

No. 606,916.

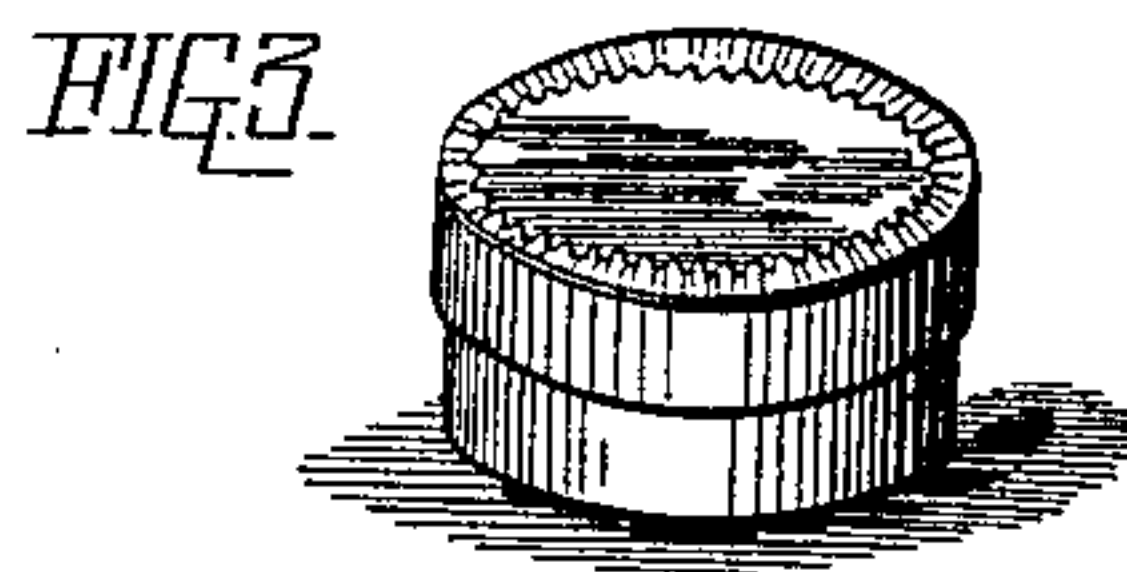
