

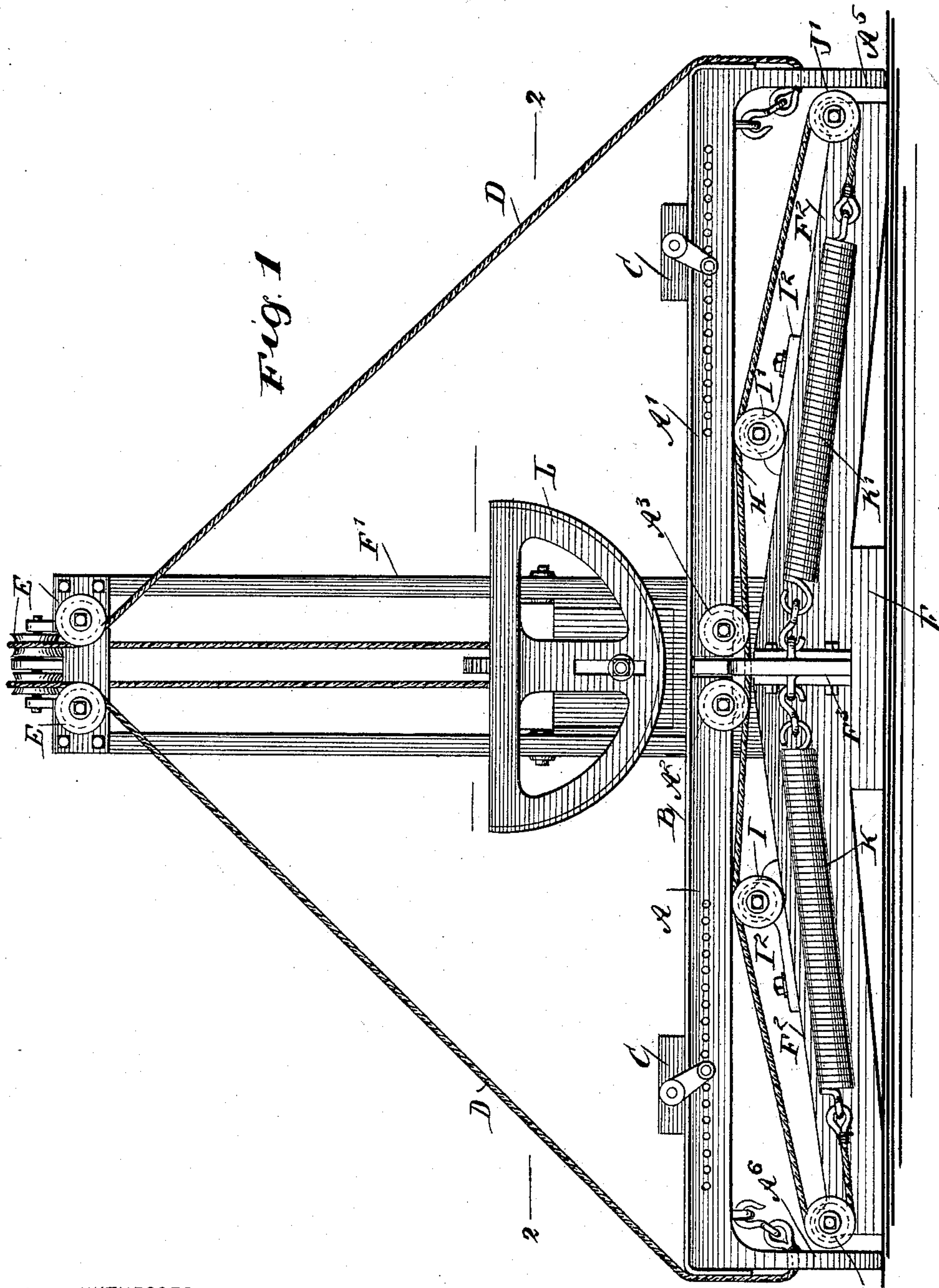
(No Model.)

2 Sheets—Sheet 1.

C. SEYMOUR.
BENDING MACHINE.

No. 603,926.

Patented May 10, 1898.



WITNESSES:
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UNITED STATES PATENT OFFICE.

CHARLES SEYMOUR, OF DEFIANCE, OHIO, ASSIGNOR TO THE DEFIANCE MACHINE WORKS, OF SAME PLACE.

BENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 603,926, dated May 10, 1898.

Application filed November 26, 1897. Serial No. 659,857. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SEYMOUR, of Defiance, in the county of Defiance and State of Ohio, have invented a new and Improved Bending-Machine, of which the following is a full, clear, and exact description.

The invention relates to machines for bending timber used in carriage and wagon fel-
lies, wagon-hounds, sleigh-runners, hames,
10 chairs, and other articles using bent-wood stock.

The object of the invention is to provide a new and improved bending-machine which is simple and durable in construction, not lia-
15 ble to get out of order, easily manipulated, and arranged to insure a close wrapping of the timber around the form without fracturing the timber by undue tensile strain.

The invention consists of novel features
20 and parts and combinations of the same, as hereinafter more fully described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indi-
25 cate corresponding parts in all the figures.

Figure 1 is a front elevation of the im-
provement. Fig. 2 is a sectional plan view
of the same on the line 2 2 of Fig. 1, and Fig.
3 is a side elevation of the same.

