No. 780,554. PATENTED JAN. 24, 1905.

F. DOBSON.

APPARATUS FOR INCASING WOOD WITH SHEET METAL.

APPLICATION FILED MAR. 30, 1904.

2 SHEETS—SHEET 1.

Fig. 1

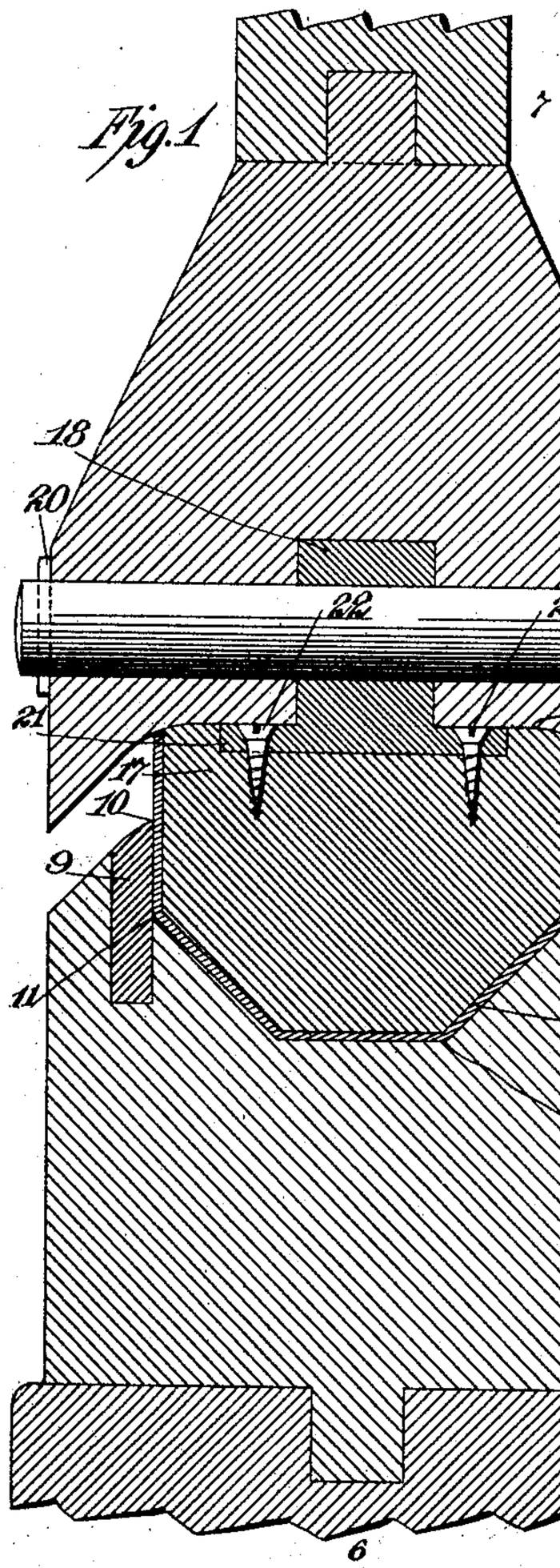


Fig. 2

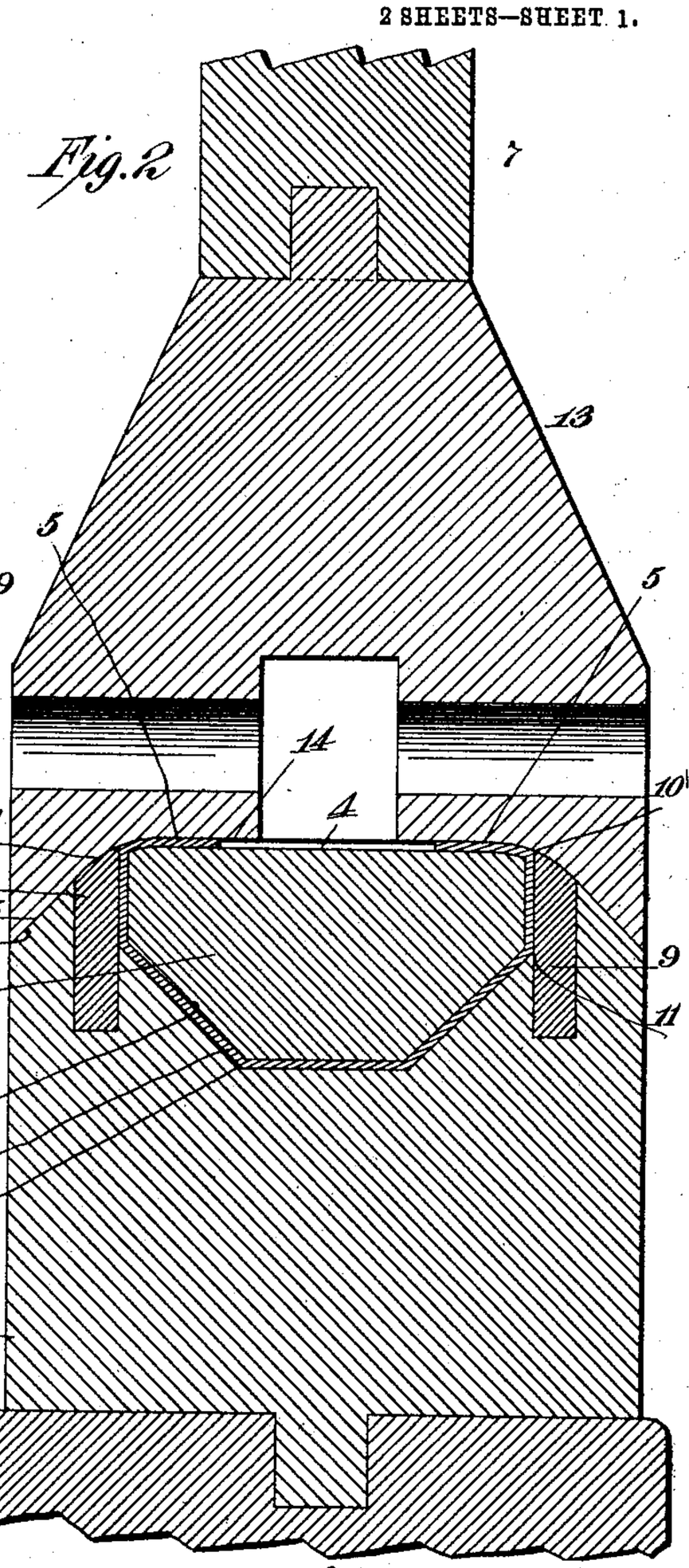
