

E. Harris.

Making Hooks.

N^o 14,193.

Patented Feb. 5, 1856.

Fig. 3.

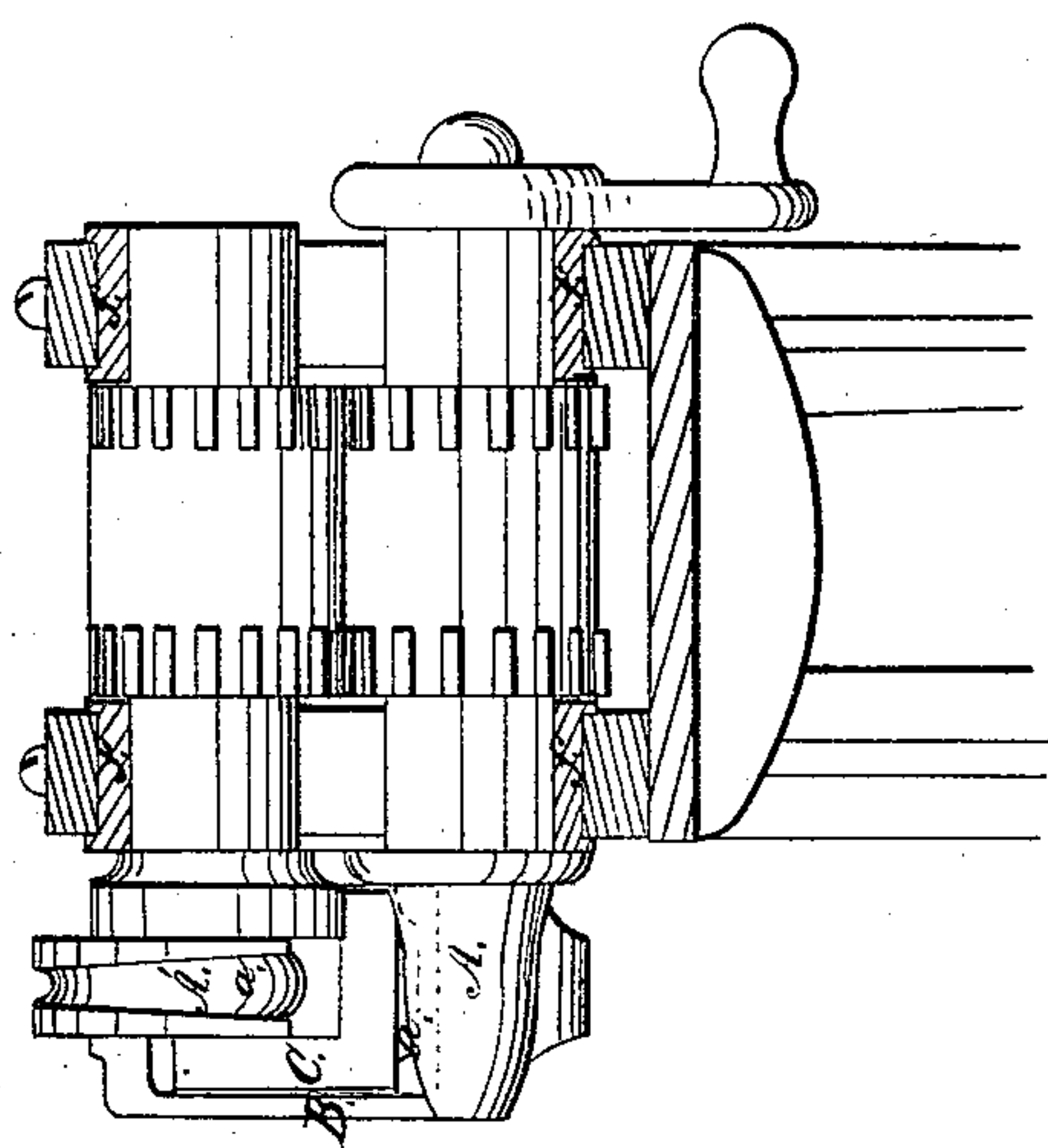


Fig. 1.

