

No. 653,245.

M. D. KEENEY.
DECKLE STRAP.

Patented July 10, 1900.

(Application filed Nov. 23, 1899.)

(No Model.)

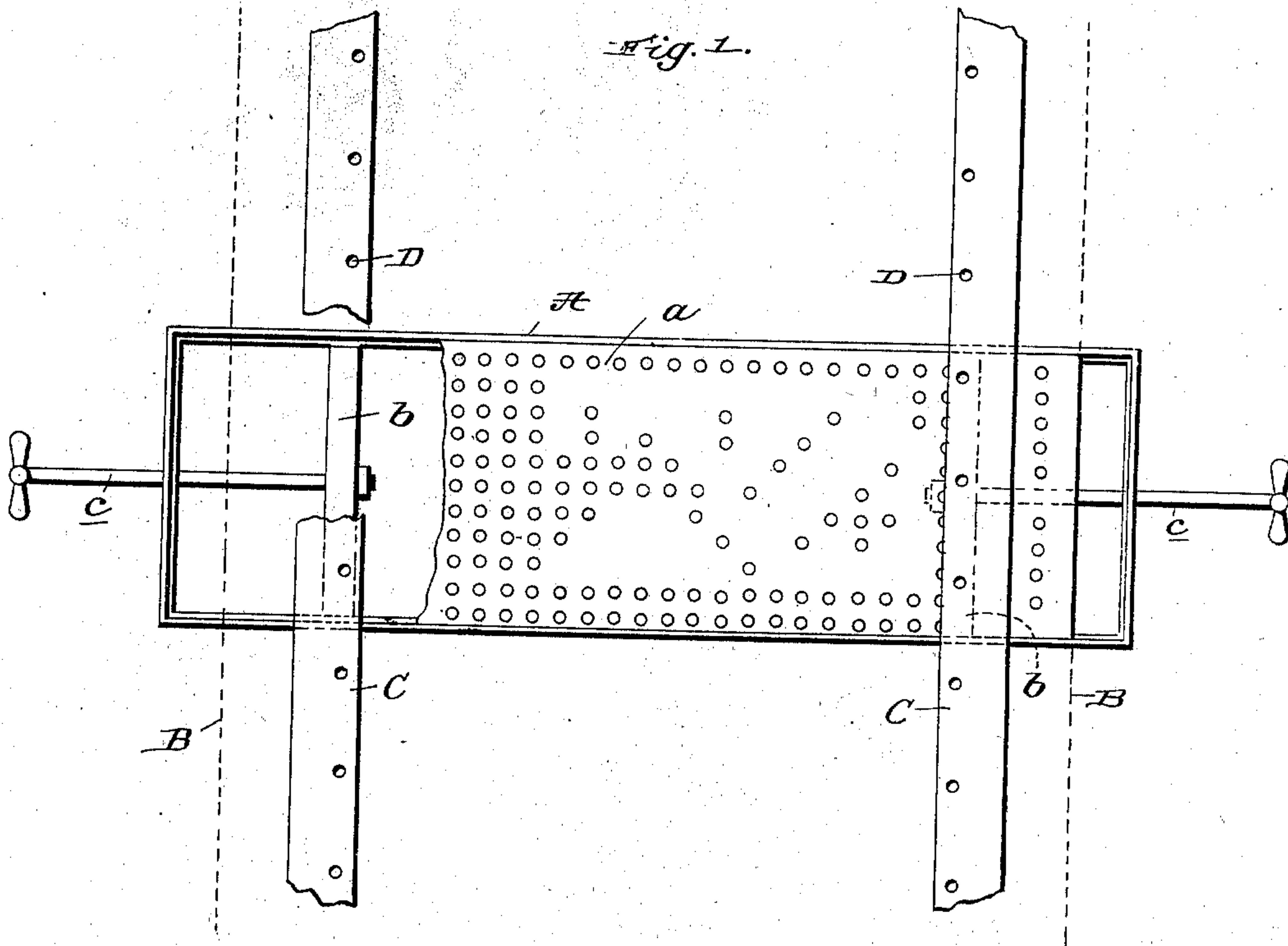


Fig. 2.

