

(No Model.)

G. J. GOODHUE.

TIMBER STRUCTURE FOR MINES.

No. 358,261.

Patented Feb. 22, 1887.

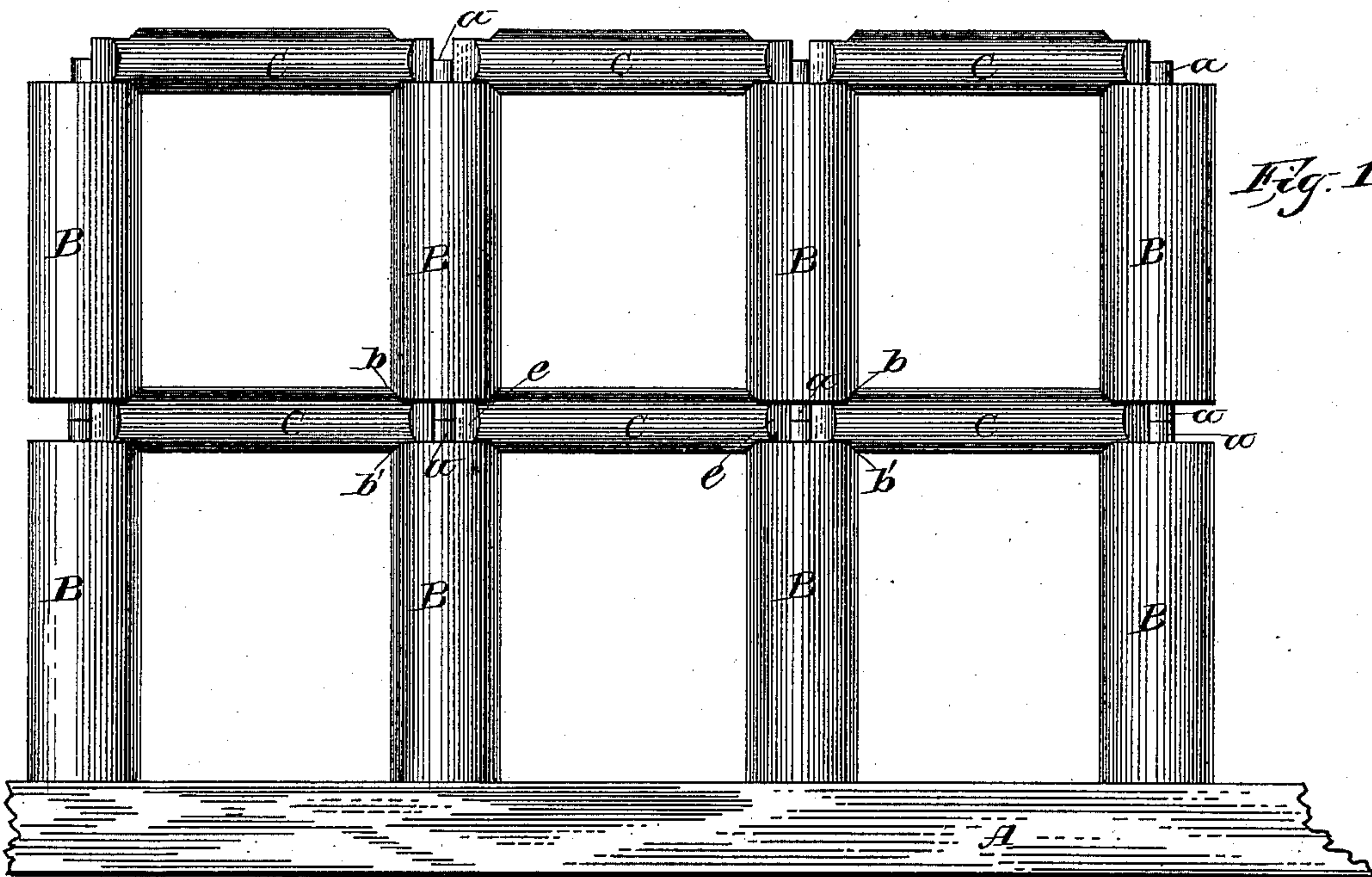


Fig. 1.