30 The bending-machine is provided with arms A A' for forcing up the ends of the timber, the said arms extending normally in a horizontal position, as shown in Fig. 1, and having a master-strap B, of steel or like material, extending over the said arms, which lat-
35 ter also support adjustable head-blocks C, against which abut the ends of the timber placed on the top of the strap B. The outer ends of the arms A A' are connected with
40 ropes, cables, or chains D, which extend upwardly and inwardly to pass over pulleys E, journaled in the upper end of standards F', erected on the main frame F of the machine. The ropes, cables, or chains D then wind on
45 a drum G, journaled in the said standards, as plainly indicated in Fig. 3, and driven by a suitable mechanism—such, for instance, as shown in the bending-machine covered by the Letters Patent of the United States No.
50 497,060, granted to me on May 9, 1893, so that

further description of such driving device is not deemed necessary.

The inner or adjacent ends of the arms A A' are provided on opposite sides with grooved pulleys A² A³, respectively, adapted to form
55 the fulcrums for the said arms when the latter are swung upward upon winding up the ropes, cables, or chains D on the drum G. The pulleys A² A³ on each side of the arms A A' are adapted to bear on a rope or cable H,
60 extending longitudinally and passing over grooved pulleys I I', journaled in suitable bearings I², adjustably held on inclined guide-ways F², formed on the main frame F under the arms A A', respectively. Each cable H
65 after leaving the pulleys I I' passes around pulleys J J', journaled on the outer ends of the guideways F², to then pass inwardly and connect with heavy helical springs K K', at-
70 tached at their inner adjacent ends on suitable brackets F³, forming part of the main frame F. The springs K K' exert such stress on the ends of the cables H that the inner
ends of the arms A A' are pressed in an up-
ward direction, and it is evident that when
75 the arms A A' are swung upward, as previously explained, then the said pulleys A² A³ form the fulcrums for the arms and travel on the spring-pressed and yieldingly-mounted
80 cables H to insure a close wrapping of the timber around the frame L, carried by the standard F', in the usual manner.

It will be seen that by the arrangement de-
scribed the yieldingly-mounted and spring-
pressed cables or ropes form an elastic or
85 yieldingly-sustained way for the pulleys A² A³ to travel on and at the same time exert such thrust against the pulleys, and conse-
quently against the upwardly-swinging arms A A', as to insure a close wrapping of the tim-
90 ber bent by the arms around the form L. When the timber has been bent around the form L, it is secured in bent shape by suit-
able straps or shackles to permit of returning
the arms A A' to their normal lowermost po-
95 sition (shown in Fig. 1) to allow of conveniently removing the bent timber from the form and to proceed to bend a new batch of timber in the manner above described.

The outer ends of the arms A A' are pro- 100

vided with suitable feet A⁴ A⁵, respectively, adapted to rest on the floor to hold the arms normally in a horizontal position, as indicated in said Fig. 1.

5 In the claims the expression "rope" is used in its broad significance—which is to say, as meaning any flexible connection or ligament, such as a chain, thong, braid, &c.

Having thus fully described my invention,
10 I claim as new and desire to secure by Letters Patent—

1. In a bending apparatus the combination of a main frame or bed, standards mounted thereon, a form carried on the standards, two
15 bending-arms located below the form, means in connection with the outer ends of said arms to swing the same, a master-strap extending from one arm to the other, a rope run below the arms, pulleys on which the rope is carried, a spring respectively in connection with
20 the ends of the rope and serving to hold the rope taut, the rope forming a support for the inner ends of the arms and serving to thrust the arms toward the form.

2. In a bending apparatus the combination of a frame, a form supported on the frame, two bending-arms mounted below the form, a master-strap extending from one arm to the other, means for swinging the arms, a rope
30 run beneath the arms, pulleys over which the rope is rolled, the pulleys being carried by the frame, and springs serving to draw the rope taut beneath the arms, the rope forming a yielding support for the inner ends of the
35 arms and serving to thrust the arms toward the form.

3. In a bending apparatus the combination with a frame, of a form, two bending-arms mounted below the form, means for swinging
40 said arms, and a yieldingly-sustained rope run below the arms and serving to support the inner ends thereof and to thrust the arms toward the form.

4. In a bending apparatus the combination
45 of a form, two bending-arms in line with each other and having contiguous ends, means for swinging the arms, and a yieldingly-sustained rope run beneath the arms and forming a support for the inner ends thereof, and serving
50 to thrust the arms toward the form.

5. In a bending apparatus the combination

with a frame, of two bending-arms mounted thereon, the arms being in line with each other and having contiguous inner ends, means for swinging the arms, and a yield- 55 ingly-sustained rope run beneath the inner ends of the arms and serving to yieldingly support the same.

6. In a bending apparatus the combination of a frame, two bending-arms in line with 60 each other and having their inner ends contiguous, means attached to the outer end of each arm by which to move the same, and a yieldingly-sustained rope run beneath the inner ends of the arms and serving to yield- 65 ingly support the arms.

7. In a bending apparatus the combination of a form, two bending-arms in line with each other, and having their inner ends contiguous, a master-strap running along the arms 70 and connected with each means attached to the outer end of each arm, by which to move the arms, and a yieldingly-sustained rope run in proximity with the inner ends of the arms and serving to support the arms and to thrust 75 the arms toward the form.

8. In a bending apparatus the combination of a form, bending devices mounted adjacent to the form and coacting therewith, and a yieldingly-sustained rope serving to support 80 said bending devices and to thrust them toward the form.

9. In a bending apparatus the combination of bending devices, and a rope yieldingly sustained in proximity with the bending devices 85 and serving to support the same.

10. In a bending apparatus the combination with a frame having standards thereon, of a form held by the standards, two bending-arms in line with each other and having their in- 90 ner ends contiguous, the bending-arms being mounted on the frame below the form, means for lifting the bending-arms, such means being attached to the outer ends thereof, and a yieldingly-sustained rope run beneath the in- 95 ner ends of the bending-arms and serving to support the same and to thrust the arms toward the form.

CHARLES SEYMOUR.

Witnesses:

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