careful labor, and the loom must be stopped until the operation is completed.

By arranging my detecter on the shuttle any imperfections in the warp are at once discovered. The filling-yarn is broken and the loom stopped, when the cause will be at once apparent to the weaver, and can be readily removed and the loom started.

Much time is thus saved, and all the picking out avoided, while only perfect cloth will be woven.

The detecter can be cheaply applied to any kind of shuttle, and more looms can be attended, when provided with this improvement, by one weaver than without the same.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

The combination, with a loom-shuttle, of the detecter-arm *g*, provided with the arm *i* and spring *j*, and means, substantially as described, by which the filling-yarn is broken, or the delivery of the same from the shuttle stopped, when the detecter-arm comes in contact with imperfections in the warp, as and for the purpose set forth.

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