

No. 810,485.

PATENTED JAN. 23, 1906.

J. A. GUNN & J. J. McBRIDE.
METHOD OF AND APPARATUS FOR STACKING STRAW.

APPLICATION FILED NOV. 30, 1904.

4 SHEETS—SHEET 1.

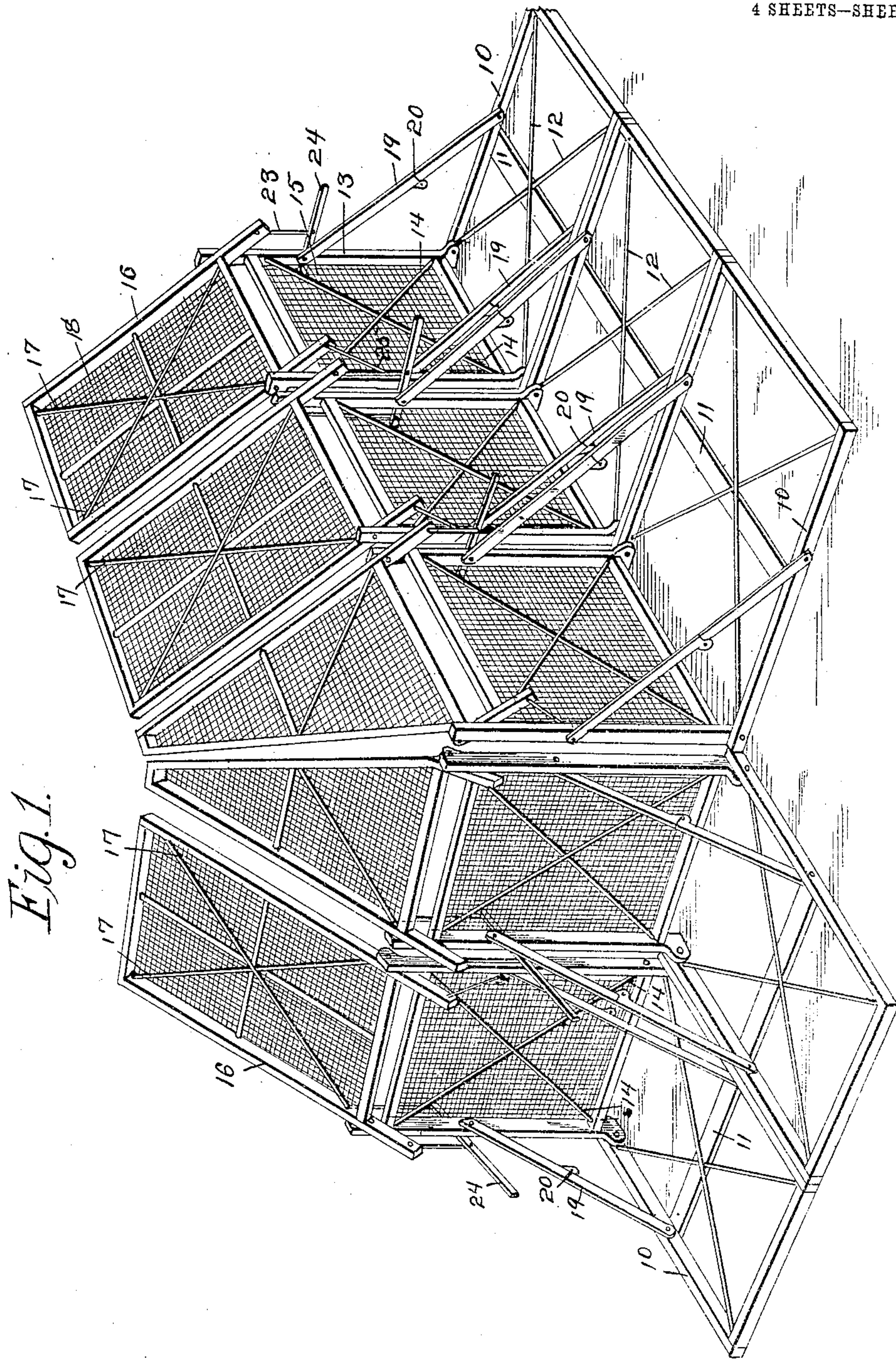


Fig. 1.

