

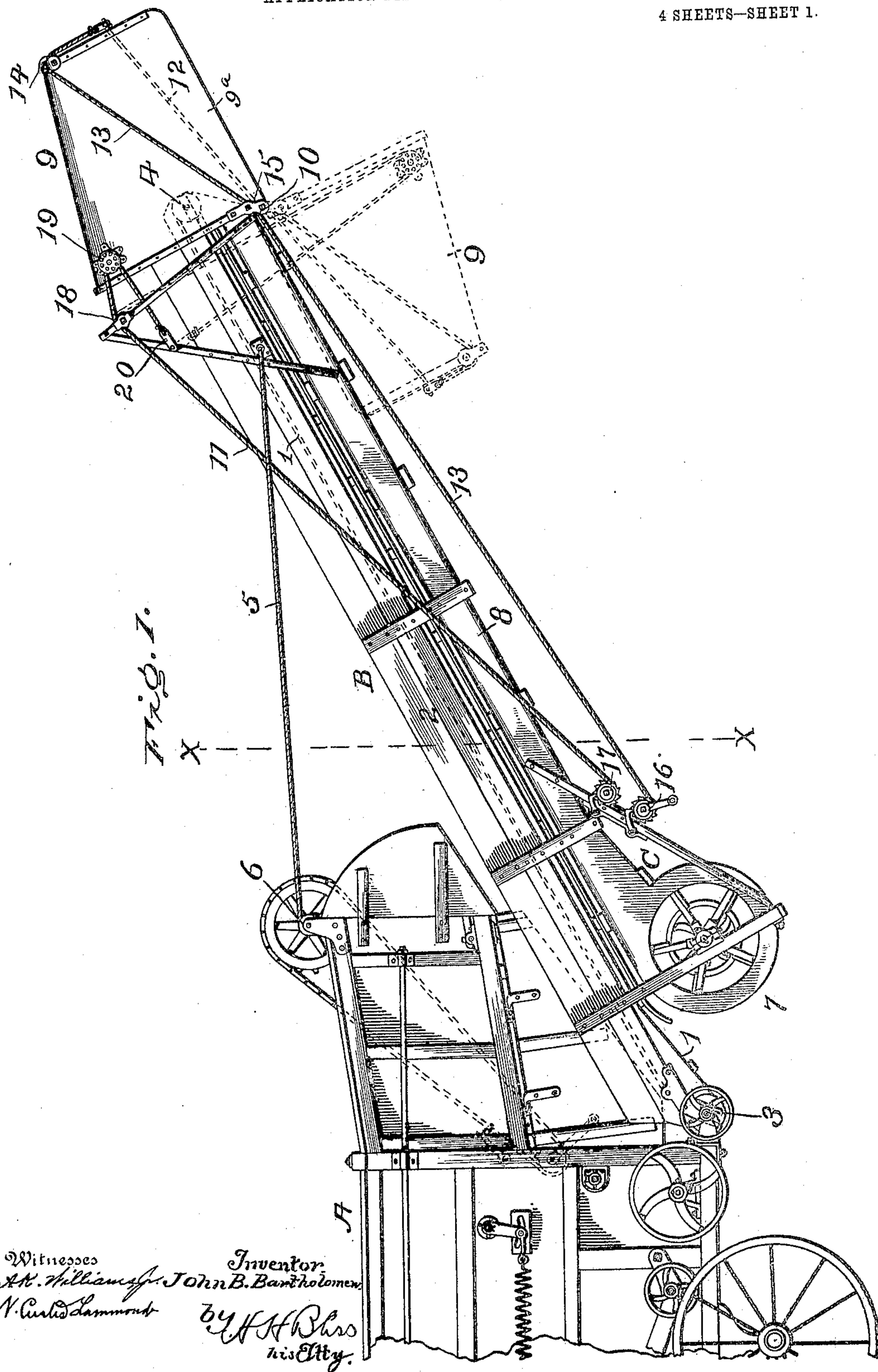
No. 817,895.

