

No. 631,043.

Patented Aug. 15, 1899.

M. HEINEKE.

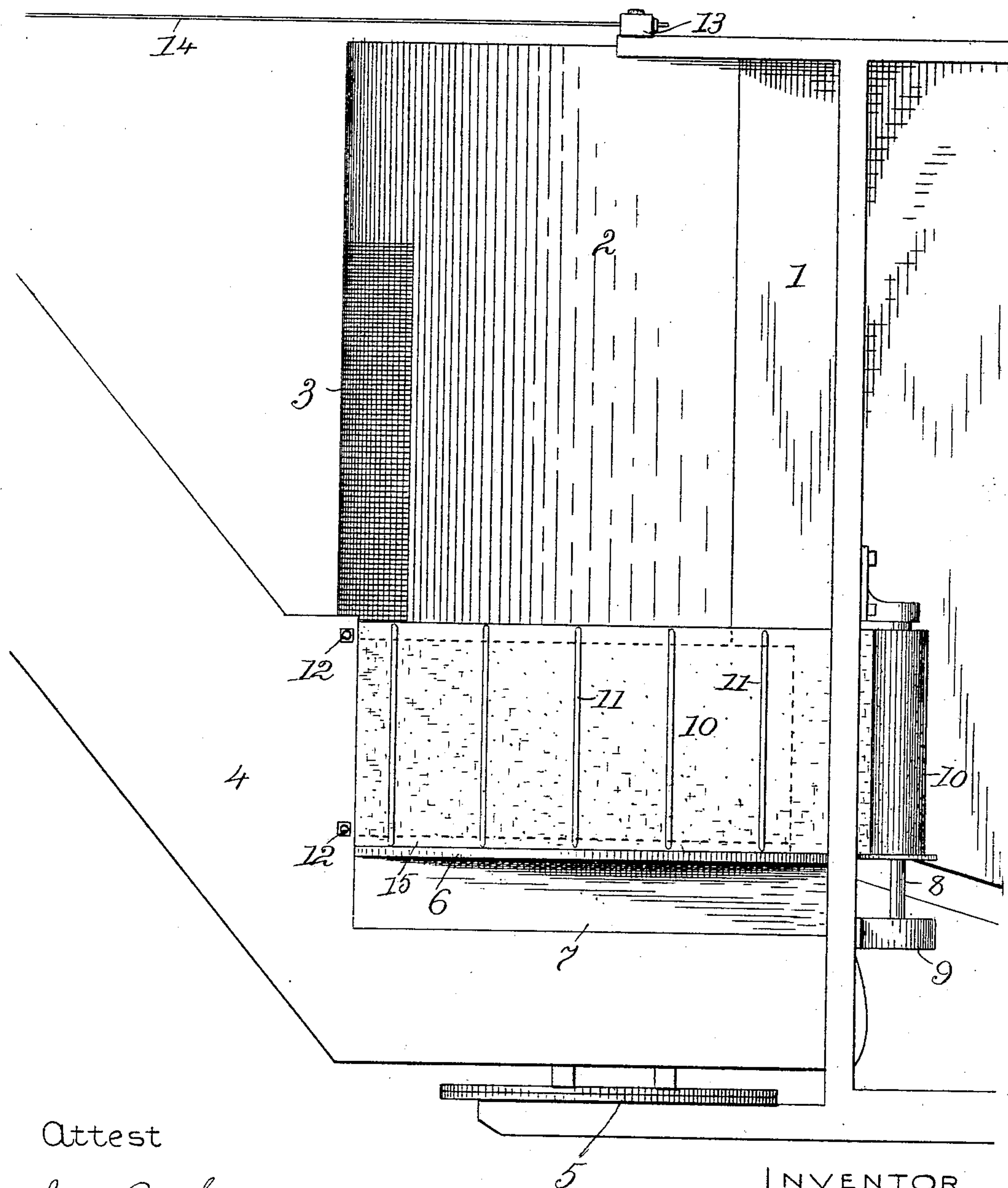
STRAW STACKER.

