

(No Model.)

M. GARLAND.
CONVEYER FOR HANDLING LUMBER, &c.

No. 480,496.

Patented Aug. 9, 1892.

Fig. 4.

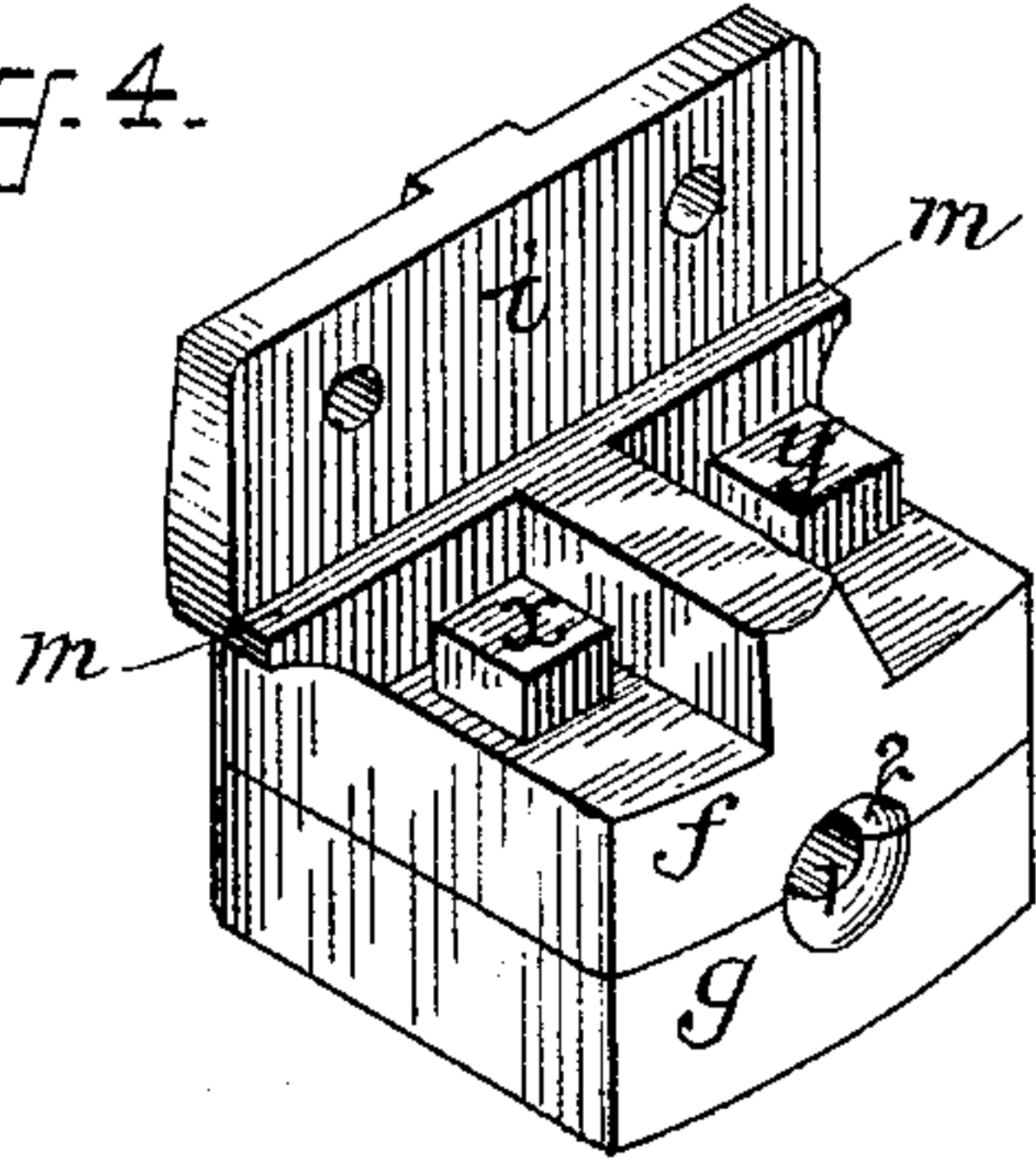


Fig. 1.

