

O. P. VROOM.
BRAKE MECHANISM FOR HAY STACKERS.
APPLICATION FILED MAY 20, 1909.

951,208

Patented Mar. 8, 1910.
2 SHEETS—SHEET 1.

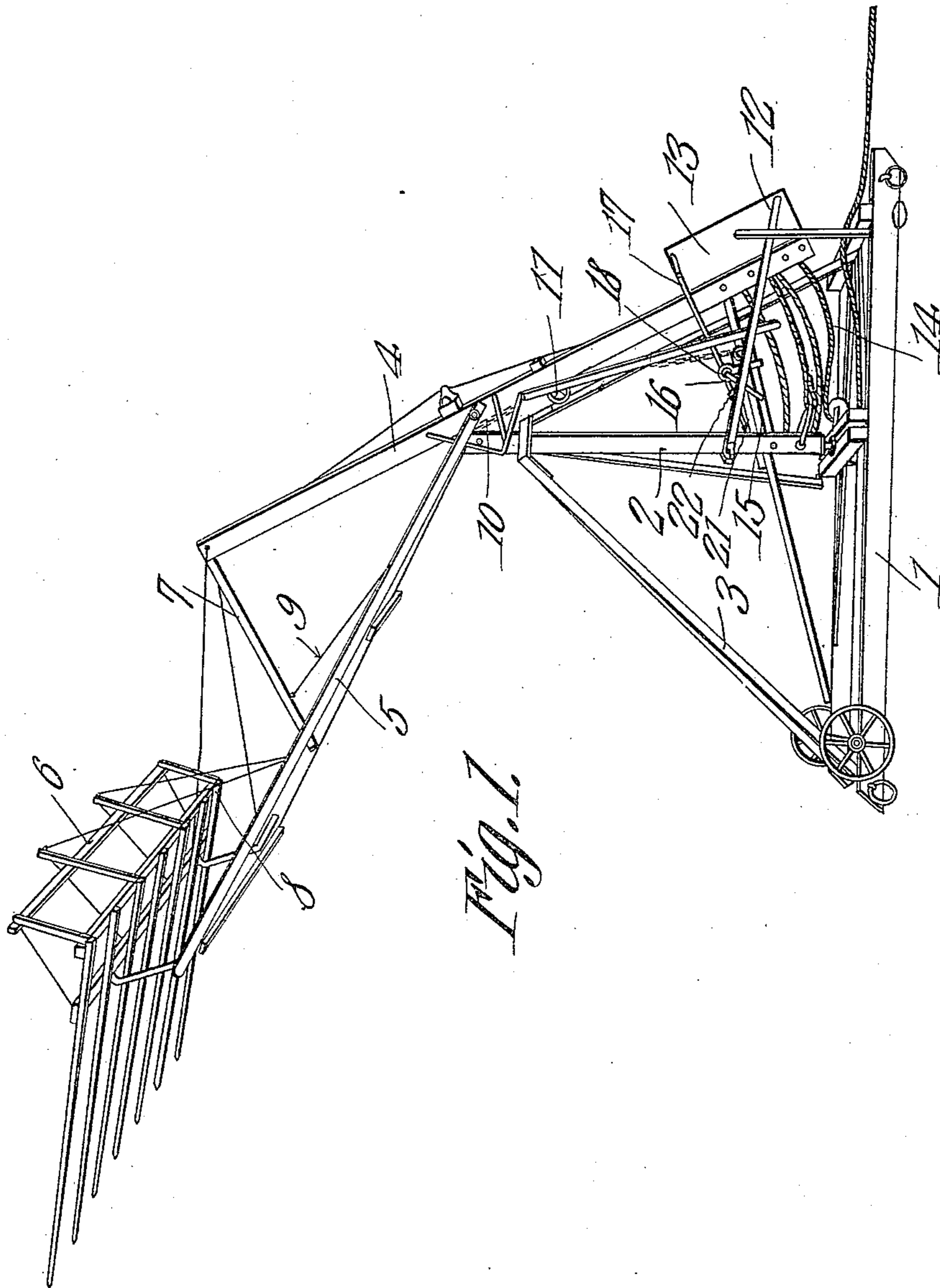


Fig. 1.