Witnesses.
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By *Erving Lane* Atty

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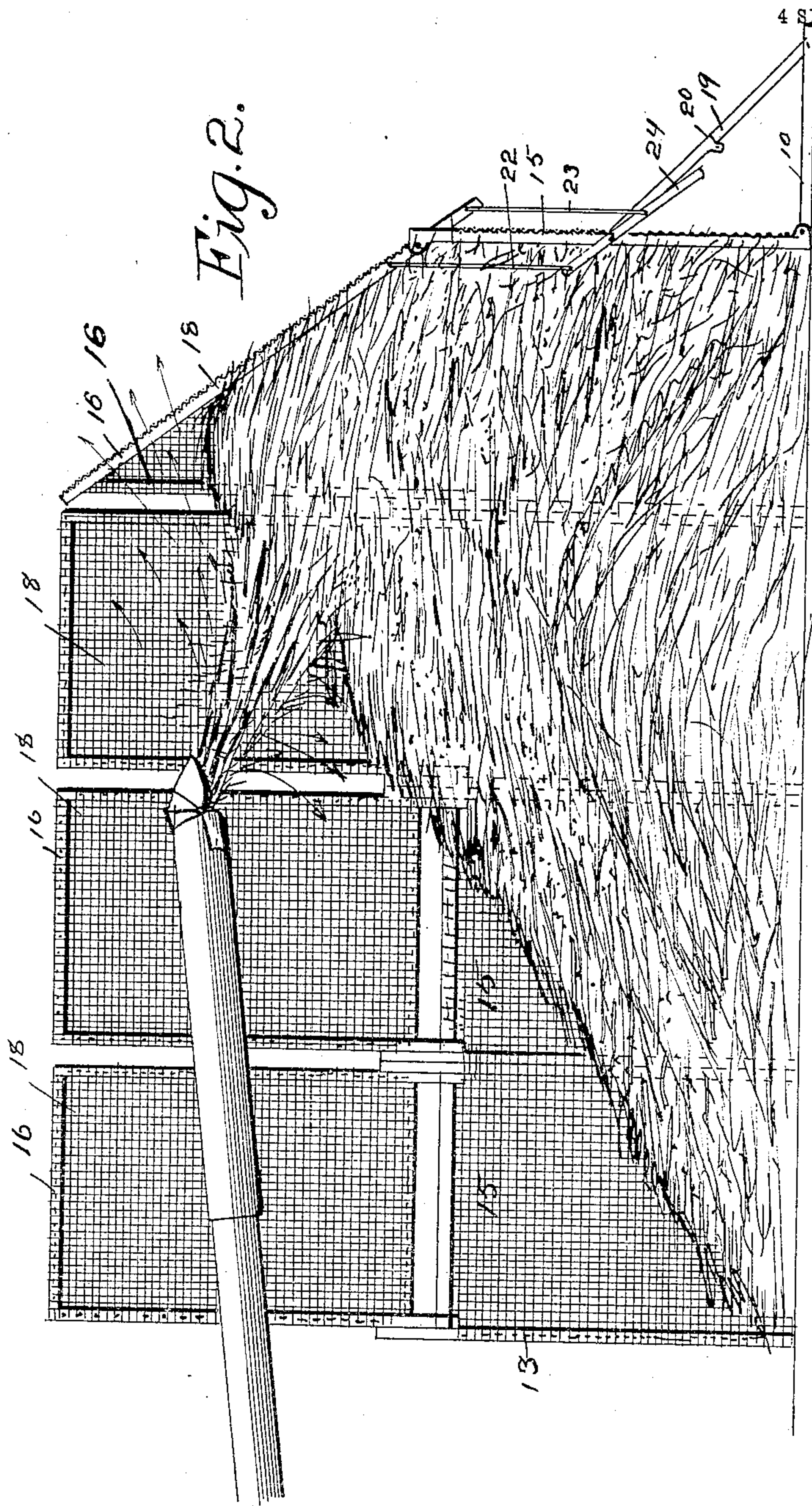
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Witnesses

