

No. 894,515.

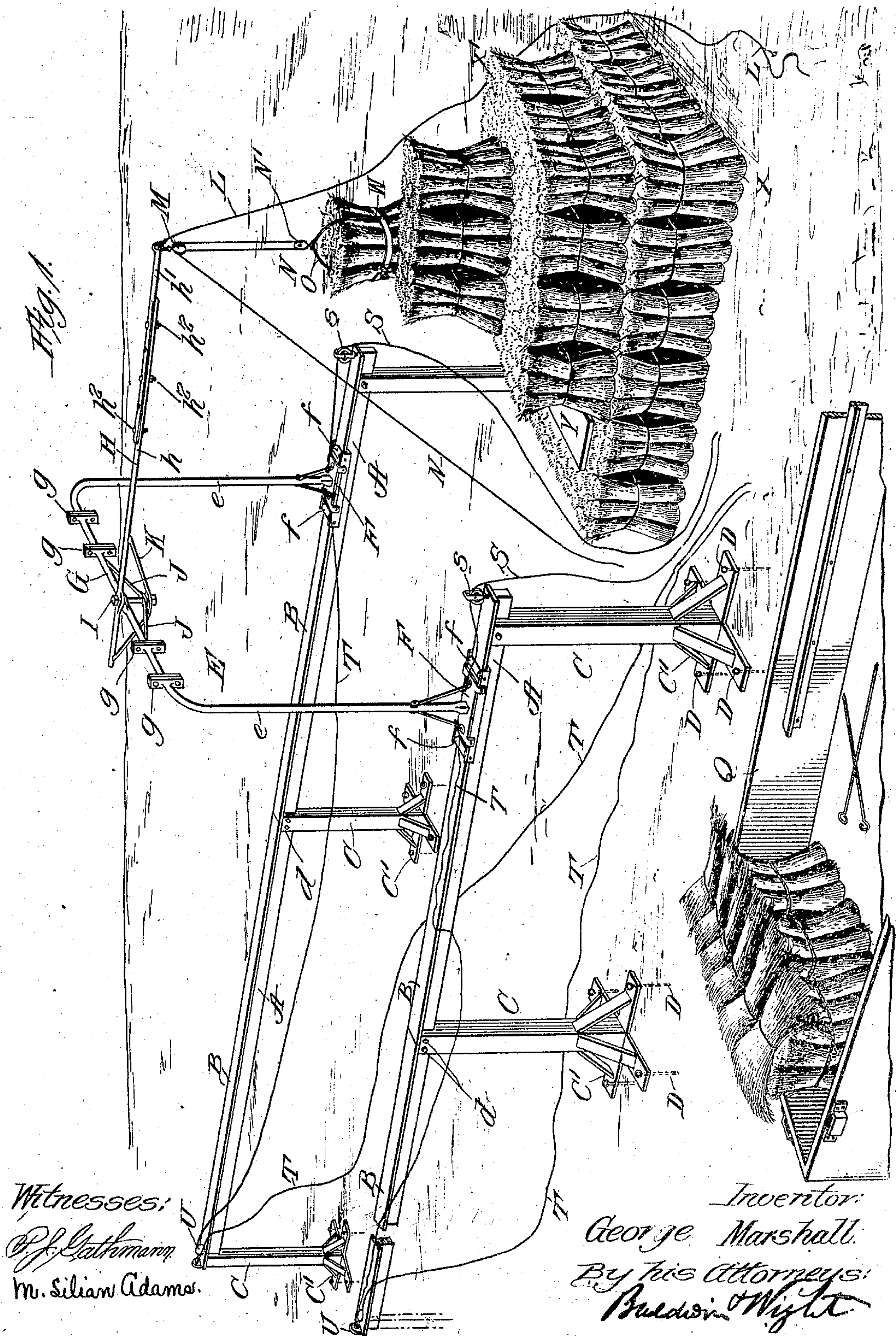
PATENTED JULY 28, 1908.

G. MARSHALL.

STACK FORMING MECHANISM.

APPLICATION FILED FEB. 27, 1908.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 2.