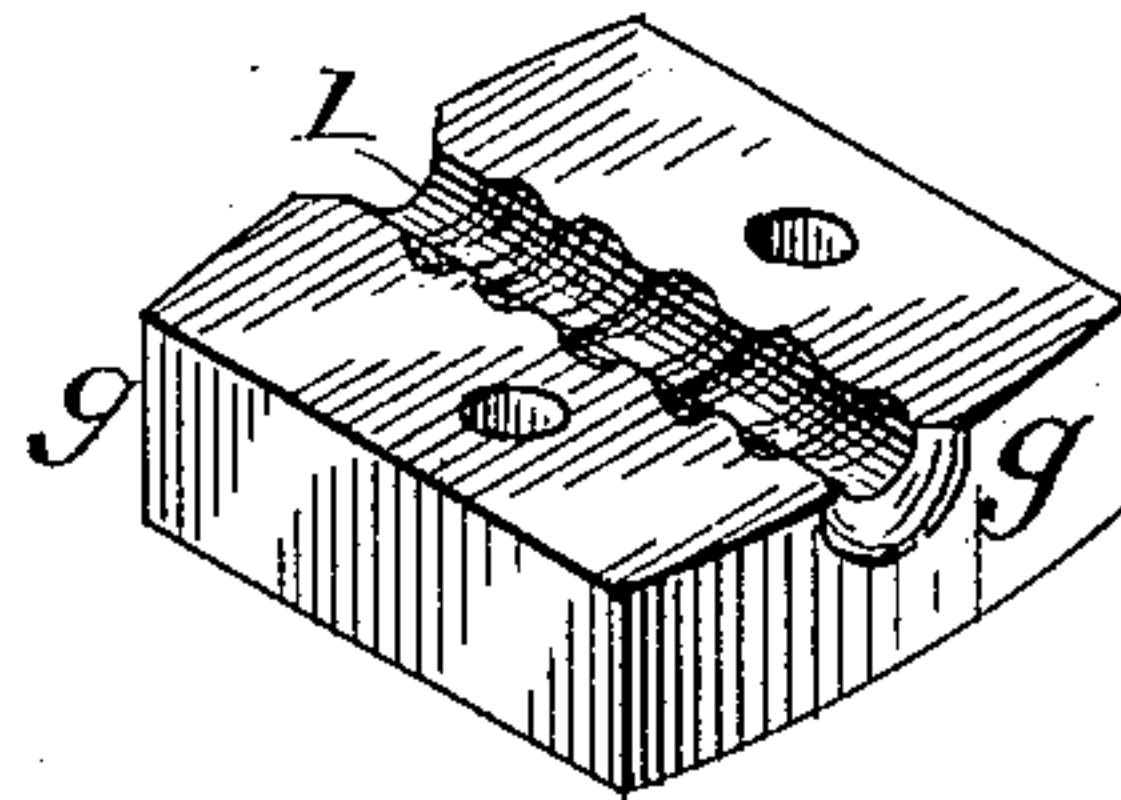