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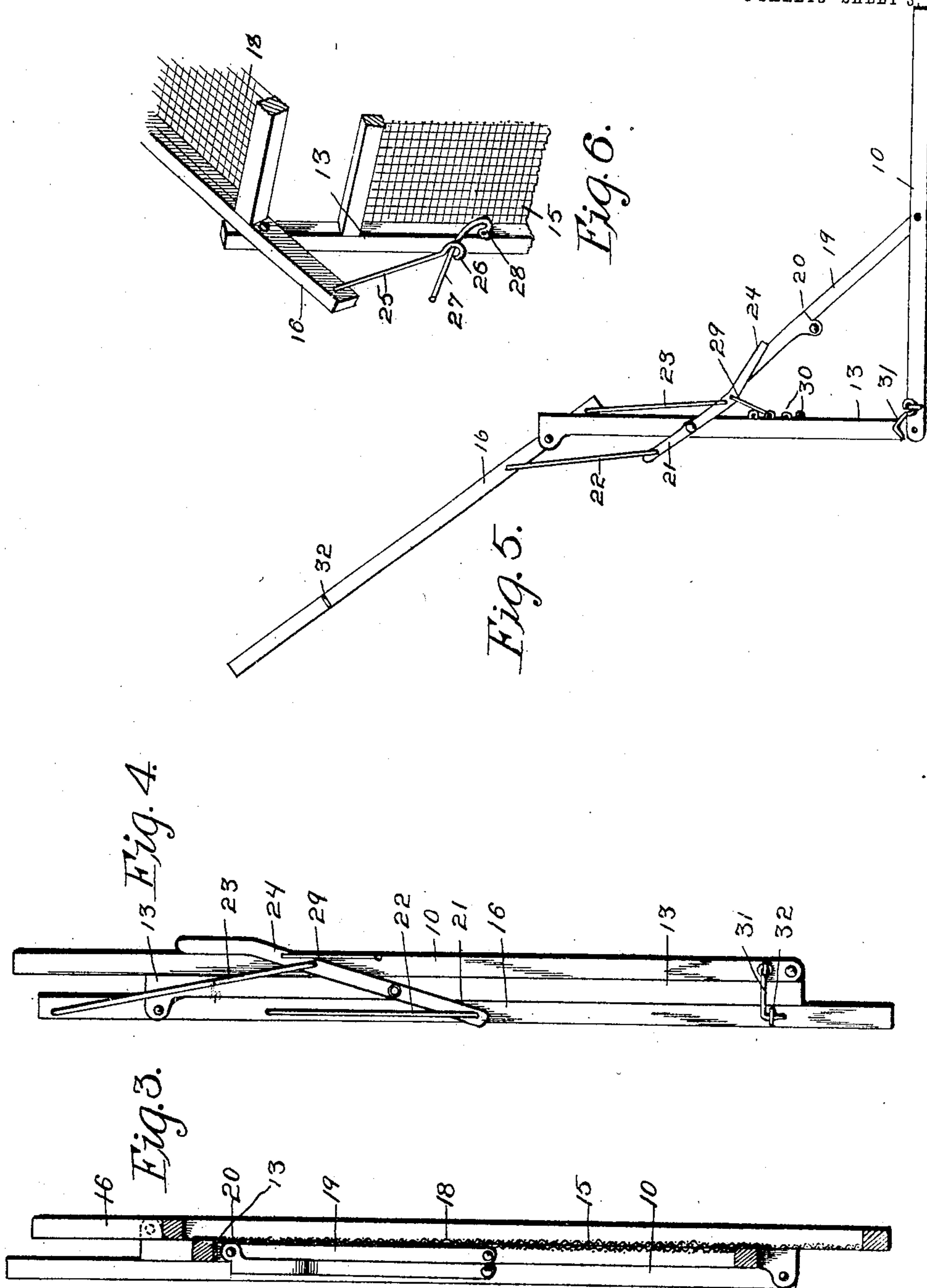
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

Fig. 8.