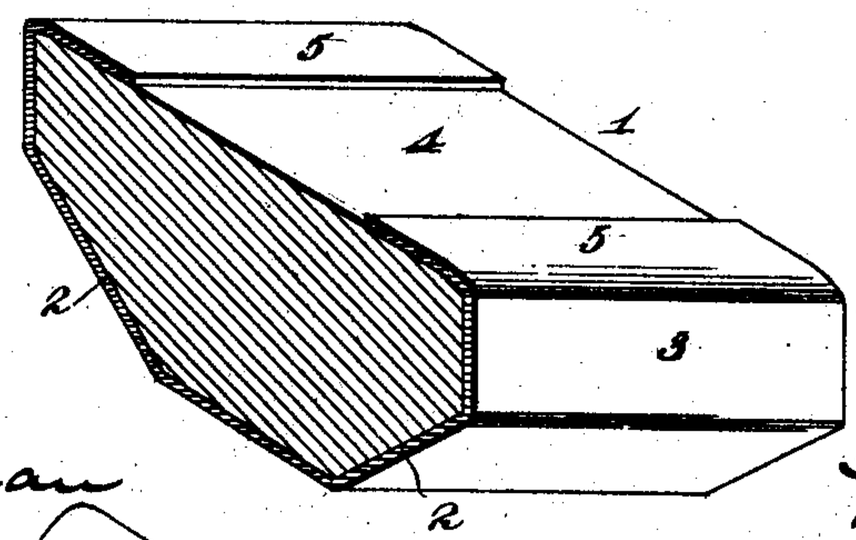


Fig. 3



Witnesses:

Jas. F. Coleman

Jno. Robt Taylor

Inventor

Frank Dobson.

By Dyer & Dyer

Attorneys.

No. 780,554. PATENTED JAN. 24, 1905.

F. DOBSON.

APPARATUS FOR INCASING WOOD WITH SHEET METAL.

APPLICATION FILED MAR. 30, 1904.