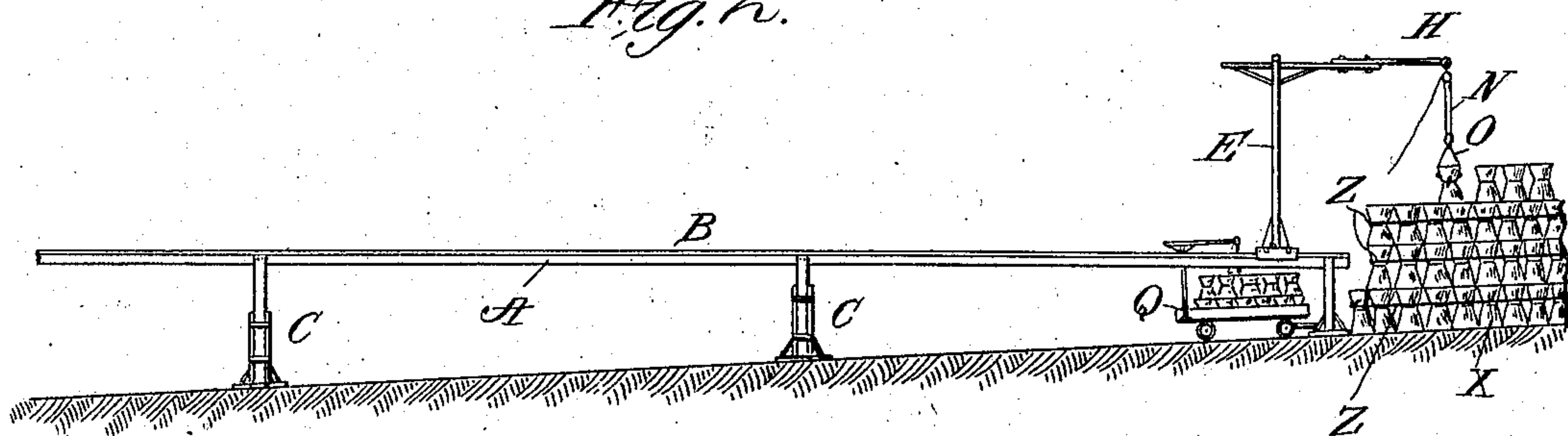


Fig. 4.