PATENTED APR. 17, 1906.

J. B. BARTHOLOMEW.
STRAW STACKER.

APPLICATION FILED MAY 22, 1900.

4 SHEETS—SHEET 1.



Witnesses
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N. Curtis Lammond
Inventor
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his Atty.

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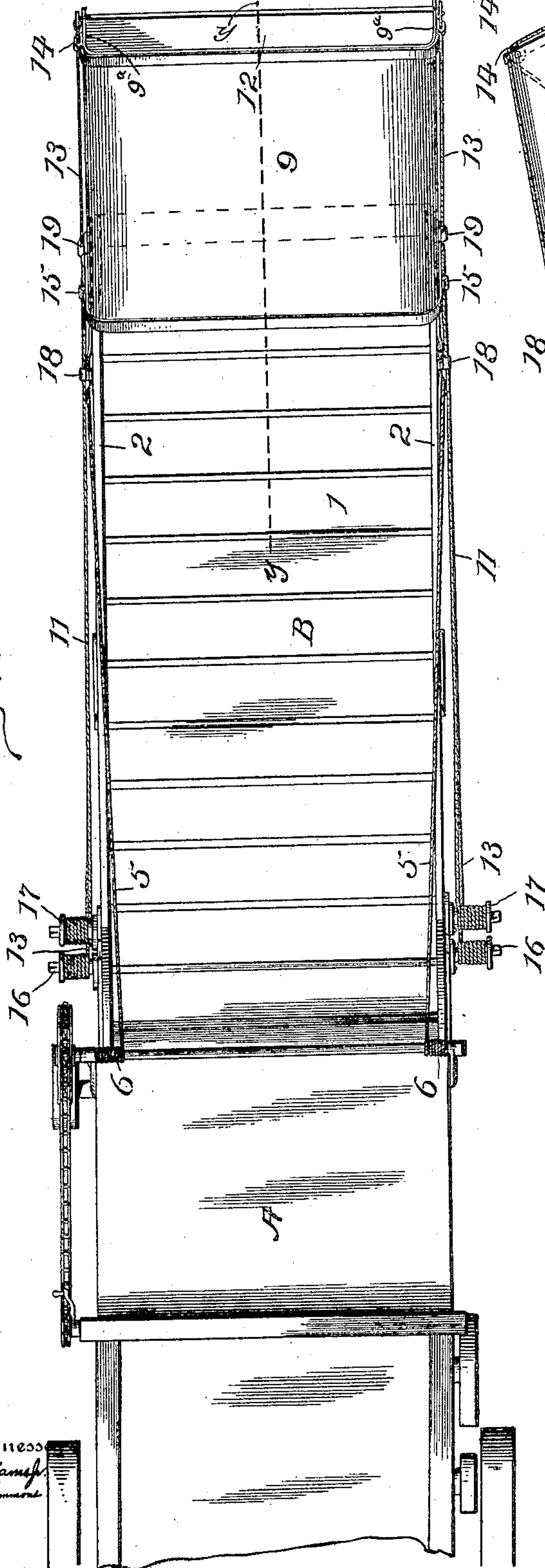
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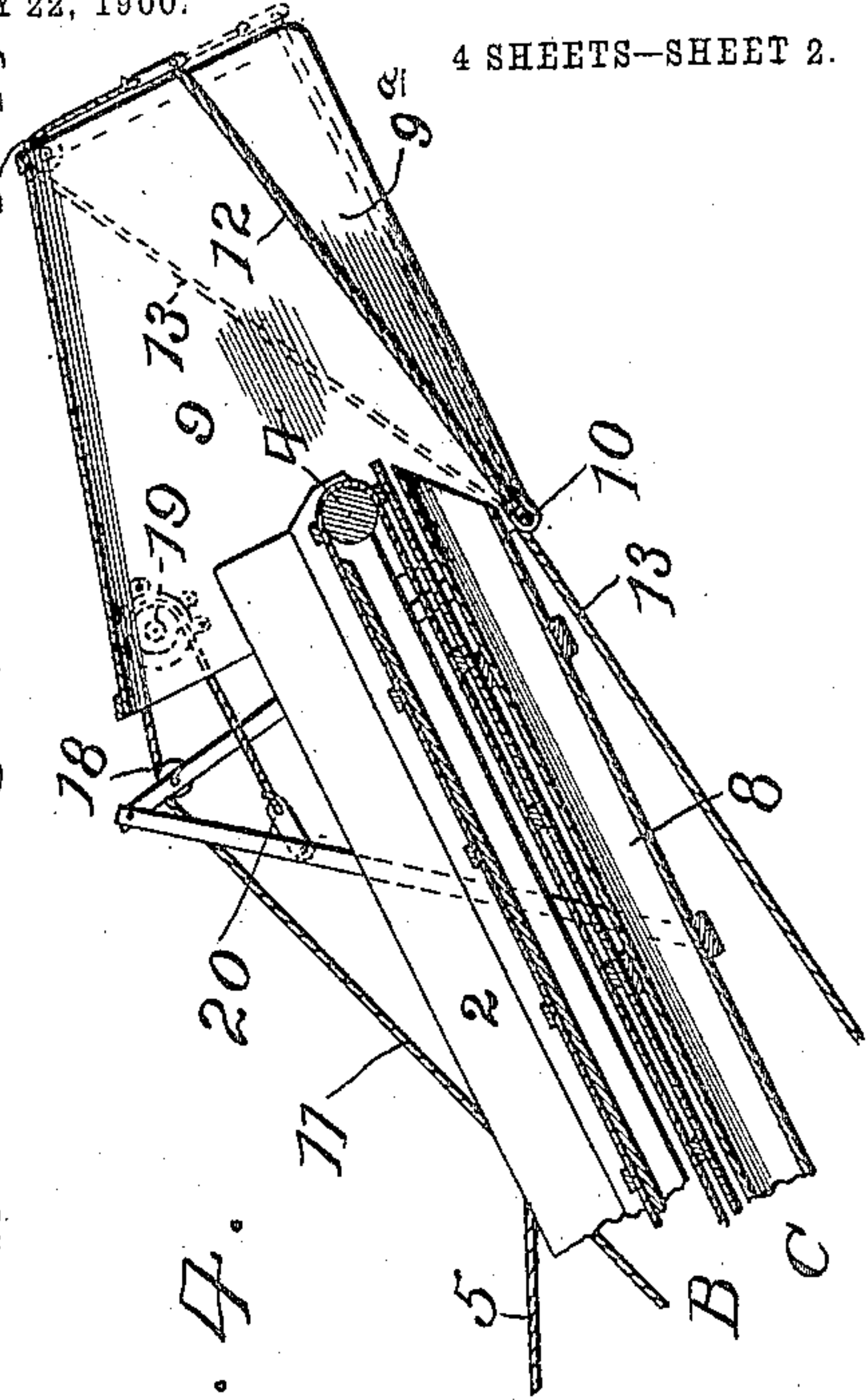
4 SHEETS—SHEET 2.