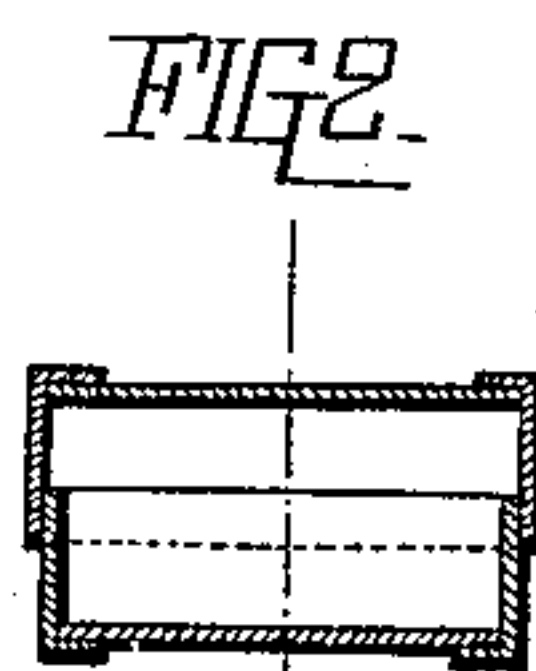
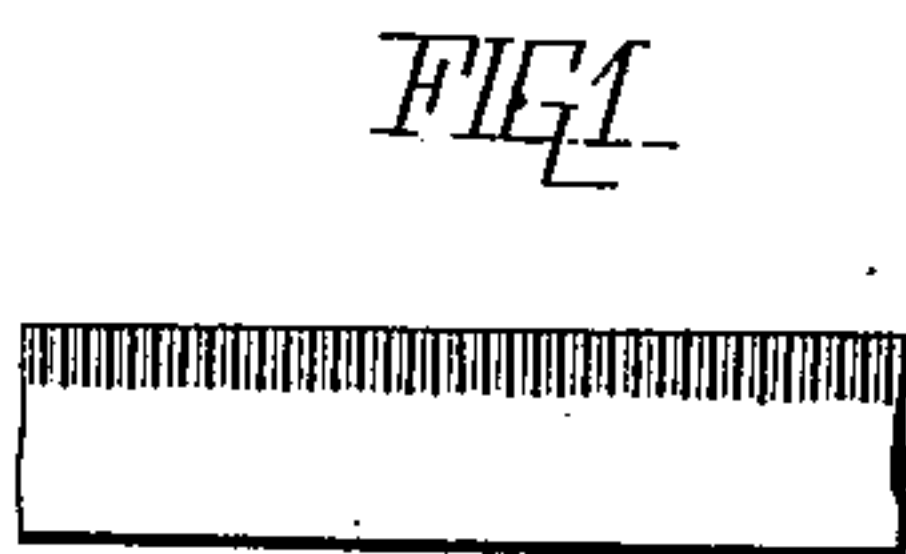