Witnesses

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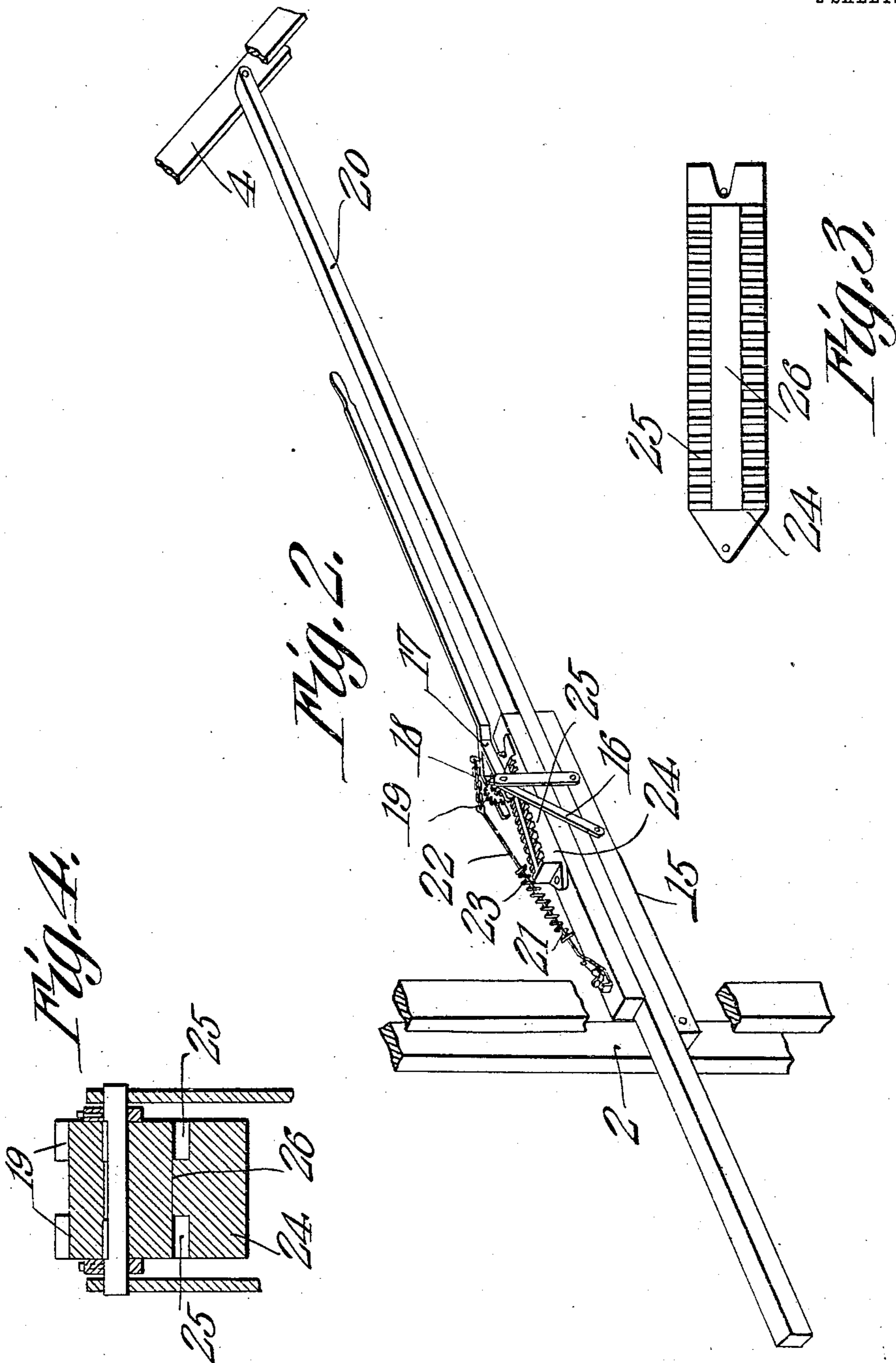
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UNITED STATES PATENT OFFICE.