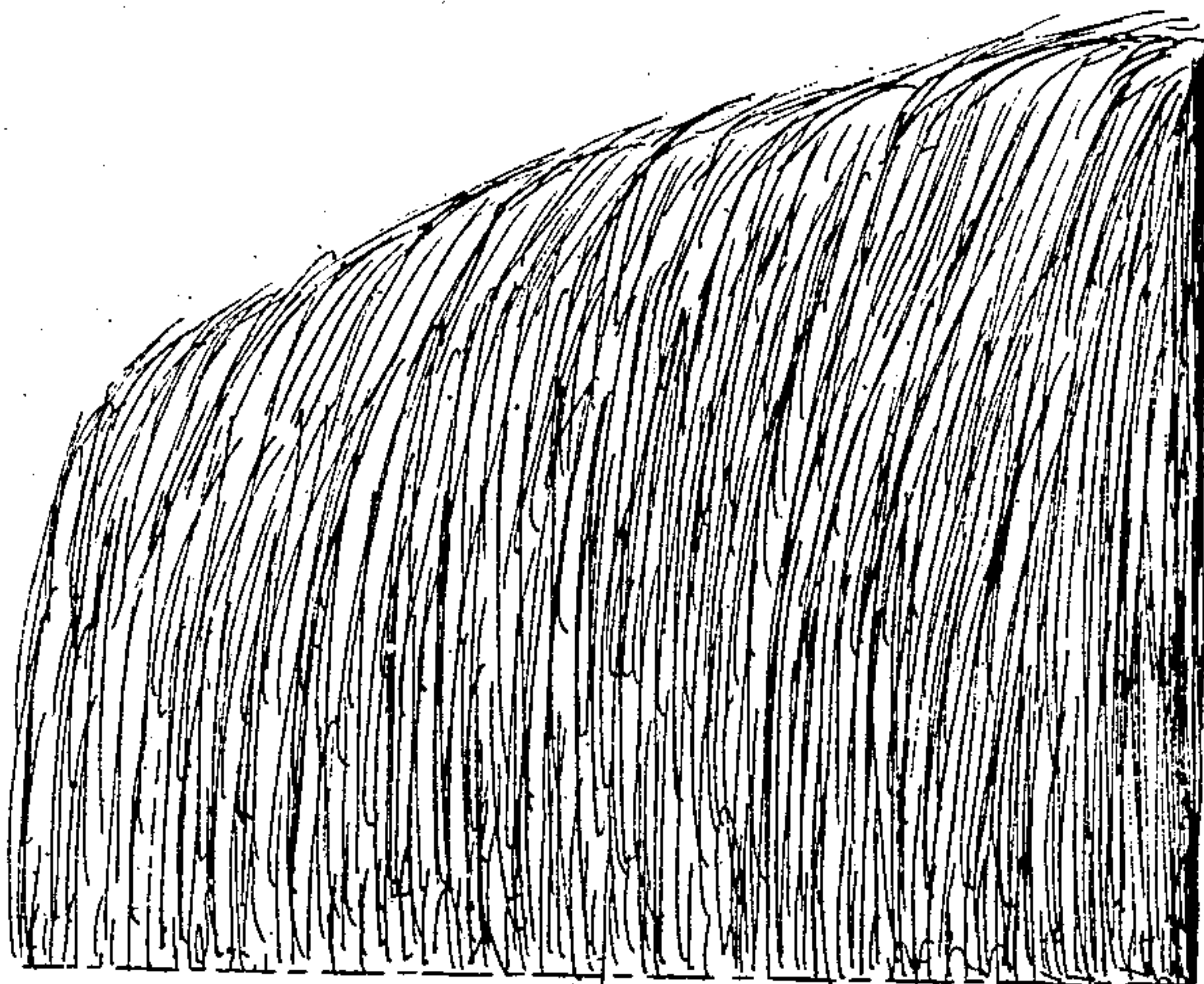