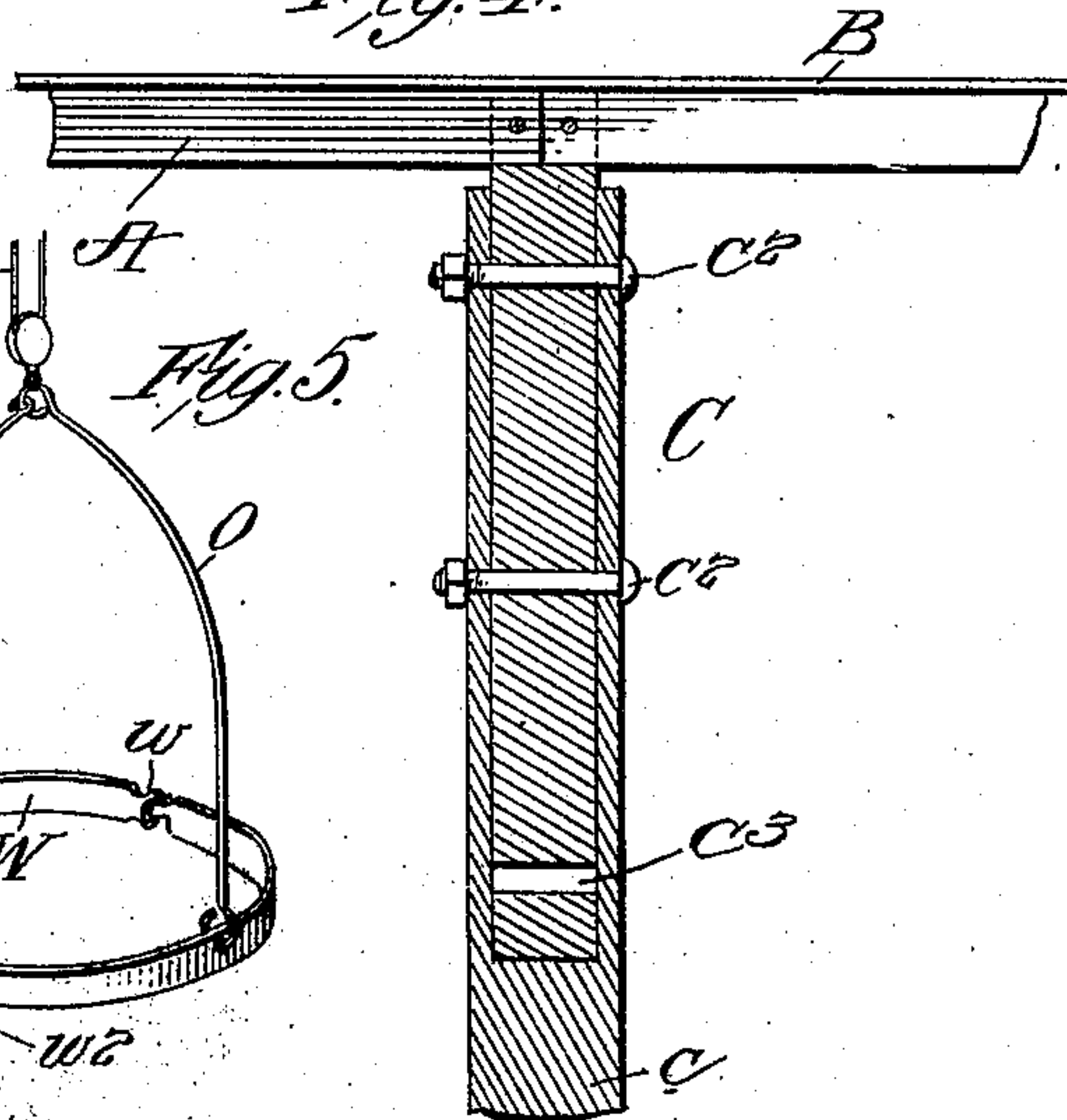


Fig. 3.

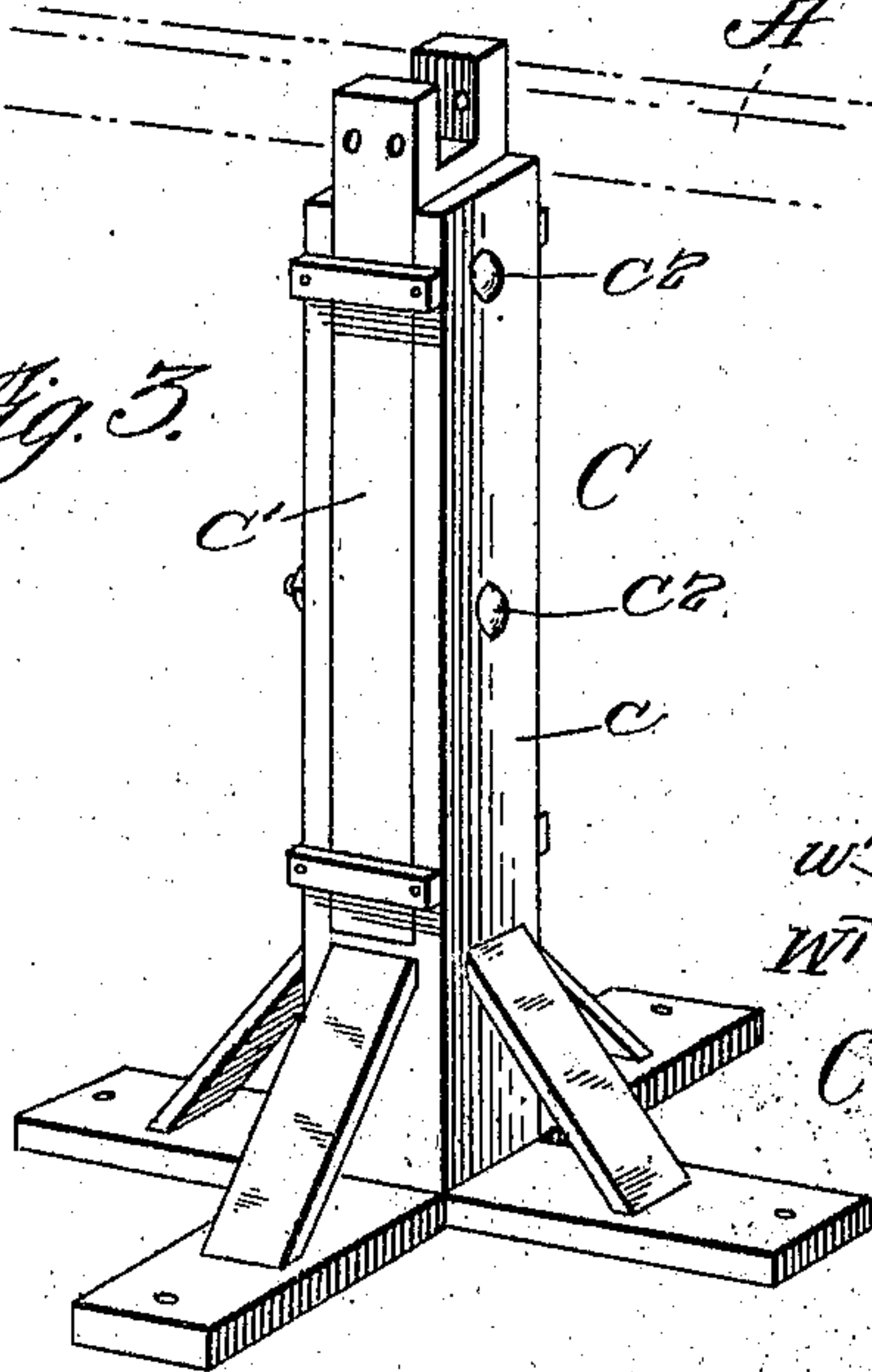


Fig. 5.

