

C. R. Penfield, Wood Molding Machine.

N^o 44,774.

Patented Oct. 18, 1864.

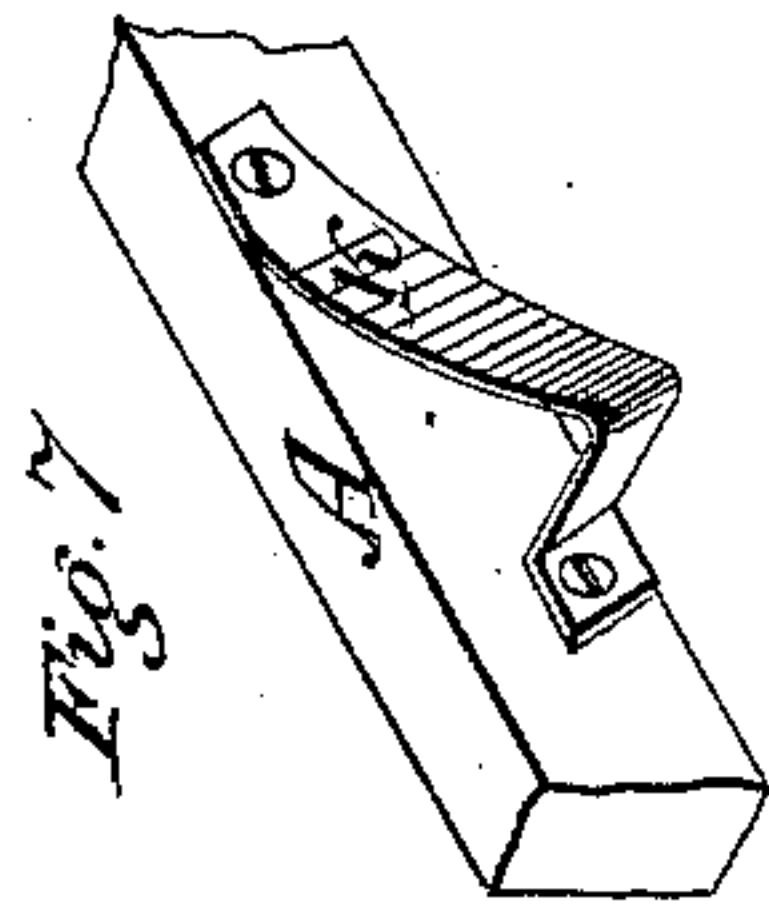
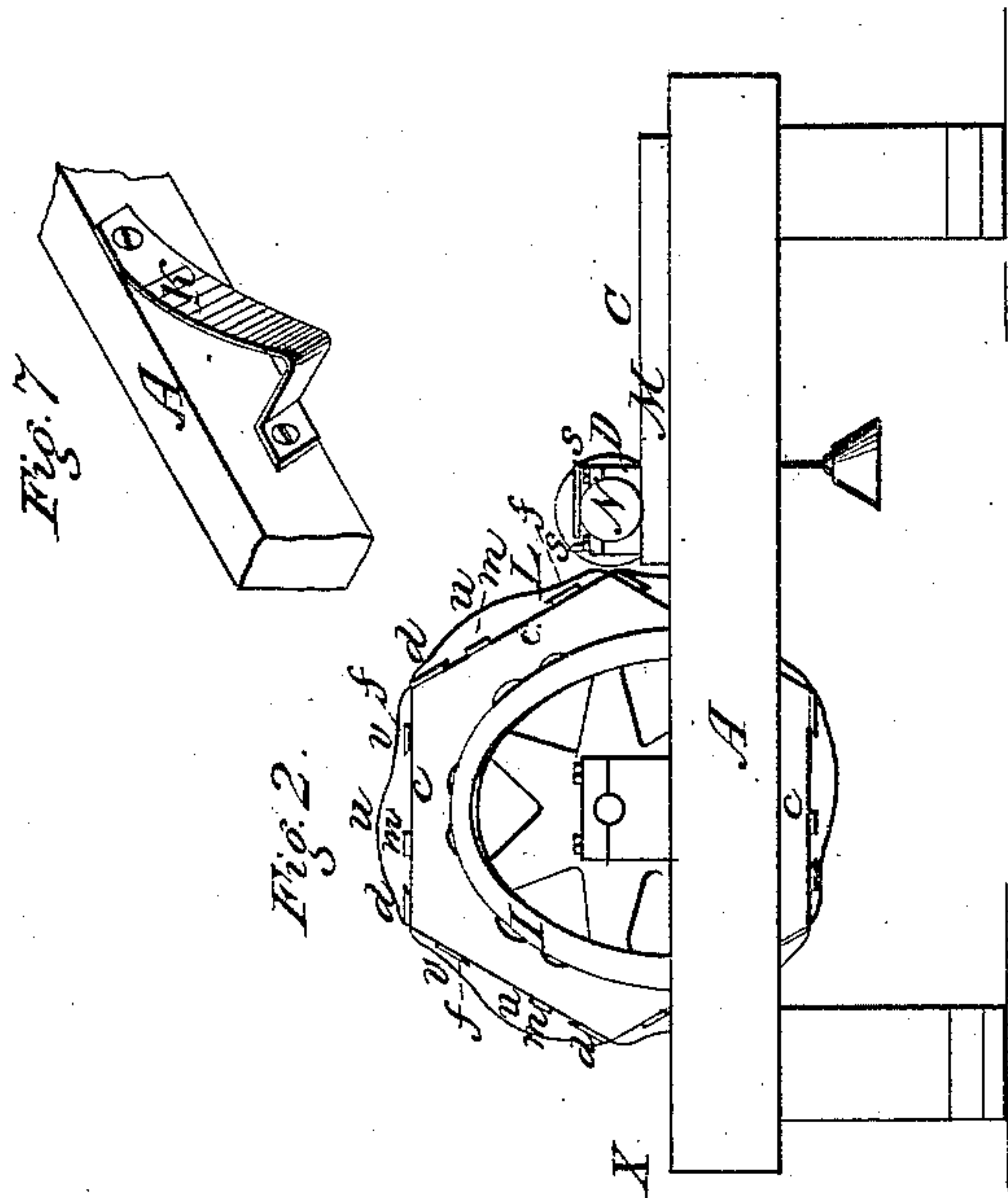


