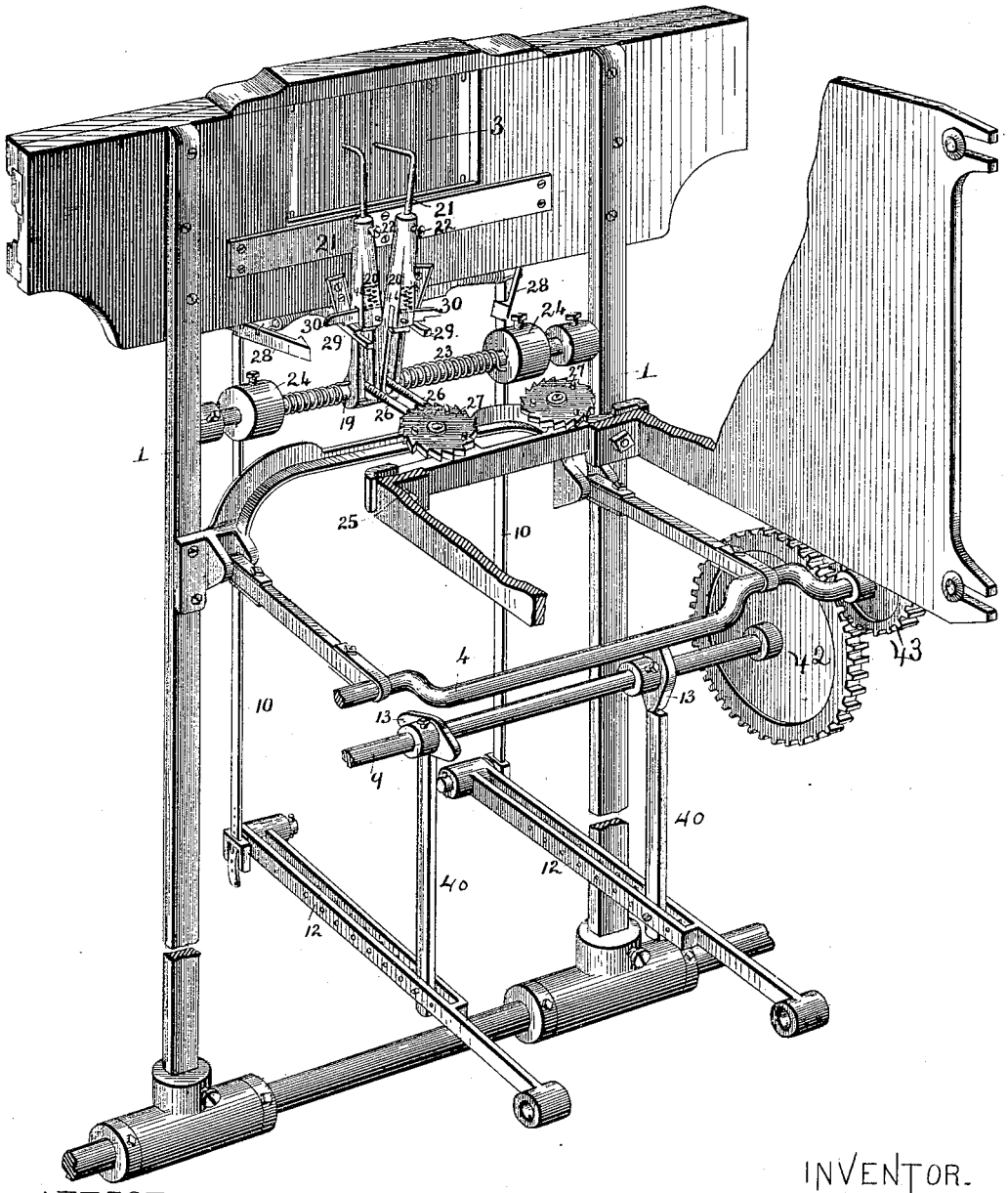
(No Model.) 3 Sheets—Sheet 1.

L. WOODBURY.

NEEDLE LOOM.

No. 344,470. Patented June 29, 1886.

FIG. 1.



ATTEST.
J. Henry Kaiser.
Harry Ames

INVENTOR.
Levi Woodbury.
By Wm. C. W. Entire
Atty.

(No Model.) 3 Sheets—Sheet 2.

L. WOODBURY.

NEEDLE LOOM.

No. 344,470. Patented June 29, 1886.

FIG. 2.