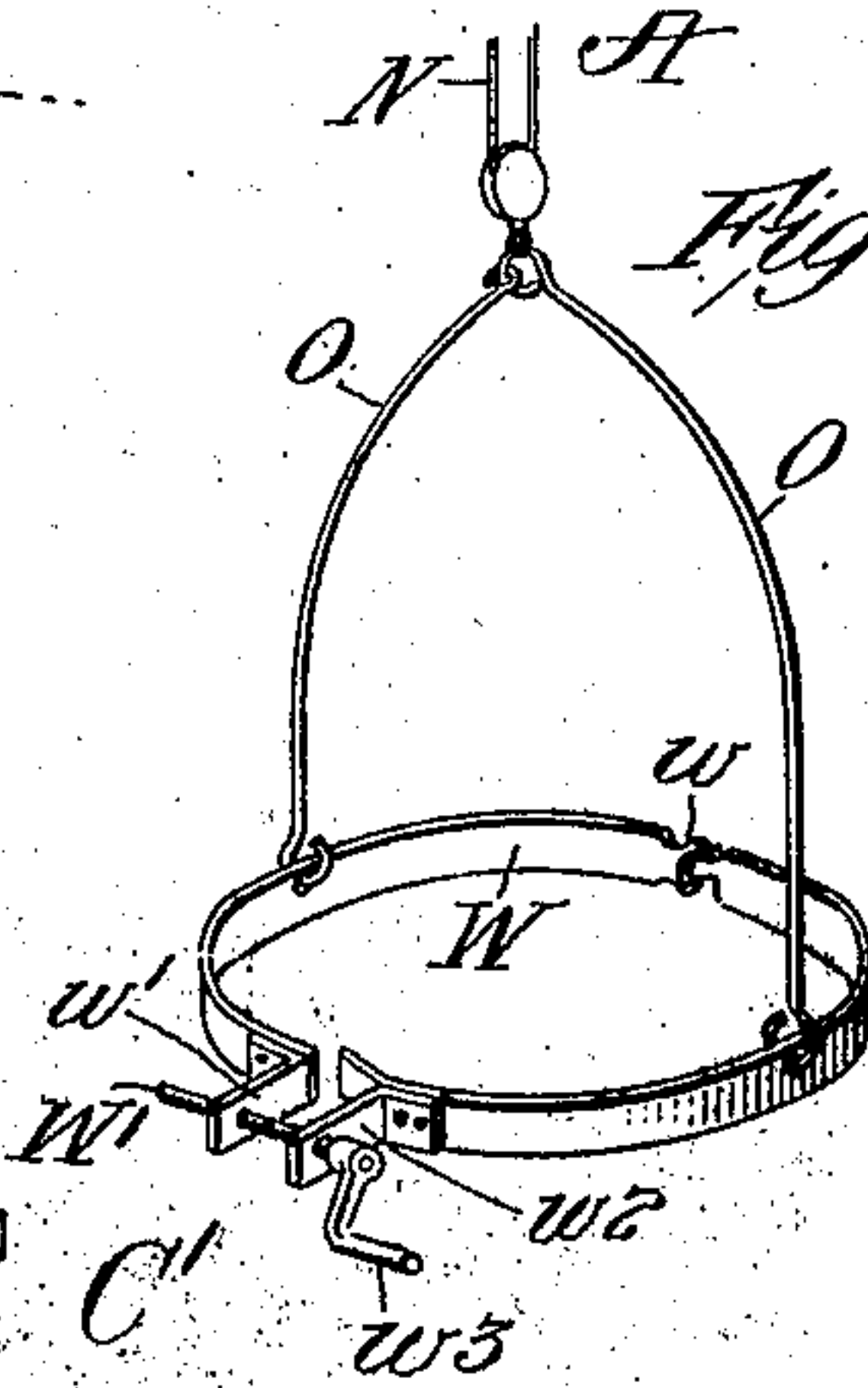


Fig. 7.