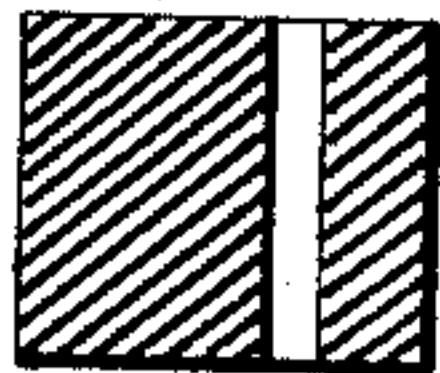


Fig. 3.

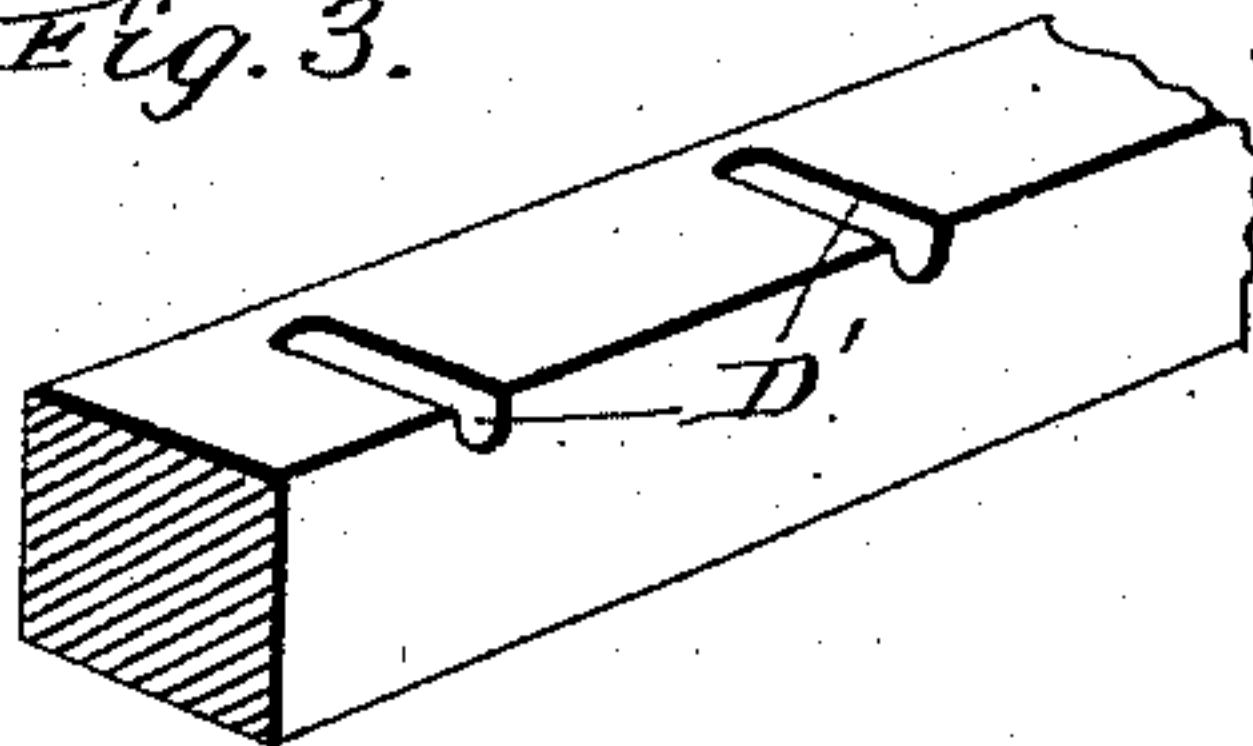


Fig. 4.