Fig. 2.

Fig. 7.

Fig. 1.

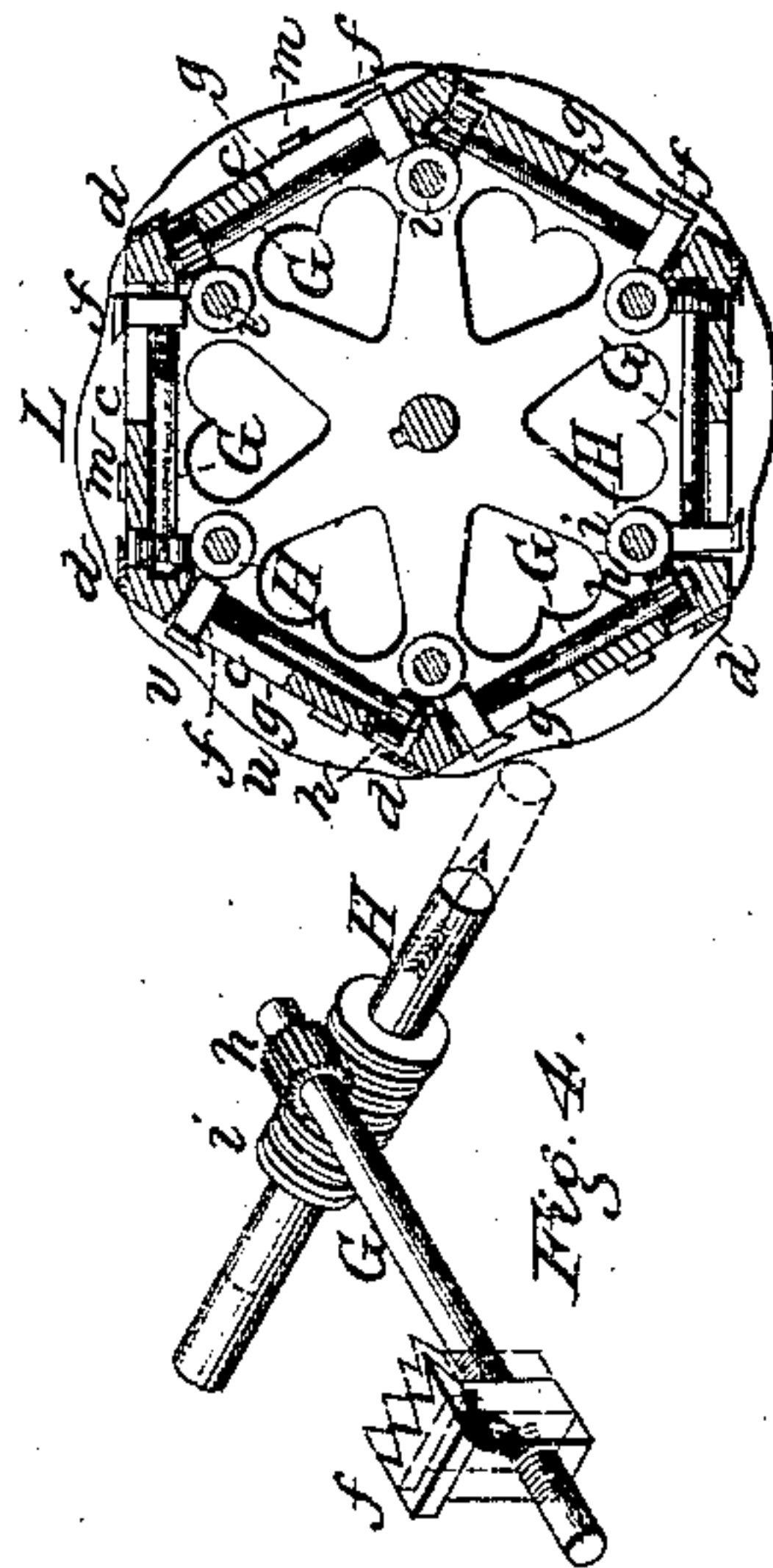