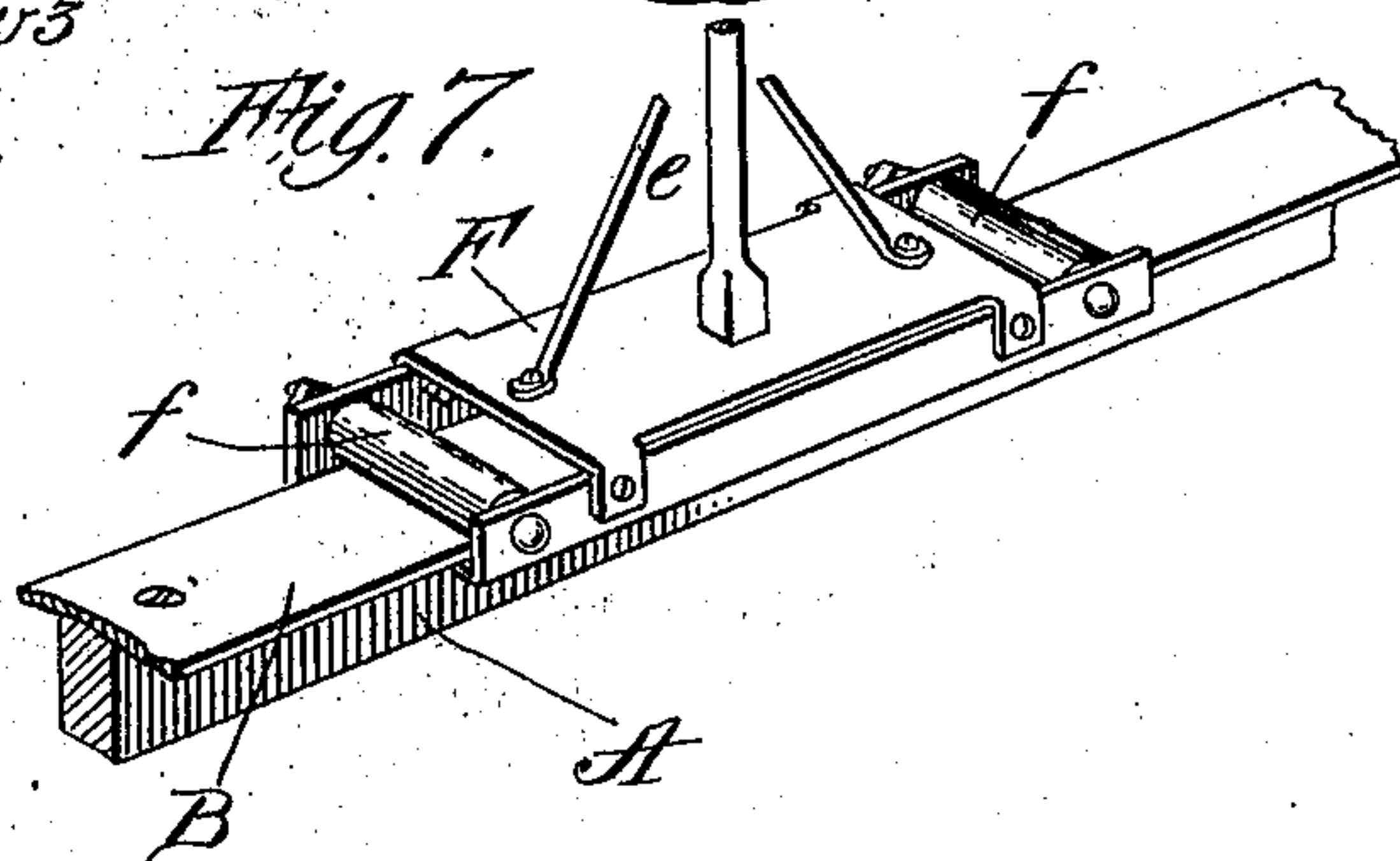


Fig. 6.