FIG. 2.



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FIG. 4.



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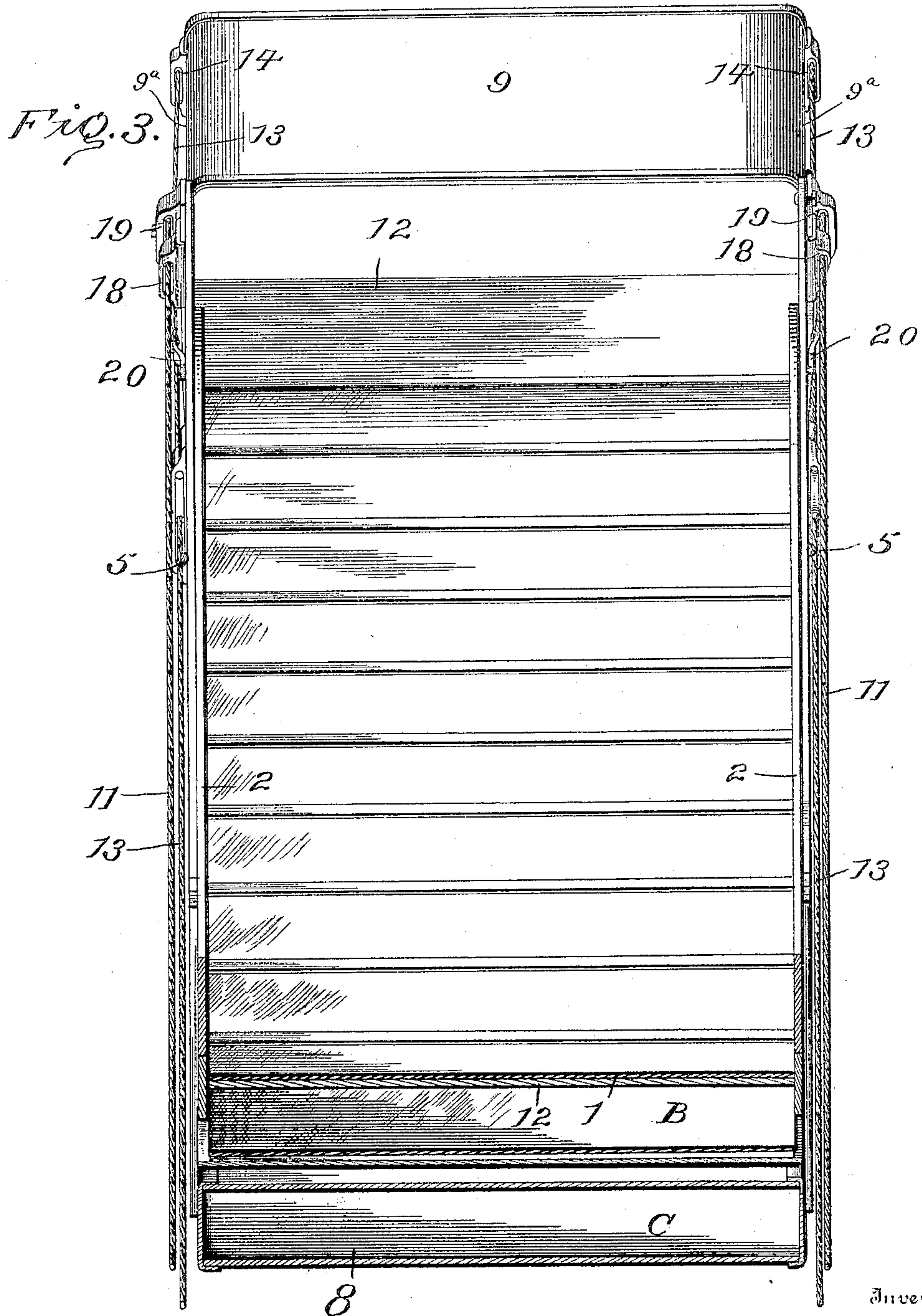
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4 SHEETS—SHEET 3.