(Application filed Apr. 1, 1899.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



Attest

*Lina Graham.*

*Nora Graham.*

INVENTOR  
MARTIN HEINEKE  
by *L.P. Graham*  
his attorney

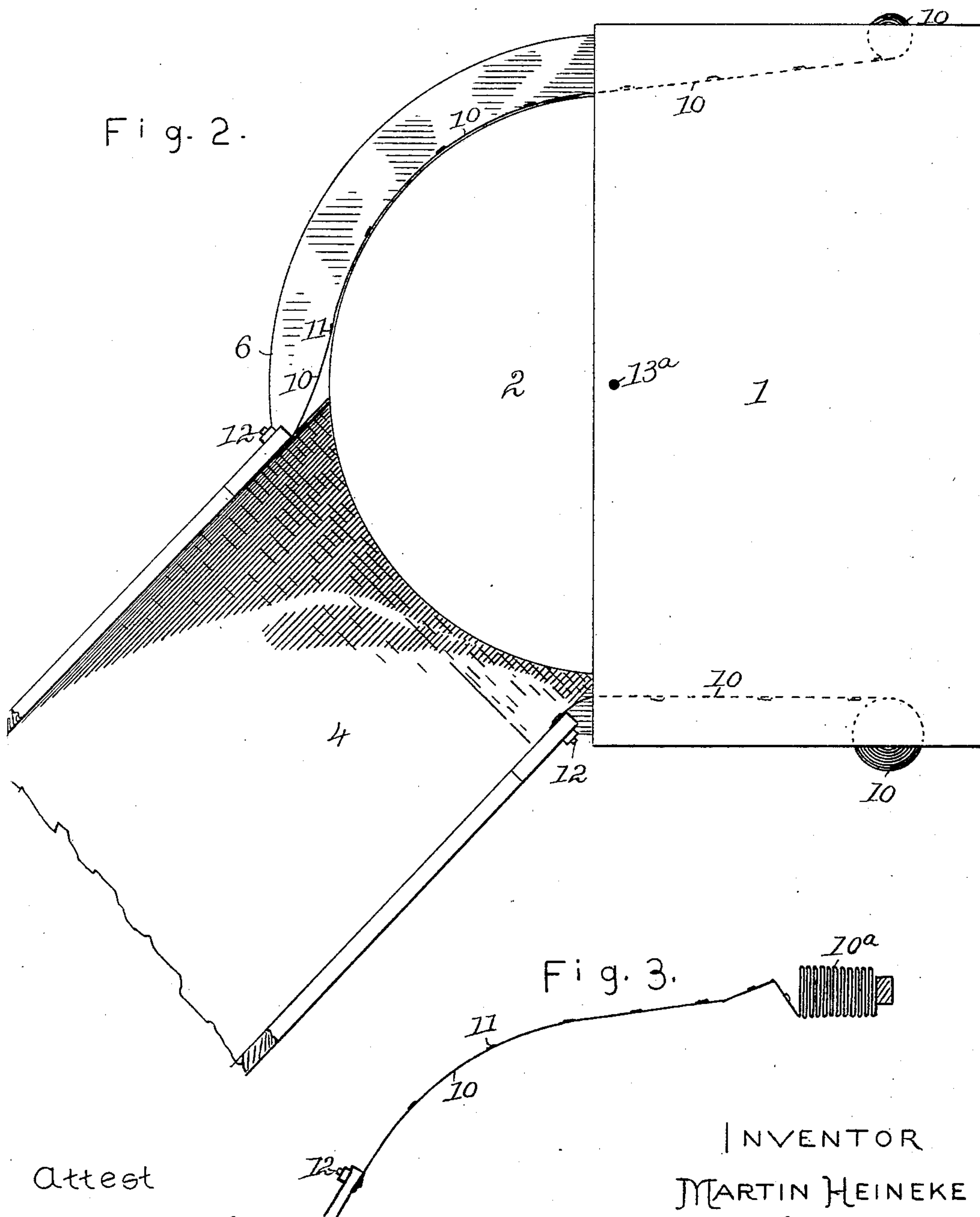
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(No Model.)