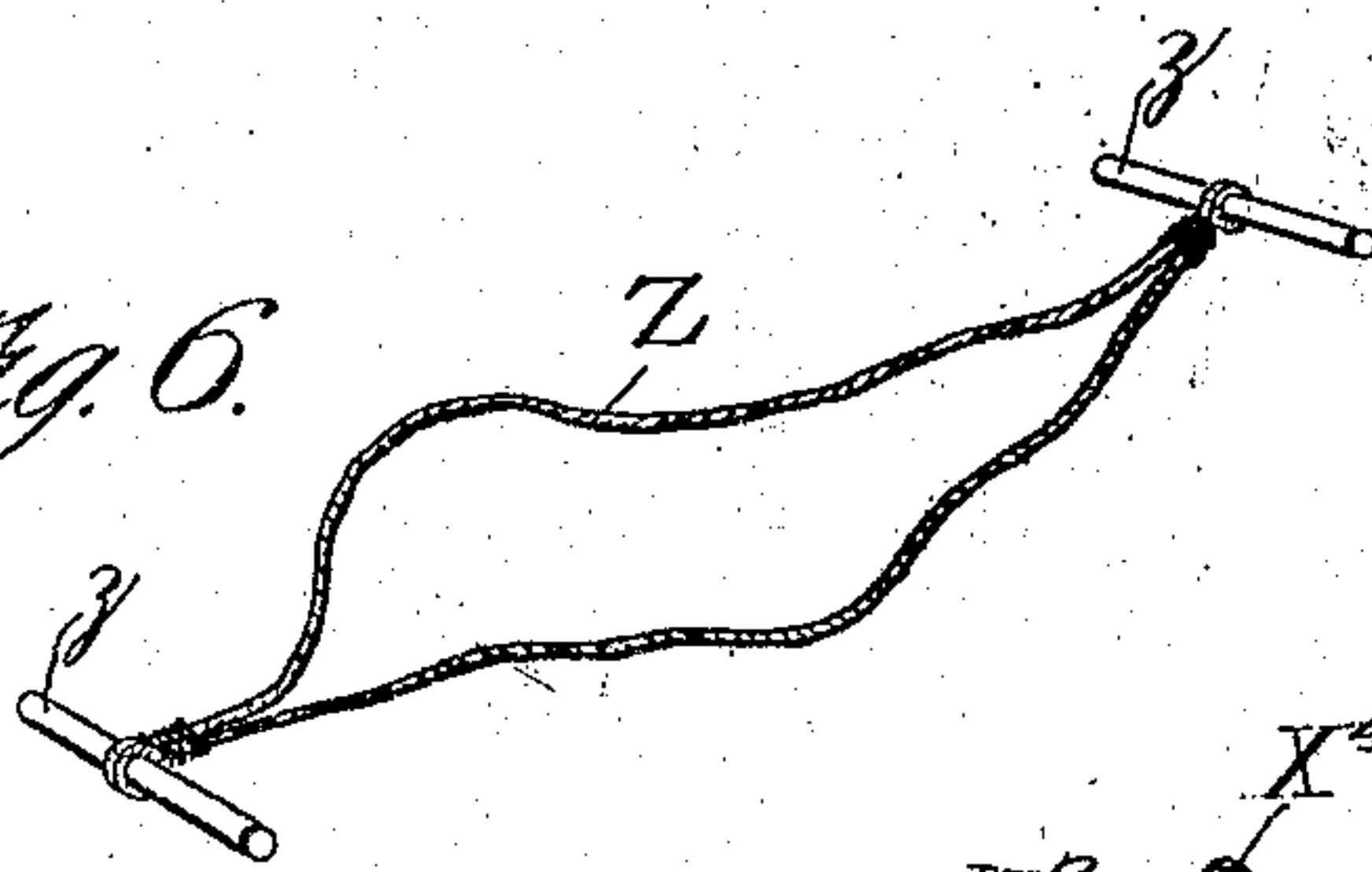
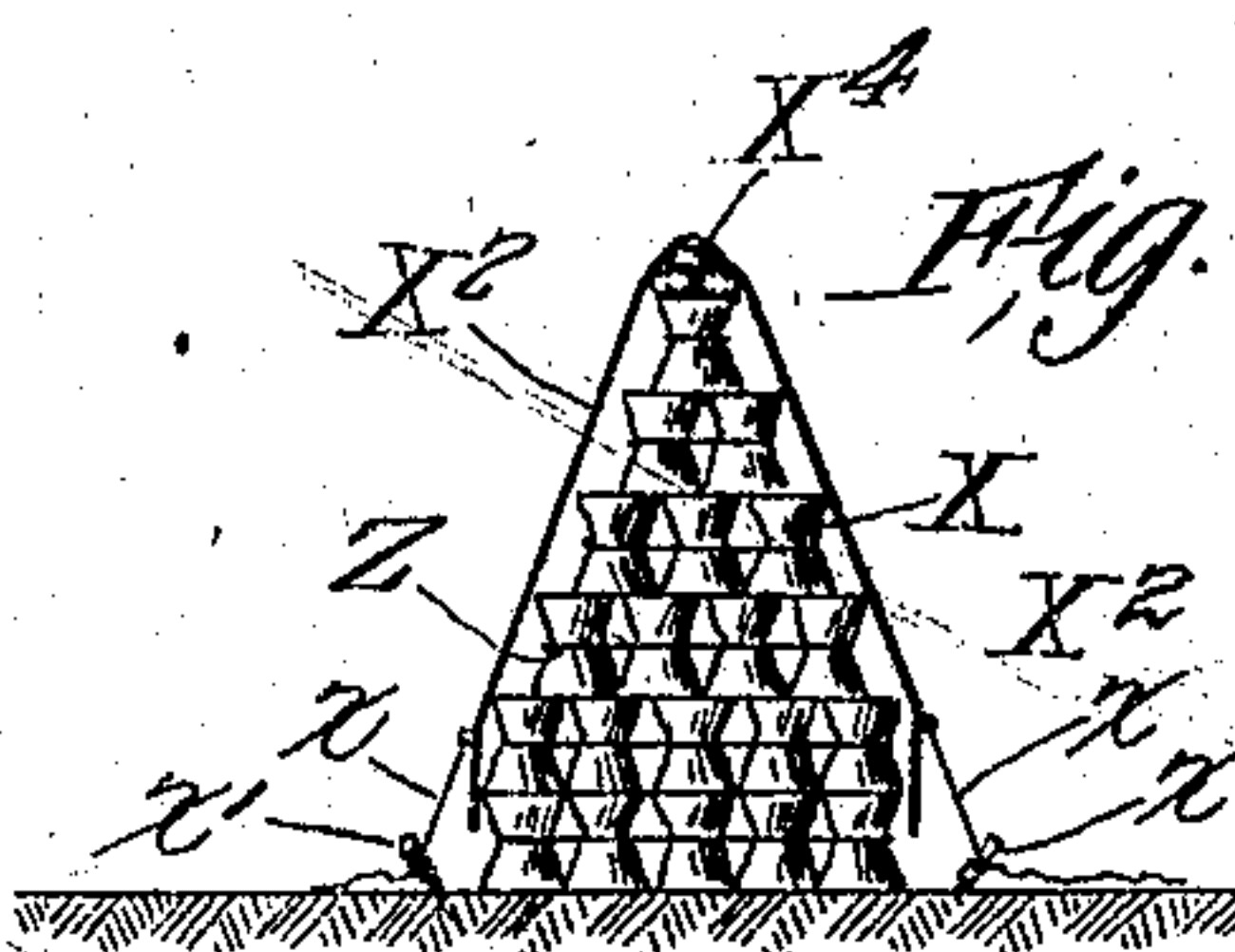


