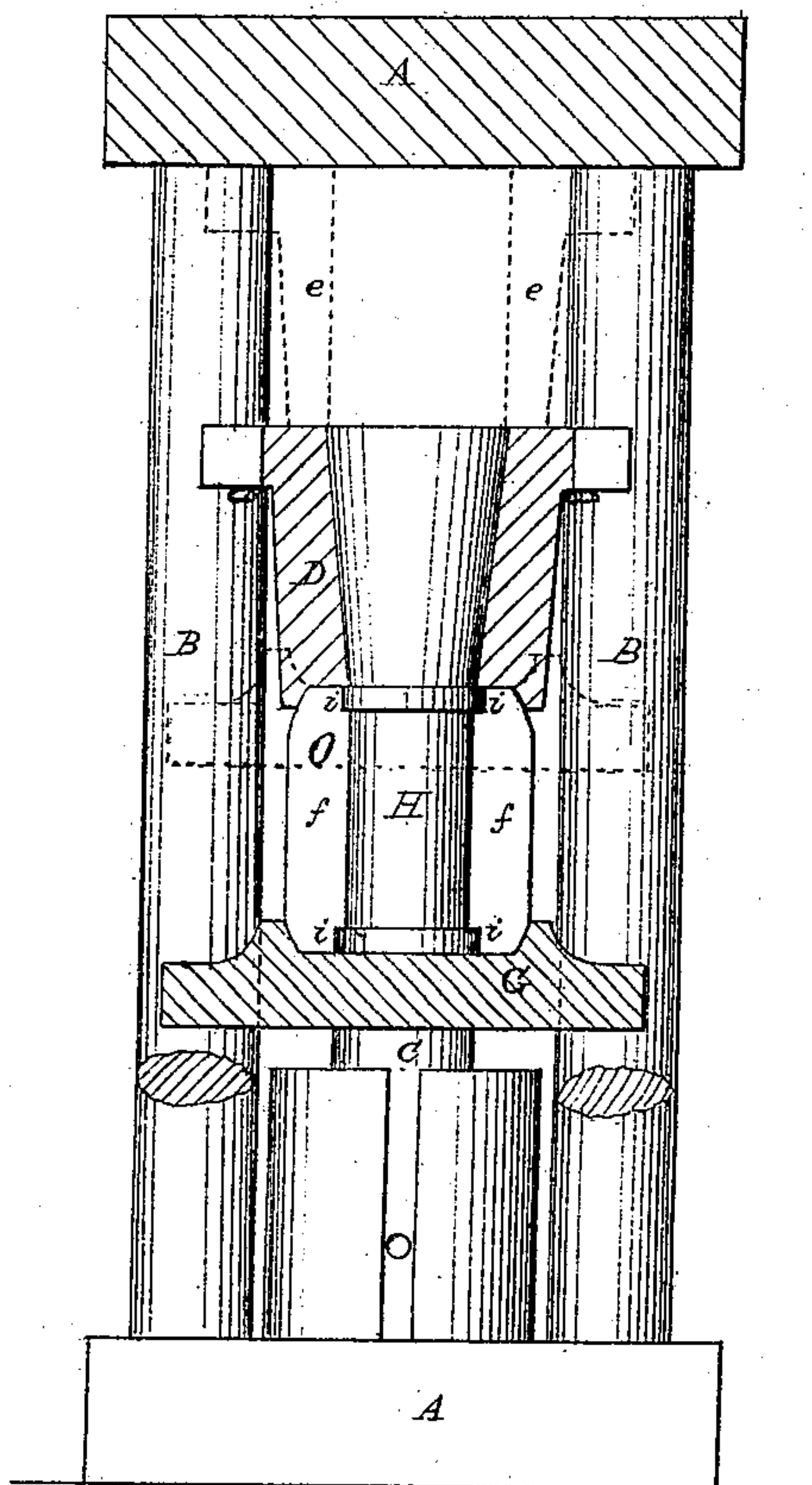
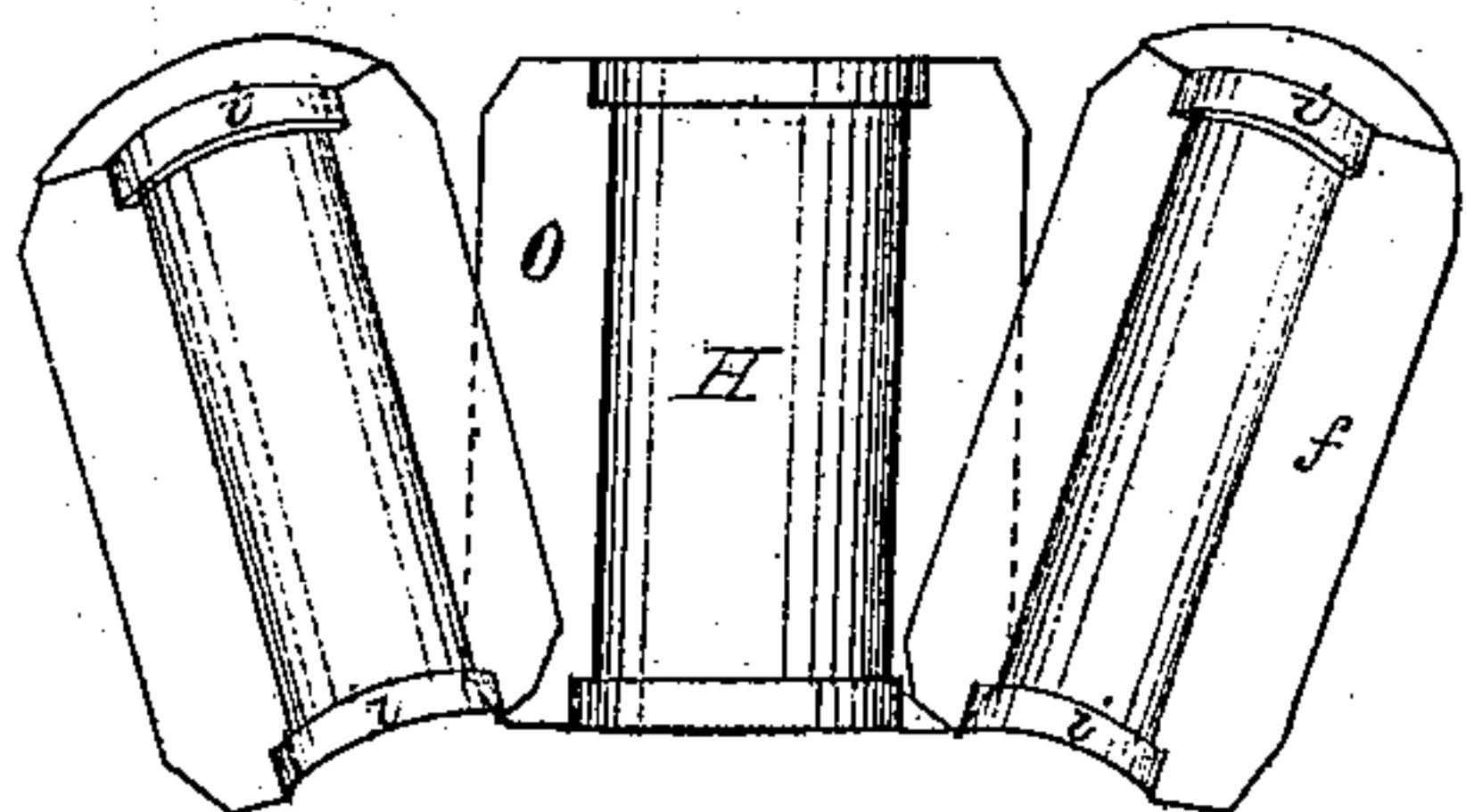


