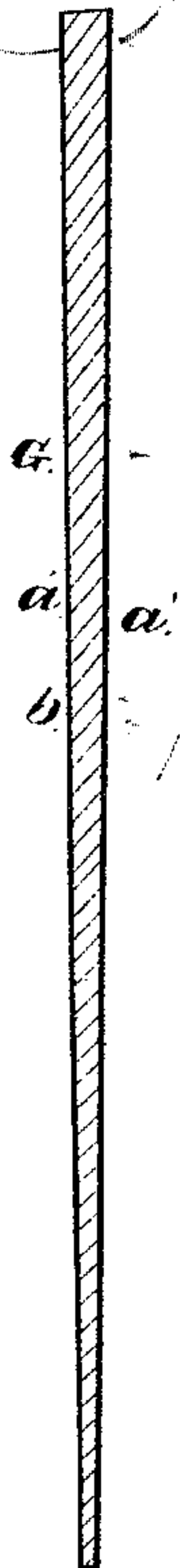


*Tenney & Bennett,  
Planing Shingles.*

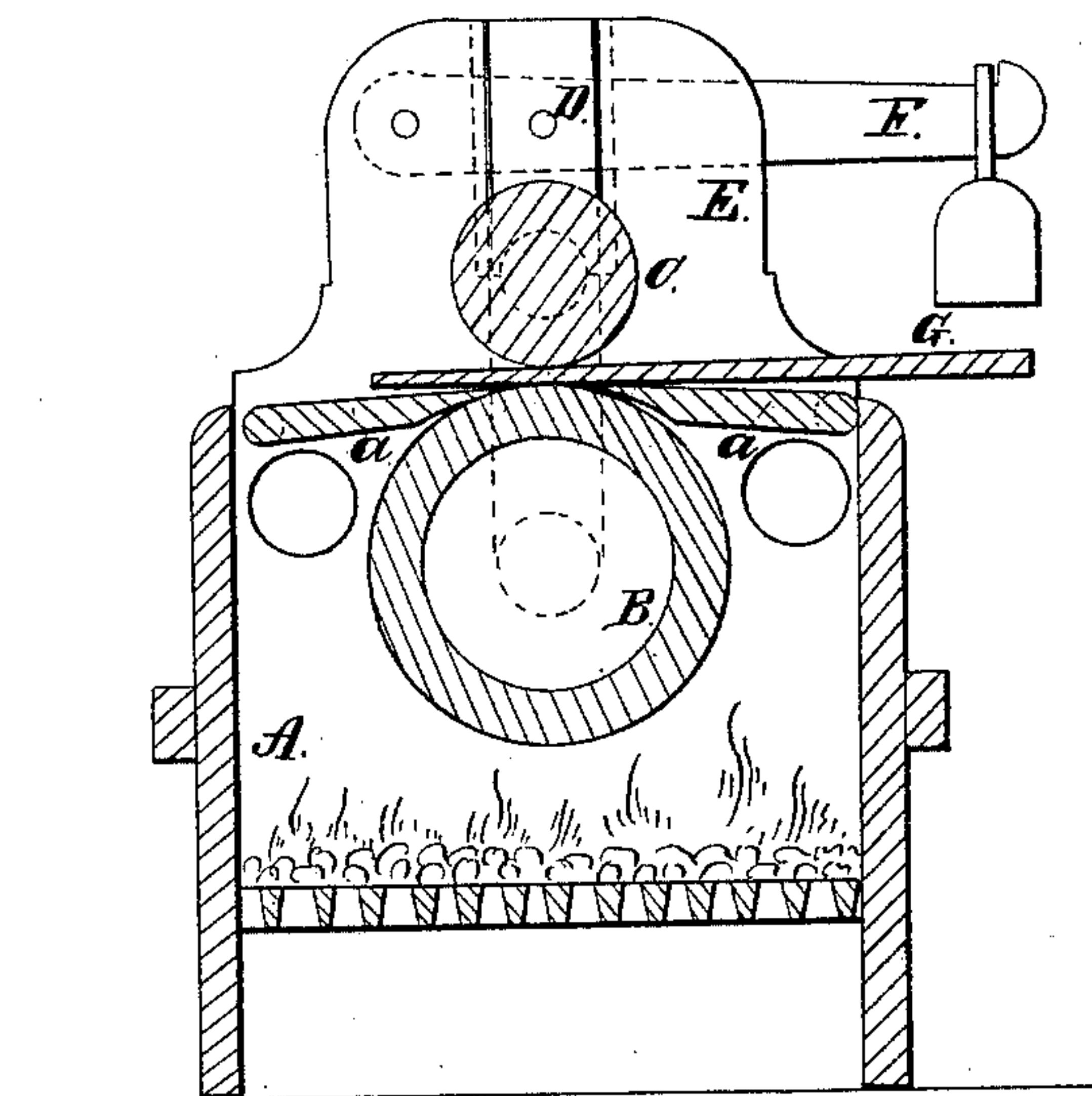
*No 18,828.*

*Patented Dec. 8, 1857.*

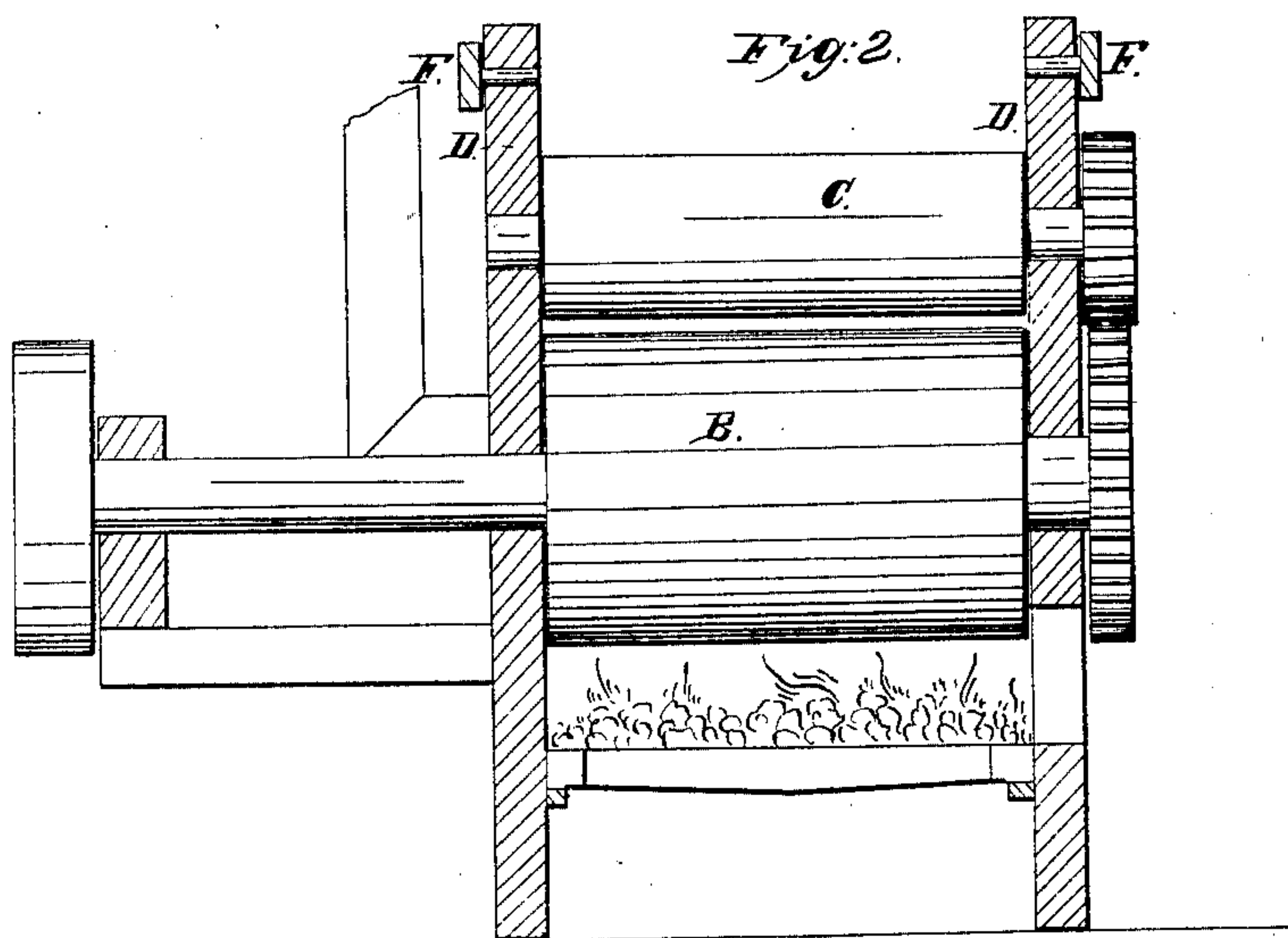
*Fig. 3.*



*Fig. 1.*



*Fig. 2.*





# UNITED STATES PATENT OFFICE.

S. R. TENNEY AND ASA BENNETT, OF HUBBARDSTON, MASSACHUSETTS.

## SHINGLE.

Specification of Letters Patent No. 18,828, dated December 8, 1857.

*To all whom it may concern:*

Be it known that we, S. R. TENNEY and ASA BENNETT, of Hubbardston, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Shingles; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of one of the devices which may be employed for effecting the improvement. Fig. 2 is also a vertical section of ditto; the two planes of section crossing each other at right angles and both passing through the center. In the latter figure the working parts (two rollers) are not bisected. Fig. 3 is a longitudinal section of our improvement.

Similar letters of reference indicate corresponding parts in the several figures.

Our invention consists of a new article of manufacture, viz: a carbonized shingle, made substantially as hereinafter set forth.

To enable those skilled in the art to fully understand and manufacture our improved shingles, we will proceed to describe one or more ways of producing them.

A, Figs. 1 and 2, represents a furnace which may be constructed in any proper manner; and B represents a hollow roller which is fitted in the upper part of the furnace; the periphery of the said roller projecting a trifle through the top of the