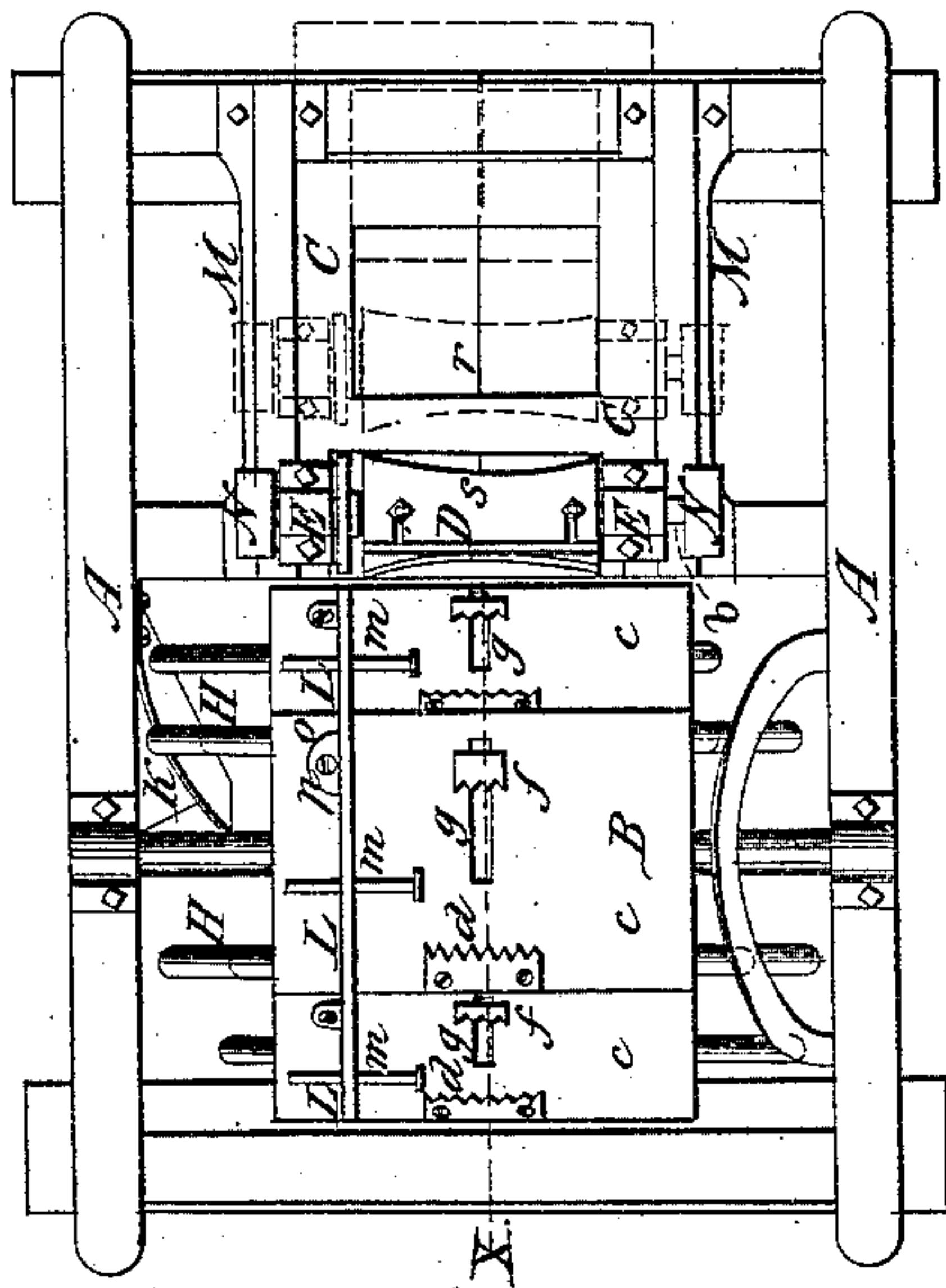


