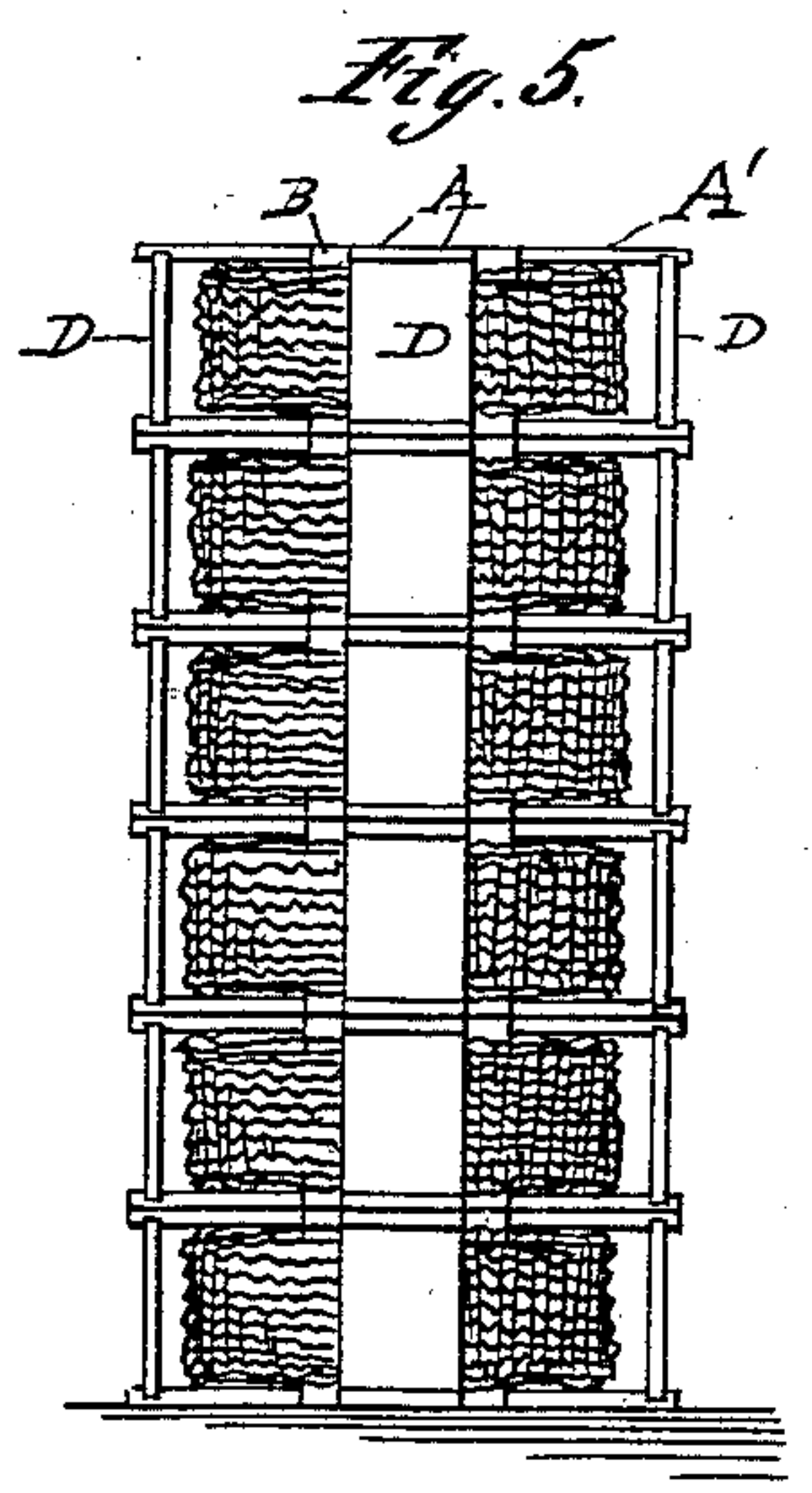
