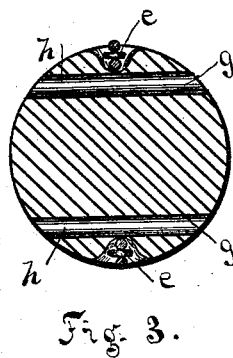
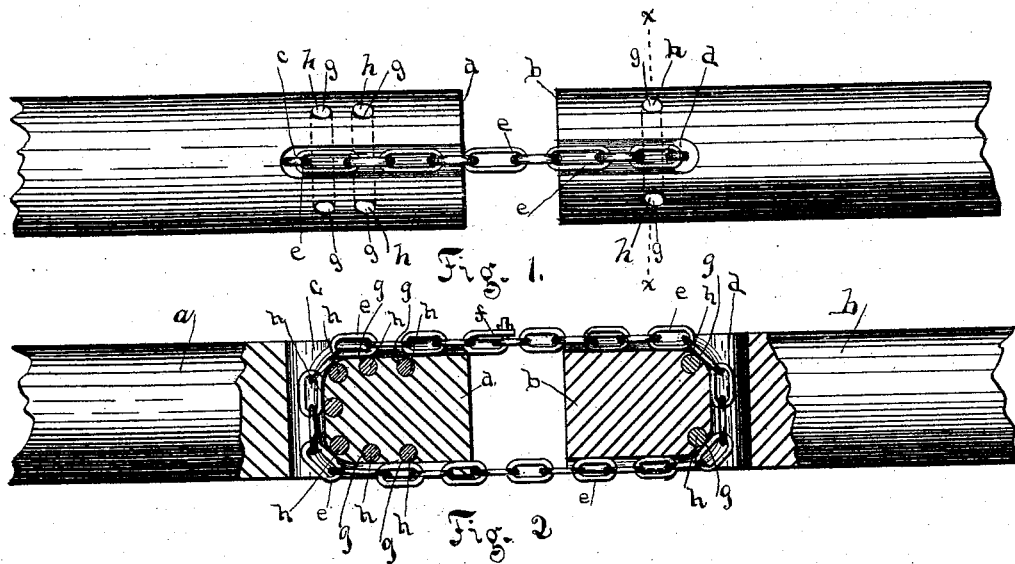


(No Model.)

D. W. CASE.
BOOM STICK.

No. 455,996.

Patented July 14, 1891.



Attest:
Geo. P. Thomas.
J. M. Maxon.

Inventor:
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UNITED STATES PATENT OFFICE.

DUDLEY W. CASE, OF BAY CITY, MICHIGAN.

BOOM-STICK.

SPECIFICATION forming part of Letters Patent No. 455,996, dated July 14, 1891.

Application filed April 6, 1891. Serial No. 387,822. (No model.)

To all whom it may concern:

Be it known that I, DUDLEY W. CASE, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Boom-Sticks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in boom-sticks, and pertains especially to that class of boom-sticks which are held together end to end by chains passed through transverse openings in the adjacent ends of the sticks. Great trouble and expense are incurred with sticks of this class on account of the clamping-chains which pass through the stick, wearing away the portion of the stick between the opening and the end of the stick, and more especially the upper and lower portions thereof, on account of the continual chafing action of the chains upon the end of or longitudinally with the grain or fiber of the soft timber, which is also rendered more susceptible to the action of the chains by being continually in the water and thoroughly soaked.

The object of my invention is to avoid this trouble and expense by providing a wearing-surface for the chain which will present the grain or fiber of a hard and dense wood to the action of the chain, whereby a greater resistance to the wear of the chain is obtained and the period of wear and use of the sticks is extended.

Another object of the invention is to provide boom-sticks of this class with means whereby repairs of the parts affected may be easily and cheaply made; and the invention consists in a boom-stick provided on its end portion with a transverse opening and a coupling-chain passed through the opening, with wear-pieces passed transversely through the stick between the chain-opening and the end of the stick and transversely with and in proximity to the chain-opening; and the invention also consists in the combination, arrangement, and construction of the parts as I shall presently describe in detail, and which will be designated in the claims of this specification.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the adjacent ends

of two boom-sticks secured to each other by a coupling-chain in the ordinary way and containing my invention. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a transverse section of the same, taken at $x x$.

