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 REINFORCED WOODEN MILL FLOOR CONSTRUCTION.  
 APPLICATION FILED DEC. 29, 1909.

975,923.

Patented Nov. 15, 1910.

Fig. 1.

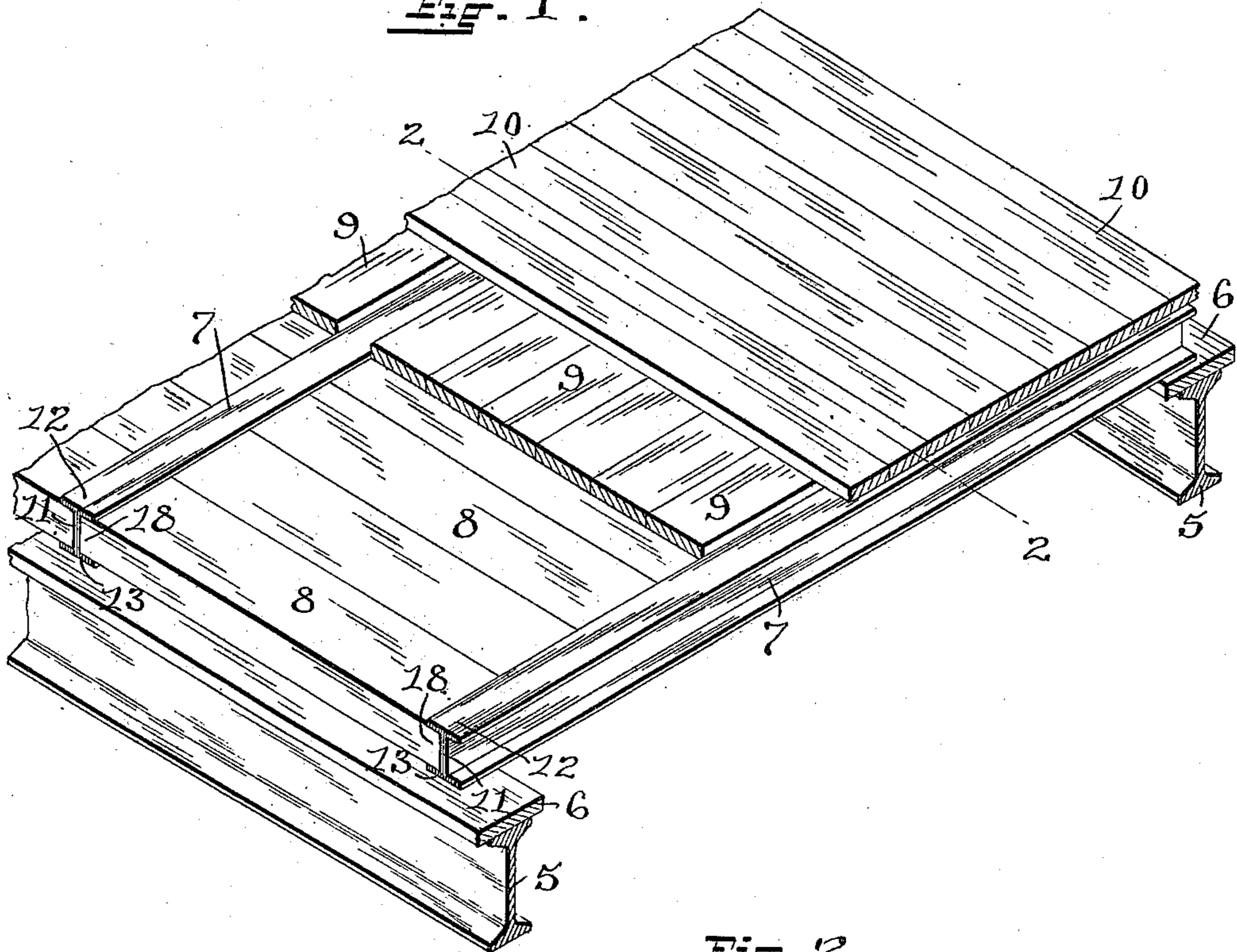


Fig. 2.

