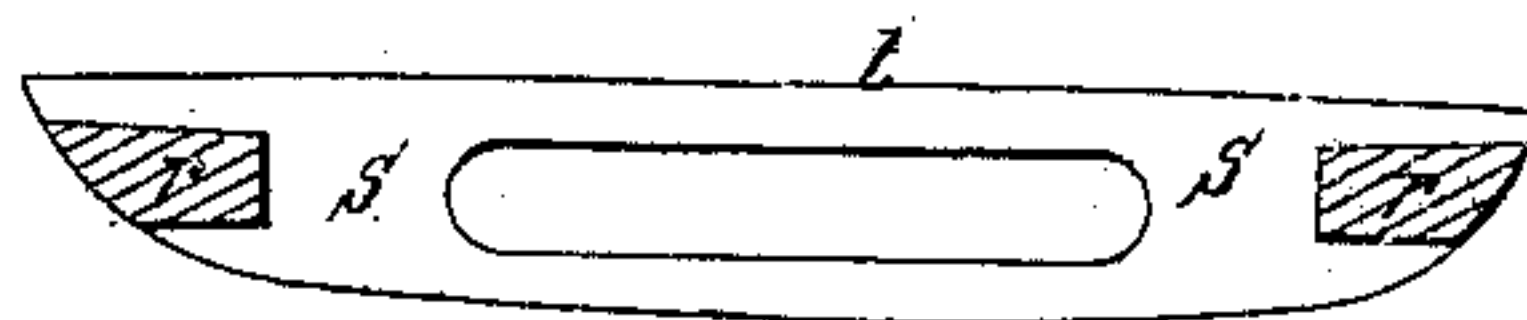
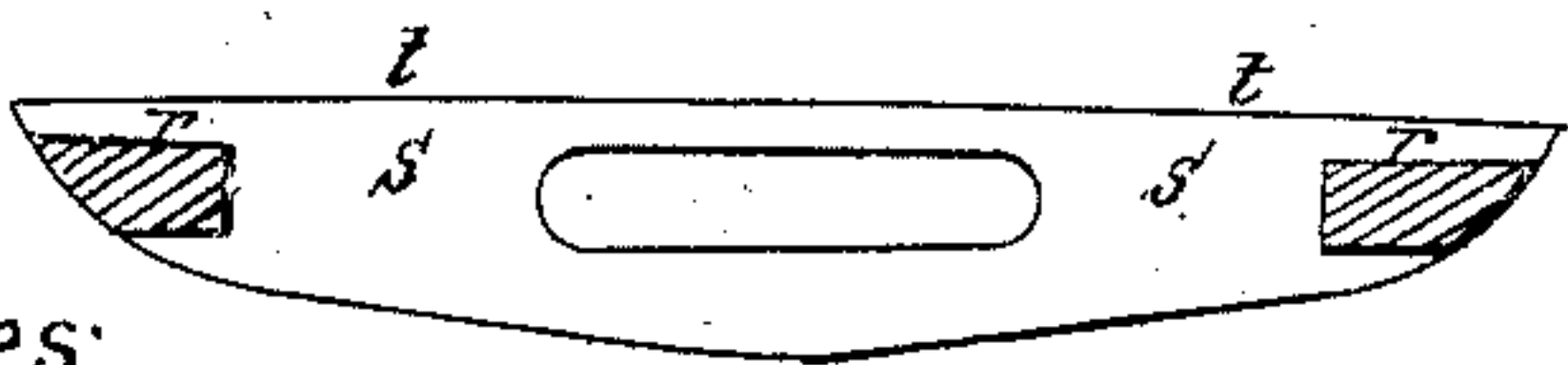