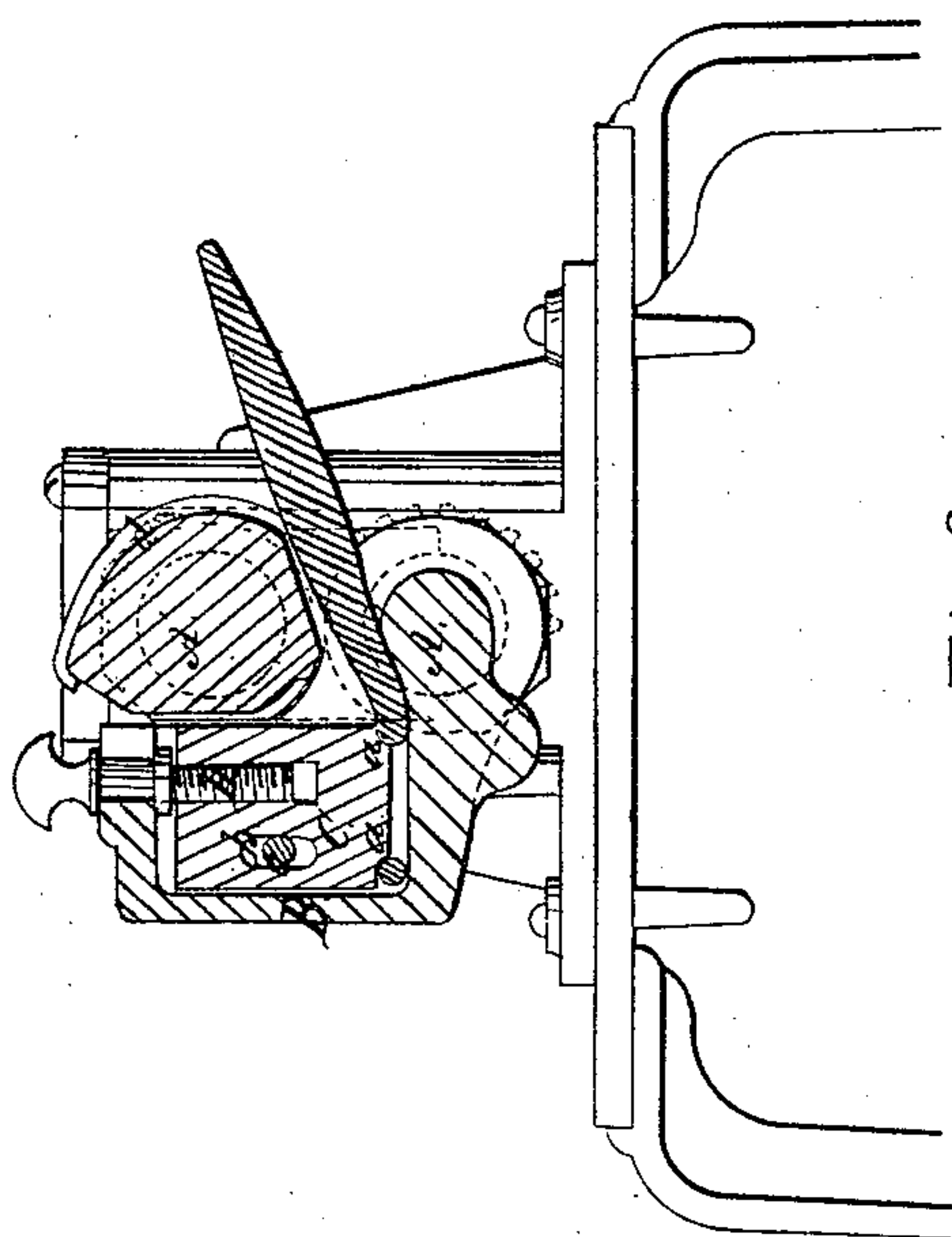