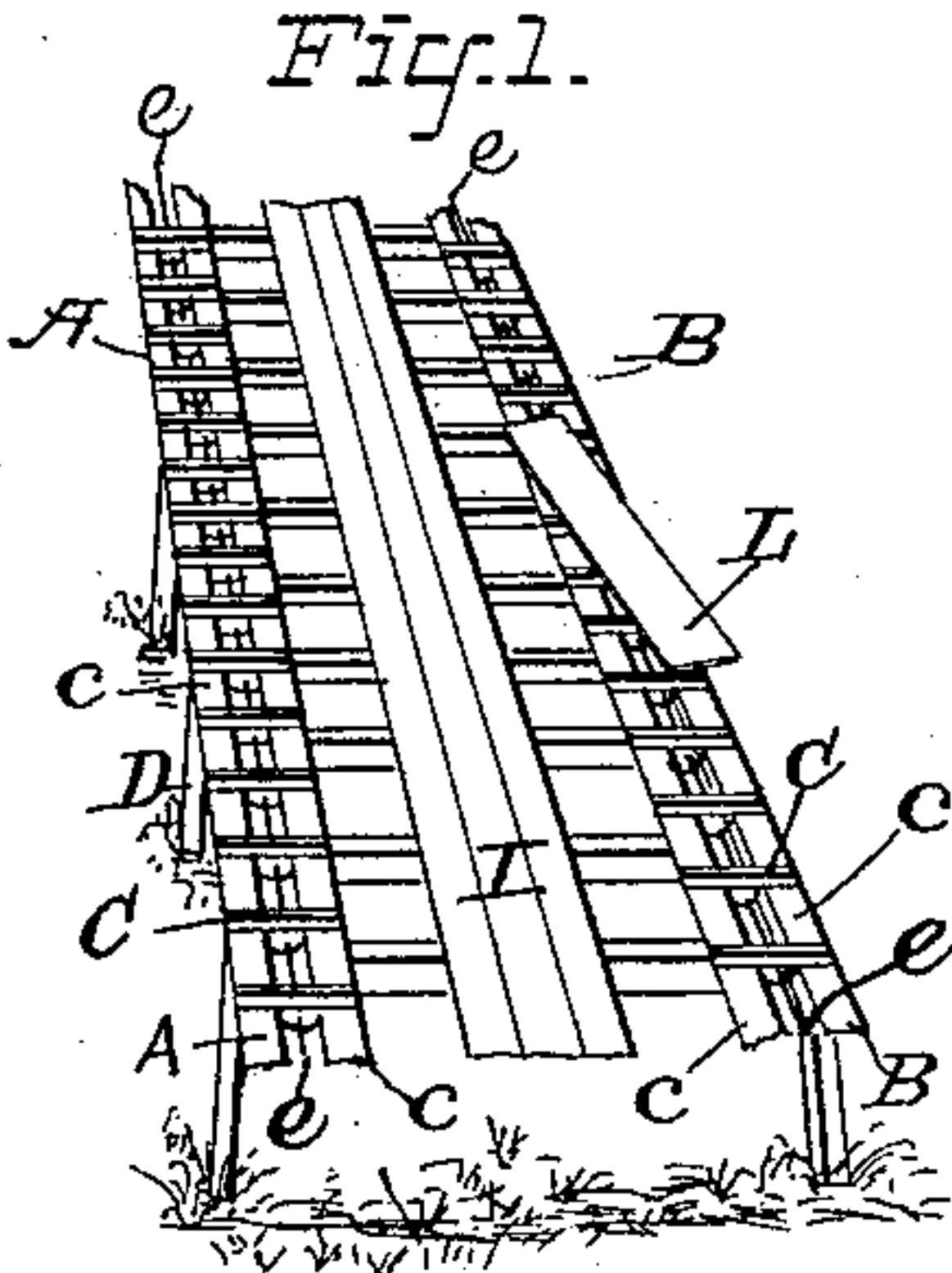