*C. B. Gilman,*  
*Banding Compressed Wood.*  
*No. 113044.                      Patented Mar. 28. 1871.*

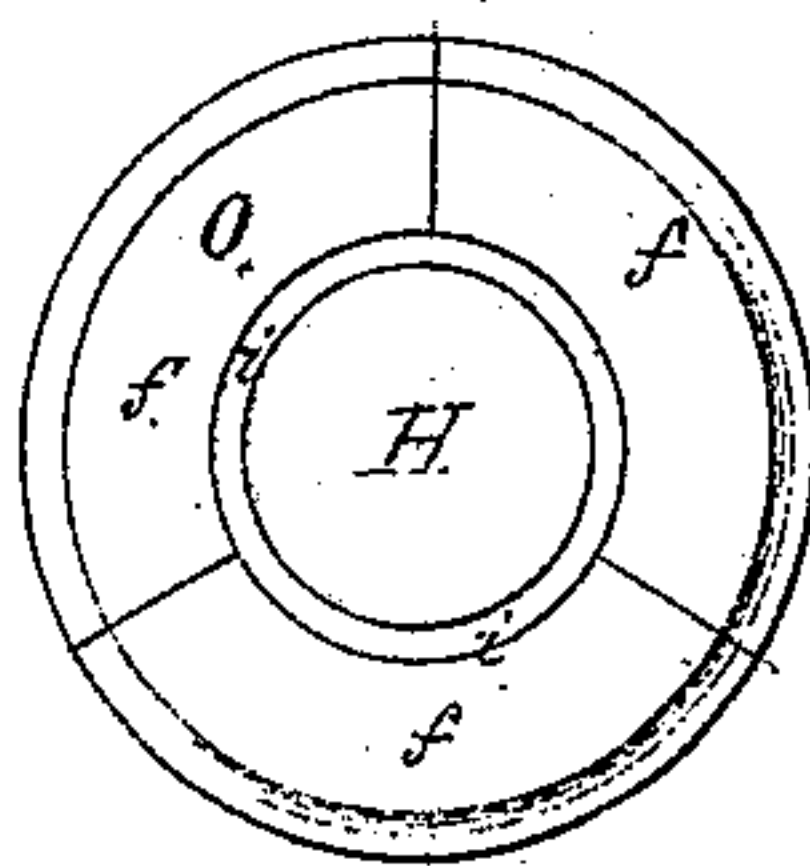
*Fig. 1.*



*Fig. 3.*



*Fig. 2.*



Witnesses:

