C. W. Packer,

Turning Orals.

No. 43,883. Patented Aug. 16, 1864.

Fig. 4.

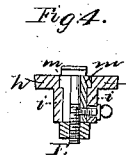


Fig. 1.

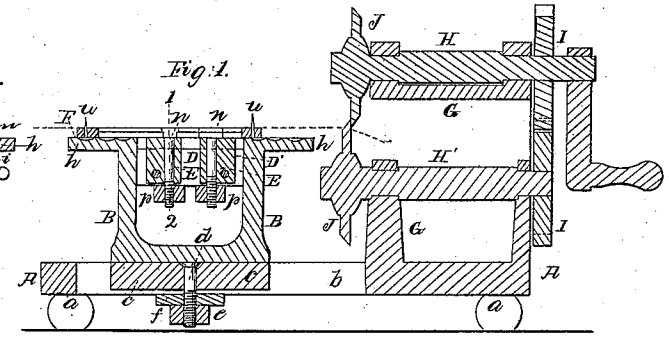


Fig. 2.

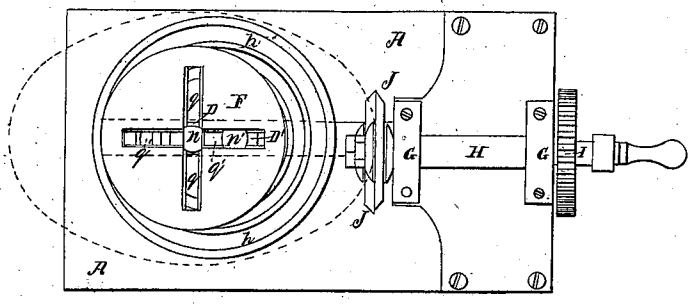
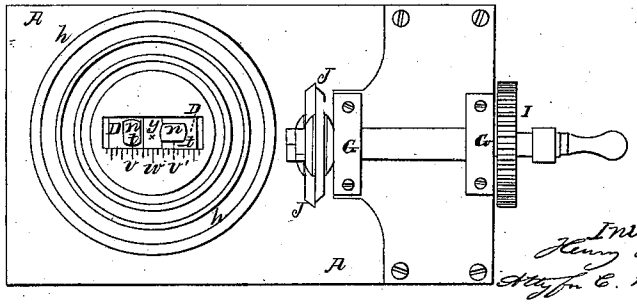


Fig. 3.



Witnesses:
Charles E. Foster.
W. H. Delany.

Inventor:
Henry Howson
Atty for C. W. Packer

UNITED STATES PATENT OFFICE.

CHARLES W. PACKER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND GEORGE BATES, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR CUTTING OVALS.

Specification forming part of Letters Patent No. **43,883**, dated August 16, 1864.

To all whom it may concern:

Be known it that I, C. W. PACKER, of Philadelphia, Pennsylvania, have invented a Machine for Cutting Ovals; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of certain mechanism, fully described hereinafter, for cutting with rapidity and accuracy from paper, pasteboard, and other materials oval forms of different dimensions, to be used in the manufacture of paper boxes, the preparation and mounting of photographic and other oval pictures, and for other purposes.

In order to enable others to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a vertical section of my machine for cutting oval objects; Fig. 2, a plan view; Fig. 3, also plan view with part of the machine removed; and Fig. 4, a vertical section of part of the machine on the line 1 2, Fig. 1.

Similar letters refer to similar parts throughout the several views.