Fig. 8.



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UNITED STATES PATENT OFFICE.

GEORGE MARSHALL, OF FREMONT, NEBRASKA.

STACK-FORMING MECHANISM.

No. 894,515.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed February 27, 1908: Serial No. 418,032.

To all whom it may concern:

Be it known that I, GEORGE MARSHALL, a citizen of the United States, residing at Fremont, in the county of Dodge and State of Nebraska, have invented certain new and useful Improvements in Stack-Forming Mechanism, of which the following is a specification.

The object of my invention is to provide improved means for stacking sheaves of grain. Ordinarily binding-machines deliver the sheaves to the ground or to the bundle-carrier as fast as formed and these sheaves are gathered by hand and formed into loose shocks which are allowed to remain until they are loaded into a wagon, as driven from shock to shock.

In my companion application No. 418,030 filed Feb. 27, 1908 I have shown improved means for forming sheaves into tightly bound shocks which are subsequently, without separating the sheaves, elevated to a wagon and arranged therein for transportation to a suitable place for stacking.

According to my present invention, I have provided means whereby the shocks thus gathered and transported, may be conveniently formed into a stack. Heretofore it has been customary to remove the loose sheaves from a wagon by means of pitch-forks and throw them into a barn or on to a stack as its formation progresses. This is a slow and laborious operation and much of the grain is lost.

I have provided mechanism whereby the shocks, each consisting of a plurality of sheaves, may be quickly raised from a wagon and carried to the stack and dropped there with but little labor for the hands and comparatively little loss of grain.

I provide an elevated track on which I mount a crane that can slide back and forth on the track and which has an extensible arm carrying block and tackle devices which are adapted to be connected with the shocks. The arrangement is such that the crane-arm may be first swung over a wagon, and the hoisting devices then be attached to the shocks and then swung over the stack to deliver the shocks thereto.

In the accompanying drawings, Figure 1 is a perspective view of my improved stacking mechanism, showing how the shocks are taken from a wagon and delivered to the stack. Fig. 2 is a side elevation showing how a stack may be formed on the side of a

hill. Fig. 3 is a perspective view of one of the vertically adjustable standards of the track. Fig. 4 shows a vertical, longitudinal section through one of the standards. Fig. 5 is a perspective view showing the clamping band for attaching the hoisting devices to the shock. Fig. 6 is a perspective view of the devices for binding together a layer of shocks. Fig. 7 is a perspective view showing how the crane-frame is supported on the track. Fig. 8 shows a completed stack inclosed in a canvas cover.