OLER P. VROOM, OF LINNEUS, MISSOURI, ASSIGNOR TO SUPERIOR HAY STACKER MFG. COMPANY, OF LINNEUS, MISSOURI.

BRAKE MECHANISM FOR HAY-STACKERS.

951,208.

Specification of Letters Patent.

Patented Mar. 8, 1910.

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To all whom it may concern:

Be it known that I, OLER P. VROOM, a citizen of the United States, residing at Linneus, in the county of Linn and State of Missouri, have invented a new and useful Brake Mechanism for Hay-Stackers, of which the following is a specification.

This invention has relation to brake mechanism especially adapted to be used upon hay-stackers, and it consists in the novel construction and arrangement of its parts as hereinafter shown and described.

The object of the invention is to provide an automatic brake mechanism adapted to be used upon stackers in which is employed a vertical mast with a sweep or beam pivotally attached to the upper end thereof. The brake mechanism is interposed between the mast and the sweep, and when in operation is designed to positively and effectually hold the sweep at any desired angle or position with relation to the mast.

In the accompanying drawing:—Figure 1 is a perspective view of a hay-stacker with the brake mechanism applied thereto. Fig. 2 is a detailed perspective view of the brake mechanism slightly enlarged. Fig. 3 is a plan view of a wedge member used in the brake mechanism. Fig. 4 is a transverse sectional view of said wedge member.

The form of stacker to which the brake mechanism is applied usually consists of a frame or series of runners 1, upon which is mounted a mast 2, held in upright position by means of suitable braces 3. A sweep 4 is pivotally connected with the upper end of the mast 2 and is provided with braces 5, upon which is pivotally mounted a cradle 6. A lever 7 is fulcrumed to the sweep 4 and is operatively connected with the cradle by means of cables 8. A cable 9 is connected at one end to the lever 7 and at its other end connects with a chain 10 which passes over a pulley 11 journaled upon the sweep 4 and extends down and connects with a lever 12, fulcrumed to the mast 2. A weight box 13 is mounted upon that end of the sweep 4 opposite the end from which the cradle 6 is supported by means of the braces 5, and a swinging or hoisting cable 14 operatively connects that end of the sweep 4 which carries the weight-box 13 with the lower portion of the mast 2. Inasmuch as the structure above described is that usually employed in stackers having vertical masts

and pivoted sweeps, it is thought that further detailed description of the stacker is unnecessary to gain a clear idea as to the structure and operation of the brake mechanism which will now be described in detail.

The brake mechanism consists of a bar 15, which is pivotally attached to the mast 2 and which is provided at its sides with up-standing brackets 16. A lever 17 is fulcrumed between the upper ends of the brackets 16, and is provided with a fixed shaft 18, the extremities of which serve as a fulcrum point for connection with the said brackets 16. Upon the said shaft 18 is fixed two spaced gear wheels 19. A beam 20 is pivotally connected with that end portion of the sweep 4, upon which the weight box 13 is mounted, and said beam passes between the brackets 16 and lies against the upper surface of the bar 15. A shoe 21 slidably rests upon the upper side of the beam 20 and also lies between the brackets 16. A resilient adductor 22 is connected at one end with the shoe 21 and at its other end with the lever 17. The said adductor is longitudinally extensible, and one of its component parts consists of a coil spring 23, which is under tension to hold or swing the free end of the lever 17 toward the mast 2. A wedge-shaped block 24 is fixed to the upper side of the shoe 21 and is provided at its opposite edges with a series of gear teeth 25 with which the wheels 19 mesh. That portion of the block 24 lying between the series of teeth 25 is plain as at 26, and, consequently, when the teeth of the wheels 19 are in mesh with the teeth 25 of the block 24, the said portion 26 lies between the said wheels and prevents any tendency to lateral relative movement of the said parts. Thus the brackets 16 are relieved of lateral strain.

