

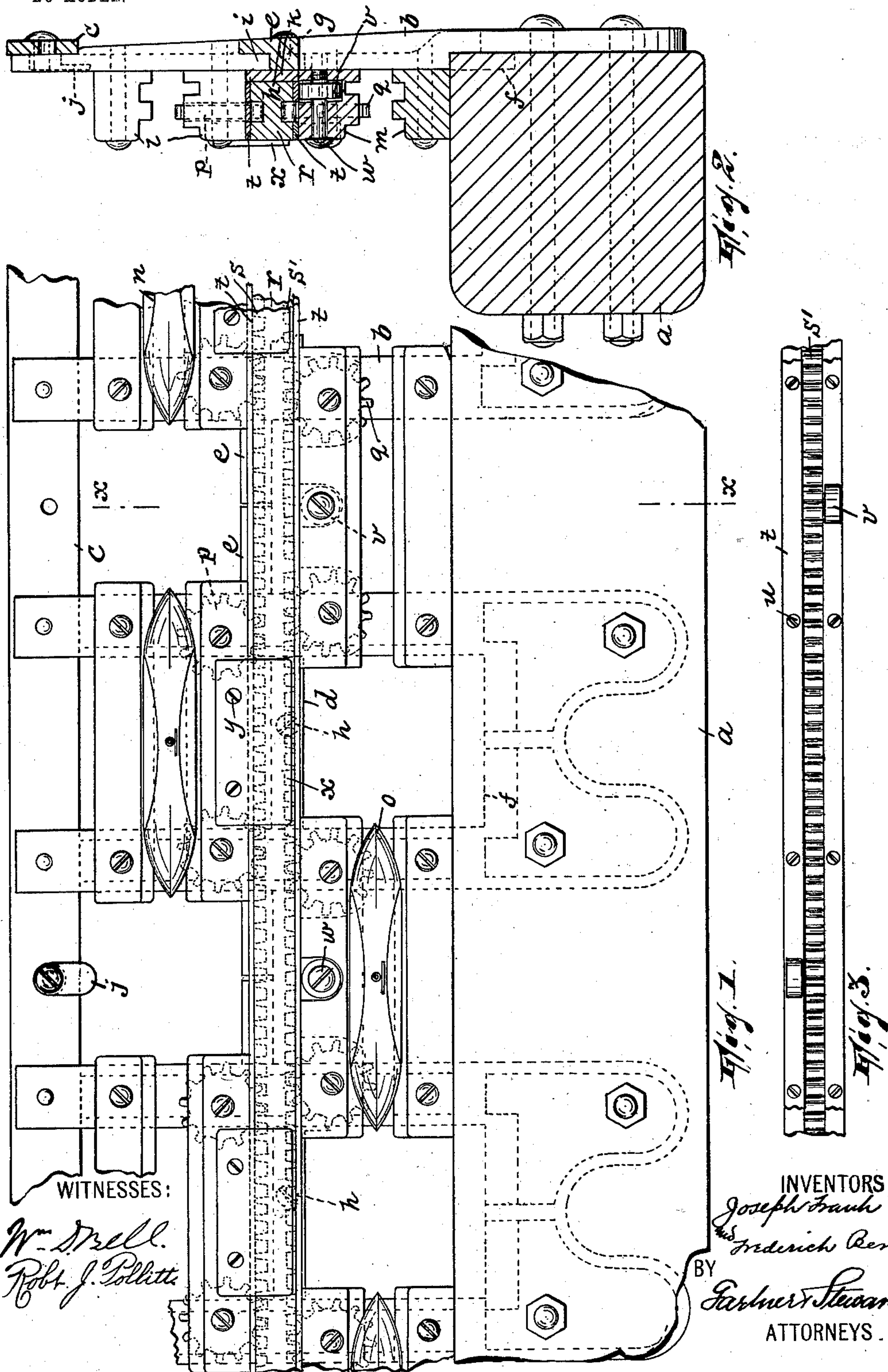
No. 748,273.

PATENTED DEC. 29, 1903.

J. FRANK & F. BENZ, JR.
LOOM SHUTTLE MOTION.

APPLICATION FILED MAY 9, 1903.

NO MODEL.



UNITED STATES PATENT OFFICE.

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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, re-
siding in New York city, county and State of
New York, and FREDERICK BENZ, Jr., resid-
ing at Haledon, county of Passaic, and State
of New Jersey, citizens of the United States,
have invented certain new and useful Im-
provements 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 specifica-
tion.

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 su-
perposed planes; and it consists in certain
improvements having for their object to sim-
plify and render more compact that portion
of the mechanism of such looms which in-
volves 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 sec-
tional 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 form-
ing 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 re-
cessed 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 brack-
ets *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 pin-
ions *p* for working the upper series of shut-
tles 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 me-
tallic 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 re-
duced 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 stag-
gered 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—

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 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 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.

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.