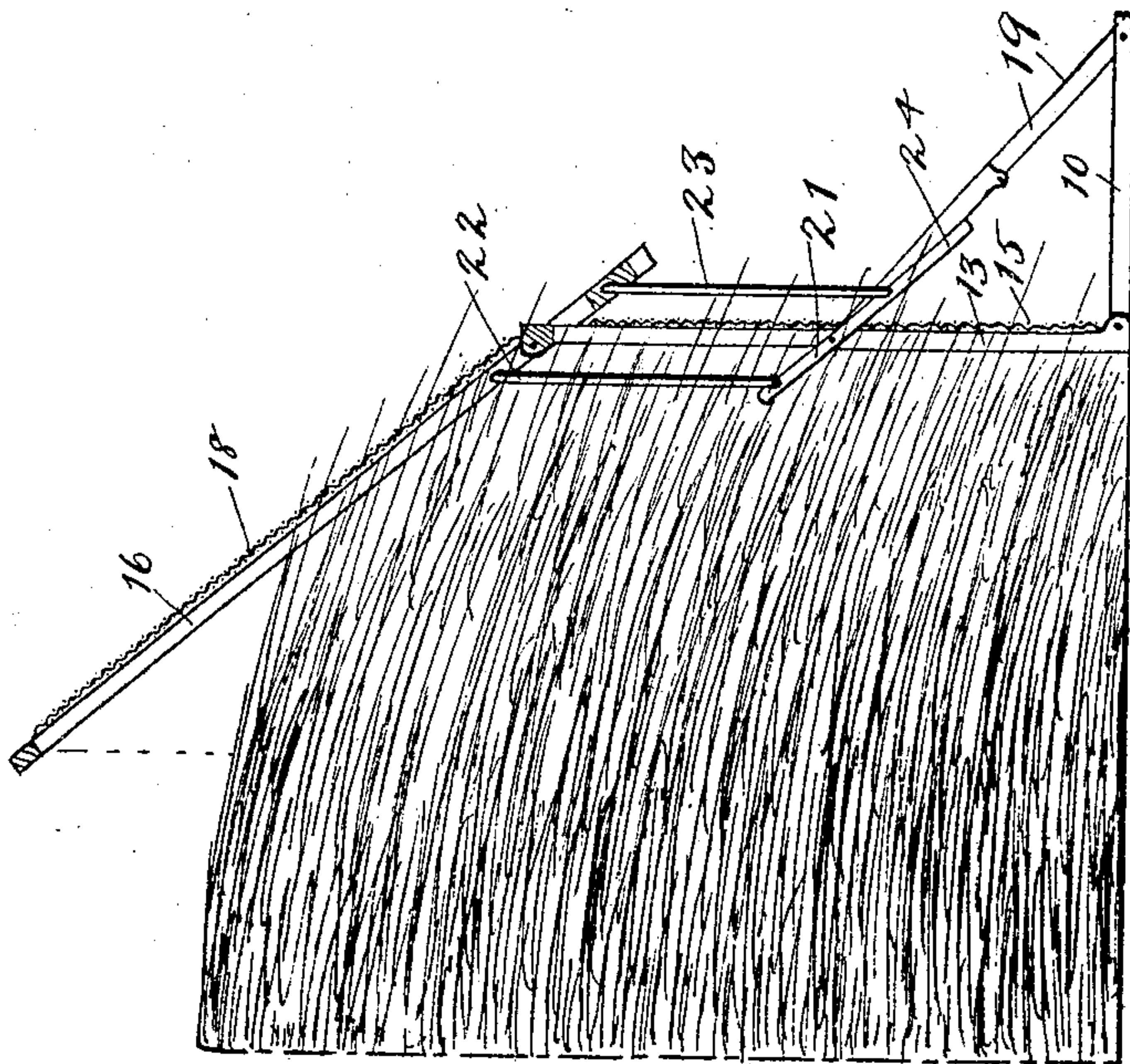


