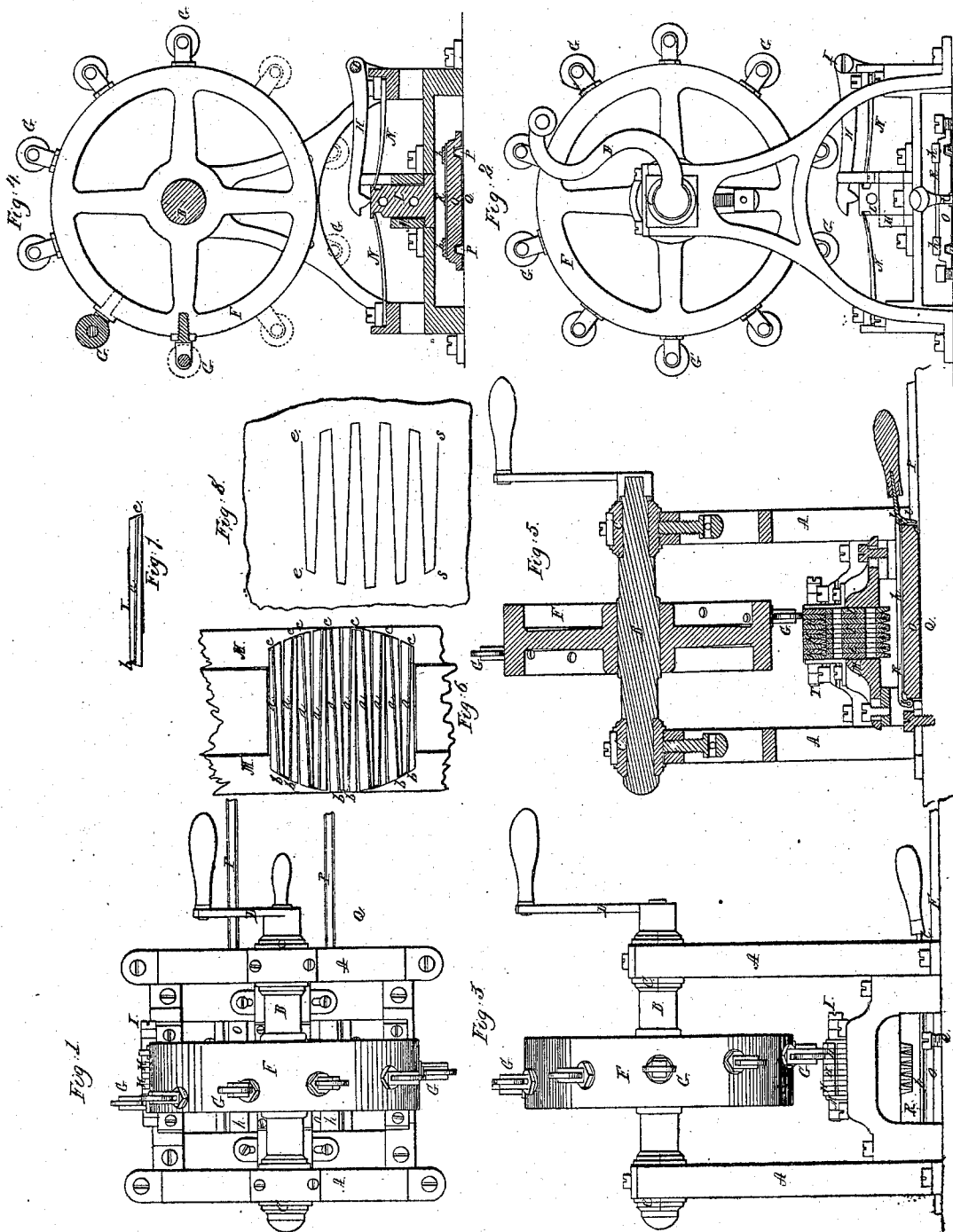


H. S. COOK.  
 COMB CUTTING MACHINE.

No. 8,129.

Patented June 3, 1851.



# UNITED STATES PATENT OFFICE.

H. S. COOK, OF LEOMINSTER, MASSACHUSETTS, ASSIGNOR TO HORACE S. COOK AND S. COLBURN.

## COMB-CUTTING MACHINE.

Specification of Letters Patent No. 8,129, dated June 3, 1851.

*To all whom it may concern:*

Be it known that I, HORACE S. COOK, of Leominster, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Machinery for Cutting or Stamping Combs Out of Plates of Tortoise-Shell, Horn, or other Suitable Material; and I do hereby declare that the same is fully described and represented in the following specification, the accompanying drawings, letters, figures, and references thereof.

Figure 1 of the said drawings denotes a top view of my improved machine. Fig. 2 is an end elevation of it, exhibiting the end thereof, on which the driving crank is situated. Fig. 3, is a side elevation of it. Fig. 4, is a vertical and transverse section and Fig. 5, is a vertical central and longitudinal section of it. Fig. 6, is an underside view of the series of cutters.