furnace. The top of the furnace is formed of two parts (a), (a), the outer ends of which are jointed to the upper part of the furnace, so that the inner ends may bear or rest upon the roller B. C is a roller the journals of which work in sliding bearings D, said bearings being fitted in grooved upright plates E, at each side of the upper part of the furnace. Each bearing D is connected to a weighted lever F, and these levers have of course a tendency to press the roller C down upon the roller B. The lower roller B is heated to a proper degree by the fire in the furnace A, and motion is given the lower roller in any proper manner. The shingles G are passed between the rollers one at a time and one surface, the under one, charred by the heated roller B. The shingles are then inverted, again passed between the rollers and the opposite sides charred.

The above device for charring or carbonizing the shingles is one of many that might be devised for the purpose. Flat heated

plates might be used, the shingles being compressed between them; but the rollers would probably be preferable to the plates or perhaps equal to any machine.

In charring or carbonizing the shingles it is essential that the internal woody fiber or tissue be not injured. It will be understood that the woody fiber or tissue constitutes the strength, and in fact is the shingle; the charred or carbonized surface being merely an external coating. In Fig. 3 (a') (a') represent the charred or carbonized surfaces, and (b) represents the internal woody fiber or tissue.

In order to prevent the woody fiber or tissue from being injured by heat as the external surfaces are charred, the shingles should be passed quickly between the rollers, or should not be allowed to be long in contact with the heated surface. The metal consequently should be heated sufficiently hot so as to char or carbonize the surface of the shingles as quickly as possible.

Among the advantages presented by our improved article over the shingles now in common use are the following: Our carbonized shingle is not subject to decay. When applied to a roof our shingles will endure as long as the building itself, and probably never require removal. No paint or oil is required to preserve or protect our shingles; an important item of expense is thus saved. A roof covered with our shingles is less liable to take fire than when the common shingles are employed. This is owing to the fact that carbon is a nonconductor of heat. Its presence upon the shingle therefore protects it, to a certain extent, from ignition. Of two pieces of dry pine, one having a clean surface and the other having been once ignited or carbonized, the uncarbonized sample will ignite the most readily. Our carbonized shingle will not absorb water or moisture like the common shingle. Nor will our shingle warp or rot. Hence no moss will gather upon it.

We do not broadly claim the preservation of wood by carbonization. But—

We claim and desire to secure by Letters Patent, as a new article of manufacture—

A carbonized shingle, made substantially as herein set forth.

STEPHEN R. TENNEY.  
ASA BENNETT.

Witnesses:

WM. BENNETT, Jr.,  
GEO. W. EDDY.