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Attest  
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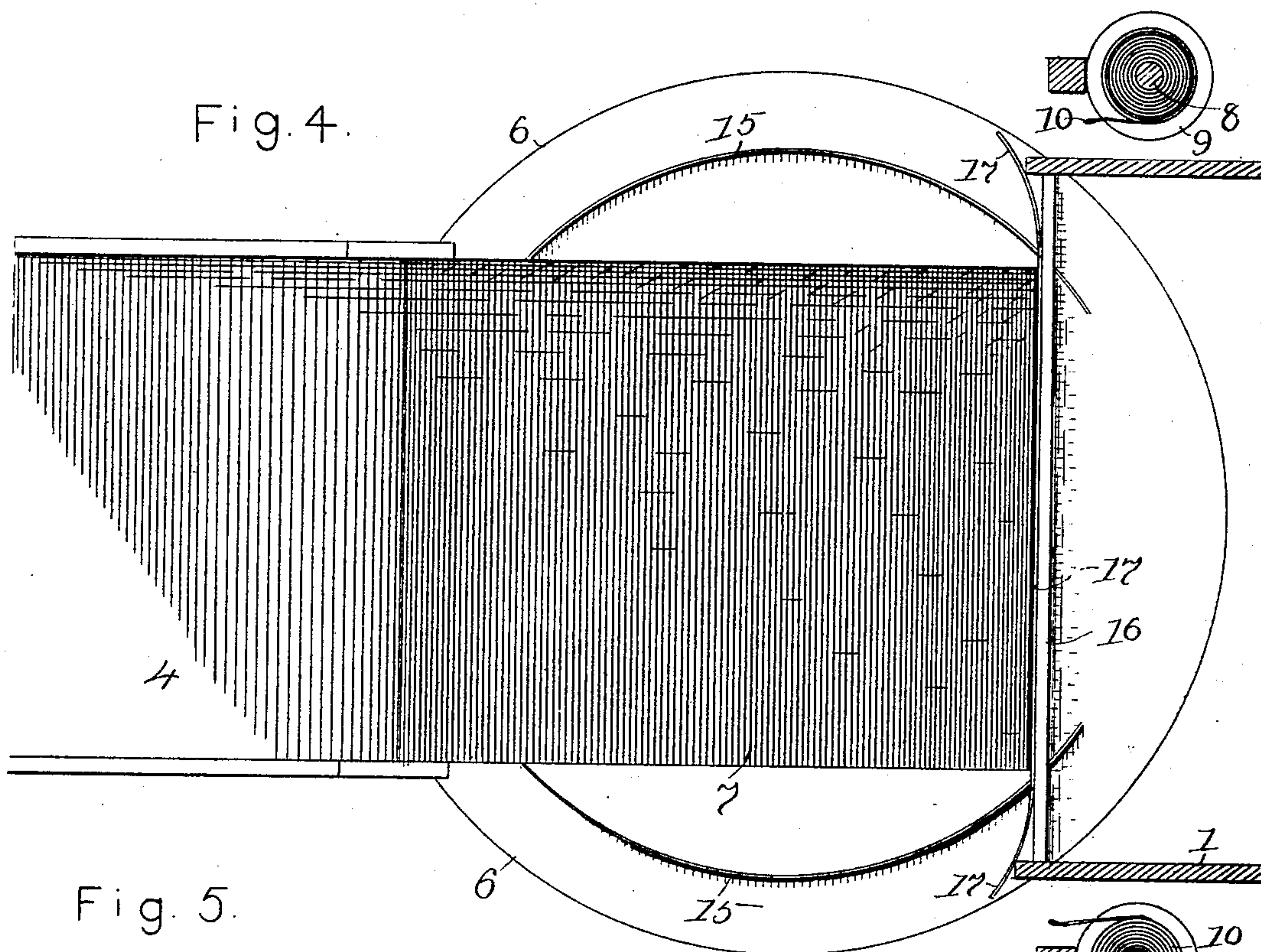
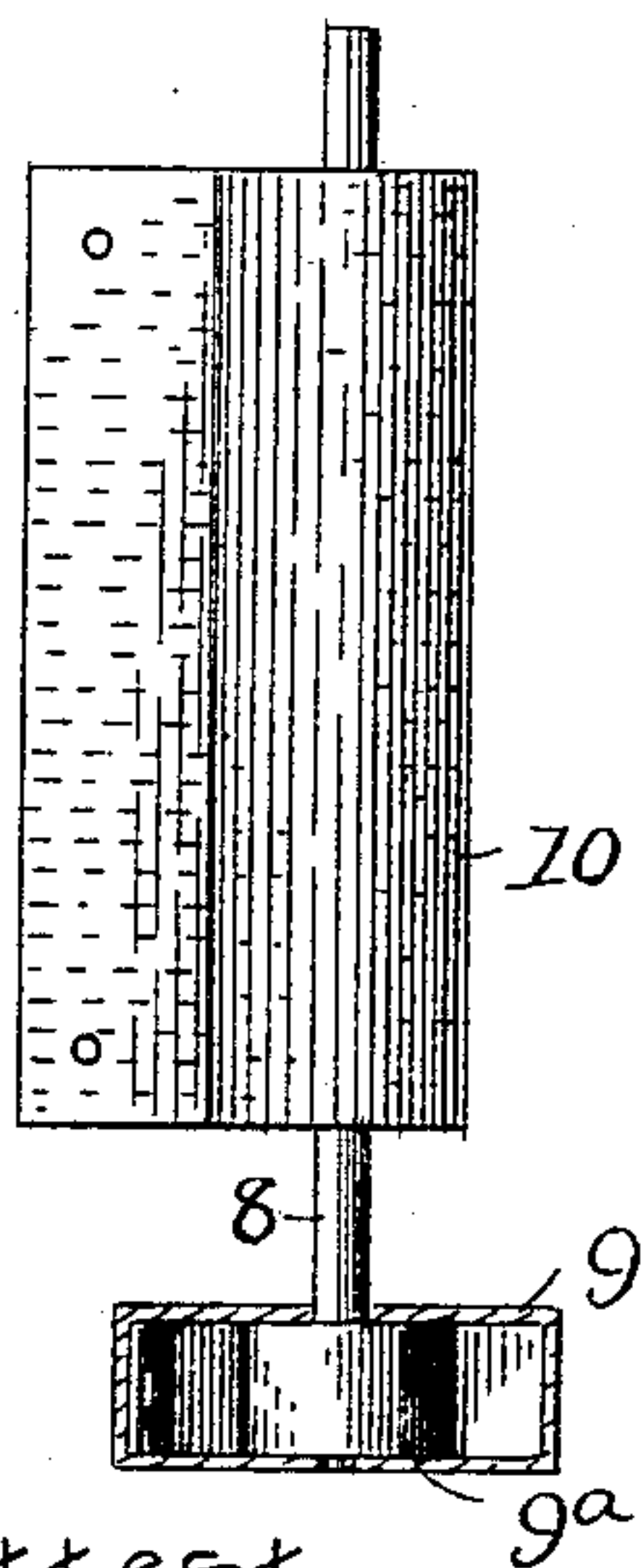


