E. B. Bigelow.
Weaving Pile Fabric.

No. 6,153. Patented Mar. 10, 1849.

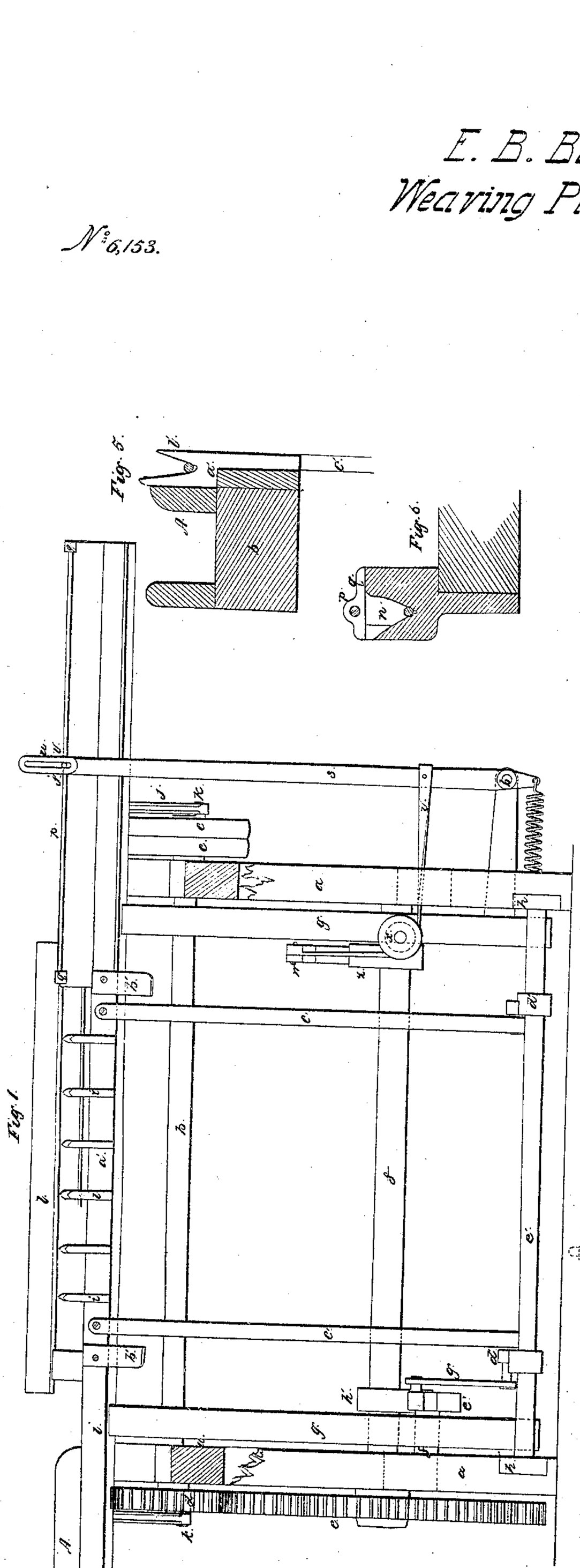

Fig. 1.

Fig. 5.

Fig. 6.

Fig. 7.

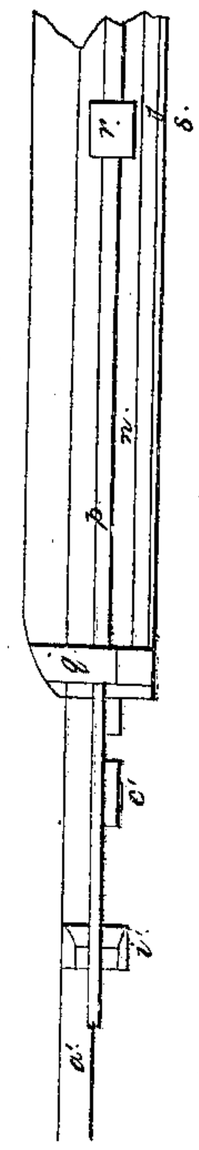

Fig. 4.