In the said drawings A represents the frame work for supporting the operative parts of the mechanism to be hereinafter described.

B is the driving shaft supported and made to revolve in suitable boxes at C, C, and having a crank D or other suitable mechanism properly applied to it for the purpose of putting it in motion or revolution. The driving shaft carries and supports a fly wheel F, to whose perimeter a series of rollers G, G, G, &c., are connected as seen in the drawings. Each of the said rollers being placed in the vertical plane of some one of a series of levers H H H, which turn on a common pin or fulcrum I, at one end while at the other end each of the said levers rests upon one of the series of cutters or stamps L, L, L, &c. The said series of cutters or stamps is disposed in the middle of the machine, and is supported by and made to move vertically up and down within a suitable frame M, and although each cutter is depressed or forced downwards whenever the lever directly over it is depressed, yet such cutter is afterwards raised by the retractive power of two springs N, N, applied to it, and extending toward it from the main frame work as seen in the drawings.

Fig. 7 denotes an edge view of one of the cutters in which it will be seen that such cutter is formed with one long cutting edge a, and two others b and c, extending therefrom as seen in said figure.

By inspection of Fig. 6, it will be seen that the several smaller cutting edges b, b, b, and c, c, c, of the cutters are not disposed in straight lines with each other, but are arranged in curved lines and this for the purpose of producing from a sheet of tortoise shell or horn, what is usually understood by comb makers as the "bottoming," which bottoming consists in arranging the roots of the tooth, as well as their points in curved lines as represented in e, s, in Fig. 8, which denotes a top view of a plate or horn or shell, and exhibits the lines of the cuts made through it in order to produce two combs.

A suitable carriage or bed for sustaining and holding the plate of horn or shell to be operated upon, is placed under the cutters as seen at, O, and is caused to slide in or out or upon parallel ways or rails P, P, raised upon the bed plate Q, of the frame A. A clamping frame R formed of two bars h, h, united by rods i, i, is hinged at one end to one end of the carriage for supporting the comb plate, such frame having a bent lever Z, applied to its other end in such manner as to enable a person by means of it, to not only confine the clamping frame down, upon the plate of shell, and thereby confine the latter to the carriage, but to move the carriage in and out or upon its supporting rails.

By the action of the rollers of the fly wheel, which rollers operate upon the levers under them in regular succession, the several cutters are successively depressed or forced downward into and through the plate of horn or shell, which may be arranged directly under them, and supported by and upon the carriage hereinbefore mentioned. In comb machines it has heretofore been customary to cut the teeth of two combs by the successive blows of a single cutter which in the interval of each two blows, has moved a suitable distance, and in a suitable manner, to produce the tapering form or forms required for the teeth of the combs. This machine or cutter so operating could not produce combs wherein the points of whose teeth as well as their roots are arranged in curved lines, they had to be disposed in straight lines with one another, that is to say, all the points of each comb were in one straight line, while all the roots were in another straight line. The oper-

ation of the single cutter is better than  
that of a series of cutters all fixed in a block  
and simultaneously driven through the horn  
or shell because the horn or shell is very  
5 much strained compressed and liable to be  
broken by the action of such a series of cut-  
ters which may be said to be stationary with  
respect to one another. The bottoming of  
the combs can be produced by such a series  
10 of cutters, but it is attended with a serious  
difficulty above mentioned. To overcome  
such difficulty and to obtain the advantage  
of the single cutter, without any material  
additional expense, I have produced the im-  
15 proved machine as herein described, by  
which I not only gain such advantages but  
also the additional one of forming the two  
combs with the curved bottoming, as I have  
above explained.  
20 I do not claim the invention of a single  
chisel made to operate by successive blows  
or cuts, each of which is in advance of an-  
other and so as to create a series of cuts  
through a plate of horn or shell, such as  
25 will separate such plate into two combs  
without what is termed a "bottoming" that  
is to say, with the roots of the teeth of each  
of the said combs in a straight line and not

in a curved line, as they are when made with  
the "bottoming" nor do I claim a die so 30  
made of stationary chisels or cutters (that  
is to say those which are immovable with re-  
spect to one another) and for the purpose  
of enabling a person by pressure of the  
whole series of cutters at once, against a 35  
plate of horn or shell to separate it into two  
combs either with or without a bottoming;  
but

What I do claim is—

My improvement in comb cutting ma- 40  
chinery, the same consisting in making the  
cutters to operate or move separately and  
independently of each other, and in regular  
succession in combination with making them  
of different and the required lengths, so as 45  
to produce the separation of two combs from  
a comb plate, substantially in the manner  
and with the bottoming to their teeth as  
hereinbefore specified.

In testimony whereof I have hereto set 50  
my signature this thirty-first day of Decem-  
ber A. D. 1850.

HORACE S. COOK.

Witnesses:

J. C. ALLEN,  
JOEL W. FLETCHER.