2 SHEETS—SHEET 2.

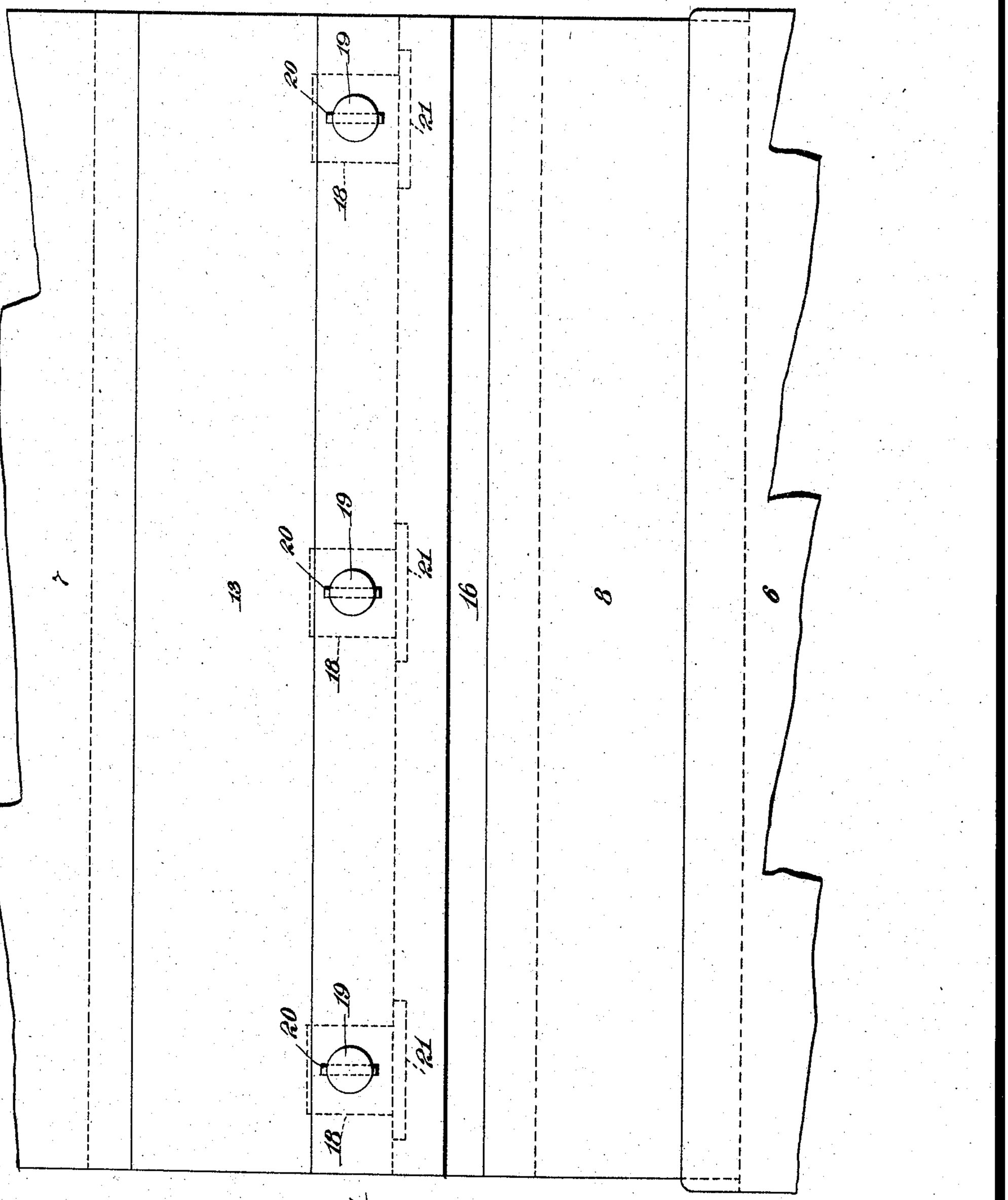


Fig. 4.

Witnesses:

Jas. F. Coleman

John C. Leech.

Inventor

Frank Dobson

By Dyer & Dyer

Attorneys.

No. 780,554. Patented January 24, 1905.

UNITED STATES PATENT OFFICE.

FRANK DOBSON, OF NEW YORK, N. Y.

APPARATUS FOR INCASING WOOD WITH SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 780,554, dated January 24, 1905.

Application filed March 30, 1904. Serial No. 200,717.

To all whom it may concern:

Be it known that I, FRANK DOBSON, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented a certain new and useful Improvement in Apparatus for Incasing Wood with Sheet Metal, of which the following is a specification.

The present invention relates to apparatus for incasing or covering strips, bars, braces, or beams of wood or other material with sheet metal. These metal-covered wooden strips have an extensive use in fireproof construction. They may be used for adding strength to ventilating-flues, or they may be used in forming window-sashes, window-frames, and other fittings of buildings and for other purposes.

Heretofore, so far as I am aware, when wooden shapes have been covered by metal the metal has first been bent to its ultimate shape and the wood forced into it from one end. This is objectionable, as the contact of the wood and metal is not as intimate as desirable. Furthermore, such construction is expensive and slow.

The object of my invention is to overcome these objections and produce a device which will closely and snugly cover the wood with the metal, the metal being closely and cleanly bent at the angles around the wood. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a sectional view of the dies and forming-block, the parts being separated. Fig. 2 is a similar view, the block being removed and the dies in contact. Fig. 3 is a section of a scantling or stiffening-bar covered with metal in accordance with my invention. Fig. 4 is a side view of the dies and block.