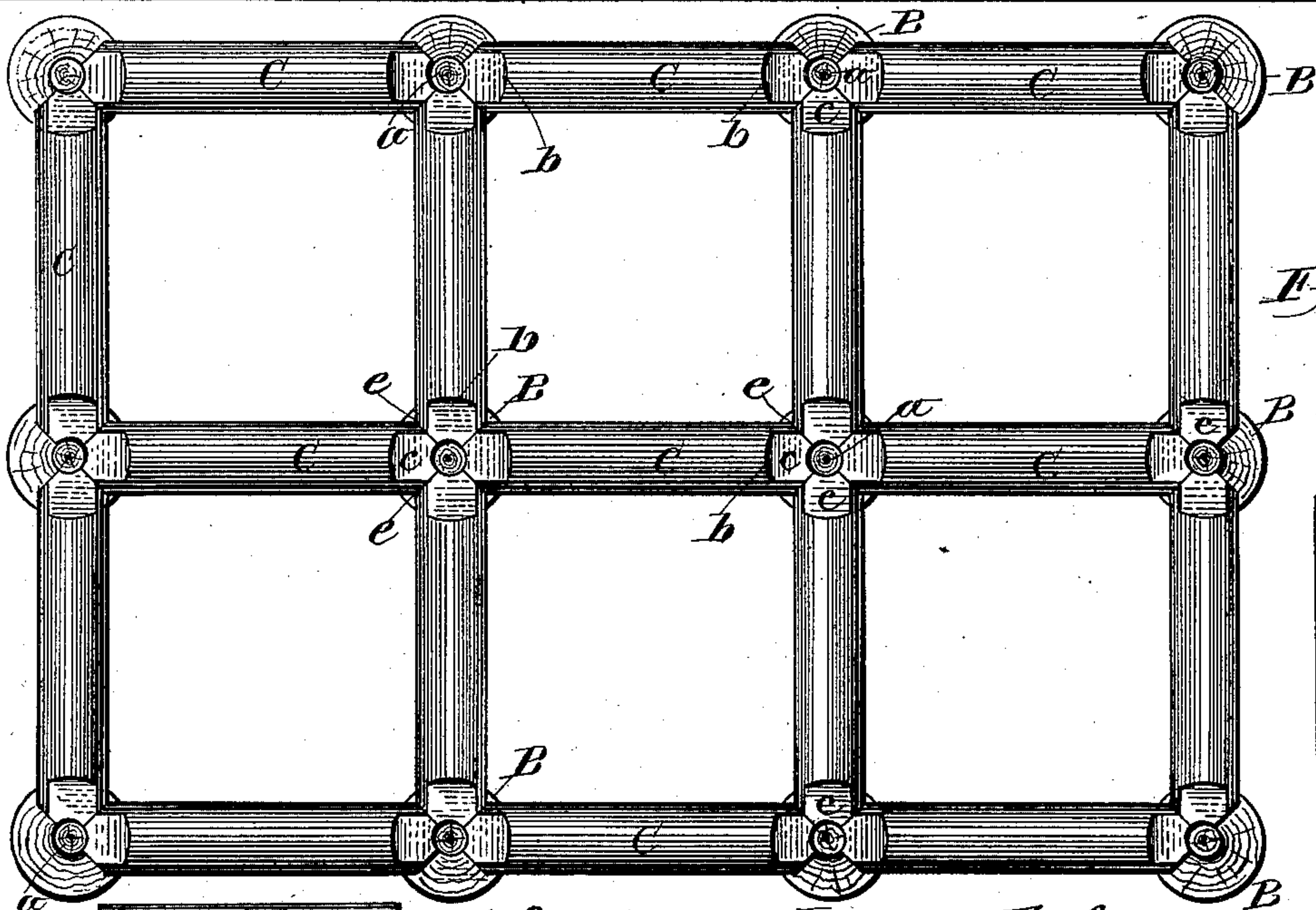


Fig. 2.



Fig. 3.

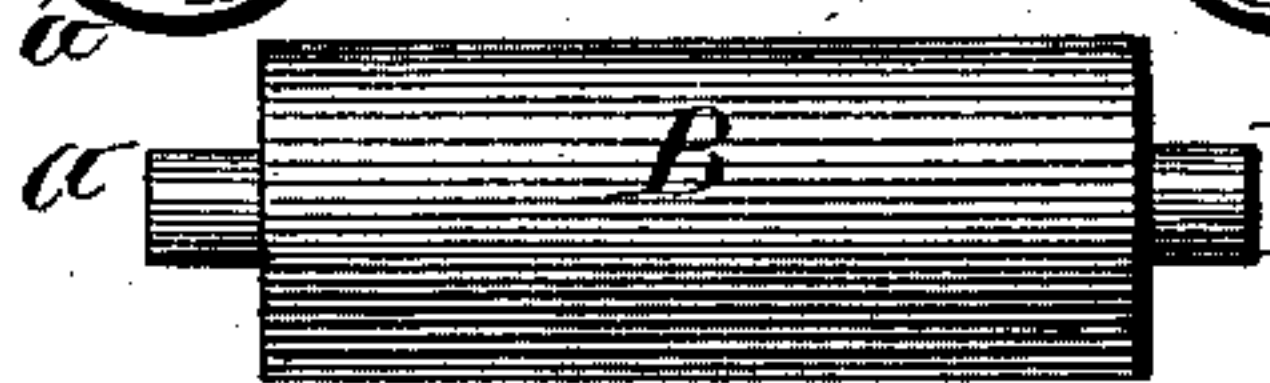


Fig. 4.

