

No. 819,679.

PATENTED MAY 1, 1906.

F. F. WEAR.
AUTOMATIC COMPUTING CHEESE CUTTER.

APPLICATION FILED MAY 12, 1904.

2 SHEETS—SHEET 1.

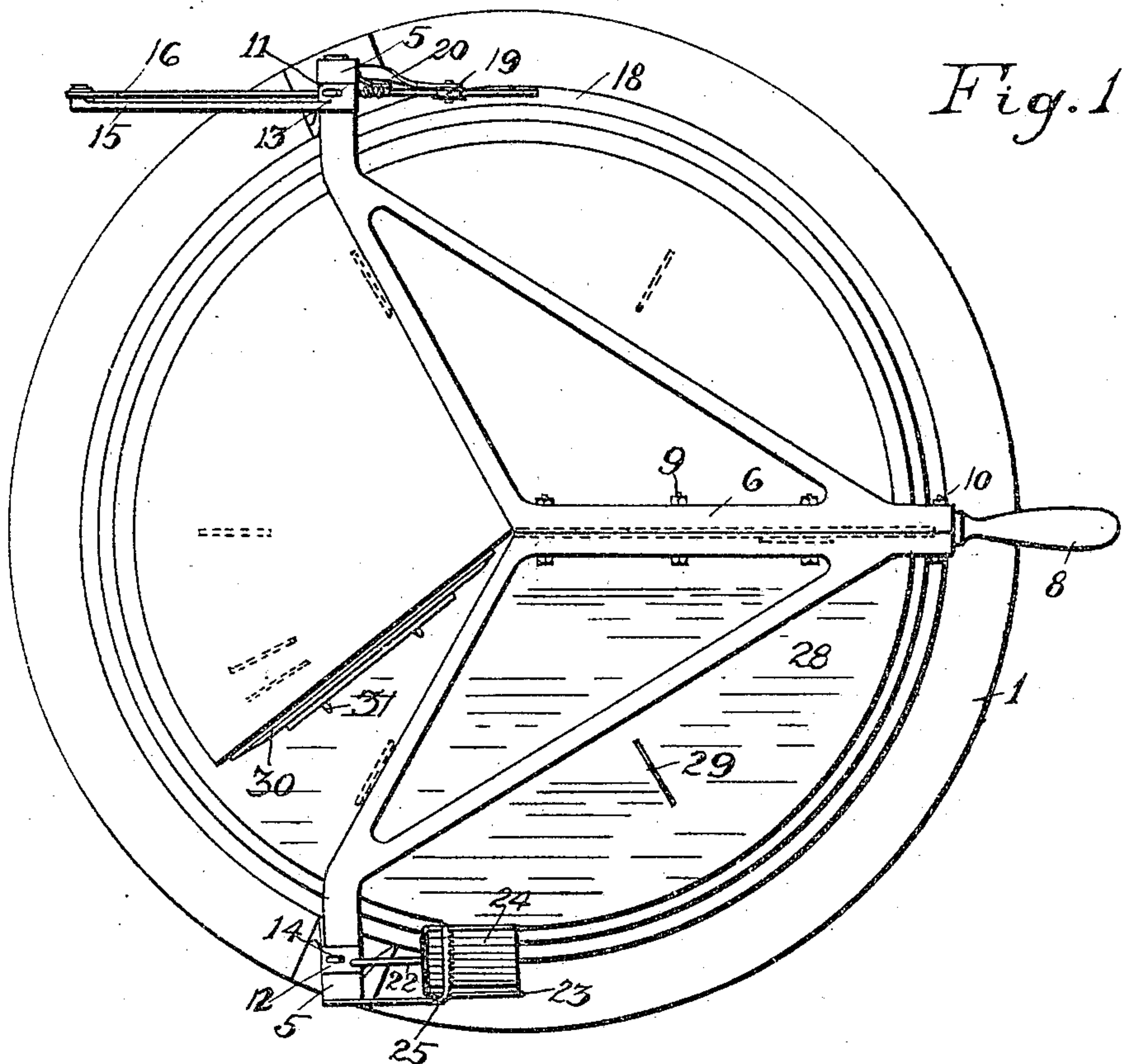


Fig. 1

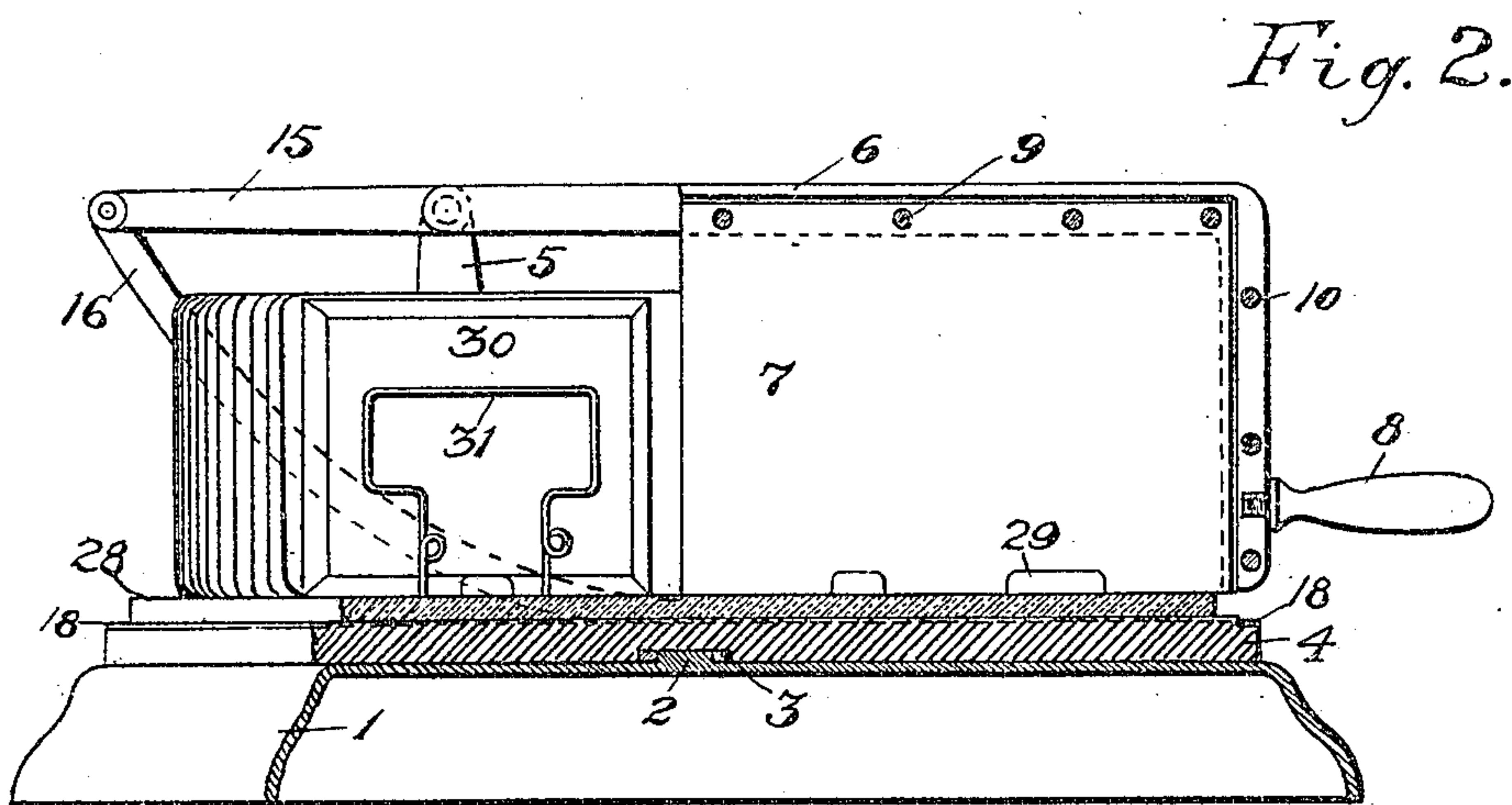


Fig. 2.