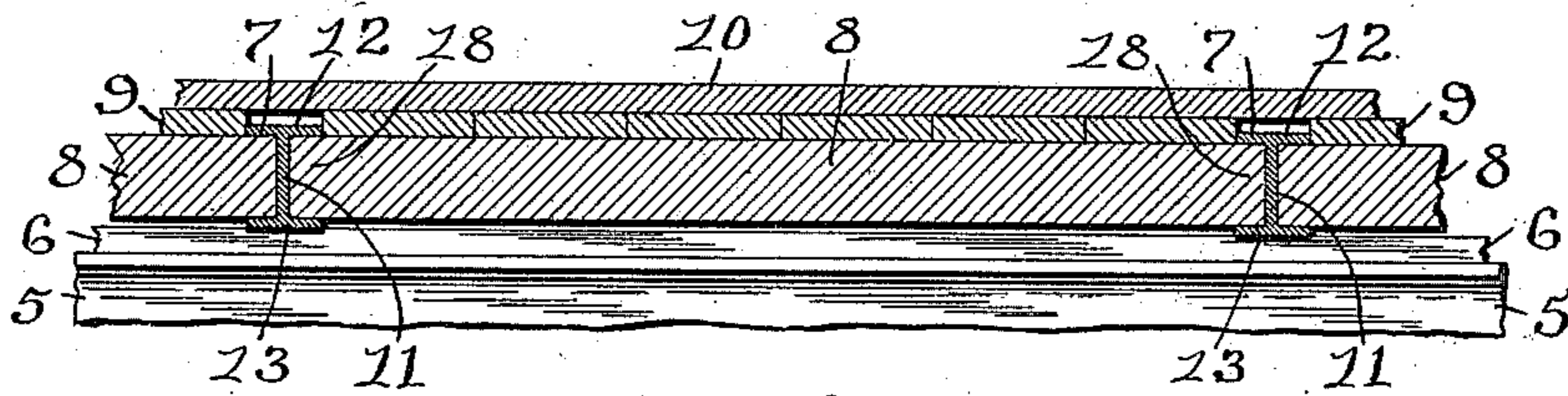
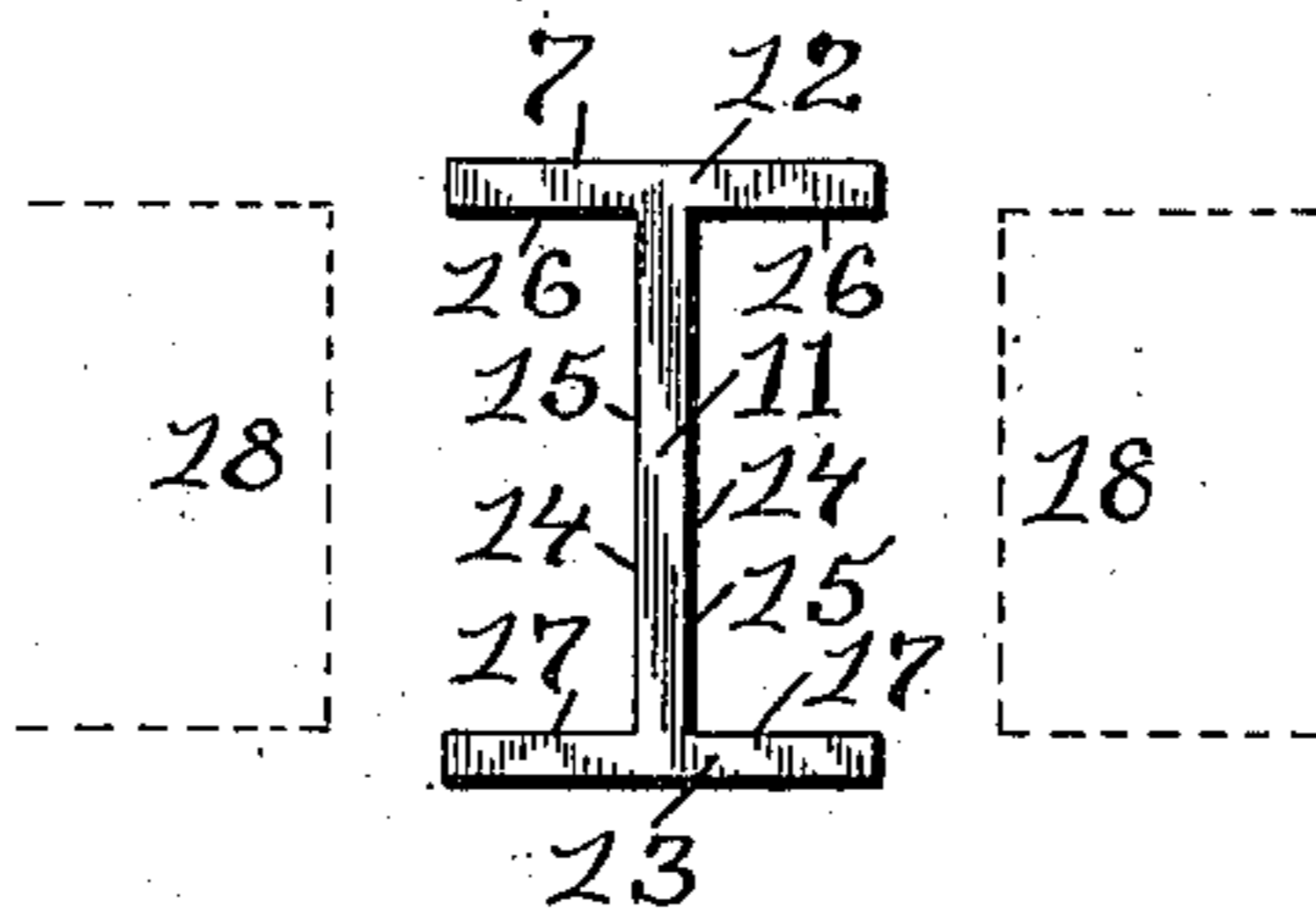