Like parts are designated by the same reference-numerals in all the views.

As illustrated in Fig. 3, the wooden bar 1, having beveled edges 2, is incased with a sheet-metal covering 3. This covering is made in one piece, preferably as long or longer than the bar, and covers all the sides except the side 4, the metal being bent around and extending a short distance, as 5, on such side. The metal may cover all of the sides, if it be so desired. The metal is sufficiently rigid, so that when bent to the form shown in Fig. 3 it will snugly and closely grasp all the sides of the bar and make close engagement with the corners and angles thereof.

To cover the wooden bar shown in Fig. 3 with the metal in the manner illustrated, the mechanism illustrated in Figs. 1 and 2 is employed. In these figures, 6 is the lower stationary platform, and 7 the upper moving plunger, of a bending-machine—such, for instance, as that forming the subject-matter of Patent No. 679,031, dated July 23, 1901. 8 is the lower die, formed preferably of cast-iron, having inserted steel blocks 9 for forming the sharp bending edges 10. The opening to the die 8 is formed of substantially the same shape and size in section as that of the covered bar shown in Fig. 3, changes in the shape of the bar necessarily corresponding to changes in the shape of the die. In the opening of the die 8 are angles 11 and 12. The upper die 13 is provided with a flat portion 14, in width slightly less than the width of the upper part of the opening of the die 8, and an inclined portion 15, which is preferably parallel with the outer portion 16 of the lower die. The inclined portion 15 and flat portion 14 are connected together by a curved portion 15′, as shown. The two dies when brought into engagement will leave an opening or pass substantially the size and shape of the cross-section of the finished bar. The two dies are preferably as long as the finished bar. In connection with these two dies I prefer to employ a forming or bending block 17, this block being of the same cross-section as the opening in the die 8, but somewhat deeper and the same length as the dies. The block is preferably formed of wood and is removably attached to the center of the die 13. A convenient mode of attachment is illustrated in the drawings and consists of a number of pins 18, each of which enters an opening within the upper die. These pins are arranged at intervals, so as to support the block 17. Each pin is provided with a central hole through which passes a bar or rod 19, the two free ends of which are secured by cotters 20. The pin 18

is provided with a flange 21, which is screwed to the block by wood-screws 22. By removing the cotters 20 and sliding the rod 19 longitudinally until it is disengaged from the pin 18 the latter, together with the block 17, may be removed.

In operation the block 17 is first inserted in place and secured. A strip of sheet metal of the proper dimensions is placed upon the lower die 8, resting upon the upper edges 10 thereof. The pressing-machine being put in operation, the upper die 13 descends and forces the block 17 downward, the metal being bent to the form shown in Fig. 1, the portions 5 standing upright. The upper die is elevated sufficiently so that the block 17 may be removed, and the wooden bar 1 is then placed within the center of the bent-over or trough-shaped piece of sheet-iron. The machine being again started, the upper die 13 is caused to descend and the free edges of the portion 5 of the sheet metal engaging with the inclined edge 15, and the curved portions 15′ of the upper die will be bent inward and caused to closely engage with the upper part 4 of the wooden bar, as shown in Fig. 2. Upon the die being again separated the finished metal-incased bar may be removed.

It is to be understood that instead of completely finishing each bar separately as many shapes of said metal may be bent as desired in successive operations with the block 17 in place and then upon the block 17 being removed the wooden bars may be successively covered.

It is to be understood that when pieces having a different cross-sectional shape from that illustrated are shown the dies are to be modified to suit the changed condition.

Instead of wood being used as the basis of the complete article other material may be employed.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An apparatus for covering wooden forms with sheet metal, comprising the two moving elements of a bending-machine, with a die on each, one of said dies having an opening of substantially the same shape and size as the cross-section of the finished article, the other die being substantially flat with inclined edges, in combination with a removable block of the same shape as the finished article but slightly deeper, so that the metal may be formed to the shape of the bottom and sides by such block, and the block may be then removed and the top turned over onto the form, substantially as described.

2. An apparatus for covering wooden forms with sheet metal, comprising the two moving elements of a bending-machine, with a die on each, one of said dies having an opening of substantially the same shape and size as the cross-section of the finished article, the other die having a flat medial portion with inclined edges and curved portions connecting the edges with the medial portion, in combination with a removable block of the same shape as the finished article but slightly deeper so that the metal may be formed to the shape of the bottom and sides by such block, and the block may be then removed and the top turned over onto the form, substantially as described.

This specification signed and witnessed this 25th day of March, 1904.

FRANK DOBSON.

Witnesses:

JNO. ROBT. TAYLOR,

LEONARD H. DYER.