Similar letters of reference are used in the several views to designate the same parts.

a and b represent the adjacent end portions of two boom-sticks of the ordinary form, consisting of two logs of a suitable dimension and composed of some buoyant variety of wood, and transversely through the sticks and near their ends are arranged the openings c and d , and through these openings a coupling-chain e is passed, and the opposite ends of the chain are brought together and secured to each other by a "cold-shut" link f or other convenient device.

Adjacent to and transversely with the openings c and d and transversely through the sticks are arranged the openings g , and in these openings are passed the pins or wear-pieces h , and these pieces h are preferably formed of hard and dense wood, capable of considerable wear, and the openings are preferably arranged in the upper and lower portions of the log and quite near to the openings c and d , so that when the chain has worn away the portion between the pin and the openings it comes in contact with the wear-pieces, which, being of a dense and solid material and presenting a harder surface to the action of the chain, lasts for a much longer time and prevents any great wear of the chain upon the stick, and whenever the wear-pieces have become so worn as to need repairs a new piece is driven into the opening and the worn piece is thereby removed, and the wearing-surface being thus renewed the log is then in substantially the same condition for operation and wear as when first coupled together.

Of course it is evident that only two of the wear-pieces may be put in the log, one for receiving the wear of the upper portion of the chain while the other receives the wear of the lower portion thereof, as shown in the log a in Fig. 2; or a series of the pieces may be placed in position, as shown in the log b , so that a greater area of wearing-surface may be provided for the chain.

It will be seen that a great advantage is gained by the use of my improved construction, as the entire wear upon the sticks usually comes upon the portion in contact with the chain, and when (with the ordinary construction) the portion between the chain-opening and the end of the stick is worn out it is necessary to reconnect the sticks by cutting off the ends and providing new openings, which soon uses up a large portion of the sticks and requires a great expense and loss of the use of the sticks while these repairs are going on, while with my improvement the wear-pieces are made of a size suitable for driving in the opening and kept in stock, so that should it be necessary to repair the sticks a new and perfect pin is driven in position against a worn pin, which removes the mutilated pin and replaces it by a perfect pin or wearing-piece by one operation and without removing the coupling-chain. Another advantage of this construction is that the wear-pieces being passed transversely through the portion of the log between the chain-opening and the end of the log binds the parts together and reduces the liability of splitting and checking the parts, which is usually very great, as the opening is quite near the end, and a continual strain from the chain obtaining upon the part between the opening and the end of the log causes a constant chafing action and straining of the parts. While I have mentioned a hard and solid wood as the material preferable to use for the wear-pieces, other material may be used instead, if desired, as the object of the inserted pieces is entirely to prolong the period of practical use of the sticks without great expense and trouble. I wish it understood that I do not confine my invention to any particular material used or to any particular number of the wear-pieces inserted, as boom-sticks used especially

for towing logs upon the lakes and liable to encounter rough weather and water would need to be provided with the wear-pieces placed in series, as shown in the log *d*, so that greater wearing-surface will be provided, while for towing and handling logs on rivers and still waters a small number of the wear-pieces, as shown in the log *b*, will answer as well.

Having described the construction and operation of my invention, what I claim is—

1. The combination, with a boom-stick provided with a transverse opening near its end and a coupling-chain passed through the opening, of the wear-pieces passed transversely through the log and transversely with and in proximity to the opening, substantially as and for the purpose set forth.

2. The combination, in a boom-stick, of the log having the wear-pieces passed transversely through its opposite side portions near its end, as described, and provided with an opening for the chain formed transversely through the log and transversely with the wear-pieces, and having the side of the opening close to or exposed to the wear-pieces, substantially as set forth.

3. The combination of the logs *a* and *b*, provided in their adjacent ends with the transverse openings *c* and *d*, and the chain *e*, passed through the said openings and with its opposite ends secured together with the wear-pieces *h*, passed transversely through the logs between the ends thereof and the said chain-openings and arranged to lie transversely with the chain and for contact therewith, substantially as set forth.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

DUDLEY W. CASE.

Witnesses:

JAS. E. THOMAS,
GEO. P. THOMAS.