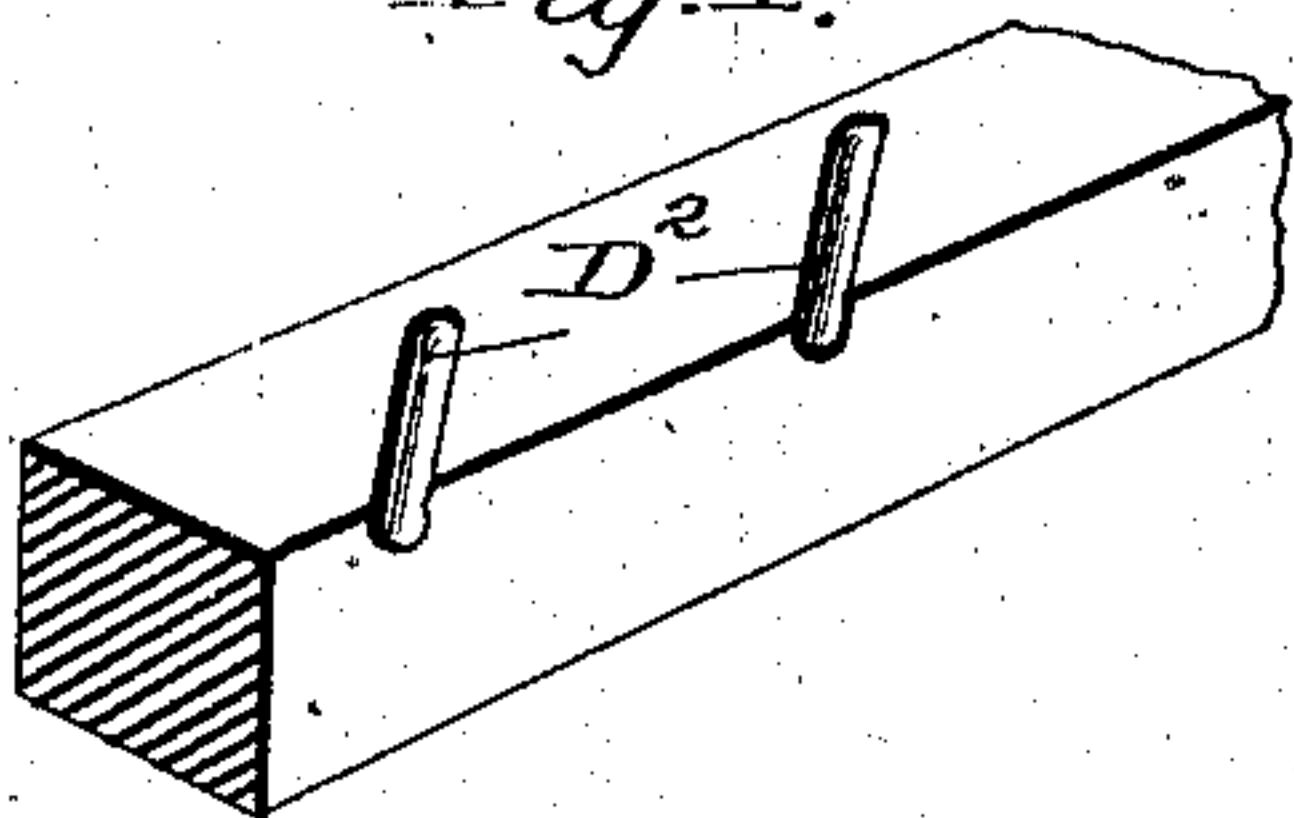
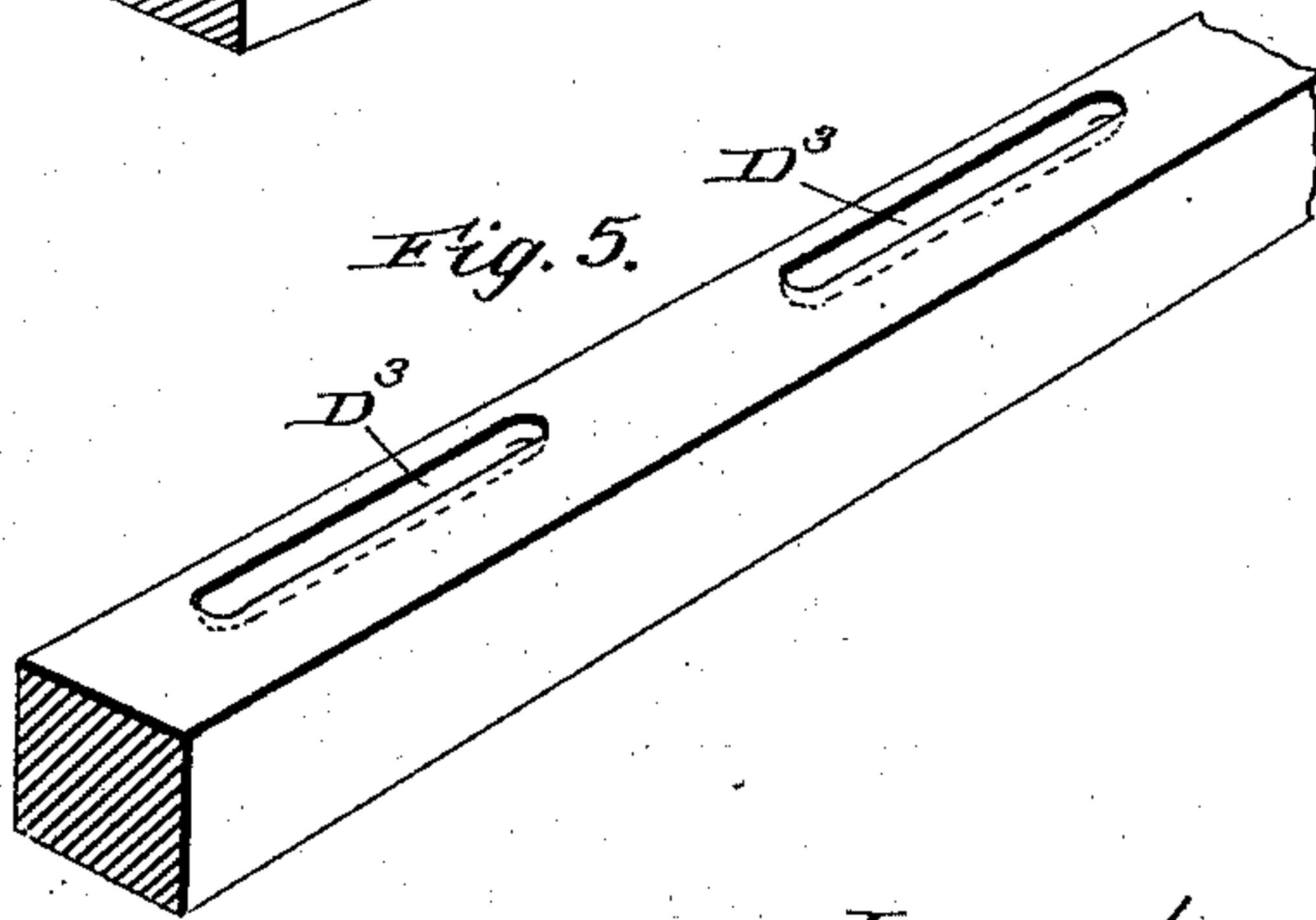