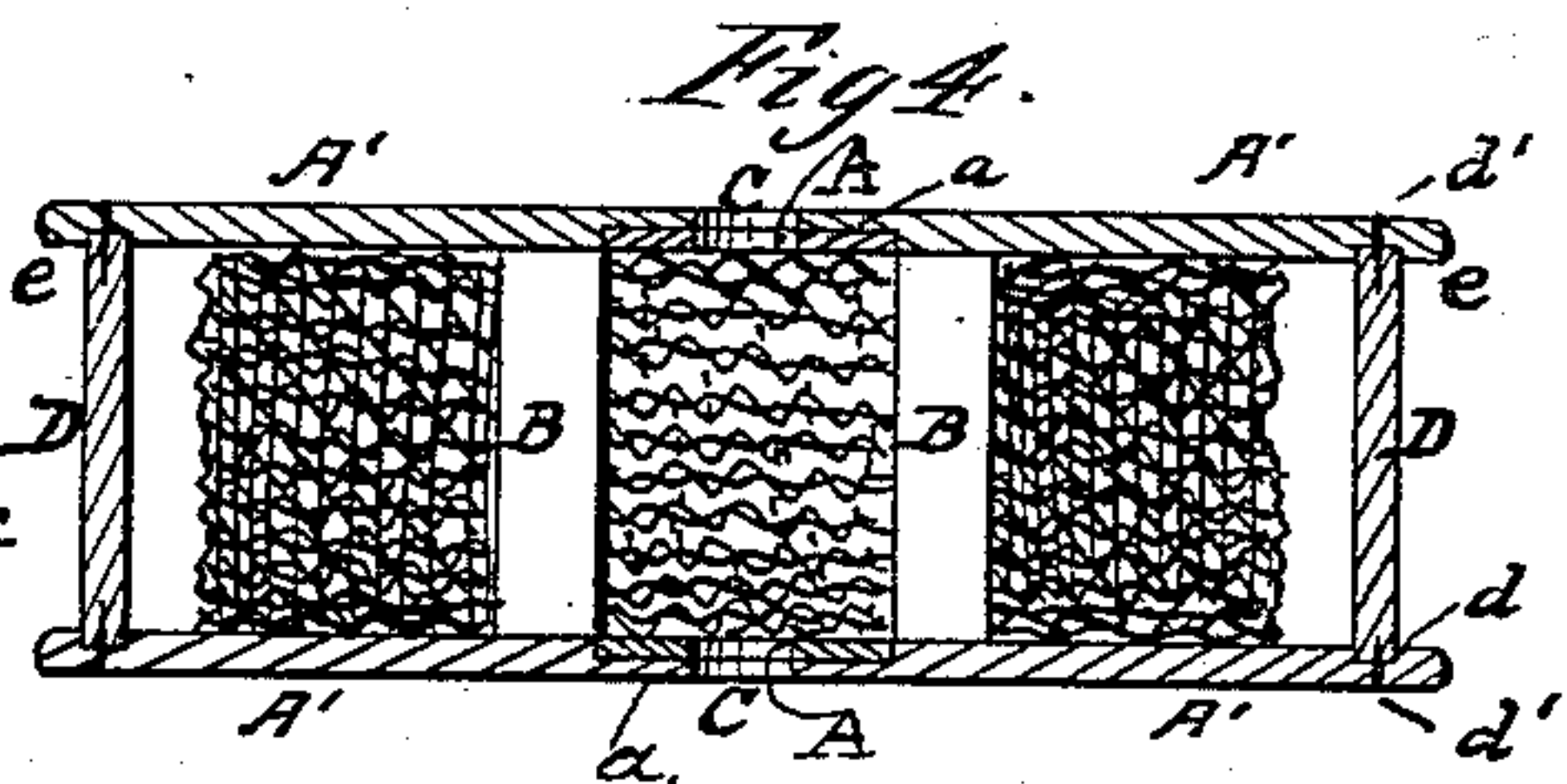
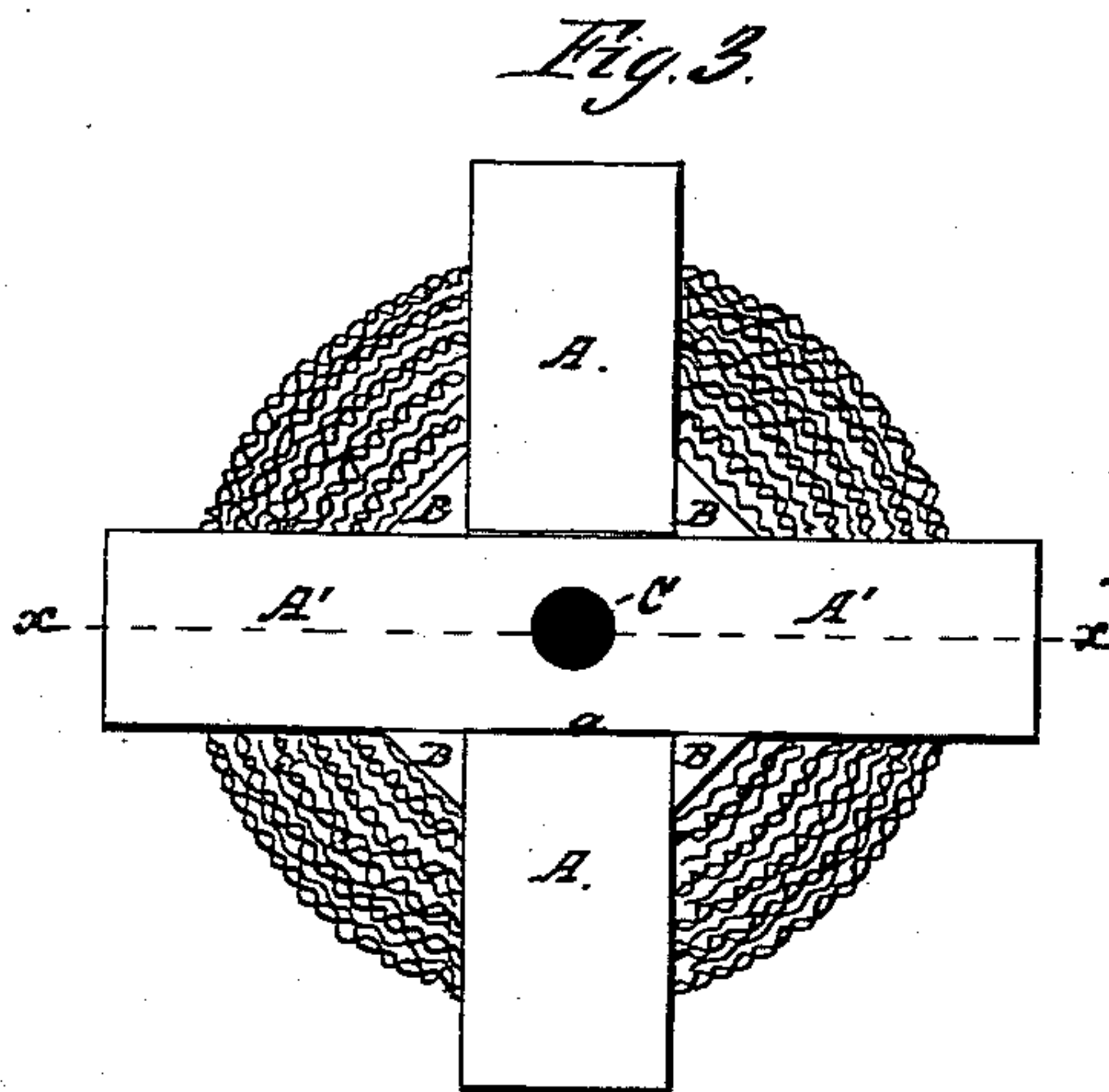