Fig. 5.



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*Ina Graham.*

*Nora Graham.*

Fig. 6.

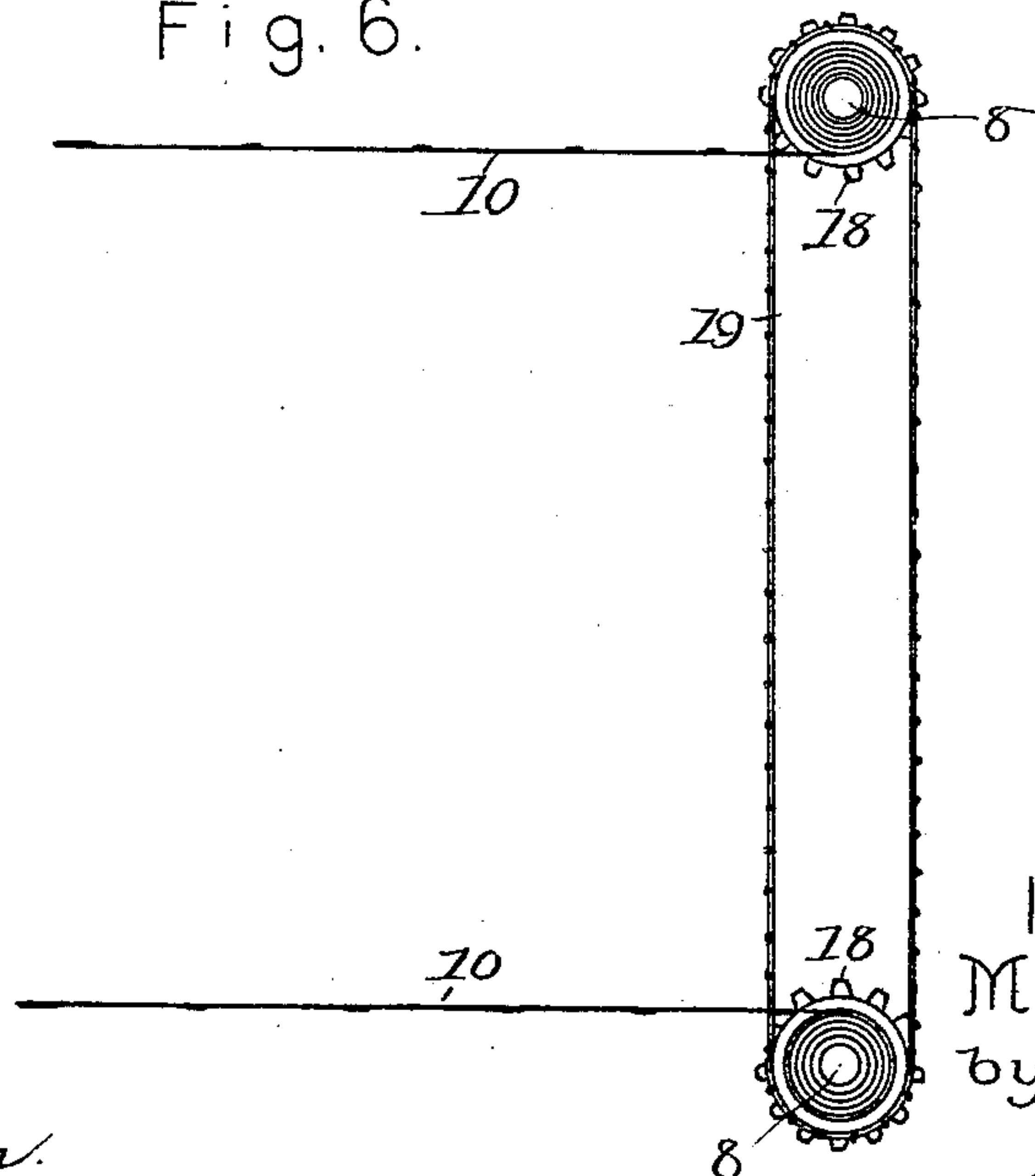
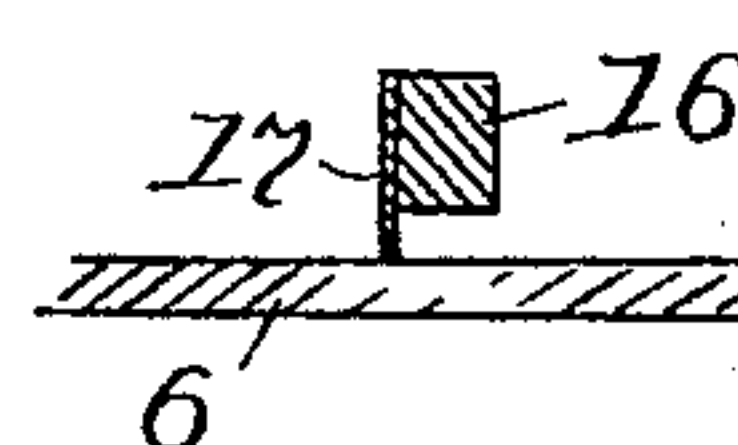


Fig. 7.



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# UNITED STATES PATENT OFFICE.

MARTIN HEINEKE, OF SPRINGFIELD, ILLINOIS.

## STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 631,043, dated August 15, 1899.

Application filed April 1, 1899. Serial No. 711,462. (No model.)

*To all whom it may concern:*

Be it known that I, MARTIN HEINEKE, of Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Straw-Stackers, of which the following is a specification.

This invention is particularly applicable to stackers built onto threshers, with their receiving ends immediately under the discharge of the threshers. Its principal object is to provide for the retention of the straw in the receiving ends of the stackers without interfering with free horizontal swing of the stackers. It is exemplified in the structure hereinafter described, and it is defined in the appended claims.

In the drawings forming part of this specification, Figure 1 is a side elevation of so much of a thresher and stacker as are needed to explain my invention. Fig. 2 is a plan of the rear end of a thresher, showing the relation of the receiving end of the stacker thereto. Fig. 3 is a diagram illustrative of a modification of the band used to close a side of the receiving end of the stacker. Fig. 4 is a plan of the receiving end of a stacker, in connection with a scraper-bar which utilizes the side swing of the stacker to force the straw onto the carrier. Fig. 5 is a detail of the means preferably employed to control the closure-bands. Fig. 6 is a modified form of means for controlling the closure-bands. Fig. 7 is a detail in cross-section of the scraper-bar used to force straw onto the straw-carrier.