Fig. 5.

Fig. 2.

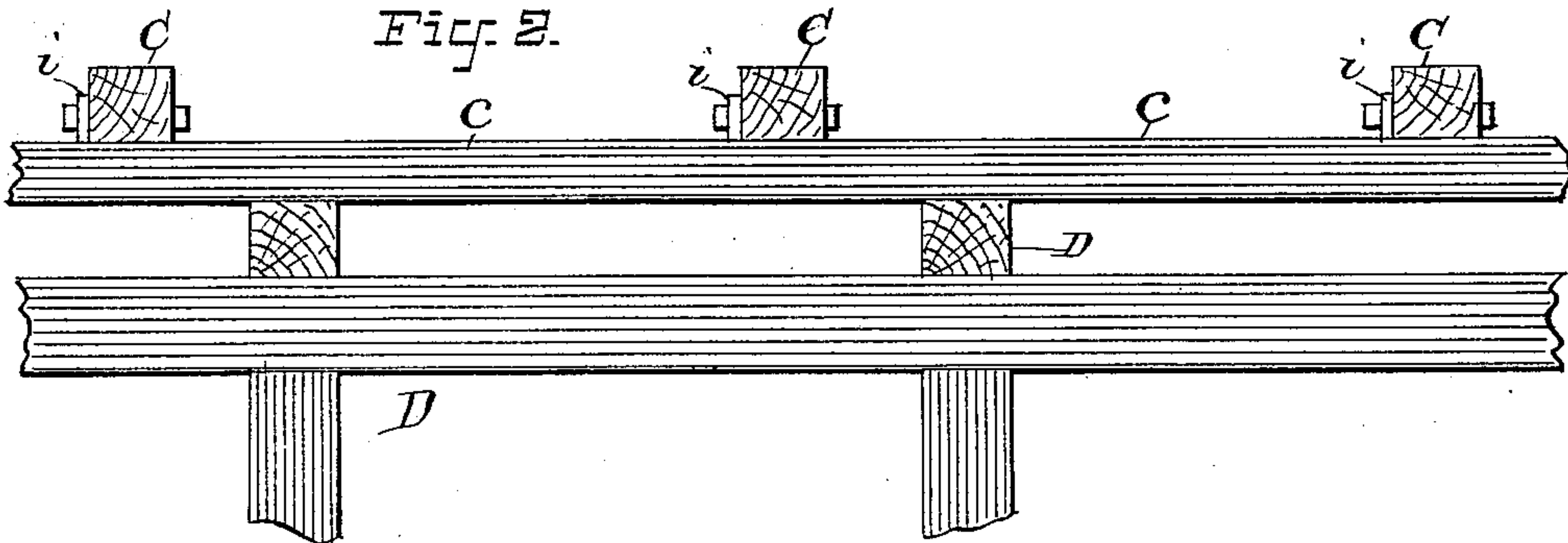
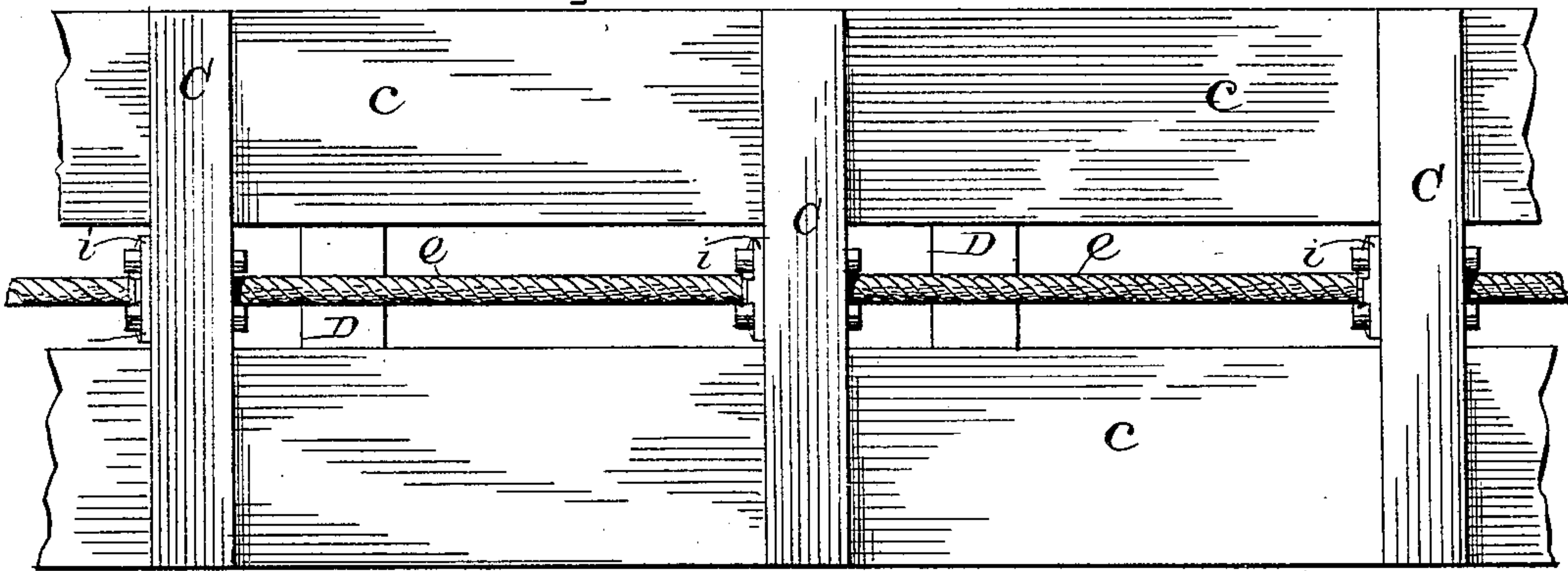


Fig. 3.