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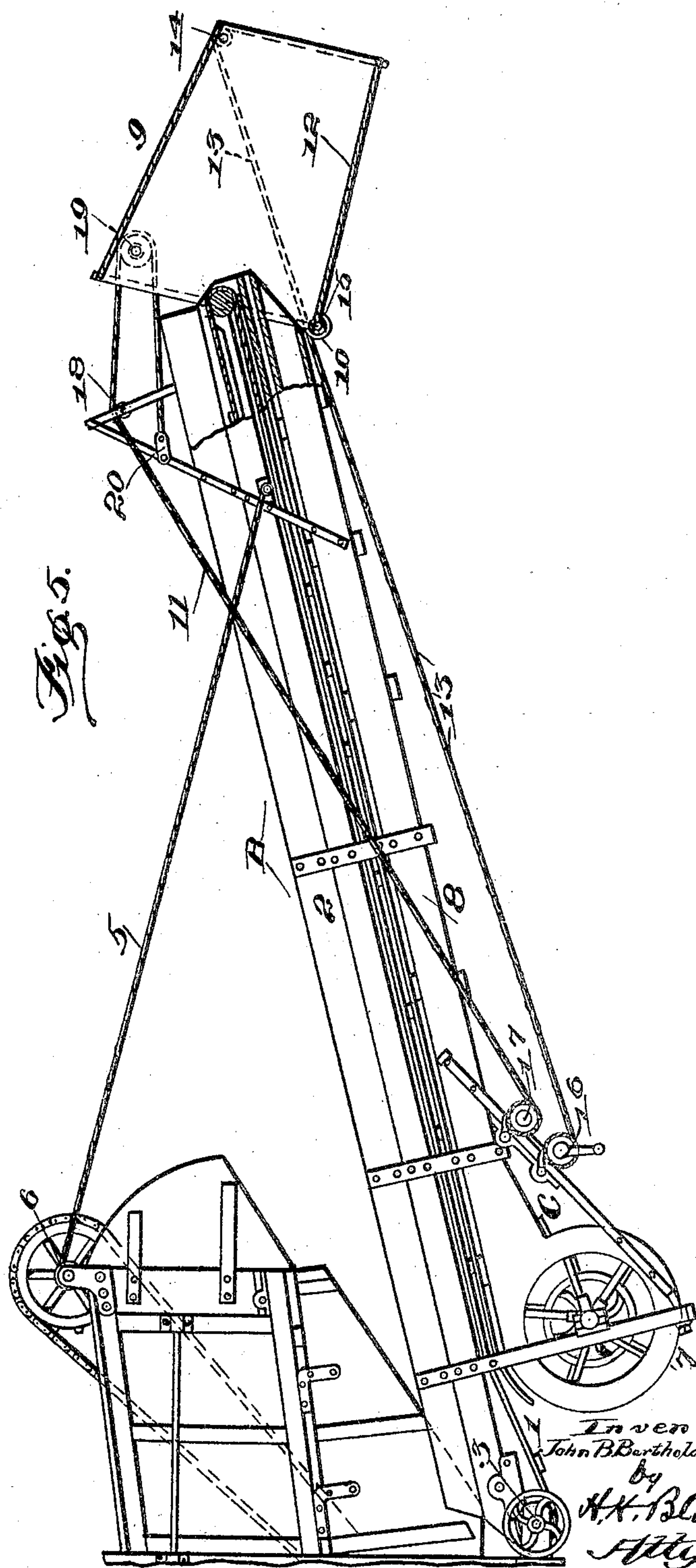
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

JOHN B. BARTHOLOMEW, OF PEORIA, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE SATTLEY STACKER COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF MAINE.

STRAW-STACKER.

No. 817,895.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed May 22, 1900. Serial No. 17,548.

To all whom it may concern:

Be it known that I, JOHN B. BARTHOLOMEW, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Straw-Stackers, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a side elevation of a straw-stacking mechanism embodying my improvements. Fig. 2 is a top plan view. Fig. 3 is a section on the line $x x$ of Fig. 1 looking toward the outer end of the stacker. Fig. 4 is a longitudinal section of the upper end of the stacker on line $y y$, Fig. 2. Fig. 5 is a view, partly in side elevation and partly in section, showing relative positions of the parts different from those in Figs. 1 and 4 under varying adjustments.

This invention relates to an improved machine for the withdrawing of straw from threshing and separating machines and delivering it at points in the rear thereof. It has been generally customary with such machines to form large piles or stacks of the straw; but in many places it is desirable to so deliver the straw that it can be carried away from the machine by horses or otherwise and spread over a large area in a comparatively thin mass and either left so distributed or burned.

One of the objects of the present invention is to provide a machine by which the straw can be delivered in this way, if desired, and by which also it can be directed and piled, more or less, when desired.

In the drawings, A indicates a portion of a threshing and separating machine sufficient to illustrate the manner of applying my invention.