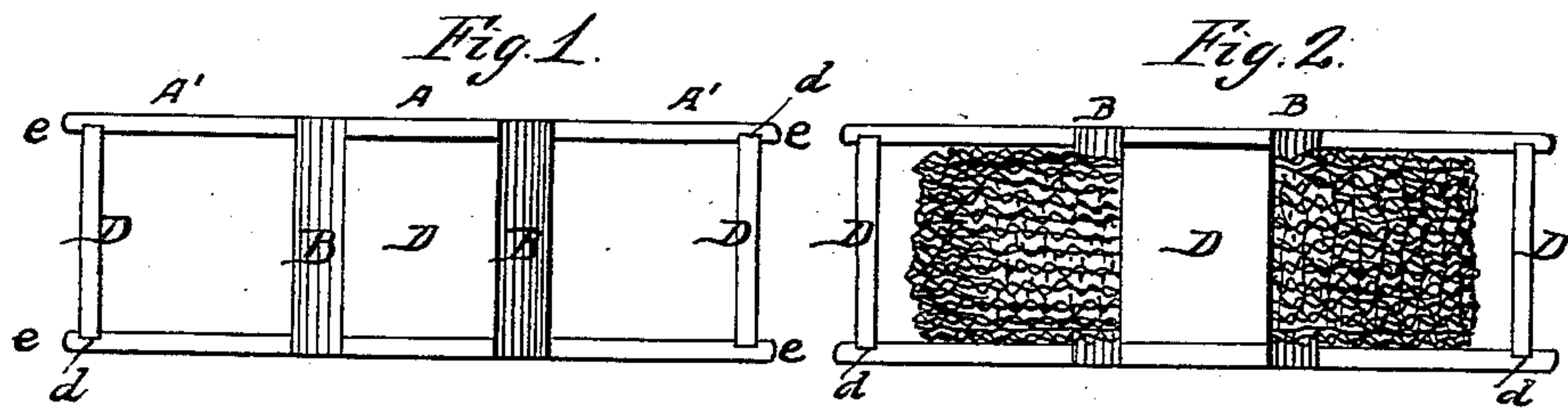