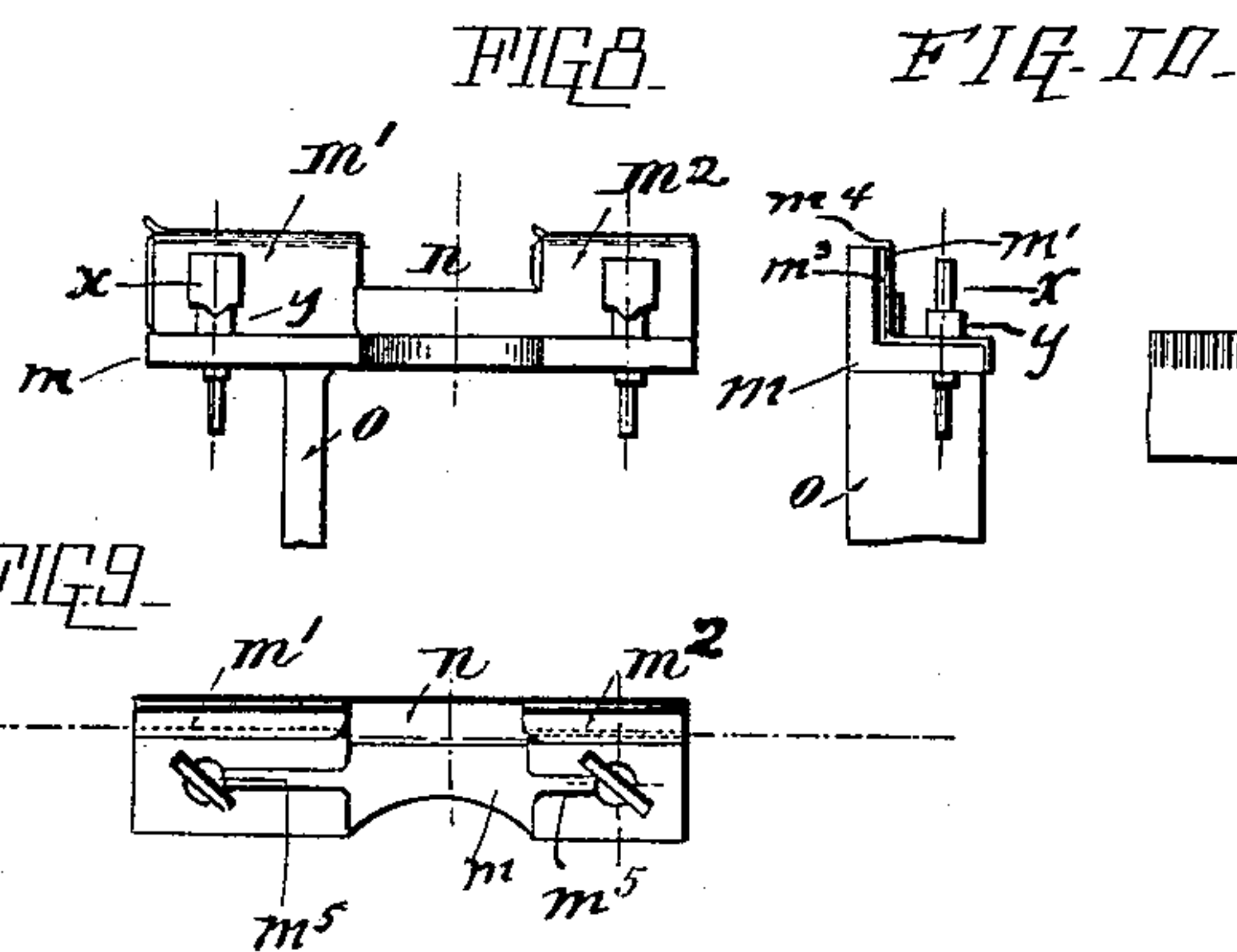
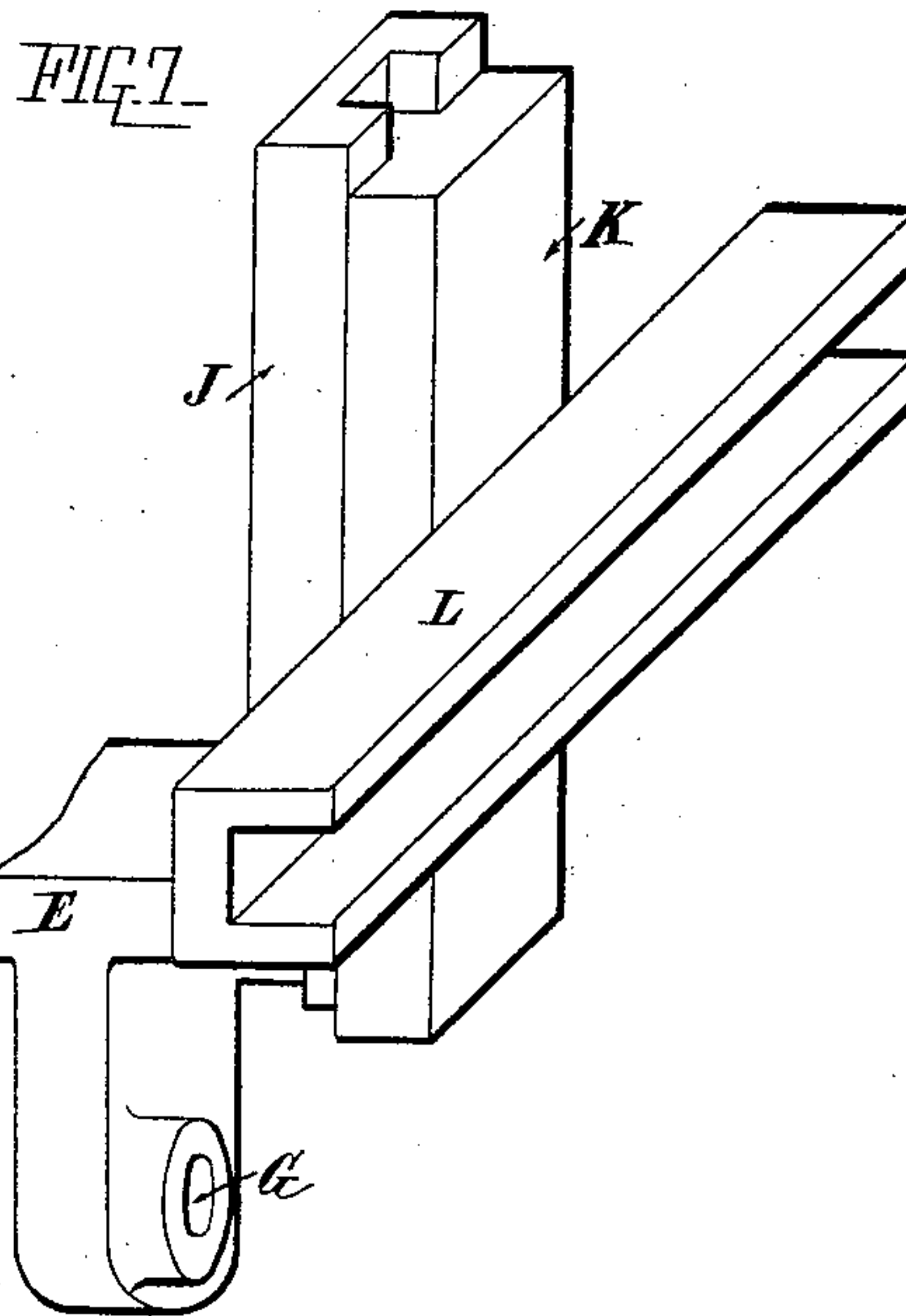
