

No. 748,273.

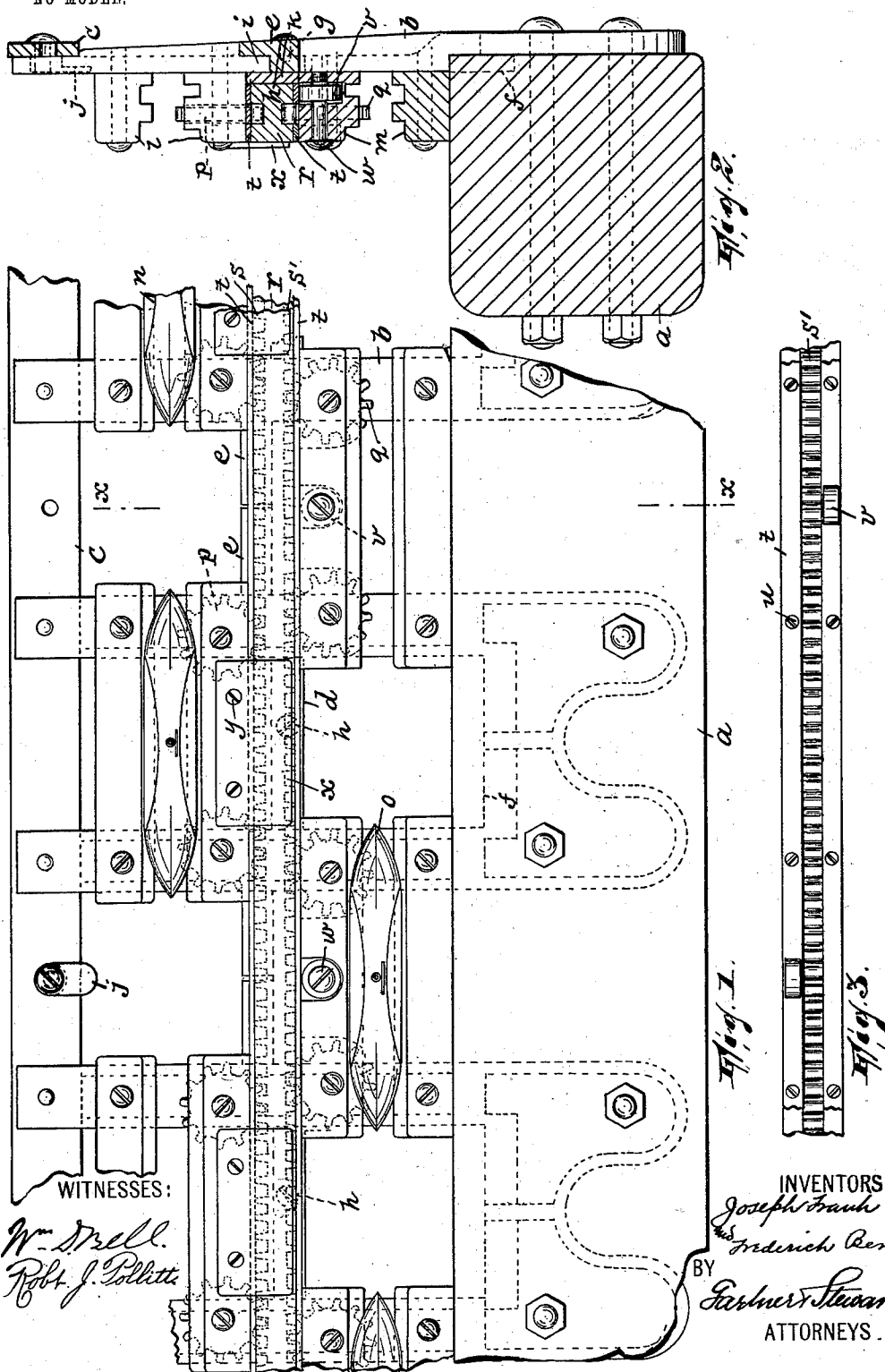
PATENTED DEC. 29, 1903.

J. FRANK & F. BENZ, JR.

LOOM SHUTTLE MOTION.

APPLICATION FILED MAY 9, 1903.

NO MODEL.



UNITED STATES PATENT OFFICE.

JOSEPH FRANK, OF NEW YORK, N. Y., AND FREDERICK BENZ, JR., OF
HALEDON, NEW JERSEY, ASSIGNORS TO FRANK & DUGAN, OF PAT-
ERSON, NEW JERSEY, A FIRM.