Fig. 5.



Witnesses:

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DECKLE-STRAP.

SPECIFICATION forming part of Letters Patent No. 653,245, dated July 10, 1900.

Application filed November 23, 1899. Serial No. 738,059. (No model.)

To all whom it may concern:

Be it known that I, MARBLE D. KEENEY, a citizen of the United States, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Deckle-Straps, of which the following is a specification.

My invention relates to the deckles or deckle-straps of Fourdrinier paper-making machines.

It is well known to users of the Fourdrinier machines that those portions of the pulp-bearing wire at and adjacent to the edges which are arranged beneath the deckle-straps wear out long before the remainder of the wire and thus render the same worthless as a whole. This excessive wear of the portions of the wire beneath the deckle-straps is due to the fact that the operator, having no way of ascertaining the position of the usual adjustable heads of a suction-box with respect to the deckle-straps, places said heads at any point intermediate of the edges of the straps, with the result that the inner portions of the straps are subjected to the suction in the box and caused to press the portions of wire beneath them against the box and create friction between said portions of the wire and box.

The general object of my invention is to provide deckle-straps which are so constructed as to render it impossible for the operator of a "Fourdrinier" machine to seal the suction-box without placing the adjustable heads below the inner portions of the deckle-straps and at the opposite edges of the sheet of paper being made, in which position said heads will effectually prevent the suction in the box from drawing any portion of the deckle-straps toward the box and causing the excessive wear of wire and box above stated.

Another object is to provide deckle-straps which are constructed with a view of notifying the operator when the adjustable heads are not adjusted correctly with reference to the deckle-straps and the sheet of paper to be made.

With the foregoing in mind the invention will be fully understood from the following

description and claims when taken in conjunction with the accompanying drawings, in which—

Figure 1 is a plan view illustrating by full lines the suction-box and by dotted lines the pulp-bearing wire of a Fourdrinier paper-making machine, together with my improved deckle-straps, one of the straps and the suction-box being shown as partly broken away to illustrate one of the adjustable heads of the suction-box. Fig. 2 is an enlarged transverse section of one of the deckle-straps. Fig. 3 is an enlarged transverse section of a modified form of deckle-strap. Fig. 4 is a detail inverted perspective view of another modified form of deckle-strap. Fig. 5 is a detail inverted perspective view of still another modified form of deckle-strap.