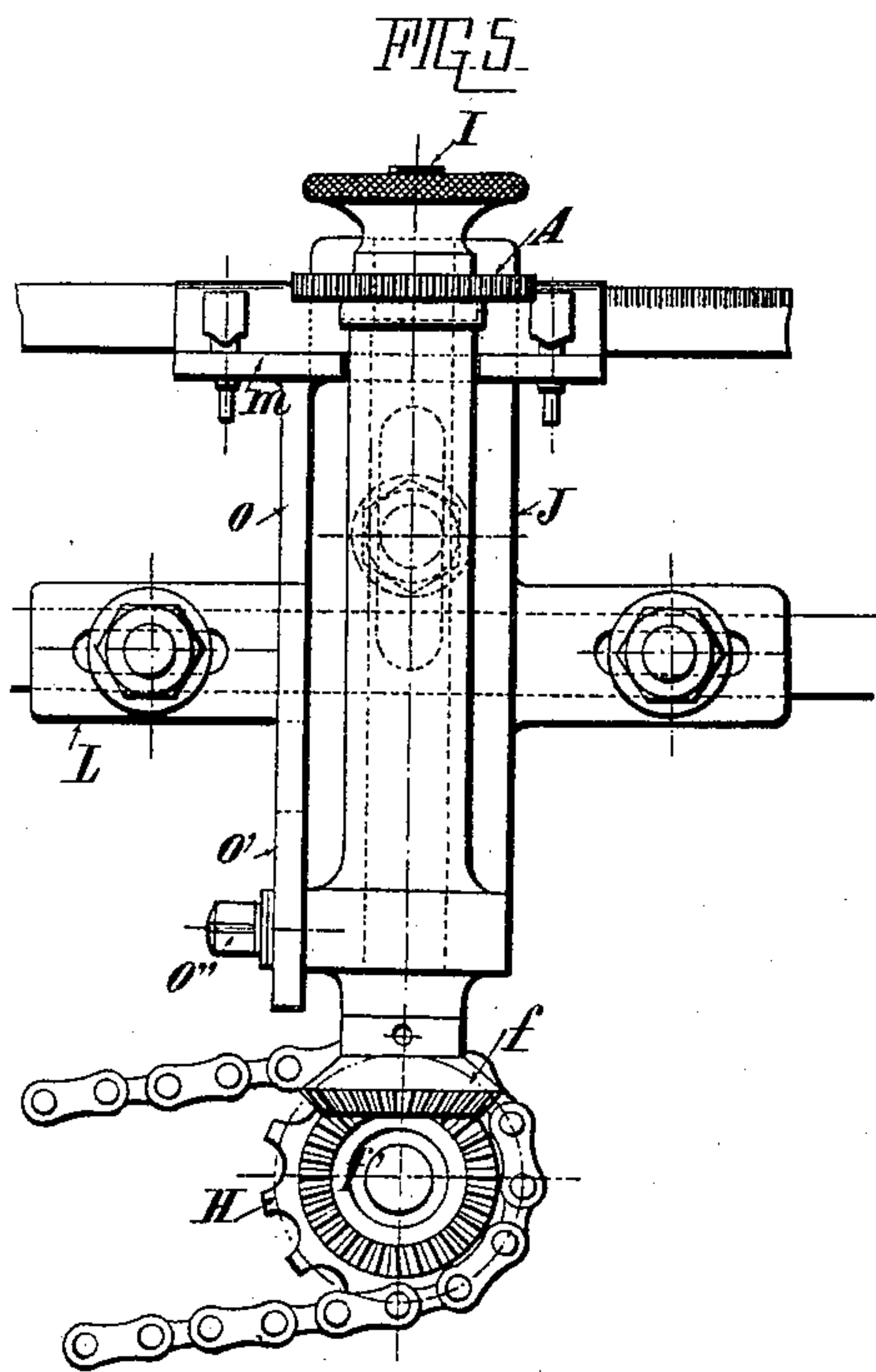
Patented July 5, 1898.