Fig. 4.

Fig. 3.



Fig. 5.

Fig. 6.

Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES R. PENFIELD, OF LOCKPORT, NEW YORK, ASSIGNOR TO HIMSELF
AND GEO. W. PENFIELD, OF SAME PLACE.

IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. 44,774, dated October 18, 1864.

To all whom it may concern:

Be it known that I, CHARLES R. PENFIELD, of Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Machines for Dressing the Cheeks of Ships' Tackle-Blocks; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a plan of my improved machine. Fig. 2 is a side elevation thereof. Fig. 3 is a central vertical cross-section of the drum that holds the blocks to be dressed. Fig. 4 is a perspective view of the apparatus for operating the dogs that clamp the blocks. Fig. 5 is a view showing one of the boxes that support the shaft of the cutter, and exhibiting more particularly the arrangement of the pattern wheel or roller connected with the cutter. Fig. 6 is a view of one of the patterns that give shape to the block, and the stop against which rests the block while being cut; Fig. 7, a view of one of the cams that operate the dogs.

Like letters of reference indicate corresponding parts in all of the figures.

The object of my invention is to produce a machine automatic in its action, in which the rough block is merely placed on the drum, said block being caught and held in place by self-acting dogs, and carried round to a cutter, which gives the proper form in cutting the block, by means of patterns and wheels of the proper form, as will be hereinafter described.

As represented in the drawings, A is a suitable frame, in one end of which is mounted a drum, B, turning on an axis, *a*, and in the other end a sliding carriage, C, sustaining a cutter, D, whose axis *b* rests in suitable boxes, E E. The drum and cutter are so relatively situated that the cutter is in contiguous position to cut the rough blocks as the drum is revolved. The drum is hollow and is formed with plane surfaces *c c c* on its periphery. The form represented in the drawings is hexagonal, but any other that will accomplish the same result may be employed. Centrally on one side of each plane is secured a stationary dog, *d*, and at a suitable distance in front of it is situated a movable dog, *f*. The shank of

this dog extends through a slot, *g*, in the plane, and forms a nut in which turns a screw-shaft, G, whose opposite ends rest in suitable bearings in the drum. At the opposite end from the movable dog the shaft G is provided with a small pinion, *h*, (Figs. 3 and 4,) that engages with the rack or worm *i* of a rod, H, that passes longitudinally out through the opposite ends of the drum, sliding freely therein and projecting beyond, as shown in Fig. 1. The rack or worm *i* extends entirely around the rod, as represented, and it will be seen that if the rod H be moved endwise, (as indicated by the arrow, Fig. 4,) the shaft G will be turned and the dog *f* moved up, as indicated by red lines. Consequently, if the rough wood from which the tackle block is to be turned be placed between the dogs *d* *f*, it will be clamped and held in place.

In order to produce the alternate end motions of the rods H, to clamp the blocks for dressing and to release them when dressed, I secure to the frame, on opposite sides, respectively, cams I and K, about in the position shown in Fig. 1. The cam I is for clamping and K for releasing. The cam I is a circle on the same line with the projecting ends of the rods H, and its top rests in near the end of the drum, so that as the latter comes up in the proper position for the operator to lay the rough block on it, the rod will commence gradually to move inward, thus operating the dog *f* and clamping the block. The block is carried forward in this position till after it has passed the cutter D, when the opposite end of the rod strikes the cam K and forces the dog *f* back again, thus releasing the perfectly-formed block and allowing it to drop off beneath the machine. Since the rough blocks are sometimes somewhat irregular in shape and length, it is necessary to make the cam I elastic, or a spring, so that when the block is of irregular size or grain, as from the presence of knots, and has been clamped to the proper extent, the cam will yield, to prevent splitting the block or breaking of the parts of the machine. This is of the greatest importance, for otherwise the machine would be inoperative.