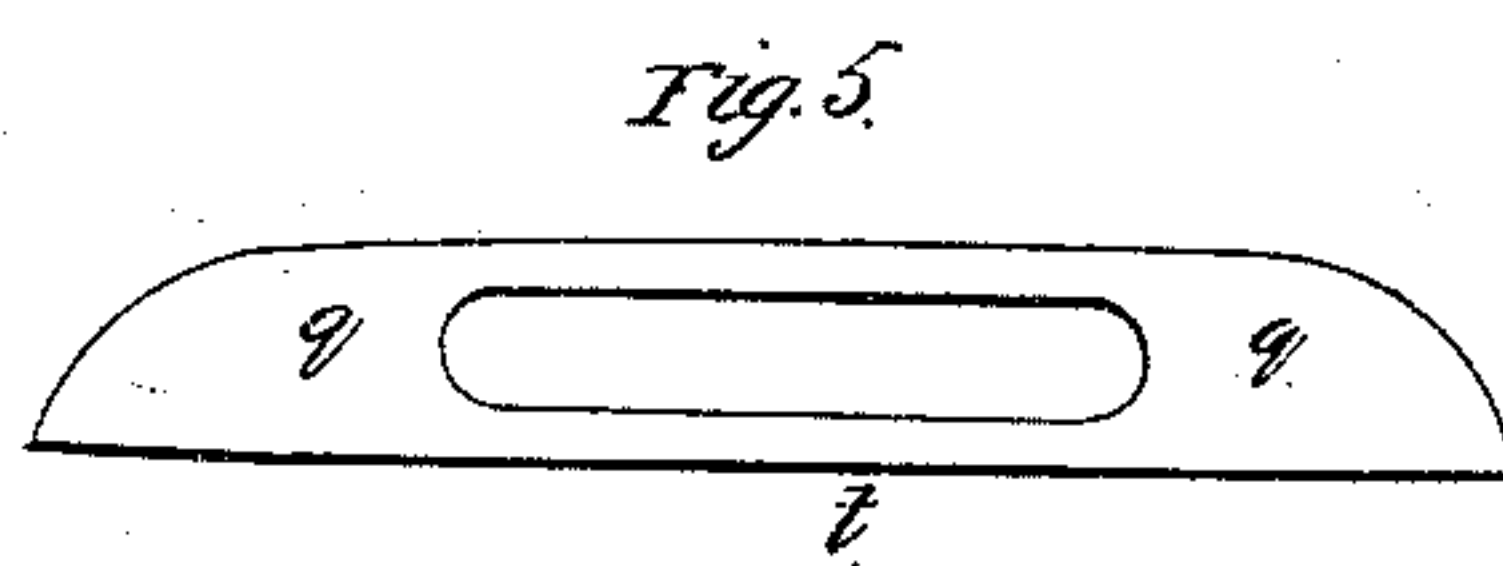