ATTEST:
J. A. Mudd
Ch. E. C. C. C.

INVENTOR:
Michael Garland
By
J. N. M. Sutter
Attorney

UNITED STATES PATENT OFFICE.

MICHAEL GARLAND, OF BAY CITY, MICHIGAN.

CONVEYER FOR HANDLING LUMBER, &c.

SPECIFICATION forming part of Letters Patent No. 480,496, dated August 9, 1892.

Application filed April 18, 1892. Serial No. 429,512. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL GARLAND, of Bay City, in the county of Bay and State of Michigan, have invented certain new and
5 useful Improvements in Conveyers for Handling Lumber, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part
10 of this specification.

My present invention relates to that type of conveyers which is especially adapted to the purposes of handling lumber—i. e., boards—and employed usually to convey the lumber
15 from a sawmill to a planing-mill, &c.

The novel features of my improved conveyer will be understood from the following description, and the nature of my invention will be found particularly pointed out in the
20 claims of this specification.

To enable those skilled in the art to make and use conveyers containing either in whole or in part my invention, either in the precise form in which I have so far practiced it or
25 under some modification thereof, I will now proceed to more fully describe a conveyer embodying all the parts of my invention, referring by letters and figures to the accompanying drawings, which form part of this specification, and in which I have illustrated a conveyer which has been built by me and is now
30 in practical and successful operation.

In the drawings, Figure 1 is a view in perspective of a section or portion of the conveyer, (in all eight hundred feet long,) showing the general plan of the plant. Fig. 2 is a partial side view of the same, on an enlarged scale. Fig. 3 is a detail top view of those of the metallic attachments and the carrier-cable and the wooden slats shown at Fig. 2.
40 Fig. 4 is a perspective view of the metallic attachment, and Fig. 5 is a similar view of the lower casting only of the attachment device.

In the several figures the same part will be
45 found always designated by the same letter or numeral of reference.

A and B are portions of the two parallel conveyer-stringers, on which rest and travel the wooden carrier-slats C, on which the
50 boards to be transported are placed.

As shown, each of the parts A and B is composed of two hard-wood running-strips c,

placed a suitable distance apart and supported by any proper means—such, for instance, as the trestle-work D in the case shown.

55 e e are portions of the two runs of an endless steel cable, which at either end or loop runs in engagement with the periphery of a suitable sprocket and cable wheel. These wheels are not shown, but they are located 60 one at each end of the looped cable, are supported in any approved manner, and one of them of course receives power and motion from some suitable motor, in order to drive the cable and its attachments, all according 65 to methods well understood by those skilled in the art.

Secured to the cable e at suitable and equidistant points are a series of metallic sprocket-like devices, each of which is composed of
70 two pieces or parts f g, that are clamped onto the cable, the upper part f of each serving as an attachment device for carrying a hard-wood slat or other bar C. These slats rest and slide, as shown, on top of the running-
75 strips c and thereby support in line the cable e, through the medium of the metallic devices f g, to which the slats are bolted and which are carried by the cable. The peculiar construction of these metallic devices f g will be
80 best understood by an observation, particularly of Figs. 4 and 5, from which it will be seen that each part is formed with a semi-cylindrical depression or recess 1 2, adapted to form, when the meeting or adjacent sur-
85 faces of the castings are in juxtaposition, a housing for the cable, within which the latter is firmly gripped when the parts f g are securely bolted together by the bolts and nuts x y. Preferably the recesses in these cast-
90 ings are formed with annular corrugations, so that when clamped onto the rope or cable they will take a firmer hold on the latter.

In the plant I have put into practical operation and that is now working I have used
95 a one-inch steel cable e about sixteen hundred and fifty feet long run on horizontally-arranged sprocket-wheels that are about six feet in diameter. The clamp-like sprocket devices f g are located about thirty-seven and a-half
100 inches apart from center to center. The hard-wood carrier-slats C are three inches wide by two and one-half inches thick and are twenty inches long, while each of the run-

ning-strips *c* is eight inches wide and two inches thick, (dressed on its upper side and inner edge,) the strips of each pair or set being set about four inches apart, or so as to
 5 freely accommodate between their adjacent edges the traveling metallic devices *f g*. Any or all of these dimensions and proportions may, however, of course be varied according to circumstances.

