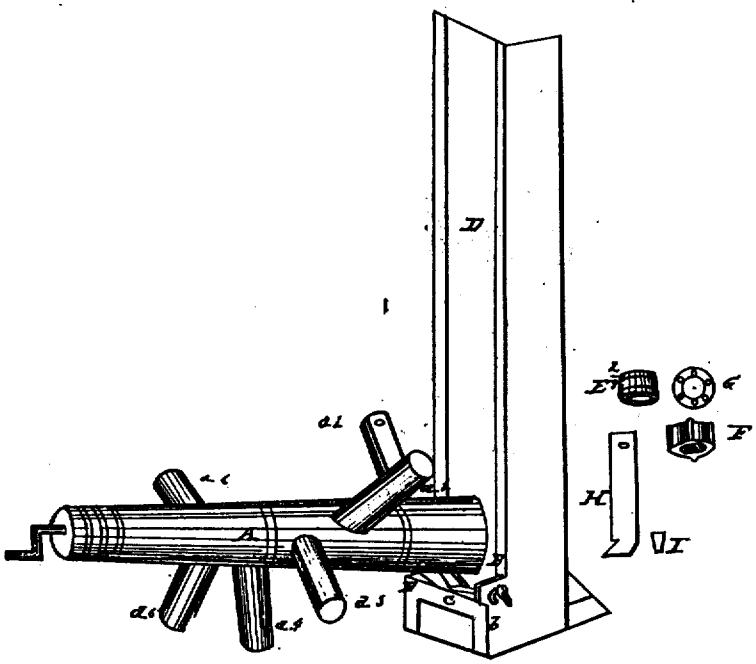
6368½X

J. C. Strode,

Water Wheel,

Patented Feb. 8, 1831.



H. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

Dec 8 1831

Joseph G. Steele
Letters Patent

6368 1/2 X

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Joseph G. Steele himself of his improvement in the machine for manufacturing Cast Nails & other nails by a certain called a Nail Rotating Cast Nail Wheel.

To all to whom these presents shall come, Joseph G. Steele of East Bradford in the County of Chester and State of Pennsylvania Teacher sendgreeting. Be it known that I Joseph G. Steele have invented a certain new and useful improvement in a machine for manufacturing Cast Nails & other nails by a certain called Steeles Rotating Cast Nail Wheel and specified in the words following viz. It is a wooden shaft I use of a cylindrical form about two diameters at the large end and four times at the smaller. on the center of this shaft I make a round hole eight inches in diameter at the large end and six at the other. The axes of this hole will vary directly as the square root of the distance of the height of the head above the center of the height of the shaft. I use my knife and cut eight notches in diameter at perpendicularly with the shaft at equal angles and known distances forming a true spiral curve from one end of the shaft. The hole through these notches are three eighth inches in diameter. Now the nail cast in the notches and three quarters inch diameter at bottom the axes of the shaft A perpendicular to the plane passing thro' the axes of the hole & that of the nail and in that plane passing thro' the axes of the hole from which the nail is to be taken out shall be a tangent to the curve formed by the nail when found on the axes of the hole by the revolution of the machine on its axis. The distance of the center of this hole from the center of the shaft is thirty three inches and one half. The distance from the axes of the nail when found on the axes of the hole to the center of the height of the head is one inch. From the center of the shaft A to the nail by the revolving machine about the axes of the nail will vary inversely as the sine of the height of the head when found on the axes of the hole. The machine I have used for giving the plane passing thro' the axes of the nail and the axes of the shaft A perpendicular to the plane passing thro' the axes of the nail and the axes of the hole from which the nail is to be taken out

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each one measure the larger and circular impression of the end of the cylinder
& they ought to be made. In that of the number of arms determine the length of the
shaft must be increased or diminished. The arms are made fast on the shaft by
means of a square rod & dove tail as represented by figure B. the end of the arm
on which the dove tail is made is rather narrower than the opposite side
V the middle on the shaft is of the same shape so that when the arms are
on the side opposite to the dove tail it will be found tight on all sides.
E is a hollow cylinder eight inches in length with a bore one one and one inch
and a quarter inside & three quarters of an inch thick. The diameter of the hole
is eight inches the same as that in the shaft. A. B. d. e. & f. are called out &
nine inches and a half. half it length. The other half or the part b. is nine inches
and a quarter at the shoulder where g. terminates, tapering to the end where it
is nine inches. This cylinder is let into the flank D of the trunk which is three
inches thick with one on the inside which is sunk in the plank three
quarters of an inch deep so as to face with the inside of the plank. It is made
at the same time fast & tight by means of eight screws both each three
inches and a half long driven in from the outside thro' holes made in the rim
where it is reduced in thickness and rendered light by means of them. The
part b, is four inches in length and goes into the cylinder F which is of the
same length & is made fast on the shaft. Metal four rings to keep it from turn-
ing. This cylinder is of such a capacity that it will work easily on the part
b and at the same time not allow too much play. G is a bed and has one
inch and a quarter inside, three eighths of an inch thick and is nine inches
by eight inches. Thy ends have each an iron flange (of the same dimensions
as described against the ends of b. and F (which are turned so as to run
easily) by means of eight screws going thro' them and screwing into the end
of the. This is in order to make the trunk tight. B. is a wooden frame about
fourteen inches in diameter among which is fastened a piece of hard
brass against the iron hoop f. on the shaft of the bed by a bolt and
thumb screw shewing the angle of the shaft. A. is screwed to the bed parallel
on the gauge line of fig one. The projection of the pedestal on the bed on
the left of the cylinder forms a box (inside of which the cylinder
by the eight screws & of the bed two inches deep and the bed

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to the ball C and made from rod the G. by the wire bent as, giving a sufficient to the other end marked to reach. On the foregoing description is given the description of a machine or mechanical powder for exhibiting a law with a view to the case of twenty feet. If a larger or smaller scale be required, the dimensions of the several parts will vary according to the proportions given. Some additional force may be obtained by the application of a funnel to each of the holes in the ends of the arms A, A, A, A, B, B, the small end of the funnel being affixed to the hole and the wide end standing outwards. These funnels may be made of small blocks of wood with a hole bored thro' the middle of each and hollowed on the inside so as to fit the arm to which they may be attached firmly by nails or screws. The holes in the blocks should correspond in capacity & position with the inside of the holes in the arms and should gradually grow wider in the form of a funnel shape towards the outward surface of the blocks. These funnels may or may not be attached at the option of the constructor. The machine will operate very well without them, though it is believed some additional force will be gained with them. If a reciprocating movement is desired it may be obtained by means of a crank on the axle of the shaft A. In the machine above described the crank is at the end of the axle, but if the axle a little further be made to work on a point fixed in a permanent block placed directly opposite the middle extremity of the shaft & in the intermediate space between the end of the shaft & the block the axle is shaped as D form a crank by which the reciprocating movement may be given. There will be less friction & consequently a gain of force.

In witness that the above is a true specification of my said invention I have hereto set my hand & seal this tenth day of June in the year of our Lord one thousand eight hundred & thirty one

Witness

Joseph Le Mesurier

Thomas Kenny

Joseph Le Mesurier

Esq

M.P.