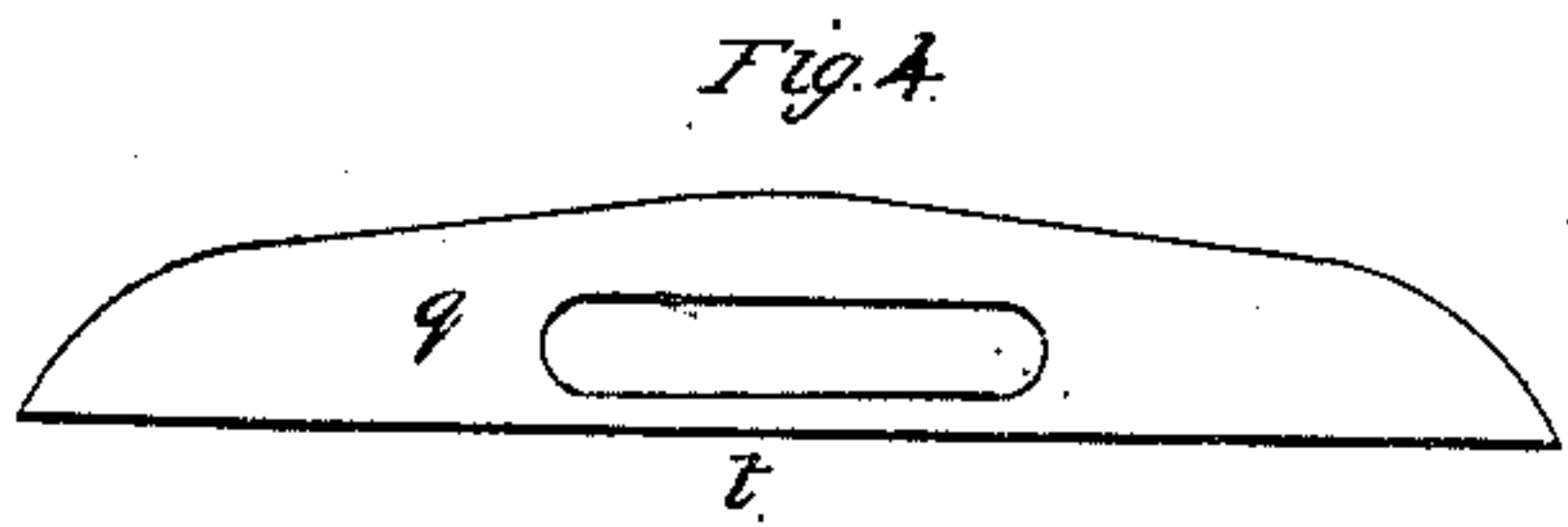
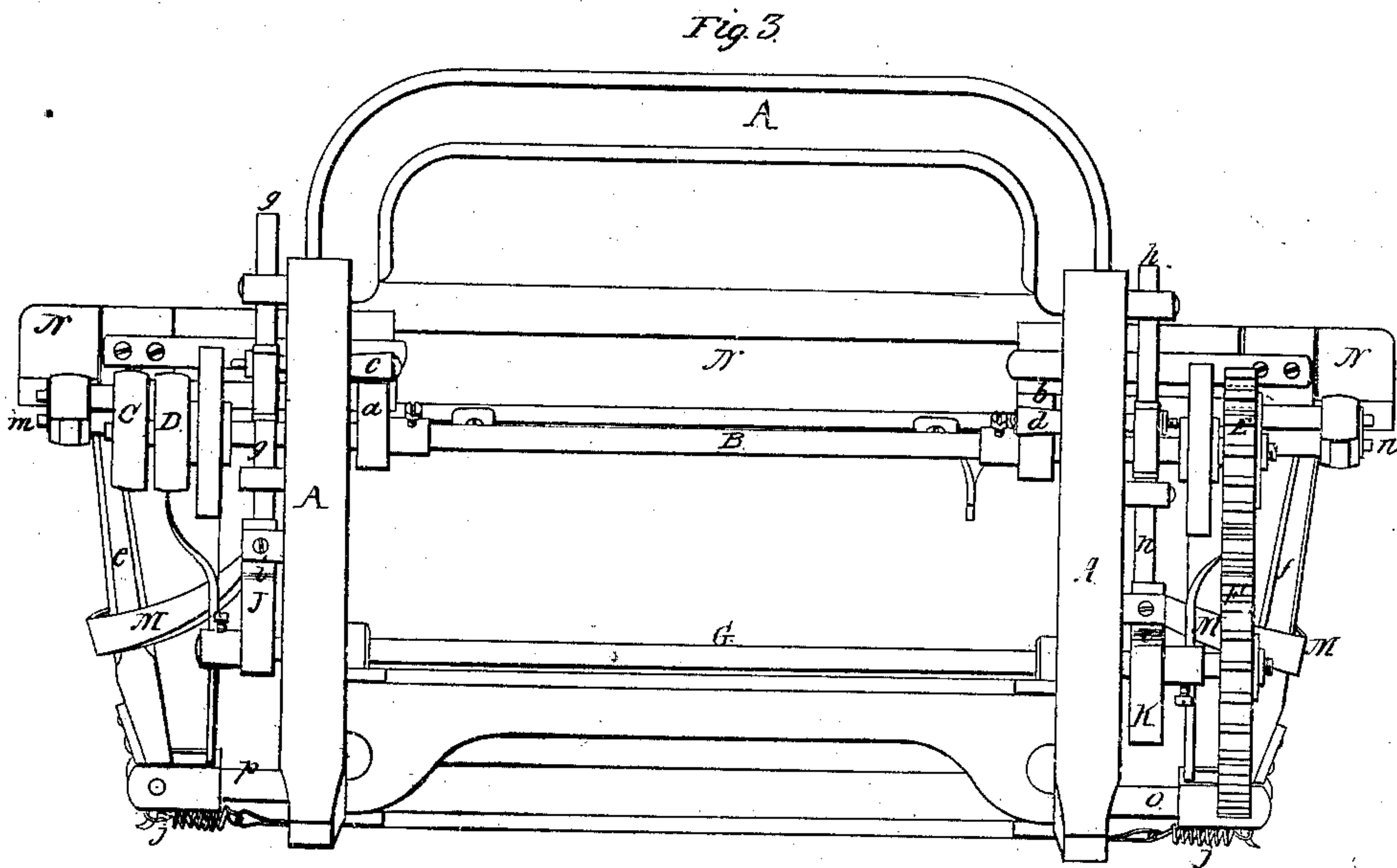