10 As shown, the same trestle-work *D* which supports the two sets of stringers *c* also serves as a support for a plank roadway *I*, arranged intermediately of the said sets of stringers and which affords convenient access to both
 15 runs of the lumber-conveyer.

In the general operation of the plant shown and so far described the moving endless cable *e* causes the whole series of slats *C* to travel on top of the running-strips *c* in about the
 20 usual manner, and the boards or lumber to be handled is simply placed on top of these slats, as illustrated by a board shown at *L*, Fig. 1, in line with the cable or direction of travel of the conveyer devices, whereupon it
 25 will be carried to the end of the line or to any intermediate point at which it may be desired to remove it, all after a fashion well understood by those familiar with the use of conveyers.

30 It will be observed that while the opposite and parallel vertical sides of the metallic device *f g* are flat or plane surfaces, adapted to move or travel easily between the adjacent edges of the strips of each pair of stringers, the
 35 ends of said pieces (barring the plate-like parts *i*) are curved, or represent convex surfaces, and it will be understood that as these curved surfaces work or run in engagement with the working faces of the teeth of the sprocket-
 40 wheels at either end of the conveyor, said curved surfaces are to be so shaped (according to the detail construction of the wheels that may be used) that they will perfectly mesh with, or will run properly in gear with,
 45 the sprocket-wheels.

The upper casting of each device *f g* is cast, it will be observed, with (so to speak) two upwardly-projecting flanges, one of which is located at one end of the casting, while the
 50 other runs lengthwise of its middle, thus leaving two depressed portions, (on either side of said middle flange,) in which are located the heads of the screw-bolts used to secure the parts of the casting together; and it will
 55 be seen that the part *i* of each clamp sets off from the body portion of the casting, so as to form a shoulder *m*, the plane of which is coincident with the plane of the top surface of the middle flange, so that said shoulder and
 60 said flange-top surface constitute seating-surfaces for the slat *C*, running, respectively, lengthwise and crosswise of said wooden or other slat.

The size and the proportions of the duplex casting or device *f g* may be varied, more or less, according to the general plan of the conveyer-plant; but with the two runs of cable arranged in a horizontal plane, which is, for a lumber-conveyer, the preferable arrangement, the formation of these devices must be
 70 substantially such as shown and described in the particulars of the curved-end surfaces, shaped to run in mesh with sprocket-wheel teeth; and in order to properly seat and effectually hold in place the slat *c*, it is important that the upper casting be made with the seating-surfaces shown and described.

With all the parts made and combined in substantially the manner herein set forth the cable will be perfectly supported by the depending portions of the metallic devices, which are in turn supported through the medium of the slats *C*, by the running-strips *c*. The said slats *C* will ride or travel with the least possible strain and friction on the stringers and
 80 will remain always in perfect alignment. All the parts are easily assembled, while at the same time in case of accident to any part they may be easily detached and repaired, and the structure as a whole will work efficiently and durably, with a minimum of driving motive power for any given amount of transportation work to be performed.

Having now so fully explained my improved conveyer that those skilled in the art can
 95 readily make and use it, either in the precise form shown or under some modification of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a conveyer of the type shown and described, the combination, with the usual pair or set of running strips *c*, the series of carrier-slats *C*, which rest and travel thereon, and the usual drive-cable *e*, located beneath the series of carrier-slats, of duplex clamping
 100 metallic devices, each one of which is secured, as shown, to one of the carrier-slats and has its depending or lower portions clamped onto the said drive-cable, all substantially in the manner and for the purposes hereinbefore set forth.

2. In a conveyer of the type shown and described, a metallic sprocket-like attachment device, formed, substantially as described, with proper seating-surfaces for the lower
 110 side of a carrier-slat, and with a vertically-projecting flange-like part *i* for securement of the carrier-slat to said part *i*, all substantially as hereinbefore set forth.

In witness whereof I have hereunto set my
 120 hand this 21st day of March, 1892.

MICHAEL GARLAND.

In presence of—

MORRIS L. COURTRIGHT,
 JOHN E. SIMONSON.