B indicates as a whole an endless carrier or belt-stacker, and C represents a blast mechanism and air-trunk as a whole related in the way illustrated to the carrier-belt.

The carrier-belt is shown at 1. It is supported in a frame having side bars 2, suitably joined by cross-bars. This frame is pivoted at the axis at 3, at which axis is mounted the lower roller of the belt, the upper roller being shown at 4. This carrier-belt and its frame can be adjusted as to inclination and height

by one or more ropes 5, which wind upon a drum at 6. When the carrier-belt alone is used, the straw is dropped therefrom upon the ground. As shown, this carrier is not extended to a great height from the ground, and a relatively low pile is formed. In such way the straw can be carried away from the pile by horses. This is generally done by having the horses hitched to what is known as a "pole," which allows the straw to be carried over the field and distributed across a wide area; but if with the same machine it is desired to form a higher pile or stack it can be done by the following means: The air-blast and duct C comprises the fan 7 and the trunk 8. These are below the belt-carrier and are attached to the frame of the latter. The upper end of the wind-trunk is near the delivery end of the belt.

9 is a duct or hood hinged at 10 and supported by a rope or ropes 11. It can be thrown down into the position shown by the dotted lines in Fig. 1 or up to that shown by the full lines. It is thrown up when the straw is to be piled by the air-blast. 12 is an adjustable bottom for this chute or hood. It is adjusted by means of a cord or cords 13, running through guides at 14 and 15 and wound by the reel 16. The rope 11 is lengthened or shortened by means of the winding apparatus and lock at 17. It extends therefrom over a guide-sheave 18 on the carrier-frame and thence to a guide-sheave 19 on the hood 9 and from that backward to the point 20, where it is fastened to the frame.

By means of the directing devices or hood, actuated by the ropes 11 and 13, the straw can be accurately guided as may be desired while propelled by the wind-blast. By placing the adjustable bottom or chute-board 12 lower or higher while the hood is stationary the straw can be thrown more nearly horizontal or more nearly vertical, as desired, and by moving the hood to a higher or lower position the extent to which such adjustment can be attained will be enlarged.

The rope 11 and its attachments are adapted to not only adjust and hold the hood in any of its operative positions, but also to draw it up and secure it in its inactive position, as shown in dotted lines, Fig. 1. The sheaves 18 and 19 are so arranged in relation to the

hinge-axis at 10 that when the hood is dropped downward and after the sheave 19 crosses the line through the parts at 10 and 18 any upward draft upon the rope 11 will cause the sheave 19 and the hood 9 to swing upward toward the wind-trunk and on its under side.

The proper adjustment of the bottom plate 12 will serve to contract at will the exit-opening for the straw and air-blast, thus enabling the straw to be projected to a greater distance from the end of the stacker. In this way also the hood serves to direct and control the delivery of the straw and the formation of the stack. It will be observed that the plate 12 furnishes a simple and practical means for directing the air-blast relative to the straw or relative to the hood and also for directing the mingled air and straw. This plate is by preference arranged as shown, so as to be capable of causing the air-blast as the latter is delivered below the lower or return limb of the carrier to impinge sharply upward against the straw at an angle which is steeper or more upward than the angle of inclination of the carrier. This causes the air to obtain such a hold upon the straw as to impart to the straw the full force of the blast, and the straw is thereafter delivered according to the adjustment of the air and straw confining means 9.

By employing lateral straw-confining and straw-guiding plates at the delivery end of the carrier 1, such as are furnished by the side plates 9^a of the hood, I am enabled to protect the straw from side blasts of wind and to direct and control it for the purpose of building a stack until the extreme end of the stacker is reached, while by providing for the removal of such side plates 9^a out of operative position (in the construction illustrated by lowering the hood) I may allow the straw to be scattered and spread by the air-blast immediately as it leaves the carrier 1. When the stacker and the straw-directing means or hood are of considerable width, I prefer to provide adjusting-ropes in pairs, one at each side of the stacker, as shown at 5 5, 11 11, and 13 13, and to provide corresponding winding devices, as seen best in Fig. 2.