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## REINFORCED WOODEN MILL-FLOOR CONSTRUCTION.

975,923.

Specification of Letters Patent.

Patented Nov. 15, 1910.

Application filed December 29, 1909. Serial No. 535,388.

*To all whom it may concern:*

Be it known that I, CHARLES AMBROSE MARSHAL PRARAY, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Reinforced Wooden Mill-Floor Construction, of which the following is a specification.

10 This invention has reference to an improvement in mill construction and more particularly to an improvement in the construction of reinforced wooden mill floors or similar wooden floors.

15 In mill practice the products of the various machines are increased by increasing the size, weight and speed of the machines, which demands an increase in the strength of the floors and necessitates placing the supporting beams and columns farther apart, thereby still further weakening the floors. This has now reached a point where the usual construction of wooden mill-floors (which give the best results) is inadequate to properly support the load or weight of the machines. Increasing the distance between the floor beams necessitates an increase in the length and thickness of the floor planks, which with the high cost of lumber, increases the cost of the floor planks to an almost prohibitive extent.

The object of my invention is to improve the construction of wooden mill-floors or similar wooden floors, whereby the floors are reinforced and greatly strengthened without increasing the thickness of the floors or lengthening the floor planks and the number of the floor beams and supporting columns materially reduced.

40 A further object of my invention is to increase the strength of the floor between the floor beams, whereby the distance between the floor beams may be increased.

45 Another object of my invention is to strengthen and stiffen wooden mill-floors so as to prevent sagging of the same, under the increased weight of the machines.

50 Another object of my invention is to reinforce and strengthen larger mill floor areas so that the number of floor beams and columns are reduced and more individual

machines may be placed between the columns.

Another object of my invention is to strengthen wooden mill-floors so that hangers and shaftings may be supported directly from the underside of the floor.

Another object of my invention is to reduce the cost of mill construction by reducing the number of floor beams, and columns heretofore required for supporting the floors and by eliminating other structure for supporting the hangers and shafting.

Another object of my invention is to reduce the length of the floor planking heretofore required for mill floors, thereby reducing the cost and increasing the strength of the floors.

