

No. 735,050.

PATENTED AUG. 4, 1903.

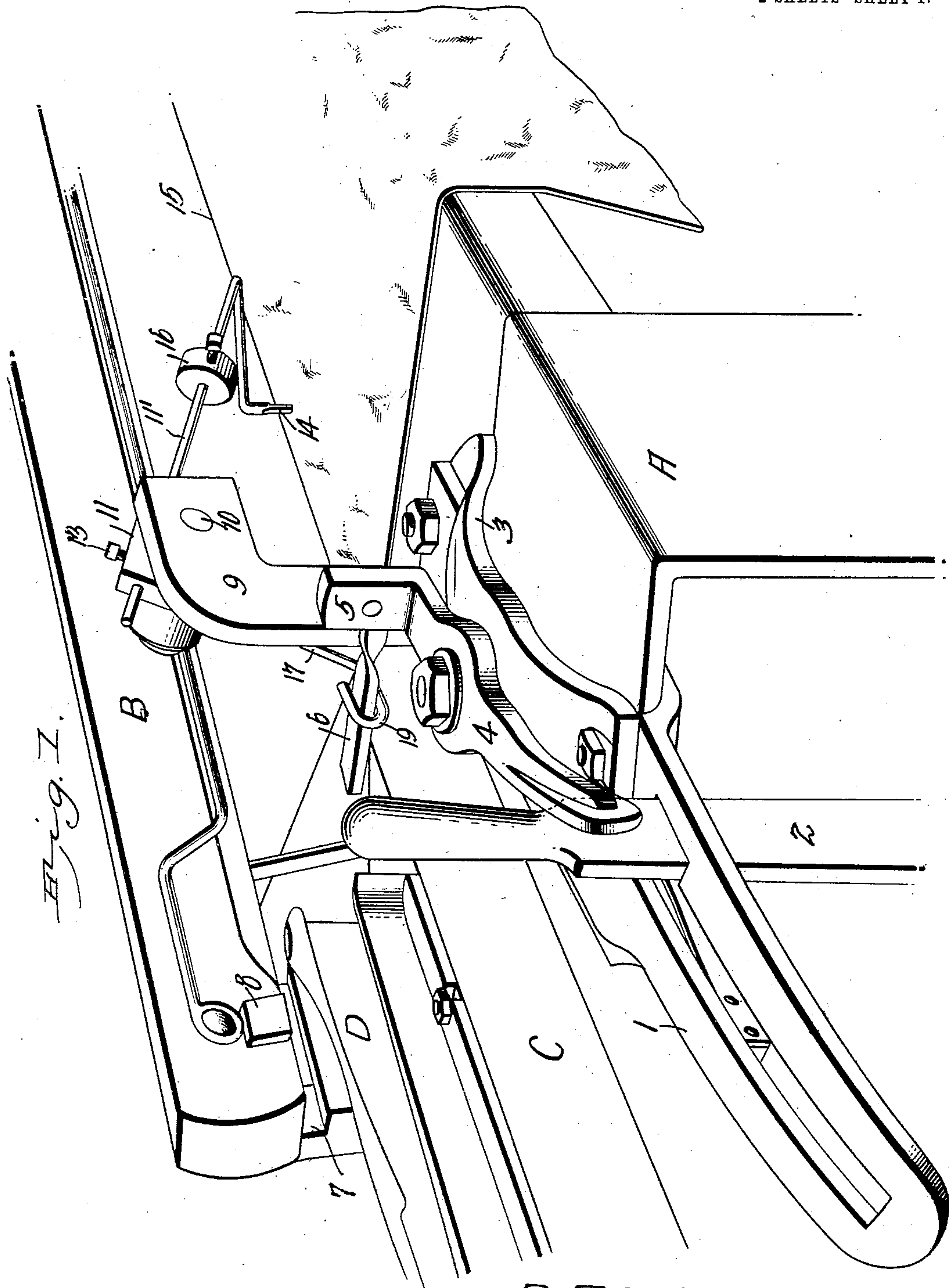
B. F. S. AUSTIN.

CLOTH THIN PLACE DETECTOR AND PREVENTER.