Referring by letter to the said drawings, and more particularly to Figs. 1 and 2 thereof, A is a stationary suction-box forming part of a Fourdrinier paper-making machine. The said box is provided with a foraminated upper wall or cover *a* and contains heads *b*, of rubber or other suitable material, adjustable lengthwise of the box through the medium of handles *c* after the usual well-known manner.

B is a pulp-bearing wire or wire-cloth which is arranged, as shown by dotted lines, to pass over the foraminated upper wall of the suction-box in the ordinary manner.

C C are my improved deckle-straps, the same being made of rubber or other suitable material and heavy that they may bear closely upon the surface of wire B and prevent any pulp from passing beneath them. They differ from the ordinary deckle-straps at present in use in that they are provided at intervals in their length with ducts D in the form of apertures, which extend from their lower to their upper sides, as shown in Fig. 2. These apertures are preferably arranged in lines adjacent to the inner edges of the straps, as shown, and they have for their purpose to admit air to the under side of the straps as the same pass over the suction-box.

In practice after the deckle-straps are arranged at the desired distance apart on the wire B the heads *b* in the suction-box A are

adjusted until they rest in alinement or coincident with the lines of apertures D in the straps C. When the heads *b* are thus placed, the whistling, due to the drawing of air through the apertures D, will cease, and the operator will thereby be apprised of the fact that the heads are in proper position to seal the suction-box. It will also be observed that by virtue of the apertures D in the straps C the suction-box cannot be sealed until the heads *b* are in their proper position—*i. e.*, in alinement or coincident with the lines of apertures in the straps C—and that when the heads *b* are in such position no part of the deckle-straps is subject to the suction in the box, and hence is not drawn toward the box and caused to create frictional wear between the pulp-bearing wire and the box.

I prefer to provide the straps C with apertures D for the purpose of admitting air beneath them when said apertures are not sealed by the heads *b*, but do not desire to be understood as confining myself to the use of apertures, as ducts D' in the form of channels, such as shown in Fig. 3, may be employed in lieu of the same. These channels D' are formed in the under side of the straps at suitable intervals and extend transversely from the outer edges thereof to a point adjacent to the inner edges.

In Fig. 4 are shown ducts D² in the form of channels, which are similar to the channels D' of Fig. 3, except that they are disposed oblique of the straps.

The ducts D³ (shown in Fig. 5) are in the form of channels which are disposed lengthwise of the straps and are adapted when one of their ends is over the suction-box to admit air beneath the straps through their exposed portions in advance or in rear of the box.

It will be readily observed that straps constructed after the manner shown in Figs. 3 to 5 will operate equally as well as the straps shown in Figs. 1 and 2 to apprise the operator when the heads *b* of the suction-box are incorrectly adjusted with reference to the straps and the width of the sheet of paper to be made. It will also be observed that deckle-straps embodying my invention may be made almost, if not quite, as cheaply as the

ordinary deckle-straps such as at present in general use.

Having thus described my invention, what I claim is—

1. An improved deckle or deckle-strap for paper-making machines provided with means for admitting air to its under side as it passes over the suction-box of a machine.

2. An improved deckle or deckle-strap for paper-making machines provided with a duct for admitting air to its under side as it passes over the suction-box of a machine, substantially as specified.

3. An improved deckle or deckle-strap for paper-making machines provided, at intervals in its length, with ducts for admitting air to its under side as it passes over the suction-box of a machine, substantially as specified.

4. An improved deckle or deckle-strap for paper-making machines provided, at intervals in its length, with apertures extending from its lower to its upper side; the said apertures being designed to admit air to the lower side of the strap as the same passes over the suction-box of a machine, substantially as specified.

5. In a paper-making machine, the combination of a suction-box, an adjustable head therein, and a deckle or deckle-strap provided with a duct for admitting air to its under side as it passes over the suction-box; said duct having its discharge arranged adjacent to the inner edge of the deckle, substantially as and for the purpose specified.

6. In a paper-making machine, the combination of a suction-box, an adjustable head therein, and a deckle or deckle-strap provided, at intervals in its length and adjacent to its inner edge, with alined apertures extending from its under to its upper side; the said apertures of the strap being adapted to be sealed by the adjustable head of the suction-box, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

MARBLE D. KEENEY.

Witnesses:

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