The free end of the lever 17 is within convenient reach of one standing upon the runners or platform 1.

The operation of the brake mechanism is as follows:—When it is desired that the sweep 4 shall swing vertically upon the mast 2, an operator grasps the free end of the lever 17 and swings the same down against the tension of the spring 23 forming a portion of the adductor 22. This movement on the part of the lever 17 rotates the shaft 18 upon its axis and the wheels 19 turn with the said shaft. Inasmuch as the said wheels are in mesh with the teeth 25 of the wedge-

block, the said block, together with the shoe 21 is moved longitudinally so that the thinner portion of the block is moved under the shaft 18. Thus the frictional contact between the under surface of the shoe 21 and the upper surface of the beam 20 is reduced and the said beam is rendered free to slide between the bar 15 and the shoe 21. When the sweep has swung to a desired position the operator releases the free end of the lever 17 and the adductor 22, under the tension of the spring 23, comes into play, and the free end of the said lever 17 is swung toward the mast 2 in an upward direction, and consequently the shaft 18 is rotated upon its axis, which carries around with it the gear wheels 19. This movement on the part of the wheels 19 draws the thicker portion of the wedge-block 24 under the shaft 18, and as the shoe 21 moves with the said block the lower surface of the said shoe is forced into close frictional contact with the upper surface of the beam 20. Thus, the beam 20 and the bar 15 assume rigid relations and are held against longitudinal movement with relation to each other. Consequently, a stacker provided with the brake mechanism as described may have its sweep swung to any desired position with relation to the mast, and, when so positioned, the mast may be rotated or turned upon its axis with impunity to bring the sweep and the load carried thereby to any desired point within its radius.

Having described my invention, what I claim as new and desire to secure, by Letters Patent, is:—

1. In combination with a stacker including a mast and a sweep pivotally mounted thereon, a brake mechanism comprising a beam pivotally connected with the sweep, a bar pivotally connected with the mast, said beam having slidable engagement with the bar, and means for locking the beam with relation to the bar.

2. In combination with a stacker including a mast and a pivoted sweep, a brake mechanism comprising a beam pivotally connected to the sweep, a bar pivotally connected to the mast, brackets attached to the bars and receiving the beam between them, a shoe slidably located between the brackets, and means for moving the shoe to force the same into frictional contact with the beam.

3. In combination with a stacker including a mast and a pivoted sweep, a brake mechanism comprising a beam pivotally connected to the sweep, a bar pivotally connected to the mast, brackets attached to the bar and receiving the beam between them, a shoe slidably mounted between the brackets, a wedge-shaped block mounted upon the shoe, wheels journaled between the brackets and having contact with the wedge-shaped block, and a spring-tensioned adductor connecting the shoe with the said wheels.

4. In combination with a stacker including a mast and a sweep pivotally mounted thereon, a brake mechanism comprising a beam pivotally attached to the sweep, a bar pivotally attached to the mast, brackets mounted upon the bar and receiving the beam between them, a shoe located between the brackets and resting upon the beam, a wedge-shaped block mounted upon the shoe and having gear teeth, a lever fulcrumed between the brackets, a gear-wheel fixed with relation to the lever and connecting with the gear upon the wedge-shaped block, and a tensioned adductor connected at one end with the shoe, and at its other end with the lever, at a point to one side of the axis of the said gear-wheel.

5. In combination with a stacker including a mast and a sweep pivotally mounted thereon, a brake mechanism comprising a beam pivotally attached to the sweep, a bar pivotally attached to the mast, brackets mounted upon the bar and receiving the beam between them, a block slidably located upon the beam between the brackets, a wedge-shaped block mounted upon the shoe and having gear teeth at its opposite sides with a plane intermediate portion, a lever fulcrumed between the brackets, spaced gear-wheels fixed with relation to the lever and engaging the gear teeth upon the said wedge-shaped block, and a tensioned adductor connected at one end with the shoe, and at its other end with the said lever.

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

OLIVER P. VROOM.

Witnesses:

M. B. FETTY,
W. P. THORNE.