My invention consists in the peculiar and novel construction of the reinforced wooden mill floor or similar wooden floor, said floor having details of construction as will be more fully set forth hereinafter and claimed.

Figure 1. is a perspective view of a portion of a mill floor embodying my invention and showing the same broken away in successive stages to more clearly show the construction. Fig. 2. is a vertical sectional view through the floor taken on line 2. 2. of Fig. 1. and Fig. 3. is an enlarged end view of my improved I shape reinforcing floor member.

In the drawings 5. 5. indicates the usual floor supporting beams, 6. 6. the wood nailing strips, 7. 7. my improved metallic I shaped reinforcing floor members, 8. 8. comparatively short lengths of floor planks of wood, 9. 9. the intermediate floor boards and 10. 10. the top floor boards of my improved mill floor construction.

My improved I shape reinforcing floor member 7. is in the form of a metal beam, shaped in cross section to have a comparatively thin vertical central web 11. merging into a straight top 12. having a uniform thickness and which extends at right angles across the web 11, and outward an equal distance on each side of the web and a corresponding straight bottom 13. having a uniform thickness and which extends at right angles across the web 11. and outward an equal distance on each side, the whole forming a longitudinal square shaped channel 14.

in each side of the member, each channel having a straight back 15; a straight top 16. extending at right angles from the back 15, and a straight bottom 17. extending at right angles from the back 15. as shown in Fig. 3.

The floor wood planks 8. 8. have the square ends 18. 18. as shown, which fit without shaping into the side channels 14. 14. in the reinforcing floor members 7. 7.

The wood nailing strips 6. 6. are secured to the tops of the floor beams 5. 5. and the ends of the reinforcing floor members 7. 7. are supported on the nailing strips 6. 6. and floor beams 5. 5. as shown in Fig. 1. The square ends 18. 18. of the floor planks 8. 8. are inserted into the square shape side channels 14. 14. in the reinforcing floor members 7. 7., all of the floor planks 8. 8. for the entire distance between the floor beams 5. 5. being supported and strengthened by the reinforcing floor members 7. 7. independent of the floor beams 5. 5. The floor planks 8. 8. now extend parallel with the floor beams 5. 5. and not at right angles to the floor beams, as heretofore. The intermediate floor boards 9. 9. are now secured to the floor planks 8. 8. at right angles to the floor planks and the top floor boards 10. 10. are secured to the intermediate floor boards at right angles to the same, as shown in Figs. 1. and 2.

In the use of my improved construction for wooden mill-floors, short lengths of floor planking of a superior grade can be used at a reduced cost, the floor is greatly strengthened and stiffened, the floor area between the floor beams and columns is materially increased and larger machines or more machines may be placed between the columns and also placed more advantageously as to light, than has heretofore been done.

It is evident that the position of the floor planks and floor boards could be varied without materially affecting the spirit of my invention.

Having thus described my invention I claim as new and desire to secure by Letters Patent:—

In combination, a reinforced wooden mill-floor construction consisting of floor beams, metal reinforcing floor members supported on the floor beams at right angles to the floor beams, each reinforcing floor member shaped in cross section to have a comparatively thin vertical central web merging into a straight top having a uniform thickness and which extends at right angles across the web and outward an equal distance on each side of the web and a corresponding straight bottom having a uniform thickness and which extends at right angles across the web and outward an equal distance on each side of the web, forming a longitudinal square shape channel in each side of the member, each channel having a straight back, a straight top at right angles to the back and a straight bottom at right angles to the back, floor planks of wood parallel with the floor beams and having a thickness corresponding to the height of the web of the reinforcing floor members and square ends supported without extra shaping or fitting in the longitudinal square shape channels in the reinforcing floor members, independent of the floor beams, an intermediate floor of wood on the floor planks at right angles to the floor planks and a top floor of wood on the intermediate floor at right angles to the intermediate floor, whereby a wooden mill-floor is greatly strengthened and stiffened without sacrificing the required resiliency of the floor and without increasing the thickness of the floor.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES AMBROSE MARSHAL PRARAY.

Witnesses:

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