Fig. 7.



Witnesses
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UNITED STATES PATENT OFFICE.

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METHOD OF AND APPARATUS FOR STACKING STRAW.

No. 810,485.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed November 30, 1904. Serial No. 234,862.

To all whom it may concern:

Be it known that we, JOHN A. GUNN, residing at Des Moines, in the county of Polk, and JOSEPH J. McBRIDE, residing at Laporte, in the county of Blackhawk, State of Iowa, citizens of the United States, have invented a certain new and useful Method of and Apparatus for Stacking Straw, of which the following is a specification.

10 The object of our invention is to provide an improved method of stacking straw whereby an ordinary wind-stacker may be used for stacking straw and a stack built thereby of uniform size and shape and adapted to shed
15 water without the necessity of having men on the stack itself while the stack is being made; and our object is, further, to provide an apparatus of simple, durable, and inexpensive construction composed of portable
20 screen-sections that may be readily, quickly, and easily folded into compact form for convenience in transportation.

Our invention consists in the method of forming a straw-stack and in the construction of the apparatus for carrying out the
25 method, as hereinafter more fully set forth, pointed out in our claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a perspective view of one
30 side and end of the stack-former set up as required for use. Fig. 2 shows a vertical central sectional view of the stack-former set up as required for use with a partially-formed stack therein and a wind-stacker in position
35 for depositing straw upon the stack. Fig. 3 shows a central longitudinal sectional view of one of the stack-forming sections in its folded position. Fig. 4 shows an edge view of same. Fig. 5 shows an edge view of a complete section in position ready for use. Fig.
40 6 shows a detail perspective view of a portion of one of the stack-forming sections to illustrate the means for locking the upper section member in its extended position. Fig. 7
45 shows a vertical sectional view of a screen and a straw-stack adjacent thereto, and Fig. 8 shows a view of a stack with the screen removed.

Referring to the accompanying drawings,
50 it is noted that the stack-former is composed of a number of stack-forming sections, each independently supported in its own base upon the surface upon which the stack is

to be formed. Each section comprises a base composed of a light frame 10, preferably braced by a cross-piece 11 and brace-
55 rods 12. To one end of the base 10 we have pivoted an upright section member 13, provided with brace-rods 14 and covered by screen 15 of wire-netting. Pivoted to the
60 upper end of the section member 13 is a top or folding section member 16, provided with brace-rods 17 and covered by a wire-netting 18. We have provided means for supporting the section member 13 in an upright po-
65 sition by means of the braces 19, pivoted at one end to the base 10 and at the other end to the section member 13 and provided with elbow-joints 20 at their central portions. These braces 19 firmly support the section
70 member 13 in their upright position, and yet when the elbow-joints 20 are broken the section member 13 may fold downwardly on top of and parallel with the base 10. We have also provided means whereby the upper
75 section member 16 may be moved from its folded position to the position indicated in Fig. 1, as follows: 21 indicates a lever fulcrumed to one of the uprights of the section member 13. Pivoted to one end of the lever 21
80 is a rod 22, which is also pivoted to the upper section member 16 on one side of its pivotal center. On the other side of the fulcrum-point of the lever 21 is a rod 23, pivoted to the lever 21 and to the upper section member 16
85 on the side of its pivotal point opposite from the point where the rod 22 is pivoted. The end of the lever 21 beyond the point where the rod 23 is pivoted is formed into a handle 24. Obviously by manipulating this handle the
90 upper section member 16 may be moved from a position parallel with the lower section member 13 to the position shown in Fig. 1. The means for raising and lowering the upper section member is connected with one side only
95 of said upper section member, and in order to secure the upper section member firmly in its elevated position we have pivoted to the other side of the upper section member a rod 25, having a loop 26 at its lower end to receive
100 an eccentric lever 27, which lever is fulcrumed at 28 to the adjacent portion of the lower section member 13. In Fig. 6 of the drawings the lever 27 is shown with its handle end elevated. Obviously by drawing this handle
105 downwardly the loop 26 moves toward the

pivotal point of the lever 27, and when the handle portion is at its lower limit of movement the loop 26 will be locked in position close to the pivotal point of the lever 27, thus
 5 firmly supporting the side of the upper section member opposite from the side to which the lever 21 is pivoted. We have also provided means for locking the lever 21 as follows: Pivoted to the lever 21 is a rod 29, and
 10 on the adjacent portion of the lower section member 13 is a number of loops 30, designed to receive the end of the rod 29. When the section is folded for transportation, as shown in Fig. 4, the parts may be firmly
 15 locked together by means of a hook 31, pivoted to one end of base 10 and inserted in an eye 32, fixed to the adjacent portion of the upper section member 16. The upper section
 20 members, which are designed for use at the corner of a stack, are made substantially of triangular form, as clearly shown in Fig. 1, so that the two adjacent sections may stand with their adjoining edges close together.