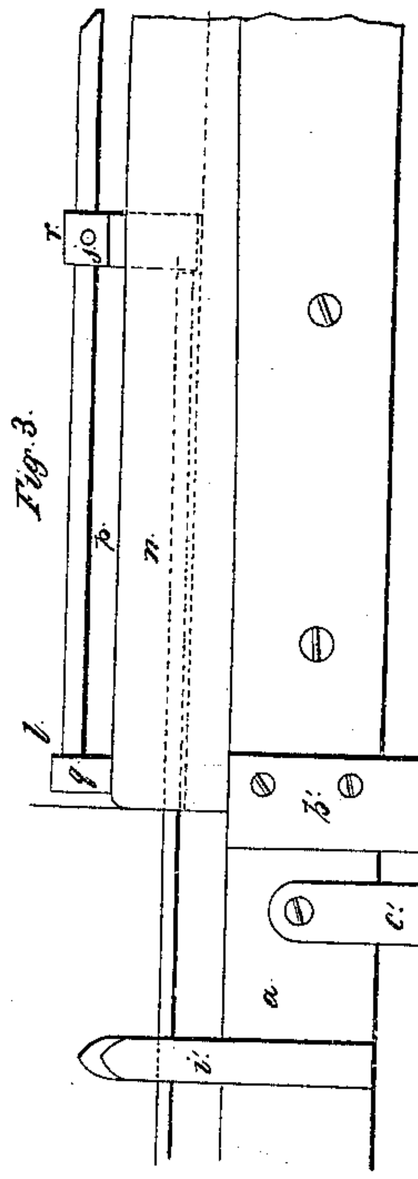

Fig. 3.