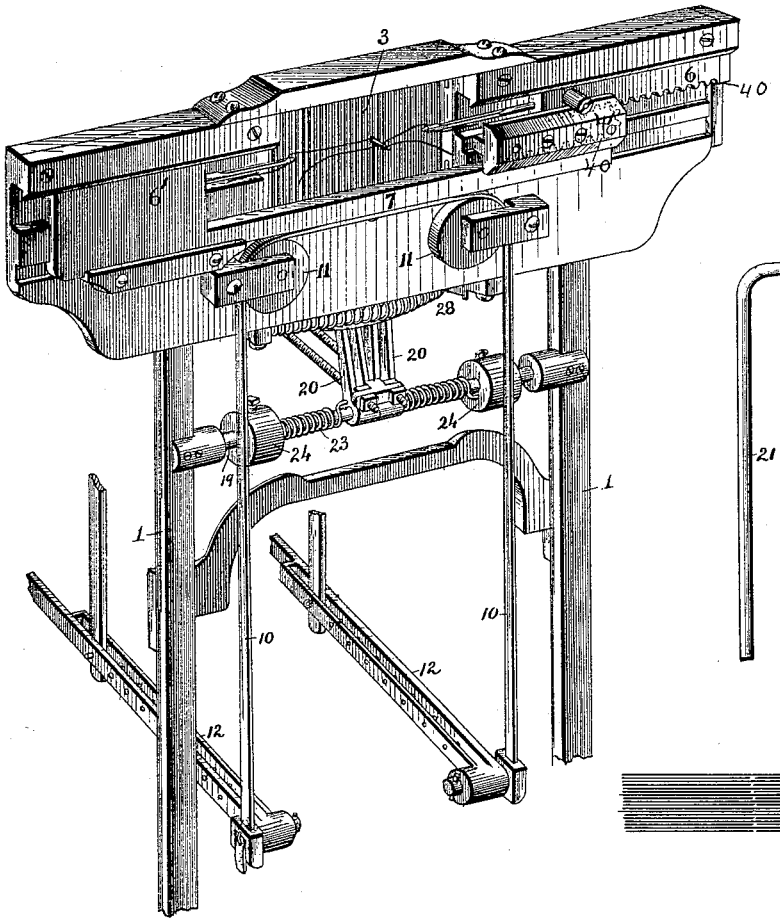


FIG. 7.

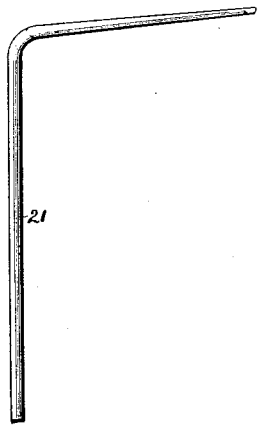


FIG. 8.

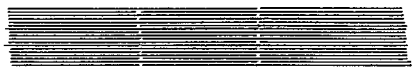


FIG. 3.

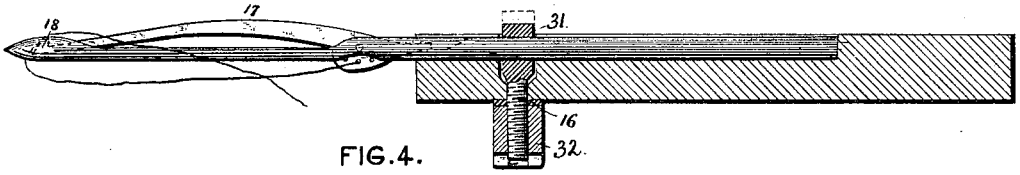


FIG. 4.

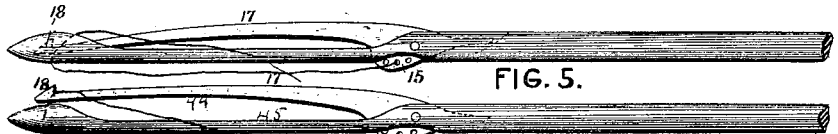


FIG. 5.

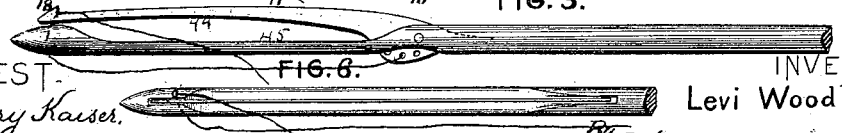


FIG. 6.

ATTEST.
J. Henry Kaiser.
Harry Amer

INVENTOR.
Levi Woodbury,
By Wm. C. R. W. Intire Att'y.

(No Model.)

3 Sheets—Sheet 3.

L. WOODBURY.

NEEDLE LOOM.

No. 344,470. Patented June 29, 1886.

FIG. 9.

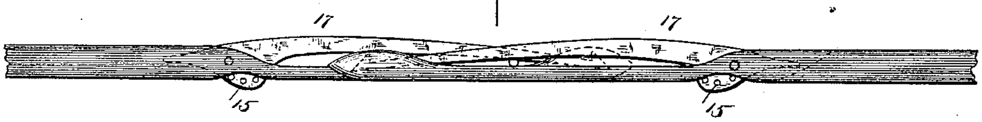


FIG. 10.