LOOM SHUTTLE-MOTION.

SPECIFICATION forming part of Letters Patent No. 748,273, dated December 29, 1903.

Application filed May 9, 1903. Serial No. 156,391. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH FRANK, residing in New York city, county and State of New York, and FREDERICK BENZ, Jr., residing at Haledon, county of Passaic, and State of New Jersey, citizens of the United States, have invented certain new and useful Improvements in Loom Shuttle-Motions; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as 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 letters of reference marked thereon, which form a part of this specification.

This invention relates to ribbon-loom of the type known to the trade as "double-decker" looms—that is to say, looms in which the capacity is increased by providing for carrying on the weaving in two or more superposed planes; and it consists in certain improvements having for their object to simplify and render more compact that portion of the mechanism of such looms which involves the batten and the part of the shuttle-controlling means which is directly carried by the batten.

In the accompanying drawings, Figure 1 is a view in front elevation of the batten and the shuttles and their controlling means as constructed in accordance with the principles of this invention. Fig. 2 is a vertical sectional view taken on the line *xx* in Fig. 1, and Fig. 3 is an underneath view of the rack and of certain rollers detached on which said rack runs.

In the drawings, *a* designates the batten, and *b* a series of brackets which are secured to the back of the batten and are braced at the top by a strip *c*.

d designates a horizontal cross-piece forming a part of each bracket, and *e* designates horizontal projections extending laterally from each bracket at an elevation slightly higher than the cross-piece *d*.

The back upper edge of the batten is recessed opposite each bracket *b*, so that thus is produced a series of sockets *f*; in which the lower tier of reeds seat. The cross-piece *d*

has its front face set back from the front face of the corresponding bracket *b*—that is to say, coincident with a dotted line *g* in Fig. 2—sufficiently, so that when the reed is seated in socket *f* it can stand vertically. The top of the reed may be secured against a cross-piece *d* by a screw *h*. The projections *e* are recessed, as at *i*, to receive the upper tier of reeds, which latter may be secured to the strip *c* by catches *j*.

Against the front faces of the several brackets *b* is secured a strip *k*. Above and below this strip are secured the shuttle-blocks *l* and *m*, corresponding to the upper and lower tiers of shuttles *n* and *o*, respectively. The pinions *p* for working the upper series of shuttles are arranged in the lower members of the upper set of shuttle-blocks, while the pinions *q* for the lower series of shuttles are arranged in the upper members of the lower set of blocks. Thus both sets of pinions are brought relatively close together.

Between the two sets of shuttle-blocks is arranged a single rack *r*, the same having its upper and lower surfaces formed with rows of teeth *s s'*. The rack may be actuated by any of the well-known means. It is shod on both its top and bottom surfaces, on both sides of the rack-teeth formed therein, by metallic strips *t*, secured thereto by screws *u*. It is supported on the lower set of blocks by antifriction-rollers *v*, which are journaled on bearing-pins *w*, arranged in the lower set of blocks. Thus wear and tear is materially reduced and the action of the parts rendered considerably easier than would otherwise be the case.

The rack is guided true—that is to say, kept in proper position relatively to the strip *k*—by plates *x*, which may be secured to the lower members of the upper set of shuttle-blocks by screws *y* or in any other desired manner.

Upon viewing Fig. 3, it will be seen that the antifriction-rollers are arranged in staggered disposition. This arrangement insures bringing all the antifriction-rollers at all times into play and as a consequence a more true and even motion of the rack-bar.

Having thus fully described our invention,

what we claim as new, and desire to secure by Letters Patent, is—

5 The combination of the batten, guiding means arranged on said batten, shuttles arranged in two tiers in the guiding means, a rack arranged in the guiding means between said tiers of shuttles and having rack-teeth on its top and bottom surfaces, metallic strips arranged on said top and bottom surfaces of
10 the rack and both sides of said rack-teeth and interposed between the same and the guiding means, two sets of spaced antifriction-rollers carried by the guiding means, each set of
15 rollers engaging one of said strips on the under side of said rack and the rollers in one

set being opposite spaces between those in the other, and two sets of pinions arranged in the guiding means, the one between the rack and the upper tier of shuttles and the other between the rack and the lower tier of shuttles, substantially as described. 20

In testimony that we claim the foregoing we have hereunto set our hands this 24th day of April, 1903.

JOSEPH FRANK.
FREDERICK BENZ, JR.

Witnesses:

JAMES B. NEWTON,
ROBERT J. POLLITT.