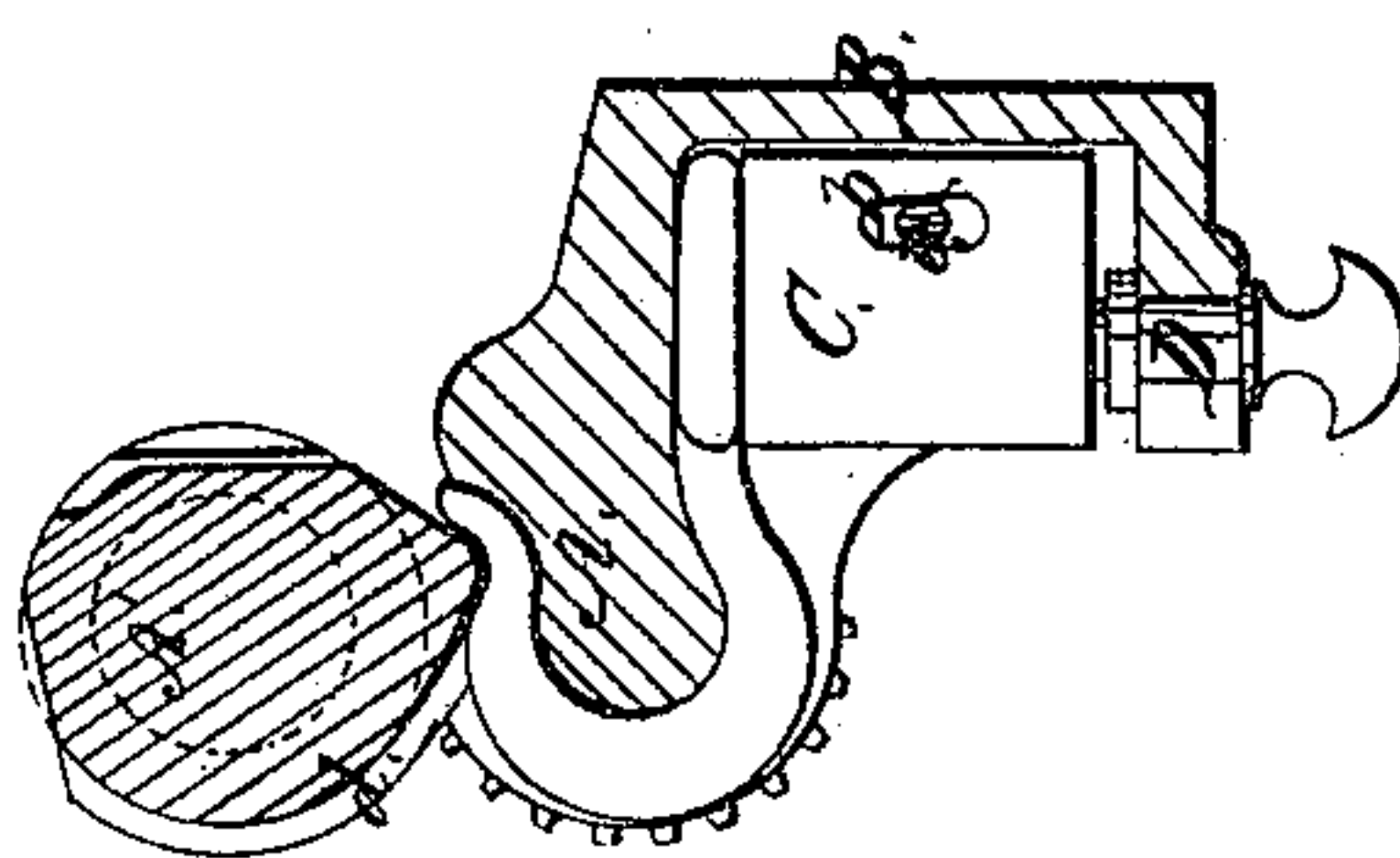