*Kate H. Jones.*  
*Jos<sup>a</sup> Austin*

Inventor:

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# United States Patent Office.

CHARLES B. GILMAN, OF BROOKLYN, NEW YORK.

Letters Patent No. 113,044, dated March 28, 1871.

## IMPROVEMENT IN THE METHODS OF BANDING COMPRESSED WOOD.

The Schedule referred to in these Letters Patent and making part of the same.

I, CHARLES B. GILMAN, of Brooklyn, in the county of Kings and State of New York, have invented an Improved Method of Banding Compressed Wood and Apparatus for the purpose, of which the following is a specification.

For many purposes, such as wagon-hubs, tool-handles, wooden rolls, and the like, compressed wood possesses advantages over other material, and it is important that such should be banded while in a state of compression, before any expansion occurs.

My invention relates to the application of bands to the wood while under the influence of the compressing force to prevent any expansion which might occur when it is released; and in the employment for that purpose of a sectional die or dies provided to receive the bands, into which dies the wood is forced in its compressed state; or the same may also be used in combination with the requisite power to produce compression.

As represented in the drawing—

Figure 1 is an elevation of a machine for compressing and banding wood, the principal portions being shown in section.

Figure 2 is a plan or end view of the sectional die removed.

Figure 3 is an elevation of a block or cylinder of wood with the bands applied and representing the sections of the die separated for its removal.

The usual method employed for compressing cylinders of wood is to force the same through conical dies by hydrostatic or other power.

In fig. 1—

A represents the top and base, and

B B, the connecting-columns of a press for this purpose, in which

C is the movable piston of a hydraulic pump.

D, the conical compressing-die, which is forced upward, by the action of the piston, through the intervening parts presently to be described.

The block to be compressed is placed in the position, shown by the dotted lines *e e*, where it is held by the transverse frame A, and forced to enter the conical opening of the die D as it rises.

Intervening between the piston-head or platen is a cylindrical die, O, composed of sections, *f f f*, the aperture of which corresponds in diameter with that of the lower extremity of the compressing-die D.

An annular recess or rebate, *i i*, is formed at either end of the cylindrical opening, of sufficient size to receive each a metal band of the requisite strength.

The lower surface of the die D is recessed to receive the top of the sectional die, and the platen or follower G is provided with a corresponding recess, by which the sections composing the die are held together.

The operation is as follows:

The sectional die is placed upon the platen or follower G, with metallic bands in the recesses *i i*, the interior diameter of which corresponds precisely with that of the die, the compressing-die D resting upon the top thereof, and serving, with the platen G, to hold the several parts in their place.

The block to be compressed being placed in position, by the upward movement of the piston C is forced to enter the die D; the stroke of the piston is then retracted, lowering the die, so that a suitable follower may be placed above the partially-compressed block, when the dies are again moved upward, the follower forcing the block H downward until it passes the compressing-die D and occupies the space within the sectional die *f f f*.

The two dies and the block all being of uniform lengths, the ends of the latter are inclosed by the bands, previously placed in the recesses *i i*, which fit them tightly.

The platen G is then lowered sufficiently to release the top of the sections *f f f* from their seat in the die D, when they separate freely, as shown in fig. 3, permitting the compressed and banded block H to be removed.

The sections may be sustained by a suitable support in a convenient position when the block is being removed.

The bands are in this manner applied while the wood is held by the force used in its compression, so that no expansion previous to banding can occur, and no additional power or expense is required to apply the bands.

Recesses may be provided in the sectional die O for any number of bands which may be required.

In some cases it may be found more convenient to reverse the position of the dies, placing the sectional die O above the compressing-die below it, and the block to be compressed directly upon the platen or piston-head, in which case a recess or ring for retaining the sections in position, like that described, is required upon the top transverse frame-piece A.

What I claim as my invention is—

1. A die composed of two or more sections *f f f*, and provided with recesses *i i* for the reception of the bands, substantially as and for the purpose set forth.

2. The combination of the sectional die O with the compressing-die D, substantially in the manner and for the purposes set forth.

3. The annular seat or recess in the die D, and platen or follower G, for holding the sections *f f f* in connection when used, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

Witnesses:

CHAS. B. GILMAN.

JONA. AUSTIN,

KATE N. JONES.