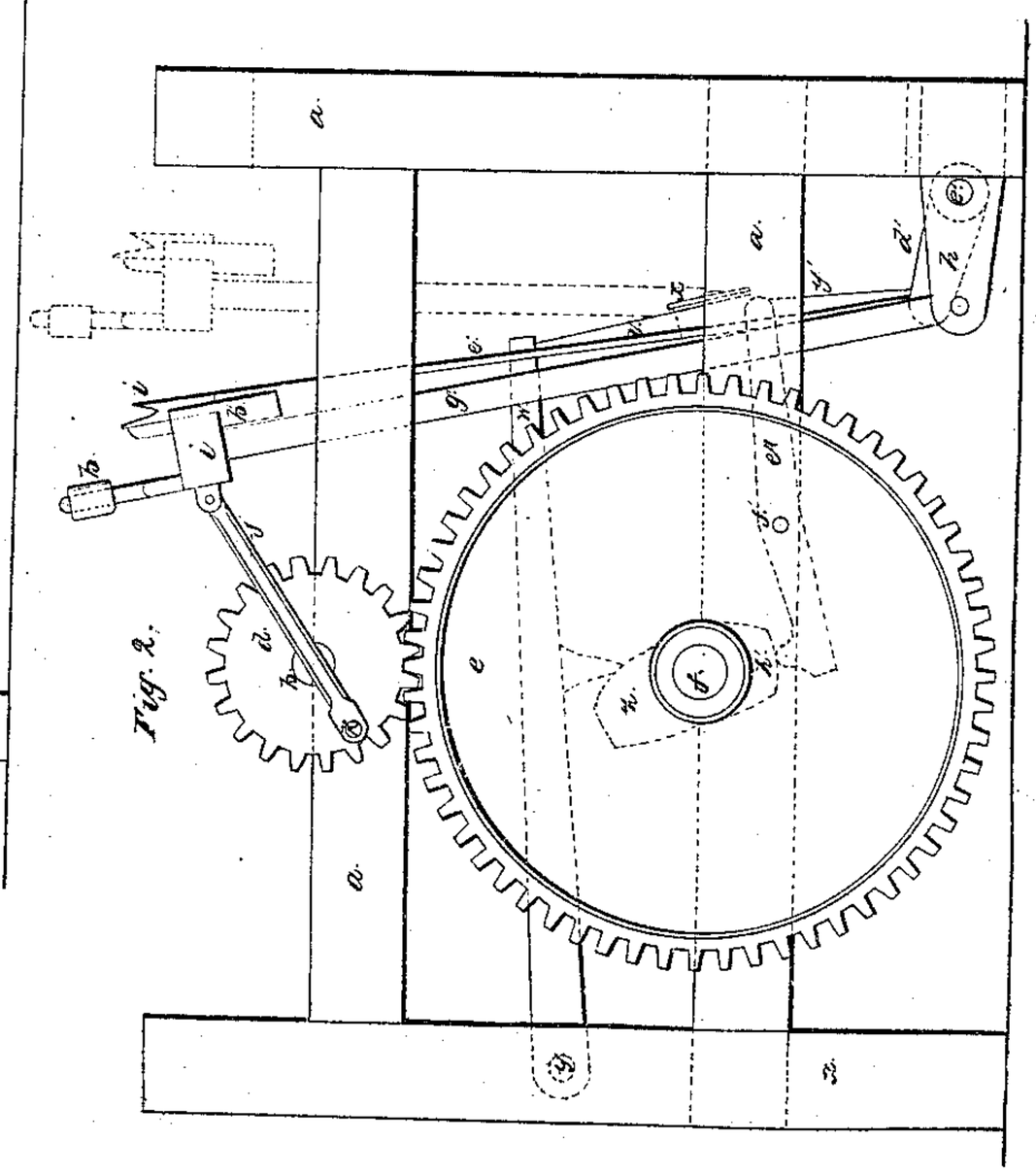

Fig. 2.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

E. B. BIGELOW, OF BOSTON, MASSACHUSETTS.

LOOM FOR WEAVING BRUSSELS CARPETS, &c.

Specification forming part of Letters Patent No. 6,153, dated March 10, 1849; Reissued October 9, 1849, No. 147.

To all whom it may concern:

Be it known that I, ERASTUS B. BIGELOW, of Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented new and useful Improvements in Looms for Weaving Brussels Carpets and other Similarly Wrought Fabrics, of which the following is a full and exact description, reference being had to the accompanying drawings, which form a part of my specification.

My improvements consist in the manner in which the wires over which the pile is wrought are introduced between warps.

The drawings represent only such parts as are necessary to exemplify my improvements.

Figure 1, is an end view of the loom. Fig. 2, is a front view with the breast beam removed to show the lathe. Fig. 3, is an enlarged view of a part of the right hand end of the race beam, and trough for receiving the wires. Fig. 4, is a plan of the same. Fig. 5, is a section of the lathe showing the toothed guide. Fig. 6, is a section of the shuttle box and trough.

The frame of the loom is represented by *a*, *a*, *a*. *b*, is the lathe shaft which has the driving pulley *c*, affixed to its right hand end. To the other end of the lathe shaft *b*, the cogged wheel *d*, is affixed which engages with the cogged wheel *e*. The relative proportions of the cogged wheels *d*, and *e*, are as one of the former, to three of the latter. The cogged wheel *e* is affixed to and turns the cam shaft *f*. *g*, *g*, are the swords of the lathe which are supported at their lower ends by the stands *h*, *h*, projecting from the frame *a*. *i* represents the race beam of the lathe connected with the upper ends of the swords *g*, *g*. The lathe is connected with the lathe shaft *b*, by the connecting bars *j*, *j*, one of which is attached to the driving pulley *c*, and the other to the cogged wheel *d*, by their respective stud pins *k*, *k*. *l*, represents the reed frame in the common form.

To one end of the lathe a shuttle box is applied in the ordinary way as seen at A, Fig. 1; and from the other end of the lathe, the race beam is made to project beyond the shuttle box to support the wire box or trough as seen at B.