In order to center the rough blocks as they are placed on the planes of the drum, I employ stops or pins *m m*, which are adjustable

laterally to any desired extent to suit the size of the blocks. These stops pass through mortises *c* in pieces *L L*, secured at the proper position to the planes, and which I denominate "patterns," from their office, which is essentially to give form to the dressed blocks by acting on the cutter, as will hereinafter be described. These patterns have nibs or projections *n* at one end, that fit in corresponding holes in the planes, while at the opposite ends they have flanges *o*, through which pass screws *p* to secure the patterns in place. It is manifest that by loosening the screws *p* the patterns may be sufficiently raised to allow the stops *m* to be adjusted out or in at pleasure, and when screwed down the stops are immovably held.

The periphery or outline edge of the patterns *L* is of the form shown most clearly in Figs. 2 and 3, which corresponds with the contour of the dressed block itself—that is, there is a central swell, *u*, with depressions *v v* on either side.

The carriage *C* rests in guides or ways *M M*, that allow it a free motion forward or backward, and it is held up in position against the drum by means of a weight, *q*, attached to a cord, *r*, passing over a pulley or equivalent on the frame, and attached to the rear of the carriage. I prefer to employ a driving pulley, *N*, at each end of the cutter, in order to allow the carriage to move forward and backward more easily; but if desired but a single one may be employed. The knives *s s*, attached to the cutter, are made hollowing or concave on their edges, as shown most clearly in Fig. 1, so as to perfectly form the rounded outline of the block. One of the boxes *E* of the cutter is provided with a projecting bearing, *t*, at the side, Fig. 5, through which passes the shaft *b*, and on this bearing, coincident with the patterns, turns loosely a friction-wheel, *P*. The bearing *t* is essential to allow the friction-wheel to run regularly and uniformly, which would not be the case were it to rest directly on the shaft of the cutter. A regular and uniform action of the friction-wheel is required to always keep it on a line with the patterns, and were it to turn on the shaft loosely it would soon become displaced by wear.

Thus arranged it will be seen that the friction-wheel *P*, and consequently the cutter *D*, with which it is connected, will be moved back by contact with the curve *u* and follow forward the depressions *v* of the patterns, and the cutter, revolving rapidly, will dress the face of the block of the corresponding shape.

The operation of the machine is obvious. The drum is slowly revolved in the direction of the arrow, Fig. 2, and the operator, standing at *X*, places the rough blocks, piece by piece, on the planes *c*, and the dogs *f f* move up automatically to clamp them in place, this

action being caused by the ends of the rods *H H* coming in contact with the spring-cam *I*. In this condition they are carried forward to the cutter, and the patterns and wheel *L P* give the outline form to the blocks while they are being cut. The opposite ends of the rods *H* then come in contact with the cam *K*, reversing the dogs *f*, and releasing the finished block, which drops to the floor beneath the drum.

This form of the drum, as described, is essential, for the beds *c c*, on which the blocks rest while being cut, must be plane in order to secure a proper bearing, and at the same time they must move up, one after another, in regular succession, so that the blocks may pass through quickly in order to make the work expeditious and economical. A simple cylinder would not answer. And in connection with this peculiar drum, the arrangement of the dogs is such as to catch and hold the blocks with the least difficulty and in the most effectual manner.

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

1. The combination and arrangement of the movable and stationary dogs *d f* with the drum, composed of the planes *c c c*, or their equivalent, in such a manner that the planes present themselves successively to the operator and the dogs clamp the blocks automatically, substantially as herein set forth.

2. In combination with the dog *f*, the screw-shaft *G*, provided with the pinion *n*, and the rod *H*, provided with the rack or worm *i*, the whole being used in connection with the drum *B*, substantially as herein specified.

3. In combination with the rod *H*, shaft *G*, and dog *f*, the spring-cam *I*, which yields when the dogs are fully clamped, substantially as described.

4. The patterns *L* and friction-wheel *P*, in combination with the drum *B*, cutter *D*, and sliding carriage *C*, for the purpose of giving form to the blocks, substantially as herein set forth.

5. Attaching the patterns *L* to the drum by means of the screw *p* and nib *n* when the same is used in combination with the stops *m*, for the purpose of adjusting and holding the latter, substantially as specified.

6. Providing the box *E* with the bearing *t*, for the purpose of sustaining the friction-wheel *P* independent of the shaft *b*, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CHARLES R. PENFIELD.

Witnesses:

J. R. COMPTON,
S. C. LEWIS.