By constructing a stack-former of a number of independent sections, each of which is
 25 self-supported, we avoid the necessity of using stakes or other means for fastening each section to the ground. Furthermore, by using more or less sections the size and shape of
 30 the stack may be varied at will. In use we prefer to erect the stack-former of sections arranged at the sides and one end only of the space upon which the stack is to be formed, and through the open end of the stack-
 35 former the wind-stacker is introduced. In erecting the stack-former two men can easily and conveniently carry each section to position. Then the base is unfolded and placed upon the ground and the upper and lower
 40 section members are placed in an upright position. Then by manipulating the lever 21 the upper section may be elevated to position. The weight of the base portion 10 is sufficient to counterbalance the weight of the upper
 45 section member, so that the device will not tilt inwardly. After the stack is completed the sections may be quickly and easily removed by first folding the lower section member over the base and then lowering the up-
 50 per section member to position on top of the lower one, or each section may be jointly withdrawn from position adjacent to the stack, so that the upper section member may be lowered first, and then the lower section
 55 member, together with the upper section member, may be folded over the base. The various sections comprising the stack-former may be easily and quickly loaded upon a wagon or suitable vehicle and transported
 60 from place to place with a threshing apparatus.

In practicing our improved method of stacking with the use of our improved apparatus we first erect the stack-former about the
 65 spot upon which the stack is to be formed.

An ordinary wind-stacker is then introduced through the open end of the stack-former and a quantity of straw is first piled at or near the center of the place upon which the stack
 70 is to be formed. Then the trunk of the wind-stacker is placed relatively close to the quantity of straw at the center of the stack and arranged to discharge air and straw in a nearly horizontal direction toward the screen.
 75 In this connection it is to be understood that blades of straw usually arrange themselves longitudinally of the wind-stacker, and hence by discharging the blast of air laden with straw from the wind-stacker in a nearly hori-
 80 zontal direction the straw is deposited upon the stack in the same way in which it is discharged—that is, with the straws in nearly a horizontal position. After a quantity of
 85 straw is first piled at or near the center of the stack the operator moves the wind-stacker around within the stack-former to build up the stack layer by layer, at all times keeping the center of the stack slightly higher than
 90 the edges. The straws that are discharged against the screen will lie with some of the ends thereof projecting through the screen and as the stack is built up in this manner the straws at the bottom of the central por-
 95 tion of the stack will settle materially more than the straws adjacent to the screen, for the reason that the straws that project through the screen will prevent settling, and hence when the stack is completed and the
 100 top rounded off the center of the stack will be packed or settled more tightly than the outer edges. Then the operator removes the screen, and when this is done the ends of the straw at the edges of the stack will be re-
 105 lieved of the support of the screen and will settle in such manner that the outer ends of the outer straws of the stack will all incline downwardly and away from the stack to shed rain.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States therefor, is—

1. The method of stacking straw which consists in first erecting a screen-barrier around the place upon which the stack is to be formed with the upper end portion of the
 115 barrier inclined toward the center of the place upon which the stack is to be formed, then depositing a quantity of straw within the barrier spaced apart from the barrier and finally discharging a blast of air laden with
 120 straw downwardly and toward the barrier, said barrier retaining the straw and permitting the air to pass through and laying the straws adjacent to the barrier with their outer ends lower than their inner ends.

2. The method of stacking straw which consists in first erecting a screen-barrier then depositing a quantity of straw spaced apart from the barrier, then discharging a blast of
 130 air laden with straw downwardly and to-

ward the barrier and then directing the air-blast ladened with straw to different parts of the stack being formed to cause the straw to lie upon the stack with the outer ends of the
5 straws lower than their inner ends.

3. The method of stacking straw which consists in first erecting a screen-barrier around the place upon which the stack is to be erected, said barrier having its upper portion inclined inwardly toward the center of the place upon which the stack is to be formed, then discharging a blast of air ladened with straw into the barrier in a direction tending to lay the straws within the barrier with their outer ends slightly lower than their inner ends, then directing the air-blast and straw to different parts of the stack to build up the stack with a greater quantity of straw upon its center than upon its edges.

4. The method of stacking straw which consists in discharging a blast of air ladened with straw in a nearly horizontal direction against a screen-barrier which will permit parts of the straw to project through it and then removing the screen-barrier to permit the outer ends of the straws adjacent to the barrier to settle.

5. The method of stacking straw which consists in first erecting a screen-barrier with its upper end inclined inwardly, then discharging a blast of air ladened with straw against the barrier in a direction to lay the outer ends of the straws in a plane slightly lower than the inner ends and discharging the straw against the barrier in a manner to project portions of the straw through the barrier, and then removing the barrier, to form a stack with inclined sides and to permit the outer ends of the straws that were adjacent to the barrier to settle more than the inner ends, and to incline the straws on the exterior of the stack downwardly and outwardly for the purpose of shedding rain.