APPLICATION FILED MAY 3, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
B. J. Stewart
Jno E Parker

B. F. S. Austin, Inventor.
By *C. A. Snow & Co.*
Attorneys

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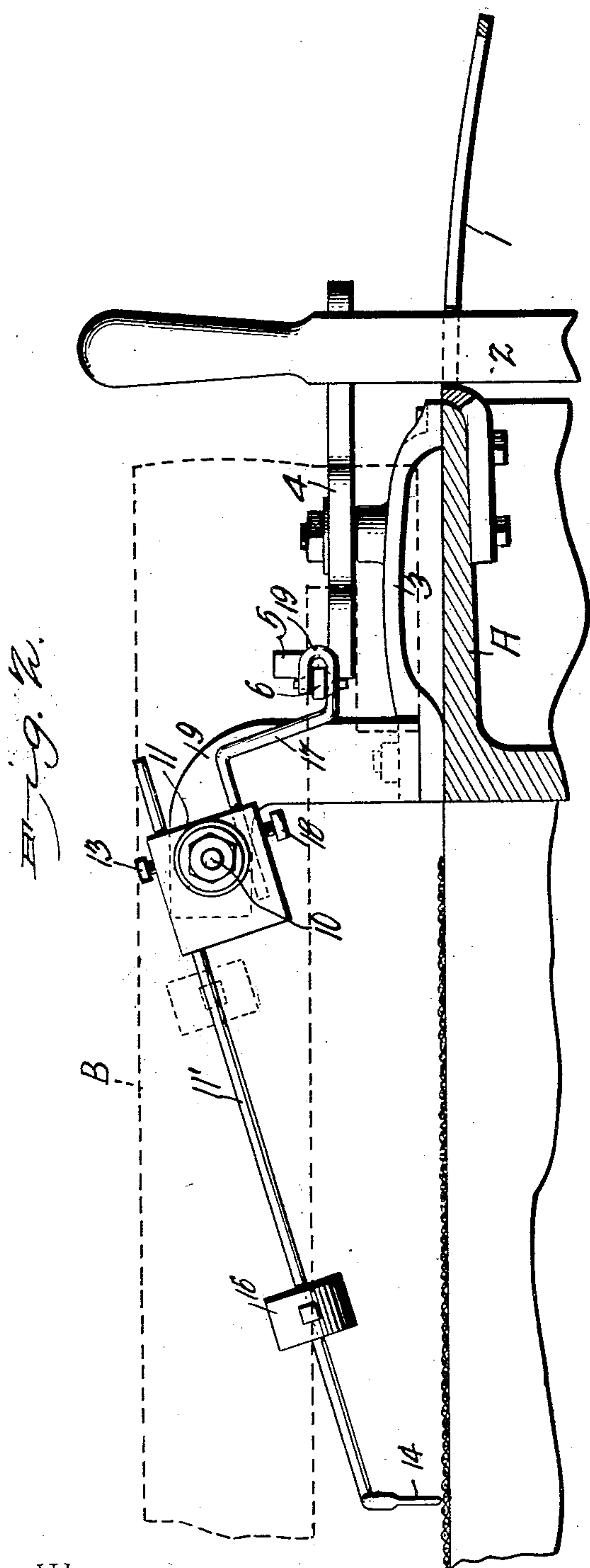
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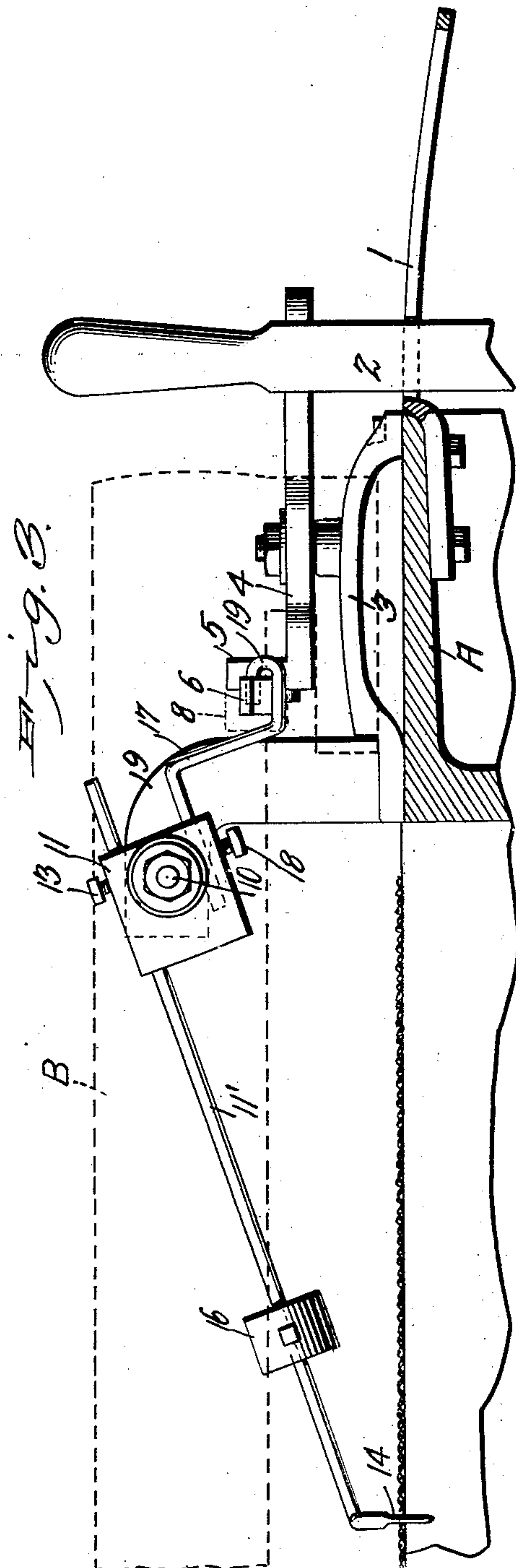
2 SHEETS—SHEET 2.