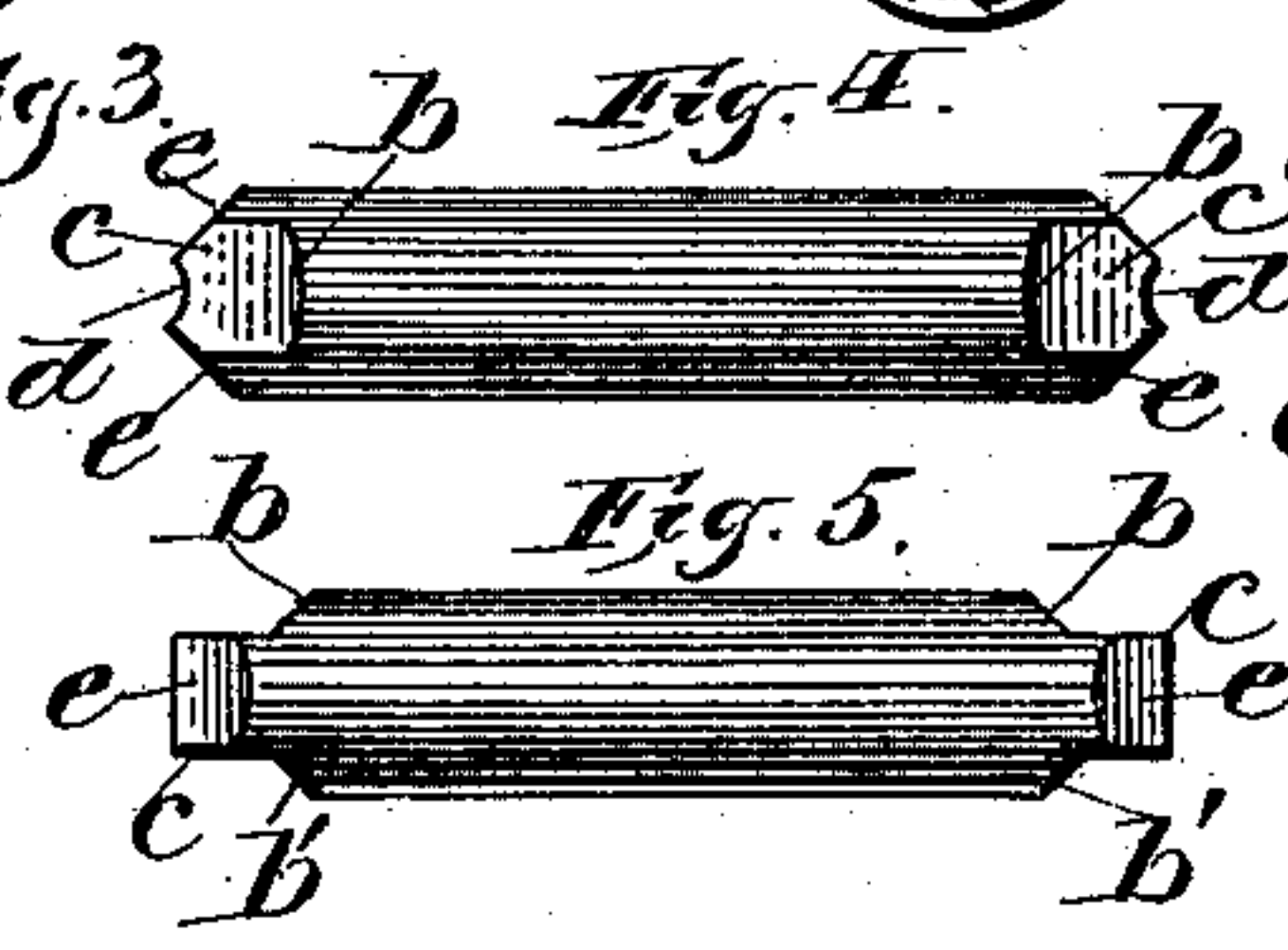


Fig. 5.

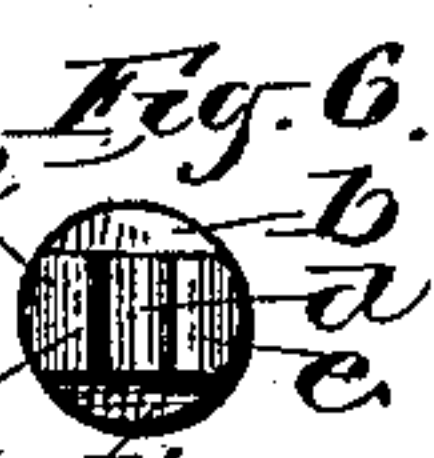


Fig. 6.