The wood rails A are made in sections and carry metal track sections B. The rails are supported by posts C having braced bases C' which may be attached to the ground by pins D. The ends of the rails fit in mortises in the tops of the posts and are held firmly by pegs or pins d. The rails are held the desired distance above the ground by the posts, say one-half the height of the stack, and support the crane-frame E, mounted on the slides F, which are adapted to travel back and forth on the tracks. The slides are provided with anti-friction rollers f, and the crane-frame comprises upright parts e and a top part G, preferably made in sections as shown and provided with intervening plates g, by means of which the sections may be secured tightly and whereby the top part may be made wider or narrower as desired.

The crane-arm H is extensible as to length, being made in two parts h, h', attached by bolts h², which may be taken out and replaced after the arm sections have been adjusted to the desired extent. The crane-arm is pivoted to the crane-frame by a vertical bolt I which extends through the arm section h through the upper frame part G and the braces J and K and the part G and the part h. On the outer end of the crane-arm there is a rope L by means of which the arm may be swung around in any desired direction. On the outer end of the crane-arm there is also a pulley-block M carrying a hoisting rope N, the lower end of the loop of which is provided with a pulley-block N' to which is attached a bail O carrying at its lower end a clamping band W made in two sections hinged together at w and provided at their opposite ends with arms w', w² through which extends a screw rod W' operated by a crank handle w³. The rope N also extends out away from the stack in convenient position for the hand or attendant to operate the hoisting devices.

The shocks are brought to the stack by a wagon Q of the kind shown in my application for patent No. 418,031, filed February 27, 1908. The wagon is driven close to the tracks near the crane-frame so that the crane-arm may be swung around over the wagon. The band W is then passed over a shock and by means of the screw rod W' firmly applied thereto, then by means of the ropes N and L the shock may be hoisted and carried to the proper position over the stack and placed thereon.

In order to move the crane-frame back and forth on the track I provide two ropes S for pulling the frame in one direction. These ropes are attached to the slides F and extend over pulleys s on the front end of the tracks, and ropes T, attached to the slides, extend through pulleys U at the rear ends of the tracks and then extend forwardly to the stack so that the attendant may pull the crane-frame back and forth as desired to cause it to assume the proper position relatively to the wagon and the stack.

I first form a tier of shocks X over the desired area and then place on top of this another tier of shocks X' and so on until the desired height is reached. In order to avoid tramping on the grain I preferably use a platform board Y, which may be placed on the tier completely formed, for the attendant to stand on while the next tier is being constructed.

When it is desirable to form a stack on the side of a hill, I preferably make the post C adjustable, as indicated in Figs. 2, 3 and 4. Fig. 2 shows how the stack is built up on the side of a hill and how the track is arranged. The track is preferably always made level, the post being suitably adjusted vertically for this purpose. As shown in Figs. 3 and 4, the lower part c of the post is attached to the base C' and in this part is arranged a telescopic vertically adjustable part c', which is attached to the track. Bolts c² are employed for securing the post members together. It will be observed, by reference to

Fig. 4, that the telescopic member c' has an extra hole c³, admitting of the vertical adjustment above referred to. As each tier of shocks is formed it is preferably bound with a stout rope Z, as indicated in Fig. 6, but this may not be essential. This rope may be provided with handles z by means of which it may be conveniently handled and twisted and these handles may be so tucked in as to securely hold the rope taut. In this way the shocks may be lifted one at a time bodily out of the wagon and carried to the stack with but little exertion on the part of the attendants. The stack can be quickly formed and will be so symmetrically constructed that it will permanently maintain its shape.

The loose cap sheaves may be taken from the wagon separately and used in building up the stack in any desired way. Some of them may be used to form the top of the stack as indicated at X⁴ in Fig. 8.

The stack when completed should be inclosed in a canvas cover X² which is held in place by ropes x secured to pegs x' driven into the ground.

I claim as my invention:

Stacking mechanism comprising a track made in sections, posts supporting the section of track and having enlarged braced bases adapted to be attached to the ground, a U-shaped crane frame above the track comprising a top part and uprights connected therewith and provided with slides supported and moving on the track but held from rising therefrom, an extensible crane arm pivotally connected with the crane frame, hoisting devices carried by this arm and means for moving the crane frame back and forth on the track.

In testimony whereof, I have hereunto subscribed my name.

GEORGE MARSHALL.

Witnesses:

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