What I claim is—

1. In a straw-stacking mechanism, the combination with the endless carrier, of the air-blast mechanism arranged to deliver a current of air backward against the straw as it drops from the carrier, the vertically-movable air and straw directing device connected with the stacker, and movable downward and inward to a position below the carrier, and manually-actuated power devices for moving said directing device upward, substantially as set forth.

2. In a straw-stacking mechanism, the combination, with the hinged vertically-adjustable endless carrier, of the air-blast mechanism adjustable with the carrier and arranged to deliver air against the straw as it is depos-

ited by the carrier, the adjustable hood and the adjustable chute in the hood, substantially as set forth.

3. In a straw-stacking mechanism, the combination, with the endless carrier, and the air-blast mechanism arranged to deliver air below and at the outer end of the carrier, of the vertically-adjustable guide-board or chute under the end of the carrier, and the hood or air-guide adapted to inclose the end of the carrier and of the air-duct the guide-board being adjustable relatively to the hood, substantially as set forth.

4. In a straw-stacking mechanism, the combination of the straw-carrier, the air-blast mechanism arranged to deliver air backward against the straw as it drops from the carrier, and a hood-like chute hinged to the frame of the carrier below the latter and adapted to surround the path of the air-current and the path of the straw as they leave the carrier, and having its longitudinal axis adjustable to lines inclined downward and outward from the longitudinal lines of the carrier, substantially as set forth.

5. In a straw-stacking mechanism, the combination of a straw-carrier, an air-blast mechanism adapted to deliver air backward against the straw as it drops from the carrier, a vertically-adjustable hood-like chute hinged at the rear upper end of the carrier below the mouth of the air-blast duct and adapted to surround the path of the air and the path of the straw as it leaves the carrier and to be folded downward and inward in an inactive position against the under side of the carrier, and power devices for positively moving the hood from one position to another in both of which its longitudinal axis is inclined downward and outward from the longitudinal lines of the carrier, substantially as set forth.

6. In a straw-stacking mechanism, the combination of a straw-carrier, an air-blast mechanism, an adjustable hood pivotally connected with the carrier, the pivoted connection being below the carrier and near its delivery end, the hood being arranged to occupy a position in line with the carrier, and means for holding the hood in an inactive position folded against the under side of the carrier out of the path of the straw falling from the carrier, substantially as set forth.

7. In a straw-stacking mechanism, the combination of an endless carrier having a straw-carrying limb and a returning-limb, an air-blast mechanism and an adjustable hood arranged to be in line with the carrier and the air-blast mechanism, and provided with a pivot about which it is adjustable to bring the top of the hood below the path of the straw, substantially as set forth.

8. In a straw-stacking mechanism, the combination, with an endless carrier, and an air-blast mechanism, of means for directing the straw as it leaves said carrier and receives the

air-blast, and devices for contracting at will the vertical dimension of the delivery-opening formed by said directing means.

9. In a straw-stacking mechanism, the combination, with an endless carrier, and an air-blast mechanism, of means for directing the straw upward or downward as it leaves said carrier and receives the air-blast, and devices arranged to move the said straw-directing means in order to contract at will the delivery-opening formed by said directing means, said straw-directing means being removable at will out of the paths of the straw and air-blast.

10. In a straw-stacking mechanism, the combination of an endless carrier, a supporting-frame therefor, means for adjusting the height and inclination of said frame, an air-blast mechanism carried by said frame, guiding devices carried by said frame at its outer end, movable means for directing the straw upward or downward also carried by said frame, and an adjusting rope or ropes passing from said directing means, by said guiding devices, and to or near the inner end of the frame.