P. A. CARTIER.  
MACHINE FOR MAKING PAPER BOXES.

(No Model.)

(Application filed Aug. 25, 1897.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

FIG. 4

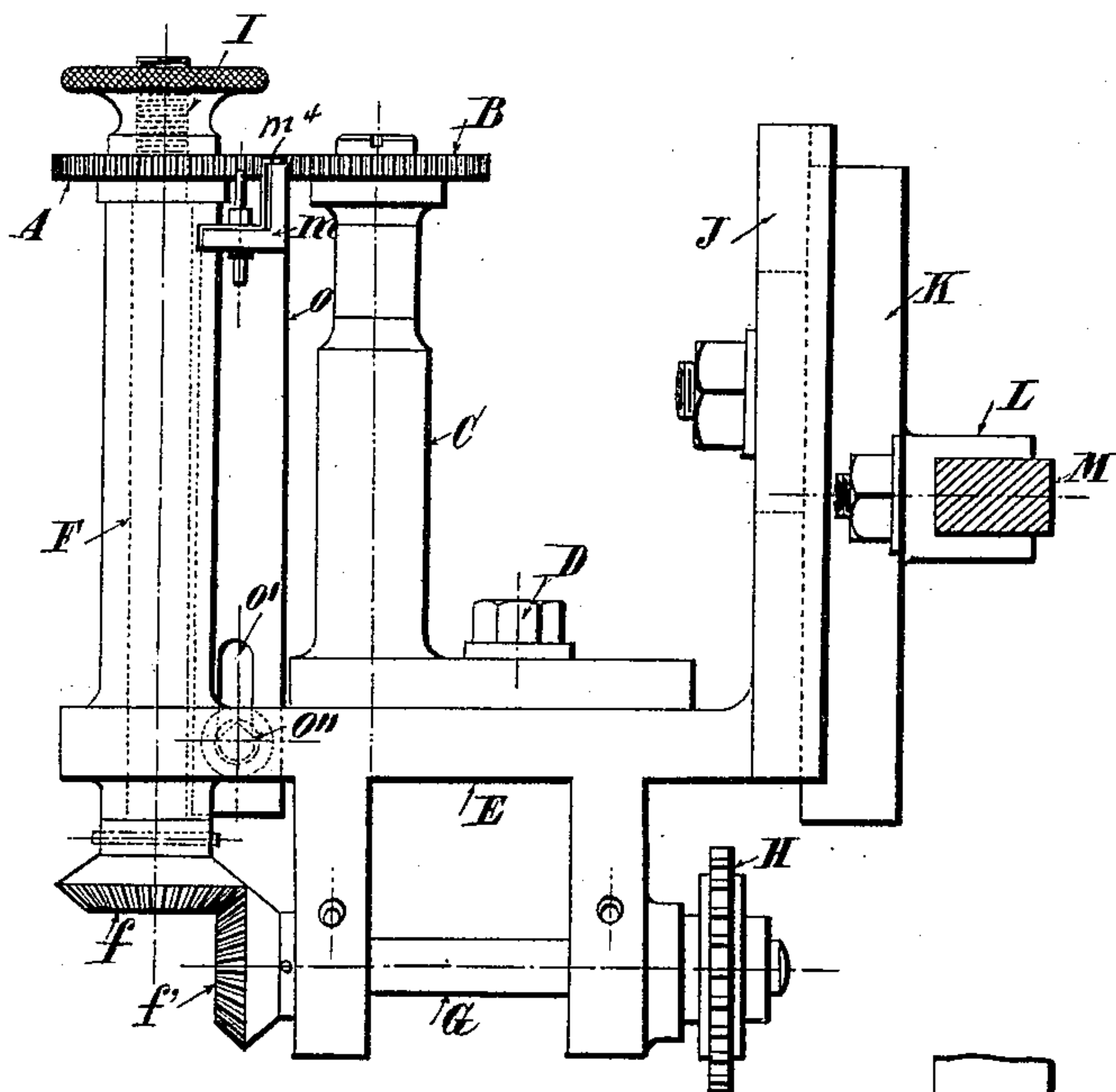
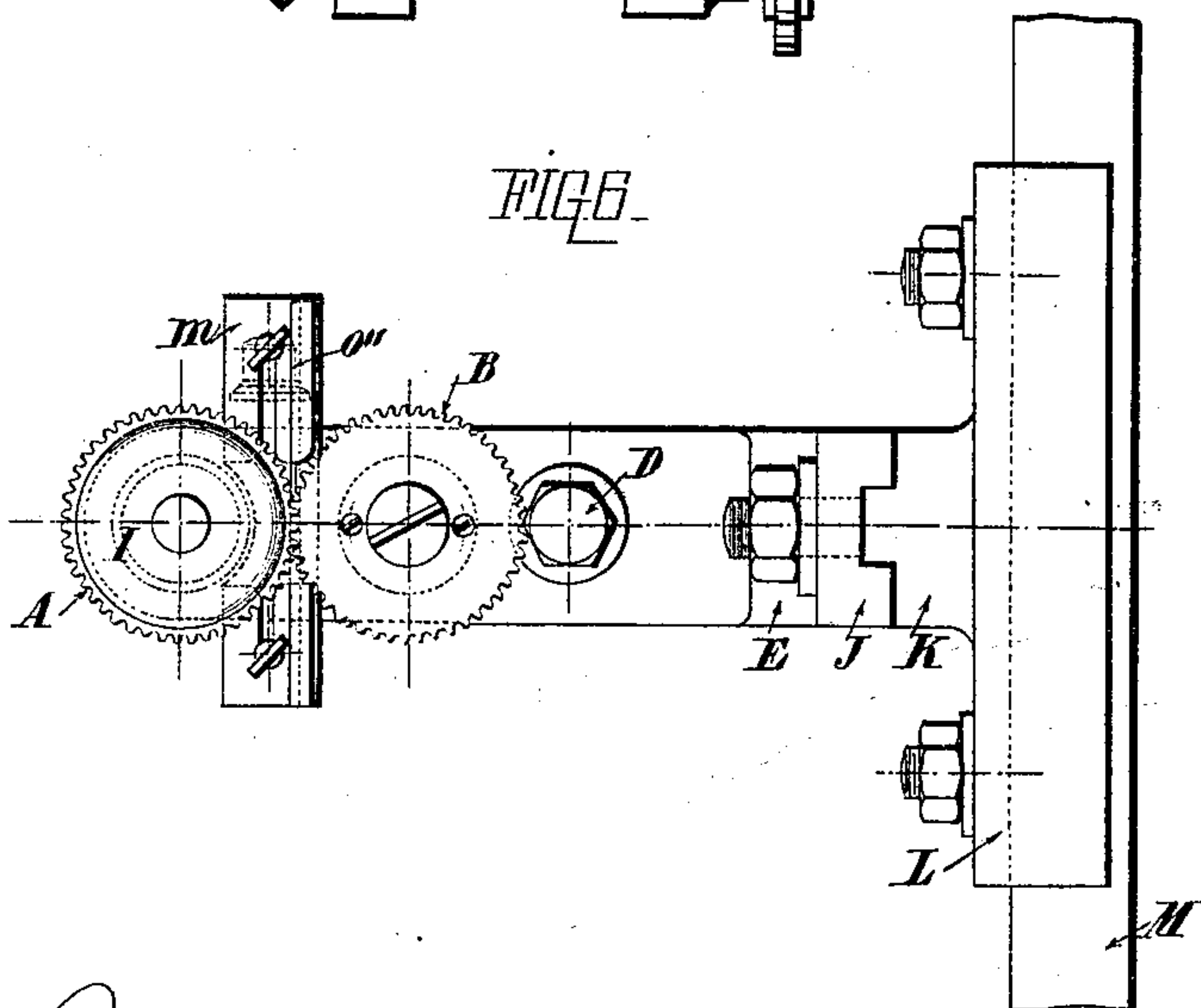