6. The method of stacking straw which consists in first erecting a screen-barrier and then discharging a blast of air ladened with straw toward the barrier, said barrier tending to retain the straw and permit the air to pass through it.

7. The method of stacking straw, which consists in first erecting a barrier, then discharging a blast of air ladened with straw toward the barrier, said barrier retaining the straw and permitting the blast of air to pass through and then removing the barrier.

8. The method of stacking straw which consists in first erecting a barrier, then arranging a chute adjacent to the barrier, then forcing a blast of air ladened with straw through the chute toward the barrier, said barrier retaining the straw and permitting the blast of air to pass through it and finally removing the barrier.

9. A stack-former comprising a screen-barrier member, means for supporting it in

an upright position, a second screen-barrier member hinged to the top of the first capable of folding adjacent to the first and also of projecting upwardly above the first, and means for supporting it in its upwardly-projecting position.

10. A stack-former comprising a number of independent self-supported collapsible sections.

11. A stack-former comprising a number of screen-covered sections, each stack-forming section comprising an upright screen-covered frame and a screen-covered frame hinged to the upper end thereof capable of folding parallel with the upright frame and means for supporting it in an upwardly-inclined position.

12. A stack-forming section comprising a base portion and an upright portion hinged to the base portion and a top portion hinged to the upright portion and screens for covering the upright and top portions.

13. A stack-forming section comprising an upright screen-covered section member, an outwardly-projecting base member hinged to the bottom of the upright member and a top section member hinged to the upright section member and capable of folding from the position adjacent to the upright member inwardly and upwardly.

14. A stack-forming section comprising a base, an upright section member hinged to one end of the base and capable of lying parallel with the base, means for supporting the upright member in an upright position upon the base and a screen-covered top section member, hinged to the top of the upright section member, capable of folding parallel with the upright section member and means for swinging the top section member inwardly away from the base and upwardly.

15. A stack-forming section comprising a base, an upright section member hinged to one end of the base and capable of lying parallel with the base, means for supporting the upright member in an upright position upon the base and a screen-covered top section member, hinged to the top of the upright section member and means for swinging the top section member inwardly away from the base and upwardly, and means for locking the top section member in its upwardly-extended position.

16. A straw-stack-former section comprising a base-frame, a screen-covered section member hinged to one end of the base-frame, arms provided with elbow-joints pivoted to the sides of the base member and the upright member, a top, screen-covered, section member hinged to the upper end of the upright section member, a lever pivoted to one side of the upright section member, rods connecting the lever and one side of the top section member for raising and lowering the top section member, means attached to the other

side of the top section member and to the upright section member for locking said other side in its upright position.

5 17. A straw-stack-former section, comprising a base-frame, a screen-covered section member hinged to one end of the base-frame, arms provided with elbow-joints pivoted to the sides of the base member and the upright member, a top, screen-covered, section mem-
10 ber hinged to the upper end of the upright section member, a lever pivoted to one side of the upright section member, rods connecting the lever and one side of the top section member for raising and lowering the top
15 section member, means attached to the other side of the top section member and to the upright section member for locking said other side in its upright position, a rod attached to said lever, and means for adjustably secur-
20 ing it to the adjacent portion of the upright section member.

18. A straw-stack-former section comprising a base-frame, a screen-covered section member hinged to one end of the base-frame,
25 arms provided with elbow-joints pivoted to the sides of the base member, a top screen-

covered section member hinged to the upper end of the upright section member, a lever pivoted to the sides of the base member and the upright member, a top, screen-covered, 30 section member hinged to the upper end of the upright section member, a lever pivoted to one side of the upright section member, rods connecting the lever and one side of the top section member for raising and lowering 35 the top section member, means attached to the other side of the top section member and to the upright section member for locking said other side in its upright position, a rod attached to said lever, means for adjustably 40 securing it to the adjacent portion of the upright section member and means for locking together the base and top section member when in their folded positions.

19. In a stack-former, a collapsible screen- 45 barrier.

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