Fig. 2.



UNITED STATES PATENT OFFICE.

ELISHA HARRIS, OF PROVIDENCE, RHODE ISLAND.

MACHINE FOR BENDING SHIPS' HOOKS.

Specification of Letters Patent No. 14,193, dated February 5, 1856.

To all whom it may concern:

Be it known that I, ELISHA HARRIS, of the city and county of Providence and State of Rhode Island, have invented a new and useful Machine for Bending Ship-Hooks, Which is also Applicable to the Bending of other Articles of Similar Shape; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a vertical section of the machine taken through the principal working parts and showing them in condition for commencing the bending operation. Fig. 2, is a similar section of the principal working parts but showing them in their condition after having finished the bending. Fig. 3, is an elevation of the machine as seen in a direction at right angles to Fig. 1, the working parts being shown entire but the frame work of the machine in section.

Similar letters of reference indicate corresponding parts in the several figures.

The machine which forms the subject of this invention consists of two rollers or the equivalents thereof, one of which has a portion of its external form the counterpart of the intended form of the interior of the hook and is provided with a pocket in which the eye of the hook is received and secured during the bending operation, and the other has a form corresponding to the exterior of the hook, the said rollers being constructed arranged and operated as will be presently fully described.

A, A', are two rollers arranged parallel to each other in suitable bearings *f, f*, and geared together in such a manner as to be capable of making any required portion of a revolution together. The lower roller A, is that around which the hook is to be bent, and therefore is made of the intended form of the interior of the hook as is illustrated in Fig. 2, where the finished hook is shown colored red. What I term the pocket of this roller consists of a box B, cast on one side of the roller, (the whole being of cast iron) and fitted with a sliding clamp C, which is formed with a circular boss *a, a*, at its end of a size to enter into the eye of the hook as shown in Fig. 1, where the hook blank and the clamp are both shown in section, the hook blank being colored red. This clamp is movable by a screw D, in such a manner as to allow the eye of the

hook to be inserted in the box, and after it is inserted to secure it to the bottom of the box. It is kept in place by a slot *h*, working on a pin *e*, which is fixed in the box. The upper roller A', is employed to bend the hook blank around the lower roller, and for that purpose is of such form as to confine the blank to the exterior surface of the roller A. In order to prevent the upper roller A', from flattening the blank under the pressure necessary for the operation, its surface is grooved to suit the form of the blank.

The hook blank before being brought to this machine has been so forged as only to require bending to make a finished hook. It is heated to a sufficient degree and brought to the machine, the rollers being brought to the position shown in Fig. 1, and the clamp C, unscrewed and drawn up high enough for the eye of the blank to be received in the pocket. When the eye is placed in the pocket the clamp is brought down by the screw D, as shown in Fig. 1, by which means the blank receives a slight bend, as shown in Fig. 1. Power is then applied to turn the rollers about half a revolution by which means the hook is bent around the lower roller A, as shown in Fig. 2. After this has been effected the rollers are turned back again to the position shown in Fig. 1, and the clamp C, unscrewed, to allow the hook to be drawn off the end of the roller A. This roller is tapered toward its end as shown in Fig. 3, to allow the hook to come off.

It may be here remarked that owing to the unnecessarily larger size of the roller A', it has a tendency during the bending operation to force back the hook toward the pocket, by which means it is slackened on the roller A, and prevented hugging it closely and by that means the hook is enabled to be easily drawn off the latter roller when finished.

What I claim as new in this machine and desire to secure by Letters Patent is—

The roller or former A, of the intended form of the interior of the hook provided with a pocket or clamp for securing the eye of the hook blank during the bending operation substantially as herein described.

ELISHA HARRIS.

Witnesses:

JOHN F. TOBEY,
CHAS. V. WARE.