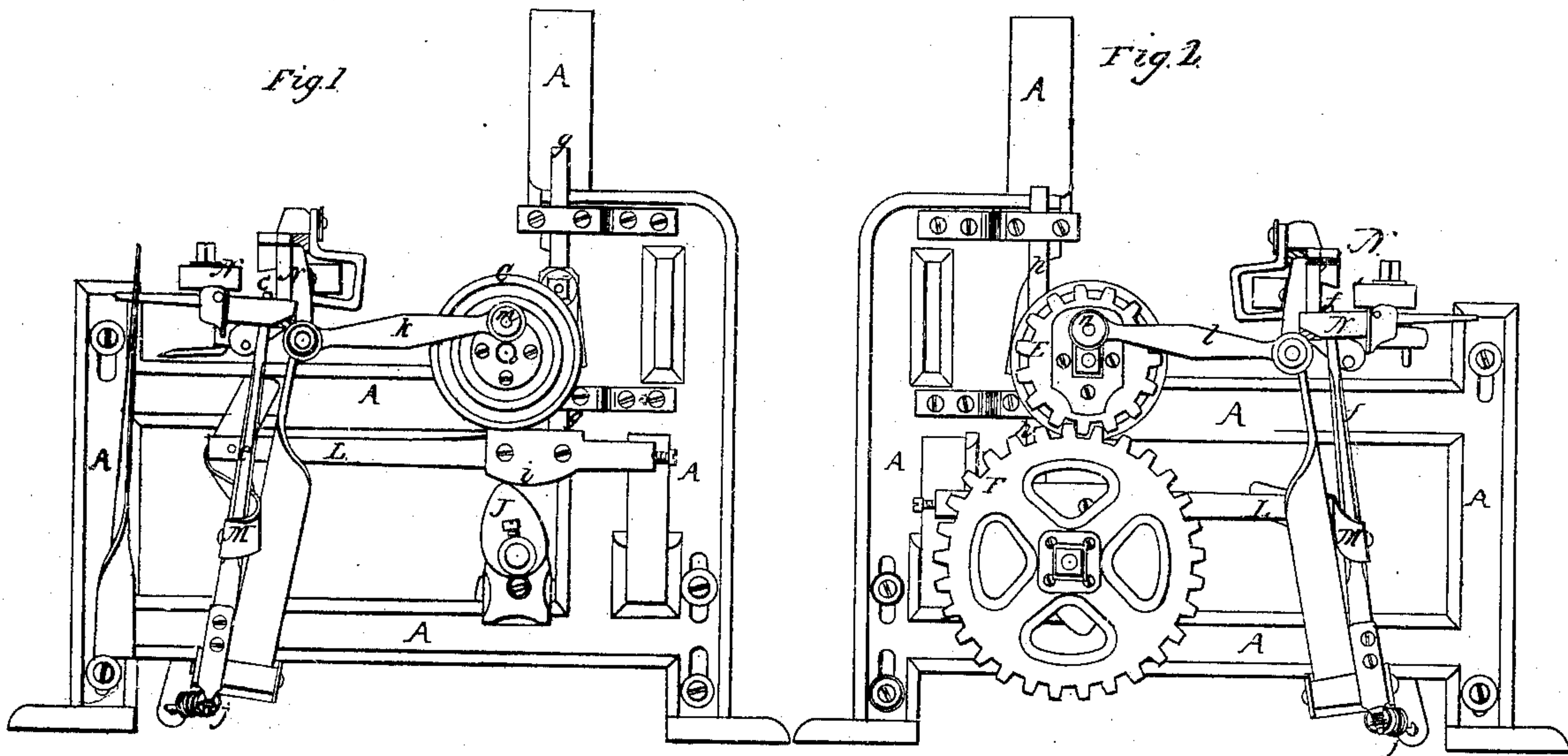