In stackers built onto the threshers the rear ends of the threshers are provided with diverter-receptacles, which are closed top and sides and open at the bottom and which receive the straw from the threshers and discharge it downward onto the receiving ends of the stackers. The stacker is pivoted to swing horizontally on a turn-table or pivot located beneath the diverter-receptacle. It is usually narrower than the thresher, and its sides under the diverter-receptacle are cut away or diminished in height to permit the stacker to swing from side to side in distributing the straw. The straw is blown from the thresher onto the stacker with considerable force, and there is some difficulty encountered in retaining the straw on the receiving end of the stacker, particularly when

the stacker is turned so far to one side as to bring an open side of the receiving end in line with the direction of the blast from the thresher.

My invention provides means whereby the sides of the receiving end of the stacker are kept continuously closed and the force of the wind from the thresher on the straw in the stacker is materially lessened. It also provides means whereby the stacker-carrier may be made much narrower than the thresher and the diverter-receptacle thereon and still handle all the straw discharged from the thresher.

The rear end of a threshing-machine is shown at 1, the diverter-receptacle thereof at 2, and the horizontally-swinging section of a stacker at 4. The stacker is mounted on a turn-table 5 or other suitable pivot, located below the center of the diverter-receptacle. It has a horizontal portion extending out beyond the diverter, and its outer end extends upward and backward at any desired angle. The diverter extends downward to the upper surface of the oblique part of the stacker; but between the lower end of the diverter and the upper surface of the horizontal part of the stacker a considerable space is left to permit the stacker to swing sidewise. The side boards of the oblique part of the stacker are left standing, as they do not interfere with the swing of the stacker; but the side boards of the horizontal part are omitted to permit the stacker to swing. The diverter cannot be lowered to close the space, as that would prevent passage of straw on the carrier of the stacker, and so a space outlined by broken lines in Fig. 1 of the drawings requires a special closure that will not interfere with the swing of the stacker. This special closure is a pair of flexible or foldable bands, as 10, slightly wider than the space to be closed, which bands are each connected at one end with a side board of the stacker and at the other end with the thresher-frame in a manner to give out and take up as the stacker swings from side to side. I prefer to mount vertical rollers, as 8, on the frame of the thresher and wind the closure-bands thereon; but provision may be made, as suggested in Fig. 3, whereby the give-out and take-up may be accomplished by folding and unfolding. The give-out action of the bands is compelled



by the swing of the stacker, and the take-up action may be compelled in the same way by driving one shaft 8 from the other, as shown in Fig. 6, or the bands may be taken up automatically by springs, as 9<sup>a</sup>, which are put under tension by paying out the bands. The bands may be made stiff enough to stand the pressure of the straw and the wind from the thrasher; but it is preferred to make them of comparatively light material and stiffen them vertically by means of metal strips 11, fastened to the bands at suitable intervals. The bands are detachably connected with the stacker, so that access may be readily had to that part of the stacker under the diverter. In this particular instance bolts 12, having removable nuts, are used to connect the bands with the stacker; but any convenient form of detachable fastening may be used.

The diverter is semicircular in plan, and it forms a guide or support, around which the upper edge of the closure-bands are drawn, as shown in Fig. 2. The horizontal part of the stacker has a circular platform 6 concentric with the diverter, and guide-ribs 15 rise from the platform precisely coincident with the curvature of the diverter. The ribs 15 sustain the lower edges of the closure-bands when the stacker is swung to one side and, with the curved wall of the diverter, prevent the closure-bands from diminishing the receiving-space of the stacker.

The platform 6 forms the upper surface of the horizontal part of the stacker. It is wider than the carrier of the stacker, and it has a depression 7 as narrow as the carrier, in which the carrier runs. A bar 16 extends across the platform at the front end of depression 7 when the stacker is extended in line with the thrasher, and it has a scraper 17, preferably of some moderately-yielding material, which bears against the upper surface of the platform. As the diverter is wider than the carrier, a little straw will accumulate on the platform alongside the carrier-opening; but as the stacker swings from side to side the parts of the platform on which the straw is accumulated will alternately pass under the scraper and be relieved of their accumulations, which are delivered by the scraper onto the rear end of the horizontal part of the stacker.

