## N.C. Sanford, Wood Auger, Nº6,221, Patented Mar.27,1849.

Witnesses:
Catharine of Hely
Bug sh Anerews

Inventor:

Nathaniel l. Sanford

## UNITED STATES PATENT OFFICE.

NATHL. C. SANFORD, OF MERIDEN, CONNECTICUT.

## COMBINED CONVEX AND CONCAVE AUGER.

Specification of Letters Patent No. 6,221, dated March 27, 1849.

To all whom it may concern:

Be it known that I, NATHANIEL C. SANrord, of the town of Meriden, in New Haven county and State of Connecticut, have invented a new and useful Improvement in Form and Construction of Concave Screw-Augers.

My improvement consists as follows. Instead of having the plate from which the auger is to be twisted of concaved shape throughout as is usual in forming concave augers, I form the lower extremity of the plate of convex shape, or of even thickness, though the former is preferred. In an auger of five eighths diameter it will be sufficient to have about an inch of the lower extremity of convex shape or of even thickness as aforesaid, varying in proportion as the diameter of the auger is increased or 20 diminished.

The advantage of this mode of construction consists in that the workman when twisting the auger which is done in the ordinary mode, is better enabled to give to the plate a short twist at the lower ex- 25 tremity and finish the cutting lips or edges in the best and most approved method for easy boring, than when the plate is formed in the usual way of concave shape throughout.

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

Forming the lower part of the plate from which an auger is to be formed, of a convex shape or of even thickness, when this is combined with the upper part of the plate formed of a concave shape. The whole plate being formed for the purpose of making therefrom a double lipped convex and concave auger.

In witness whereof I have hereto set my hand and seal this twenty third day of October A. D. 1848.

NATHANIEL C. SANFORD. [L. s.]

In presence of— Chs. W. Curtiss, Jno. S. Beach.