Witnesses

Witnesses
E. J. Stewart
John E. Parker

John E. Parker



B. F. S. Austin, Inventor.

by

Cañon & Co.
Attorneys

Attorneys

UNITED STATES PATENT OFFICE.

BINGHAM F. S. AUSTIN, OF GASTONIA, NORTH CAROLINA.

CLOTH THIN-PLACE DETECTOR AND PREVENTER.

SPECIFICATION forming part of Letters Patent No. 735,050, dated August 4, 1903.

Application filed May 3, 1902. Serial No. 105,844. (No model.)

To all whom it may concern:

Be it known that I, BINGHAM F. S. AUSTIN, a citizen of the United States, residing at Gastonia, in the county of Gaston and State of North Carolina, have invented a new and useful Cloth Thin-Place Detector and Preventer, of which the following is a specification.

The object of the present invention is to provide a loom with an attachment which will detect thin places in the cloth and will automatically stop the loom as soon as such thin place is at a distance of four or five picks from the fell of the cloth, so that the defects may be remedied by beating up without the necessity of picking out any of the weft-threads.

A further object of the invention is to provide a mechanism of this character which will be entirely automatic in its operation and which may be adjusted in accordance with the thickness of the fabric, so that it may be employed in connection with any class of goods.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of sufficient of a loom to illustrate the application thereto of a cloth thin-place detector and preventer constructed in accordance with my invention. Fig. 2 is an elevation of the same, illustrating one of the side frames of the loom in section. Fig. 3 is a view similar to Fig. 2, showing the detector moved to a position to effect the stopping of the loom.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In the drawings is illustrated a portion of a loom including the side frame A, the reed-cap B, the lay C, and shuttle-box D. On the side of the loom is bolted a guide 1 for a shipper-lever 2, which is connected in the usual manner to a belt-shifter for stopping the loom, the mechanism employed being similar to that in ordinary use in connection with weft stop-motions. On the top of the side frame or at the end of the cloth-beam is secured a bracket

3, on which is pivoted a knock-off lever 4, one end of which is arranged in contact with the front face of the shipper-lever and when moved forces the shipper-lever from the usual holding-recess at the end of the guiding-slot and permits the movement of the shipper-lever to such position as to effect the stopping of the loom. At the opposite end of the knock-off lever is an upwardly-projecting lug 5, to which is pivoted a knock-off finger 6, the inner end of said lever being so arranged as to enter an opening or recess 7, formed in the reed-cap, during the normal operation of the loom, the forward movement of the reed-cap in beating up having no effect on the knock-off lever. When a thin place is detected in the cloth, the knock-off finger 6 is raised until its inner end is in the path of movement of a bumper or block 8, carried by the reed-cap and adapted to come into contact with said knock-off finger just before the completion of the forward swing of the lay to thereby operate the knock-off lever and effect the movement of the shipper mechanism.