FIG. 5



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# UNITED STATES PATENT OFFICE.

PAUL ADOLPHE CARTIER, OF DARNETAL, FRANCE.

## MACHINE FOR MAKING PAPER BOXES.

SPECIFICATION forming part of Letters Patent No. 606,916, dated July 5, 1898.

Application filed August 25, 1897. Serial No. 649,455. (No model.)

*To all whom it may concern:*

Be it known that I, PAUL ADOLPHE CARTIER, a citizen of France, residing at Darnetal, France, have invented certain new and useful Improvements in Machines for Making Paper Boxes, of which the following is a specification.

As is well known in the manufacture of boxes of paper, cardboard, &c., and in particular in the manufacture of boxes of round, oval, or analogous shapes, the material employed sometimes becomes creased at its edges or becomes bent in an irregular manner under the action of the mechanical parts which are designed to impart the shape to the box which it is desired to produce. Consequently the box when finished has a slovenly appearance.

The object of this invention is to remedy the defects above mentioned and to enable the paper, cardboard, &c., to assume in a more perfect manner the shape of the mechanical parts on which the boxes are formed. To this end the strips of the material employed (paper, cardboard, &c.) are subjected to a particular preparatory operation consisting in milling one of the edges of the strip. The edge thus milled is that edge which is to be turned down in the manufacture of the boxes for the purpose of being pasted on the disk of cardboard, which forms either the bottom of the box proper or the head of the cover, according as one or the other is being made.

The milling of the edge of the strip of paper designed for the manufacture of paper boxes is effected by the apparatus forming the subject of this invention, which consists of certain features of construction and combinations of parts to be hereinafter described and then claimed.

In the accompanying drawings, Figure 1 is a view in elevation of a strip of cardboard having one of its edges milled by the machine forming part of my invention. Fig. 2 is a vertical central section of a box constructed by my machine. Fig. 3 is a perspective view of the box. Fig. 4 is a front elevation of the machine. Fig. 5 is a side elevation, and Fig. 6 is a plan thereof. Fig. 7 is a fragmental view showing in perspective the manner in which the machine is adjusted upon its sup-

port. Figs. 8, 9, and 10 are side, top, and end views of details of construction.

Similar letters of reference indicate corresponding parts.

As shown in the accompanying drawings, the apparatus consists, essentially, of two milling-wheels A and B, Fig. 4. The teeth of the milling-wheels may have any suitable form. They may be straight or inclined, narrow or wide. The milling-wheel B is mounted on a shaft situated inside a sleeve C, fixed by a screw D on the frame E of the apparatus. This milling-wheel rotates simply in consequence of the rotation of the other milling-wheel A, with which it gears. The milling-wheel A is mounted loosely on the shaft F, which carries at its lower part a bevel-wheel f, gearing with another bevel-wheel f', mounted on the shaft G, which receives rotary motion by means of a power-driven sprocket-chain H. A milled nut I, screwed on the threaded upper part of the shaft F, binds the wheel A to the shaft F, so as to cause it to rotate with the same.