A represents the base-plate of the machine, having suitable legs, *a*, there being in this base-plate a longitudinal slot, *b*, in which an oblong projection, *c*, on the head-stock B is arranged to fit snugly and to slide freely in a longitudinal direction only, the head-stock being secured to the base-plate, after adjustment, by means of the set-screw *d*, nut *e*, and washer *f*. The upper portion of the head-stock consists in a circular plate, *h*, in which, as well as in the two projecting ribs *i i*, underneath the said plate, is an oblong opening for the reception of the two adjustable blocks D and D′, flanges *m m* on each of the latter resting in recesses in the plates, as seen in Fig. 4. A bolt, E, passes through each of these adjustable blocks, each bolt being furnished at the top with an oblong T-shaped head, *n*, and below with a nut, *p*, by means of which the block is secured to the head-stock. On the top of the plate *h* rests another circular plate, F, in which are two longitudinal openings, *q* and *q′*, crossing each other at right angles, these openings being formed for the reception of the T-shaped heads of the bolts E E, which serve to confine the plate F to the plate *h*. A frame, G, is secured to or forms a part of the base-plate A, and in this frame two shafts, H and H′, are caused, by cog-wheels I I, to turn in contrary directions to each other. The portion of each shaft which projects beyond the frame toward the head-stock B is furnished with a circular knife, the cutting-edge of one knife overlapping that of the other at a point coinciding or nearly coinciding with a horizontal line, *x*, level with the surface of the plate F.

Supposing it to be desirable to so adapt the machine as to cut from pasteboard an oval piece suitable for the bottom or cover of a paper box of oval figure, it will be necessary, in the first instance, to determine the size of the oval and the difference between the major and minor diameters of the same.

The head-stock B is adjusted on the base-plate A at a proper distance from the cutting-edges of the circular knives to suit the size of the oval, the head-stock, after this adjustment, being secured by the nut *e*. It then becomes necessary to so adjust the blocks D and D′, in respect to each other and to the center *y* of the plate *h* (see Fig. 3) that the oval cut by the machine shall have a given difference between its major and minor diameters.

It will be observed on reference to Fig. 3 that a graduated scale is marked on one edge of the opening in the plate *h* in which the blocks D and D′ fit. It will also be seen that each of the blocks has a mark directly opposite the hole through which the bolt E passes. The middle mark, *w*, of the scale is directly in a line drawn through the center *y* of the plate *h*, at right angles to the oblong opening for receiving the blocks D and D′.

If it be desirable to cut an oval figure having a major diameter one inch more than its minor diameter, the block D is so adjusted that its mark *t* shall coincide with the mark *v* on the scale, and the block D′ is so adjusted that its mark *t* shall coincide with the mark *v′* of the scale, these marks of the scale being situated one on one side and the other on the opposite side of the central mark, *w*, and both at a distance of a quarter of an inch from the said central mark. After this the upper plate,

F, is placed on the plate *h* in the position shown in Fig. 2, and the bolts D and D′, which had been previously withdrawn, are passed through their respective blocks, the head of the bolt D coinciding with the opening *q* in the said plate *h*, and the head of the bolt D′ with the opening *q′*. The piece of pasteboard is then placed on the plate *h*, where it is held by pins *u*, or by other suitable appliances, the pasteboard, near its outer edge, being situated between the circular cutters, so that when the latter are turned they must sever the board and draw the same, together with the plate F, round in an oval course, for the heads of the bolts D and D′, adapted as they are to the slots *q* and *q′* in the plate F, cause the latter to move in an oval path, on a principle too well known to those familiar with mechanical movements to need explanation.

It will be seen that the machine is applicable to the cutting of photographic and other oval pictures, which it must necessarily do with the greatest accuracy; also, to the cutting of oval forms in the pasteboard sheets frequently framed with pictures, and it may also be used to cut the thin wooden packing used at the backs of oval picture-frames.

The shaft H may be so arranged or the part of the frame in which it turns so constructed that the upper cutting-knife, J, can be temporarily elevated for the purpose of introducing the object to be cut between the edges of the two knives.

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

The combination, for the purpose specified, of the rotating knives J J with a plate, F, which is caused to traverse in an oval course by the devices herein described, or any equivalent to the same.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHAS. W. PACKER.

Witnesses:
CHARLES E. FOSTER,
JOHN WHITE.