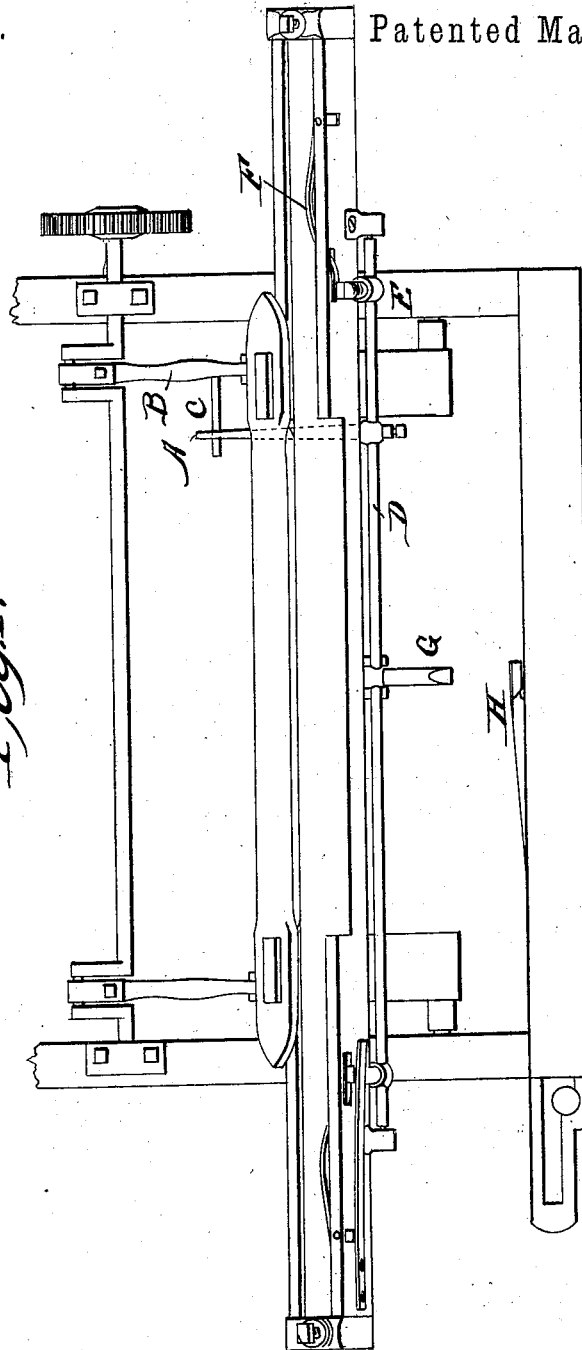


J. HAWORTH  
LOOM.

No. 5,021.

Patented Mar. 20, 1847.

*Fig. 1.*



*J. B. Gifford*

# UNITED STATES PATENT OFFICE.

JAMES HAWORTH, OF FRANKFORD, PENNSYLVANIA.

## LOOM.

Specification of Letters Patent No. 5,021, dated March 20, 1847.

*To all whom it may concern:*

Be it known that I, JAMES HAWORTH, of Frankford, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Looms, which is described as follows, reference being had to the annexed drawing of the same, making part of this specification.

Figure 1 is a plan or top view of the frame and lathe.

In the construction of a common loom wherein a spring is used to force the "swell-lever" against the "shuttle" considerable inconvenience is experienced arising from the friction of the shuttle in leaving the box against the swell lever pressed against it by the usual spring.

My improvement is designed to remove said friction of the shuttle against the "swell-lever" and thereby to reduce the power required to operate the loom.

Besides the aforesaid object I also by my improvement effect another important object, namely—running the loom backward or in a contrary direction without the use of the shuttle—when the loom is not performing the operation of weaving.

These two objects I effect in the following described manner. I secure to the "stop rod" of the loom an "additional finger" A which is to be connected loosely with the "arm" B of the lathe by means of a "pin" C inserted into the arm; or by bending the finger A so as to lie upon the arm B; or

otherwise connected by which connection the stop-rod D. is vibrated during the operation of the loom in weaving, said vibration of the stop-rod having the effect of relieving the pressure of the "finger" E of the said stop rod against the "swell lever" F which bears against the "shuttle," thus relieving the shuttle. When the loom is not performing the operation of weaving but is running in a contrary direction then the said additional finger A vibrates the stop rod D causing the "stop finger" G to clear the "stop lever" H. This last named effect enables the weaver to run the loom backward for any required purpose without the necessity of holding back the swell lever by his hand or otherwise.

What I claim as my invention and desire to secure by Letters Patent is—

The mode of relieving the pressure of the "swell lever" F against the "shuttle" whilst the "shuttle" is leaving the "box"—also the mode of causing the loom to run backward without the use of the "shuttle" by means of the before described combination of the "additional finger" A with the "stop rod" D and "lathe arm" B and pin C or any other combination substantially the same, for producing analogous results.

JAMES HAWORTH.

Witnesses:

WM. P. ELLIOTT,  
ALBERT E. H. JOHNSON.