To the bracket or support 3 is secured a standard 9, having a pivot-stud 10, on which is mounted a block 11, having an opening for the reception of the shank portion of a detector-wire 11', which may be adjusted longitudinally in the block and locked in position by a set-screw 13. The free end of the detector-wire is bent forwardly and thence downwardly and its extreme end is somewhat reduced in thickness to form a comparatively sharp point, which rests on the surface of the cloth at a point near the end of the web or fell, as indicated by the line 15. The cloth-engaging end of the detector is somewhat in the form of a chisel, being flat and provided with slightly-rounded edges to prevent injury to the cloth, and normally the cloth will support the weight of the detector-rod and an adjustable weight 16 carried thereby. The block 11 also carries a lifting-finger 17, adjustably secured in position by a set-screw 18 and having at its lower end a looped portion 19, which extends around the knock-off finger 6 and serves to move the latter to position for stopping the loom when the pointed end of the detector-rod is forced through a thin place in the cloth, as indicated in Fig. 3.

From a practical standpoint it is highly de-

sirable to detect any thin place in the cloth at a point as near as possible to the fell, and for this purpose the pointed end of the detector-finger is arranged in such manner as
 5 to rest on the cloth at a point some four or five picks from the fell, so that should the end of the detector pass through a thin place in the cloth the loom may be quickly stopped and the defect remedied by merely raising
 10 the take-down pawl and beating up the wefts and without the necessity of picking out a number of weft-threads.

The weight 16 may be adjusted at a greater or less distance from the fulcrum of the detector-rod in accordance with the character
 15 of the cloth being woven, so that the device may be employed in connection with the weaving of goods of any character.

While the construction herein described,
 20 and illustrated in the accompanying drawings, is the preferred form of the device, it is obvious that various changes in the form, proportions, size, and minor details of the structure may be made without departing from
 25 the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what I claim is—

1. A device of the class specified, comprising a rod having an adjustable weight and adapted to bear against the surface of the cloth, a pivotal support for said rod, a knock-off finger connected to the rod and movable thereby to a position for engagement with a
 30 movable part of the loom, and a shipper-actuating mechanism connected to said knock-off finger.

2. A device of the class specified, compris-

ing a supporting-bracket having a pivot-stud, a block mounted on said stud, a weighted rod
 40 adjustably secured to the block and having a pointed end adapted to bear against the surface of the cloth, a shipper-lever, a knock-off lever having one end engaging the shipper-lever, a knock-off finger pivotally con-
 45 nected to said knock-off lever, a lifting-finger adjustably secured to the block and connected to the knock-off finger, said knock-off finger being adjustable by the movement of the rod to an operative or inoperative position with
 50 respect to a movable part of the loom.

3. A device of the class specified, comprising a pivotally-mounted knock-off lever 4, a shipper-lever on which said knock-off lever is adapted to operate, a knock-off finger 6 piv-
 55 otally connected to said knock-off lever, a bracket 9, a pivot-stud 10 carried thereby, a block mounted on the pivot-stud, a detector-rod longitudinally adjustable in said block, a set-screw for locking the rod in adjusted
 60 position, a lifting-finger adjustably secured in the block and having a loop portion for engaging the knock-off finger, a reed-cap having a recess for the reception of the end of the knock-off finger in one position, and a
 65 block carried by the reed-cap for engaging the knock-off finger when the latter is moved to elevated position, substantially as specified.

In testimony that I claim the foregoing as
 my own I have hereto affixed my signature in
 the presence of two witnesses.

BINGHAM F. S. AUSTIN.

Witnesses:

JOHN L. BRYAN,

FRANK A. CASTNER.