The frame E, Fig. 4, which carries all the parts above mentioned, is provided with a slotted and grooved extension J, which is adjustably secured to the part K of the support, Fig. 7, by means of a rib engaging said groove. A threaded bolt carried by the part K passes through the slot formed in the extension J and is provided with a binding-nut by which the parts are locked in their adjusted position. Integral with the part K of the support is a slotted part L, horizontally arranged thereto and provided with a groove which allows the apparatus to be shifted horizontally along a bar or straight edge M, Fig. 4, fixed upon the framing of the machine in which the paper strips are to be used for the manufacture of the boxes on leaving the milling apparatus just described. Binding-bolts carried by the said edge M extend through the slots of the part L and permit the locking of the parts in their adjusted position.

The paper strip, one of whose edges is to be milled, must be guided during the action of the milling-wheels A and B. For this purpose a guideway for the paper strip is composed of a rectangular bracket m, which is supported on an upright plate o. On this bracket are mounted two plates of copper m'



$m^2$ , which are bent at an angle corresponding to the rectangular bracket  $m$  in such a manner that their horizontal portions rest on the horizontal portion of the bracket, while between the vertical portion of the plates and the vertical portion of the bracket  $m$  is left a small space  $m^3$ . The copper plates  $m' m^2$  are bent at their upper ends over the edge of the vertical portion of bracket  $m$ , as shown at  $m^4$ , which bent-over portion has a bearing on the upper edge of the bracket. In this manner a guideway is obtained for the paper strip between the vertical portions of the bracket and the copper plate.

The recess  $n$  is located midway of the guideway formed by the angular bracket and angular plates  $m' m^2$ , into which recess extend the intermeshing gear-wheels by which the forward feed of the paper strip is produced. The recess  $n$  has to be of sufficient size for permitting the proper intermeshing of the gear-wheels. The horizontal portions of the copper plates  $m' m^2$  are provided with slots by which they may be adjusted along a screw post  $x$  and clamped by thumb-nuts  $y$ . By means of the slotted portions and the screws the curved plates may be adjusted farther away or closer to each other, so as to change the length of the recess  $n$ , according to requirement. The edge of the paper strip can thus be subjected to the action of the milling-wheels A and B during its passage through the guideway and be gripped between these two milling-wheels, which gear one with the other, while having sufficient play to allow of the passage of the paper strip. Obviously it is necessary to regulate the height of the guideway according to the width of the milled part to be produced and also according to the depth of the strips used. For this purpose

the bracket  $m$ , Fig. 8, is supported by a rod O, Figs. 4 and 8, which is adapted to be fixed upon the frame E of the apparatus by means of a fixing-bolt O'', passing in an elongated hole O'.

In the manufacture of boxes with milled strips the disks designed to constitute the bottom of the box and the head of the lid are not milled. It is only the strips which are designed to be turned down over the said bottom and head which are subjected to the milling operation.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a machine for making paper boxes, the combination with a vertically and horizontally adjustable frame, of a milling-wheel loosely mounted in said frame, a power-driven shaft, a milling-wheel fixed upon said shaft and loosely meshing with said loosely-mounted milling-wheel, and a vertically-adjustable guideway located between said milling-wheels, substantially as set forth.

2. In a machine for making paper boxes, the combination with a suitable frame, milling-wheels carried by said frame and means for operating said milling-wheels, of a guideway constructed of a rectangular bracket provided with a central recess, adjustable plates carried by said bracket and shaped to conform therewith, and means for vertically adjusting said bracket, substantially as set forth.

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

PAUL ADOLPHE CARTIER.

Witnesses:

EDWARD P. MACLEAN,  
 ANTOINE ROUTTANNES.