When the sides of the horizontal part of the stacker are closed against passage of straw, the escape of the wind from the thrasher is also impeded to an extent to interfere with perfect action of the stacker. To neutralize this, I make the rear part of the vertical wall of the diverter or a portion thereof of wire-netting or otherwise provide perforations or reticulations that will retain the straw and chaff, but permit passage of the air. (See 3 in Fig. 1.)

The means by which the straw is carried or forced up the stacker may be an overdraft drag, an underdraft drag, or any other me-

chanical movement suited to such uses, acting by itself or with the assistance of a blast of wind, and it has nothing to do with this invention.

In Fig. 1 a yoke pivoted on the upper surface of the thrasher coincident with the vertical pivot of the stacker is shown at 13, and rods connecting the yoke with the swinging end of the lower section of the stacker are shown at 14. In Fig. 2, 13<sup>a</sup> represents the location of the pivot of yoke 13. In Fig. 3 a plurality of folds of closure-band is shown at 10<sup>a</sup>.

In Fig. 6 sprocket-wheels 18 are represented on shafts 8, and a chain 19 is made to connect the sprocket-wheels. A further modification of this idea would be embodied in pulleys in place of the sprocket-wheels and a band in place of the chain. The casing for the spring 9<sup>a</sup> is shown at 9.

While it is preferred to have the closure-bands pay out and take up from the thrasher, it is evident that the operations would be the same if shafts 8 were journaled on the stacker and the detachable connections were made with the thrasher.

What I claim is—

1. The combination with a thrasher and a stacker pivoted to swing horizontally and to receive from said thrasher, of flexible and automatically-extensible side curtains or bands connected with the stacker and with the thrasher and forming sides for the receiving end of said stacker, substantially as described.

2. The combination with a thrasher and a stacker pivoted under the discharge of the thrasher to swing horizontally, of flexible pay-out and take-up bands connected with the stacker and with the thrasher and forming sides for the receiving end of the stacker.

3. The combination with a thrasher having a downward diverter on its discharge end, and a stacker pivoted under the diverter to swing horizontally, of flexible pay-out and take-up bands connected with the thrasher and with the stacker and forming side closures of the space between the receiving end of the stacker and the lower end of the diverter.

4. The combination with a thrasher having a downward diverter on its discharge end, and a stacker pivoted under the diverter to swing horizontally, of vertical rollers journaled on the thrasher-frame, and flexible pay-out and take-up bands wound on the rollers and connected with the stacker, such bands forming side closures between the receiving end of the stacker and the lower end of the diverter.

5. The combination with a thrasher having a downward diverter on its discharge end, and a stacker pivoted under the diverter to swing horizontally, of vertical rollers journaled on the thrasher-frame, flexible bands wound on the rollers and connected with the stacker, such bands forming side closures between the receiving end of the stacker and



the lower end of the diverter, and springs to wind up the bands on the rollers, substantially as set forth.

5 6. The combination with a thresher having a downward diverter the vertical wall of which is perforated or reticulated, of a stacker pivoted under the diverter to swing horizontally, and flexible pay-out and take-up bands connected with the thresher and with the  
10 stacker, such bands forming side closures between the receiving end of the stacker and the lower end of the diverter.

15 7. The combination with a thresher of a downward diverter the vertical wall of which forms in plan a segment of a circle, a stacker pivoted under the diverter to swing horizontally, ribs rising from the platform of the receiving end of the stacker coincident with the curvature of the vertical wall of the diverter  
20 and pay-out and take-up bands connected with the thresher and with the stacker, such

bands bearing against the lower end of the diverter and the ribs on the platform when drawn out by the swing of the stacker, substantially as set forth.

25 8. The combination with a thresher having a downward diverter, of a stacker pivoted under the diverter to swing horizontally, a platform for the receiving end of the stacker as wide as the diverter, a straw-receiving depression in the platform narrower than the  
30 diverter and a fixed scraper extended across the platform to scrape the straw from the platform into the straw-receiving depression as the stacker swings from side to side.

35 In testimony whereof I sign my name in the presence of two subscribing witnesses.

MARTIN HEINEKE.

Witnesses:

M. SATTLEY,  
A. SATTLEY.