11. In a straw-stacking mechanism, the combination of the carrier-frame, the air-blast mechanism having its delivery-trunk below the carrier-frame, the endless straw-carrier mounted on the carrier-frame and arranged to have both its up-moving strand and its down-moving or returning strand arranged to travel on lines above the air-trunk, and the vertically-adjustable hood-like chute arranged to surround the path of the straw as it leaves the carrier and adjustable to have its longitudinal axis while the hood is in action move about a horizontal axis below the outer end of the air-trunk from one inclined line to another inclined line relative to the longitudinal lines of the carrier and relative to the line of travel of the air-blast as it escapes from the air-trunk, substantially as set forth.

12. In a straw-stacking mechanism, the combination of a straw-carrier, an air-blast mechanism having a trunk below the carrier with its upper end fixed relatively to the carrier whereby the air-blast always escapes on the same lines relatively to the carrier and impinges on the straw as it drops therefrom, and an air and straw directing hood having a top wall adjustable to different positions across the fixed lines of the air travel and having a straw-supporting board adapted to be inclined downward and outward from the lines of the carrier, substantially as set forth.

13. In a straw-stacking mechanism, the combination of a straw-carrier, an air-blast mechanism having a delivery-trunk for directing the air against the straw as it is delivered by the carrier, a hood surrounding the end of the carrier and said air-duct, means for adjusting the position of the hood

and means independent of the hood for changing the direction of the air-blast upward or downward relative to the straw being delivered, substantially as set forth.

14. In a straw-stacking mechanism, the combination of an endless straw-carrier, an air-blast mechanism having a delivery-trunk with its discharge end adjacent to the delivery end of the carrier, an adjustable hood surrounding the delivery end of the carrier and the air-trunk, means for adjusting the angular position of the hood relative to the carrier, a deflecting-board arranged within the hood and movable independently thereof, and means for adjusting the deflecting-board, substantially as set forth.

15. In a straw-stacking mechanism, the combination of a carrier, an air-blast mechanism, an air and straw receiving hood, and means within the hood for directing the air and straw relative to the hood.

16. In a straw-stacking mechanism, the combination of a carrier, an air-blast mechanism, the receiving-hood and means supplemental to the hood for changing the path of the straw in vertical planes after leaving the carrier.

17. In a straw-stacking mechanism, the combination of the carrier, an air-blast mechanism, and a straw catching and supporting board or plate which while in action is held at all times across the vertical lines on which the straw drops from the carrier and which while so held is adjustable vertically for directing the air-blast and the straw at different angles relative to the path of the straw on the carrier, substantially as set forth.

18. In a straw-stacking mechanism, the combination with the air-blast mechanism having an upwardly-inclined air-trunk, the endless carrier arranged to have all of its traveling parts move above the air-trunk, and the air and straw receiving hood extending over and under the path of the straw and the air, and movable about a horizontal axis beneath the outer end of said air-trunk, said parts being arranged substantially as set forth whereby the air is delivered from the trunk without impedance from the carrier and the straw and air can be directed downward, outward and upward at will, as described.

19. In a straw-stacking mechanism, the combination of an endless carrier, an air-blast mechanism delivering air against the straw as it falls from the carrier, and a tubular straw and air receiving and directing device which surrounds the upper end of the carrier and is arranged to move about a horizontal axis below the outer end of said air-blast mechanism and is adapted to be adjusted to have its longitudinal axis inclined relatively downward in relation to the longitudinal lines of the carrier, substantially as set forth.

20. In a straw - stacking mechanism, the combination of a carrier, an air-blast mechanism, an air-deflector adjustable relative to the carrier, and an air and straw confining
5 means adjustable relative to the carrier, and relative to the deflector.

21. In a straw-stacker, the combination of an inner stacker-section, a support therefor, an outer stacker-section hinged to the outer
10 end of the inner section and vertically swingable relative thereto on a transverse axis, and arranged to fold downward toward the rear of the inner section, an upward-extending frame carried by the outer section,

sheaves carried respectively by the said 15 frame and the outer section, and a draft device having one end connected to the frame and passing thence around the sheave on the outer section, past the sheave on the frame, and to a winding device on the innersection, 20 substantially as set forth.

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

JOHN B. BARTHOLOMEW.

Witnesses:

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