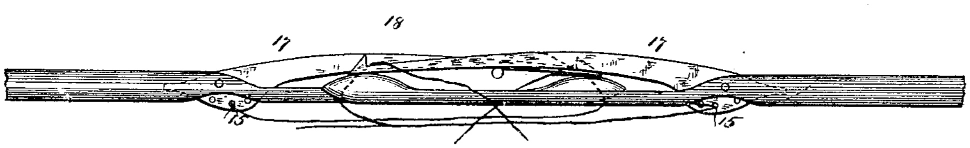
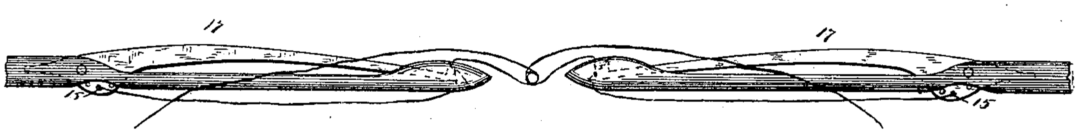


FIG. 11.



WITNESSES.
Curtis Lammond
David S. Mead.

Levi Woodbury INVENTOR.

By Wm. McIntire ATTY.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

LEVI WOODBURY, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR OF TWO-THIRDS TO EDMUND H. GRAHAM, OF BIDDEFORD, MAINE.

NEEDLE-LOOM.

SPECIFICATION forming part of Letters Patent No. 344,470, dated June 29, 1886.

Application filed July 16, 1884. Serial No. 137,862. (No model.)

To all whom it may concern:

Be it known that I, LEVI WOODBURY, a citizen of the United States, residing at Washington, District of Columbia, have invented *new and useful Improvements in Needle-Looms*, of which the following is a specification.

My invention relates to what are known as "needle-looms." Heretofore, so far as I am aware, there never has been a loom of this kind produced which formed a uniform selvage on each side of the cloth without the use of a shuttle arranged at the end of the lathe and moving in a direction parallel with the warp to pass through the loop of the filling as the needle carrying the same completes its inward movement. This form of loom has many defects, among which may be mentioned the fact that the loom has to be stopped from time to time in order that the shuttle may be replenished with yarn. In another form the filling is carried through the shed and caught by a hook, which holds it in position while the carrier returns to its normal position, after which the beating up takes place. In this form of loom a selvage is formed on but one side of the cloth.

The object of my invention is to produce a loom by which cloth is woven having a selvage on each side without the employment of a shuttle, and in which no stoppage is necessary when the filling is replenished.

The invention consists in such features of improvement as will hereinafter be distinctly described and claimed.

In order that those skilled in the art to which my invention relates may know how to make and use the same, I will now proceed to describe it in connection with the accompanying drawings, in which I have illustrated one means of carrying my invention into effect.

In these drawings, Figure 1 is a perspective view showing parts of a loom with the invention applied thereto, the view being made from the rear. Fig. 2 is a similar view taken from a point opposite to that from which Fig. 1 is taken. Figs. 3, 4, 5, 6 represent different views of the preferred form of needles employed for carrying the filling-yarn. Fig. 7 shows the preferred form of pin for catching the loops of the filling-yarn carried by the needles and holding the same in position to be beaten up. Fig. 8 is a plan view of the filling as it would appear were the warp-yarns removed from the completed fabric. Fig. 9 represents a side view of the filling-carrying needles and a retaining-pin, the needles being shown as at the limit of their inward movement and the retaining-pin being shown as entering below the latches on the needles. Fig. 10 is a similar view of the needles and a retaining-pin, the needles being shown as moved outward a short distance, the latches slightly raised, and the pin in place to retain the loops of the filling-yarns; and Fig. 11 is a side view showing the needles drawn back free of the retaining-pin and the latch-levers dropped.

In these drawings, 1 represents the lathe, which is supported upon a shaft upon which it vibrates to beat up the filling. The lathe has secured in its upper portion the reed 3, which is of any desired size commensurate with the quality and texture of the goods to be woven. The lathe receives motion from the main driving-shaft 4, mounted in any convenient portion of the frame of the loom, through the medium of the pitmen, which are secured at one end to the upright portions of the lathe and at the other to the crank-turns in the driving-shaft. 6 6′ represent blocks adapted to slide on the lathe, to which are secured the needles carrying the filling. One of these blocks, 6′, is secured directly to a reciprocating bar, 7, sliding on the lathe.

In order that the blocks, and consequently the needles, may be moved inwardly and outwardly by the same movement of the bar 7, I provide one, 6, of the said blocks with a rack, 40, to gear with a pinion, 41, secured to the frame in which it is carried, and the upper surface of the bar 7 is also provided with a similar rack, 40, which gears with the said pinion. Thus it will be seen that when motion is given to the bar 7 to move the block secured thereto inwardly, the opposite block is given a similar inward movement by reason of the said block receiving a motion reverse to that of the bar through the medium of the pinion.

As a convenient means of imparting a reciprocating motion to the bar 7, I provide a supplemental shaft, 9, geared to the main driving-shaft by means of gear-wheels 42 and 43

ne 29, 1886.