The wire box or trough and the toothed guide which coöperates with it to take the wires into the shed of the warps, I shall now describe. The wire box or trough *n*, may be composed of any suitable material, and is formed with a groove opening upward as represented in Fig. 6. The back side of the wire box or trough *n*, is made straight and attached to the front side of the race beam in such a manner as to form the front side of the shuttle box at this end of the lathe, as seen in Fig. 4. *o* represents the back part of the same shuttle box, which is constructed in the ordinary way. A rod *p*, is placed over the groove of the wire box or trough *n*, and is supported by the stands *q*, *q*, as represented in Figs. 1 and 6. *r*, is the wire picker or driver the upper end of which clasps the rod *p*, while the lower end is formed to fill the groove of the wire box or trough *n*. The wire picker *r*, traverses the rod *p*, at proper periods of time, for driving the wire into the warp, and receives its motion from the upright lever *s*. The lever *s*, vibrates on the stud *t*, at its lower end, and is connected at its upper end to the picker *r*, by the pin *j'* which extends from the picker *r*, and works in the slot *u*. *v*, is a strap one end of which is connected with the lever *s*, and the other to the treadle *w*. *x* is a pulley turning upon a stud projecting from one of the swords *g'*, of the lathe, around which the strap *v*, passes to change the direction of its motion. The treadle *w*, vibrates on the stud *y*, shown by the dotted lines in Fig. 2. The cam *z*, is affixed to the cam shaft *f*, and actuates the picker *r*, through the intermediate parts just described. The figuring wires may be drawn from the cloth and transferred to the wire box or trough *n*, in the same manner as described in my Letters Patent for new and useful improvements in machinery for weaving Brussels carpets, &c., dated March 20, 1847.

When a wire is placed in the wire box or trough *n*, as seen in Fig. 6, and the picker *r*, is at the outer end of the rod *p*, it is evident that when the picker *r*, is moved forward toward the loom it will carry the wire along with it into the warp as seen in Fig. 1, where the blue lines represent it as being part way out.

The wires generally used being too small to support their weight for any considerable length out of the wire box or trough, I em-

ploy a vertical toothed guide to support them as they pass into the warps, which I shall now describe.

a' is a plate or bar which is situated on the front side of the racebeam, and slides up and down in the guide plates b', b'. The guide plates b' b' are formed with grooves in their inner edges, which receives their respective ends of the plate or bar a', as seen in Fig. 1.

c' c' are connecting bars, the upper ends of which, are attached to the bar a', and their lower ends to their respective arms d', d'. The arms d', d', are affixed to the shaft e' which is supported by the stands h, h.

e'', is a lever which vibrates on the stud f', and is connected at one end to the arm d', by the bar g', and actuated at the other end by the cam h'. The cam h' is affixed to the cam shaft f and communicates motion to the plate a', through the medium of the intervening parts just described.

i' i' i' are teeth or forks extending upward from the plate a' which form the guide for the wires. These teeth have a groove in their upper ends to receive the wires as represented in Figs. 2 and 5.

The sides of the grooves next to the wire box are made tunnel shaped as shown in Fig. 4 to facilitate the ingress of the wires. The upper ends of the teeth i' i' are made wedge shaped that they may freely pass up between the warps. During the operation of forming the cloth, the toothed guide is depressed so as to bring the points of the teeth i' i' below the warps; then when a wire is to be introduced into the shed of the warps said guide is raised and the teeth pass up through the lower part of the warps to the position shown in the drawing: then after the wire has been driven into the guides i', i', i', by the picker r, said guides fall, and leave the wire in the shed of the warps.

Having fully described my improvement, what I claim as new, and desire to secure by Letters Patent is—

1. The toothed guides i', i', i', employed in the manner and for the purpose above set forth, or in any other way which shall accomplish the same end by analogous means.

2. I also claim the combination of the toothed guides i', i', i', with the wire box or trough n.

ERASTUS B. BIGELOW.

In the presence of—

JAMES W. CALDWELL,
E. H. HEYWOOD.

[FIRST PRINTED 1913.]