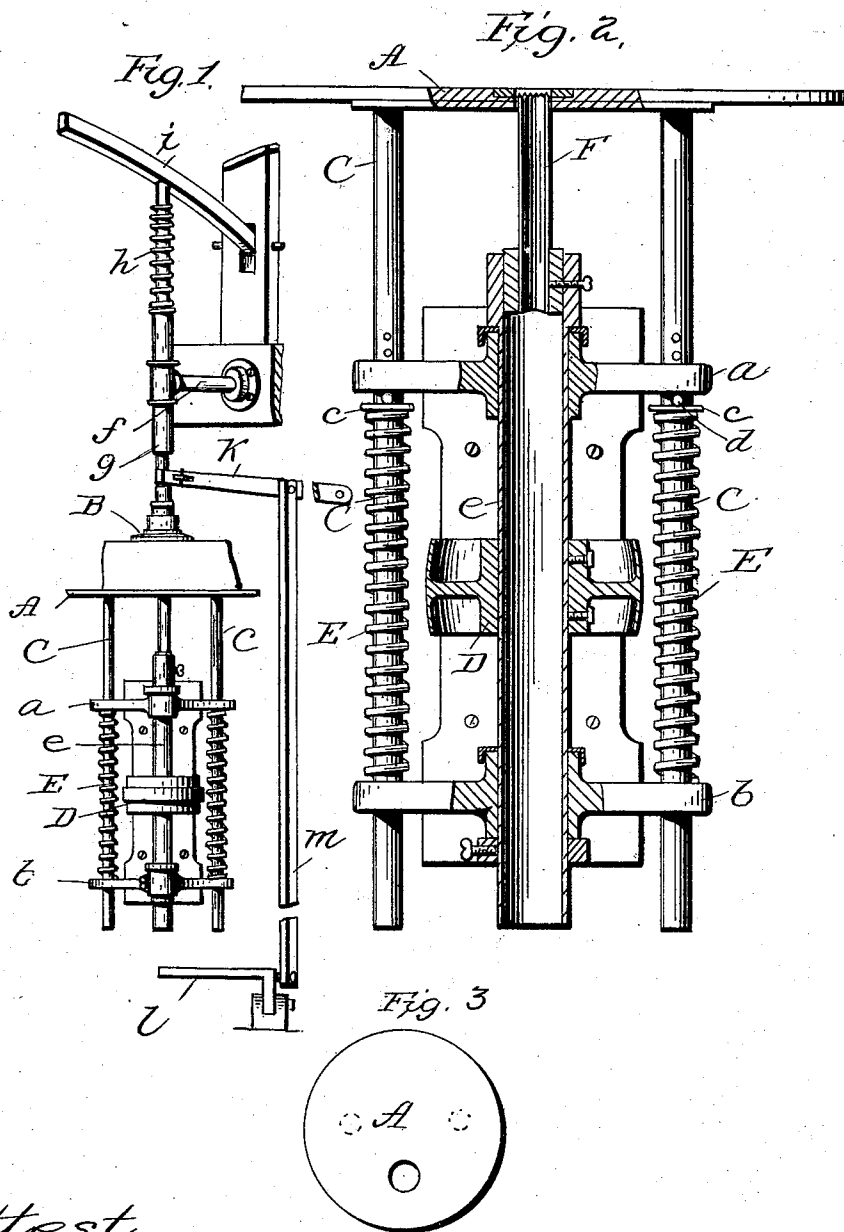


(No Model.)

A. J. BIRD.
PUNCHING CUTTER.

No. 506,661.

Patented Oct. 17, 1893.



Attest
J. L. Middleton

Inventor
A. J. Bird
by Geo. Sprar
Att'y

UNITED STATES PATENT OFFICE.

ADONIRAM J. BIRD, OF ROCKLAND, MAINE.

PUNCHING-CUTTER.

SPECIFICATION forming part of Letters Patent No. 506,661, dated October 17, 1893.

Application filed February 14, 1893. Serial No. 462,275. (No model.)

To all whom it may concern:

Be it known that I, ADONIRAM J. BIRD, a citizen of the United States of America, residing at Rockland, in the county of Knox and State of Maine, have invented certain new and useful Improvements in Punching-Cutters, of which the following is a specification.

My invention relates to a machine for the manufacture of lime pencils or cylinders adapted for use with calcium lights or in any other situation where cylinders or pencils can be used or where they would be desirable.

My invention consists broadly of a table adapted to receive the material to be operated upon, and a tubular cutter adapted to be forced through the material to cut out the pencil or cylinder from the material which passes down through the cutter to a suitable discharge.

The invention further consists in the various details of construction hereinafter more particularly set forth.

In the accompanying drawings Figure 1, is a front elevation of a portion of the mechanism, partly in perspective, and Fig. 2, an enlarged front view, partly in section. Fig. 3 is a plan view of the table.

In the drawings the supporting table A is shown as circular though it may be of any shape and has a flat upper surface to receive the material to be operated upon. It is connected to downwardly extending guide rods C, which pass through brackets *a*, *b*, and between these brackets spiral springs E encircle the ends of the guide rods bearing against the lower bracket *b*. The upper ends of the springs bear against washer *c* secured to the guide rods and the tension of the springs and consequently the upward movement of the table is increased or diminished by adjusting the washer through the means of a pin *d*, and a series of holes in the guide rods. It will thus be seen that the table is kept normally raised by the pressure of the springs and in operation it is depressed against the pressure of these springs as will be more fully hereinafter described.

Arranged centrally of the guide rods C, is

a hollow shaft *e* adapted to rotate in bearings in the brackets *a*, *b*, and having secured to it a band wheel D which is driven from any suitable source of power to rotate the said shaft. Secured to the upper end of this hollow shaft is a hollow cutter F held in place by means of a thumb screw so that it may be readily removed or adjusted as may be found necessary. The upper end of this tubular cutter is serrated or toothed so that when the lime or other material is placed upon the table it is positioned over an opening therein which is in direct line with the cutter F. The table is depressed against the cutter which in its rotation cuts into the material and cuts out therefrom a pencil or cylinder which passes down through the cutter and through the hollow shaft into a receptacle adapted to receive the pencil.

Pressure is applied to the material by means of a pressure plate B in the form of a disk which is supported by a sleeve extending from a bracket F the spindle of the disk extending through the sleeve *g*, and connected with a handle *i*, and surrounded by a spring *h*, so that the disk will be kept normally raised. The lower end of the spindle is connected to the end of a pivoted lever K and this lever is connected to a treadle *l*, through a rod *m*, so that the disk may be depressed to force the material and table downward by both hand and foot pressure. After the material is placed upon the table A, the disk is brought into contact with it and the disk and material with the table forced down upon the rotating tubular cutter with the result specified.

Suitable oil cups may be provided to lubricate the upper and lower bearings of the shaft *e*.

I do not limit myself to the particular material operated upon as any material may be used of this general character in connection with the apparatus out of which it may be found desirable to cut cylinders.

What I claim is—

In combination with the rotary cutter, the vertically movable table supported upon slid-

ing rods, springs for holding the table normally raised and the work out of contact with the cutter, a pressure disk supported from a vertically reciprocating rod, a spring surrounding said rod for keeping the pressure disk normally raised, a hand lever bearing upon the upper end of the rod, and a foot lever also connected to said rod for forcing the

table and material thereon down upon the cutter, substantially as described. 10

In testimony whereof I affix my signature in presence of two witnesses.

ADONIRAM J. BIRD.

Witnesses:

ORLANDO S. TRUSSELL,
AUGUSTUS D. BIRD.