E. M. CRANDAL.
Spool for Barbed Fence-Wire.

No. 226,283.

Patented April 6, 1880.



Witnesses:
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UNITED STATES PATENT OFFICE.

EDWARD M. CRANDAL, OF CHICAGO, ILLINOIS.

SPOOL FOR BARBED FENCE-WIRE.

SPECIFICATION forming part of Letters Patent No. 226,283, dated April 6, 1880.

Application filed February 27, 1880.

To all whom it may concern:

Be it known that I, EDWARD M. CRANDAL, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Spools and Packages for Shipment of Barbed Fence-Wire; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in the construction of the spool or package for containing barbed fence-wire during shipment.

The purpose of the invention is to so construct the spool that it will receive and contain the wire in the same manner as ordinary spools, while at the same time the structure is so braced and strengthened in all parts as to endure readily the rough handling incident to shipment, and at the same time so construct it that several spools may be readily piled one on top of the other without danger of breaking the spools.

In the common spool in use at present, and which consists in having two heads formed of pieces of boards laid across each other and connected together by a skeleton drum composed of angle-strips of wood placed in the four corners of the two head-pieces and extending from one to the other, serious difficulty is found in handling and transporting, due to the fact that the head-pieces are formed simply of two pieces of wood laid one on top of the other, so that when the spool is completely filled with wire and rested upon the ground or floor it is liable to tip to one side or the other, owing to the fact that it is supported upon only one of the two cross-pieces which form the lower head, and for this same reason several of such spools cannot be piled one upon the other with safety. Moreover, the outer piece of each head in such spools is raised away from the wire the thickness of the inner piece, and consequently, receiving no support from the wire, is liable to be broken or crushed.

In the present invention I overcome these difficulties by halving or rabbeting together the two pieces which form each head, so that all four arms of each head come in direct contact with the wire by reason of the inner surface of all the arms being in the same plane,

and this structure at the same time brings the outer surface of all four arms of each head also upon the same plane, so that the spool, when set upon end, is not liable to tip or rock or be subject to any undue strain upon a portion of its arms, either by its own weight or from the weight of other spools resting upon it, which enables my improved packages to be piled one upon the other readily and safely, the several arms of each head being further braced by cross-pieces rabbeted or grooved in place from one arm of one head to the corresponding arm of the other head, so that when several spools are piled one upon another there will be a direct support from the floor to the upper spool through the intermediate ones by reason of these brace-pieces, which also serve at the same time as fenders or guards to protect the wire.

The peculiar advantage due to rabbeting or grooving the brace-pieces into the arms, as shown, consists in the fact that where so applied they cannot readily either be driven in toward the wire or pulled out away from the wire, because the groove, of course, resists this, while at the same time the nailing of the brace-pieces prevents the spool-arms from springing up to release the brace-pieces when the spool is lifted.

The halving together of the spool-head arms, of course, weakens them considerably; but this weakening does no harm, because after the wire is applied and wound onto the spool that forms a support for each arm against any pressure in a direction toward the wire, while the brace-pieces securing each pair of arms together afford a like support against any breaking-pressure in a direction tending to lift them away from the wire.

In the accompanying drawings, which form a part of this specification, Figure 1 is a side view of one of the spools empty. Fig. 2 is a view of the same filled with wire. Fig. 3 is a plan view of one of the spools filled with wire. Fig. 4 is a section of the spool in the line $x x$ of Fig. 3. Fig. 5 is a view of spools piled one upon the other.

Similar letters of reference indicate like parts wherever the same are used in the several figures of the drawings.

In said drawings, A A' are cross-pieces form-

ing the spool-heads. The cross-pieces A and A' of each spool-head are halved together, as at *a*. B B are four angular strips extending from one head to the other, being secured in the 5 corners, as shown, to form the skeleton drum upon which the wire is wound. C is an axial perforation in each head, to form a means of holding the spool in the machine to fill the same. D D, &c., are four brace-boards, which 10 are grooved into the arms of the heads near their extremities by the grooves *d*, and they are further secured by toe-nailing through the arms, as at *d'*.

In filling the spool I place it in the machine 15 without the brace-strips D. When the spool is filled, if it be desired to paint the wire, which is usually done by immersing it in a vat of liquid paint, I submit it to this immersion before applying the brace-strips D, so that when 20 applied said brace-strips shall be unpainted, and consequently in proper condition to be stenciled with marks indicating weight, quantity, trade-mark, &c., and also affording a suitable place for marking the address or ship- 25 ping directions on the packages. It will be

noticed that these brace-strips are grooved into place a little distance from the ends of the cross-arms, leaving a projecting part, *e*, affording a ready means or grasp for the hands in handling or lifting the package. 30

What I claim, and desire to secure by Letters Patent, is—

1. The spool or package for barbed wire described, consisting of two heads, the arms of which are halved together to present a plane 35 surface interiorly and exteriorly, said heads being connected together by a drum and braced by strips applied outside of the wire from head to head between the arms, substantially as specified. 40

2. The combination, with the spool the heads of which are composed of separate arms, of the brace-pieces D, secured in position by being grooved or fastened near the ends of the arms to form a hand-grasp, *e*, at each arm, substan- 45 tially as specified.

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Witnesses:

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