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TIMBER STRUCTURE FOR MINES.

SPECIFICATION forming part of Letters Patent No. 358,261, dated February 22, 1887.

Application filed September 9, 1886. Serial No. 213,089. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. GOODHUE, of Stevens Point, in the county of Portage, and in the State of Wisconsin, have invented
5 certain new and useful Improvements in Timber Structures for Mines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to timber structures
10 for mines; and it consists in certain peculiarities of construction and combination of parts, as will be hereinafter described with reference to the accompanying drawings, in which—

Figure 1 represents a side elevation of a
15 structure embodying my invention; Fig. 2, a plan view of the same; Fig. 3, a detail view of a leg; Figs. 4, 5, and 6, detail views of a cap; and Fig. 7, a detail of another form of leg employed in my structure.

20 In the ordinary mode of mining, a shaft is first sunk, and at various depths suitable drifts are started therefrom. A drift is first chambered out to form a space, ordinarily about eight feet square, (more or less,) as may
25 be found necessary or desirable, and upon the floor of said drift are set timbers A, and at each corner of the chamber a leg, B, is set upon these timbers. The chambering out is continued through the drift and from each side
30 thereof, timbers and legs being added from time to time as the work proceeds. The tops of the legs are connected by caps C, and the work carried on in an upward direction, additional legs and caps being added as the ex-
35 cavation proceeds, in order to shore up the mine.

The legs B are provided with gudgeons *a*, and these latter are preferably round, though in some instances the same may be square.

40 In my invention I prefer to make the caps C of round timber, in order to gain additional strength, and the respective ends of each cap are suitably cut away to form top and bottom arc-shaped shoulders *b b'*, thereby leaving
45 tongues *c*, that are also cut away to form recesses *d*, and the sides of these tongues are beveled off at about an angle of forty-five degrees, as shown at *e*. The recesses *d* may be either concave or square, according to the
50 form of the gudgeons *a* on the legs B; and, if desirable, said recesses and gudgeons may be

entirely omitted, though it is preferred to employ the latter as a guide to the fitting of the caps.

When the caps C are set on the legs B, the
55 tongues *c* of the former rest upon the tops of the latter, their arc-shaped shoulders *b'* bearing against the outer sides of said legs and their beveled faces forming miter-joints, as best illustrated in Fig. 2. In case the legs are
60 provided with gudgeons the ends of the tongues *c* are recessed to fit around the same, as described.

When the several caps are in position, the arc-shaped shoulders *b* form a circular seat
65 just above and in line with each leg, on which the tongues *c* rest, thus providing a secure bearing for the next succeeding leg, and the spaces formed by the recessed ends of said
70 tongues form sockets to receive the lower gudgeon on the latter leg.

Like the caps, I prefer to make the legs of round timber, and in case such timber varies in diameter I cut away the ends of the larger
75 legs to form circular shoulders *f*, as shown by Fig. 7, in order to permit a close fit of the tongues on said caps, these tongues being of uniform size and both parts B C shaped by
suitable machinery.

The advantages derived by the construction
80 of parts above described are as follows: The shoulders of the caps bearing against the body of the legs, the strain is on said body-portion and not on the gudgeons, as is ordinarily the case in the structures now in use, and hence
85 there is no breaking of these gudgeons and consequent dislocation of said legs and caps. The ends of the caps being all uniform, there is no trouble in fitting the same to the legs, and the adjacent ends of the several caps be-
90 ing miter-joined when in position, the pressure that may be exerted in one direction is met with a resistance in all other directions.

Another advantage of my invention lies in the fact that all the parts necessary to my
95 structure are made by machinery, and can consequently be turned out with greater rapidity and at a less cost than is ordinarily the case.

Having thus fully described my invention, 100
what I claim as new, and desire to secure by Letters Patent, is—

1. In a timber structure for mines, the combination, with suitable legs, of caps having their respective ends cut away to form upper and lower shoulders and beveled tongues, substantially as and for the purpose set forth.

2. In a timber structure for mines, the combination, with suitable legs having gudgeons at their extremities, of caps having their respective ends cut away to form upper and lower shoulders and beveled tongues, the latter having their ends suitably recessed to fit said gudgeons, substantially as and for the purpose set forth.

3. In a timber structure for mines, the combination, with round legs having circular gudgeons at their extremities, of caps cut away at their respective ends to form upper and lower shoulders and beveled tongues, the latter hav-

ing concave recesses in their ends to fit said gudgeons, substantially as and for the purpose set forth.

4. In a timber structure for mines, the combination, with legs having their extremities cut away to form shoulders, of caps having their respective ends cut away to form upper and lower shoulders and beveled tongues, substantially as and for the purpose set forth.

I testify that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

GEORGE J. GOODHUE.

Witnesses:

H. G. UNDERWOOD,

N. E. OLIPHANT.