*C. Zwicki.*  
*Loam Shuttle Motion.*

N<sup>o</sup> 41,254.

*Patented Jan. 12, 1864.*



Witnesses:

C. Evans &  
S. D. Patton

**Inventor:**

Inventor  
Casper Furicki  
By atty H B Slaughter



# UNITED STATES PATENT OFFICE.

CASPAR ZWICKI, OF PITTSBURG, PENNSYLVANIA.

## IMPROVEMENT IN LOOMS.

Specification forming part of Letters Patent No. 41,254, dated January 12, 1864.

*To all whom it may concern:*

Be it known that I, CASPAR ZWICKI, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Looms; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents an elevation of one end of the loom. Fig. 2 represents an elevation of the opposite end. Fig. 3 represents a rear elevation of the loom. Figs. 4 and 5 represent the forms of shuttles which I propose to use in connection with the loom.

Similar letters of reference, where they occur in the several figures, denote like parts of the loom in all cases.

My invention consists in the manner in which I have geared the two main driving-shafts and arranged the cams thereon for the purpose of working the picker-staffs alternately and alternately lifting out of action the arms which operate the picker-staves when they are not being worked, as will be hereinafter explained.

A represents the frame of the loom, in which is hung the shaft B, driven by a pulley, C, that in turn is driven by any first-moving power.

D is a loose pulley for shifting the belt onto when the loom is to be stopped.

On the opposite end of the shaft B from the pulley C there is a gear, E, which works into a gear, F, on the shaft G, said gear F being of such size as to give to its shaft G one revolution for every two revolutions of the shaft B.

On the shaft B there are two cams, *a b*, which, by striking against the arms *c d*, alternately work the picker-staves *e f*, as will be explained hereinafter, and the arms *c d* may have cone-shaped rollers upon them to facilitate the rocking of their shafts *g h*, which work the picker-staves. Upon the lower shaft, G, there are also two cams, J K, which in their rotation come against cam-projections *i* on levers L, connected to the lower ends of the shafts *g h*, and thus alternately raise up said

shafts, so as to take the arms *c d* alternately out of reach of the cams *a b*, that would otherwise strike against and operate them, and through them the picker-staves *e f*. The ends of the levers L, which get their throw through the rocking of the shafts *g h*, to which they are respectively attached, are connected by a thong, strap, or other flexible connection, M, to the picker-staves, respectively, and thus give to said picker-staves the motion that impels the shuttle through the race, while a light spring, *j*, returns them to their place again for a similar operation.

The raceway N is connected to the pulley C at one end and to the gear E at its opposite end by connecting-rods *k l*, attached to wrist-pins *m n* therein, and thus gets its beat, the picker-staff frames being supported on pins *o p*, on which they can turn to admit of the beat or vibratory motion of the raceway and its several connected parts.

At Figs. 4 and 5 I have shown the top and bottom plans of the shuttles, such as I propose to use in this loom. The bottom *s* and face *t* of these shuttles are flat and at right angles to each other. The top or third side, *q*, may be rounded or chamfered off from top to bottom. In the under sides of these shuttles I form mortises or gains *r*, in which the points of the picker-staffs *e f*, projecting up through slots into the raceway, take to throw the shuttle, avoiding in this way the use of pickers between the shuttle and the picker-staves.

The operation of the loom is very simple, while it may be run at a very high speed.

Having thus fully described the construction and operation of my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

The arrangement of the cams *a b* on the shaft B and of the cams J K upon the shaft G, said shaft B having two revolutions to one of the shaft G, and the cams of both shafts acting upon the rocking shafts *g h* to work alternately and move out of action alternately the picker-staves, substantially as described.

CASPAR ZWICKI.

Witnesses:

A. B. STOUGHTON,  
HAVER FENDRICH.