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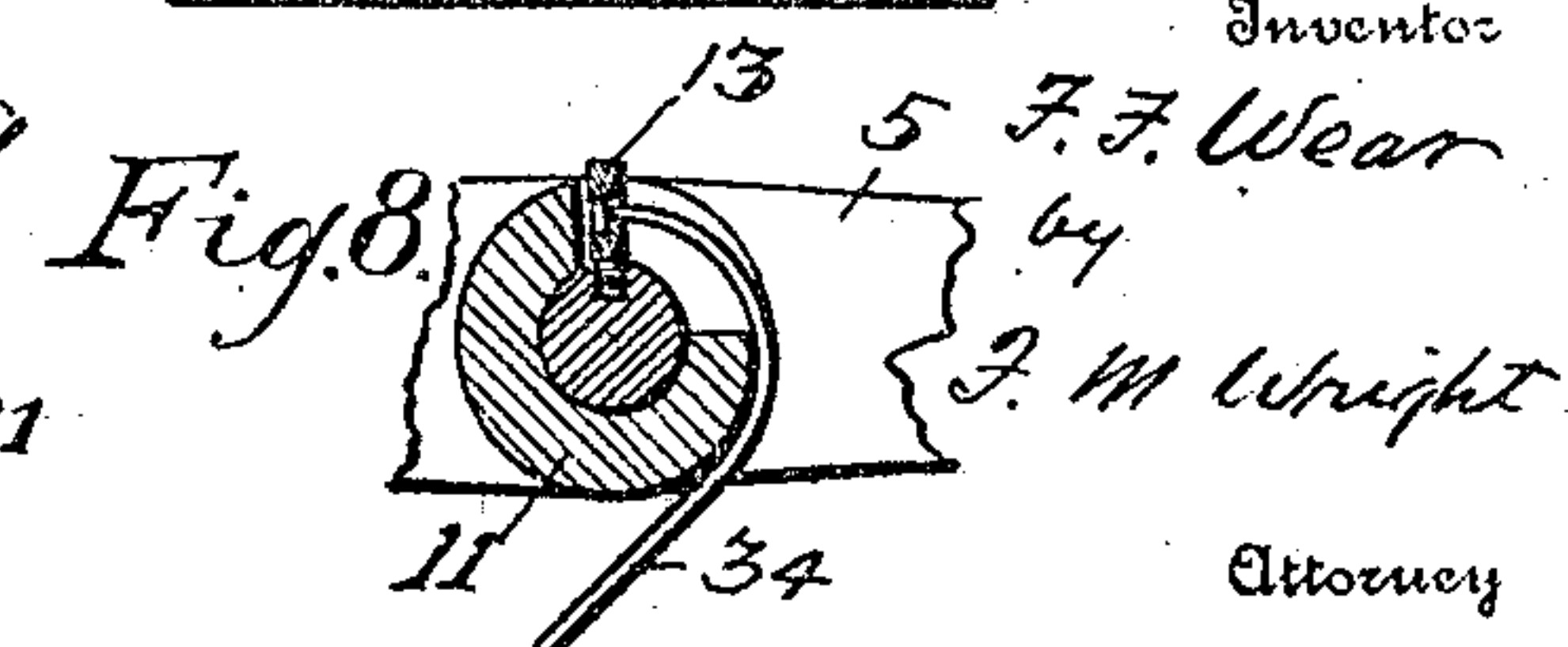
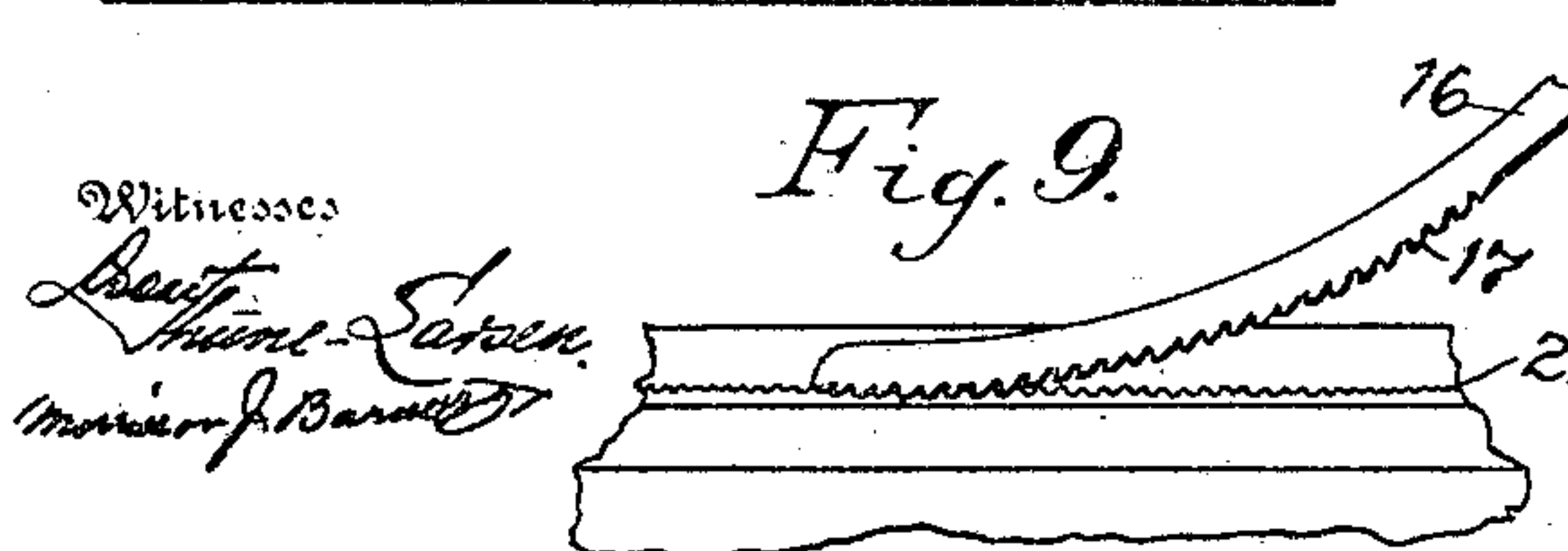
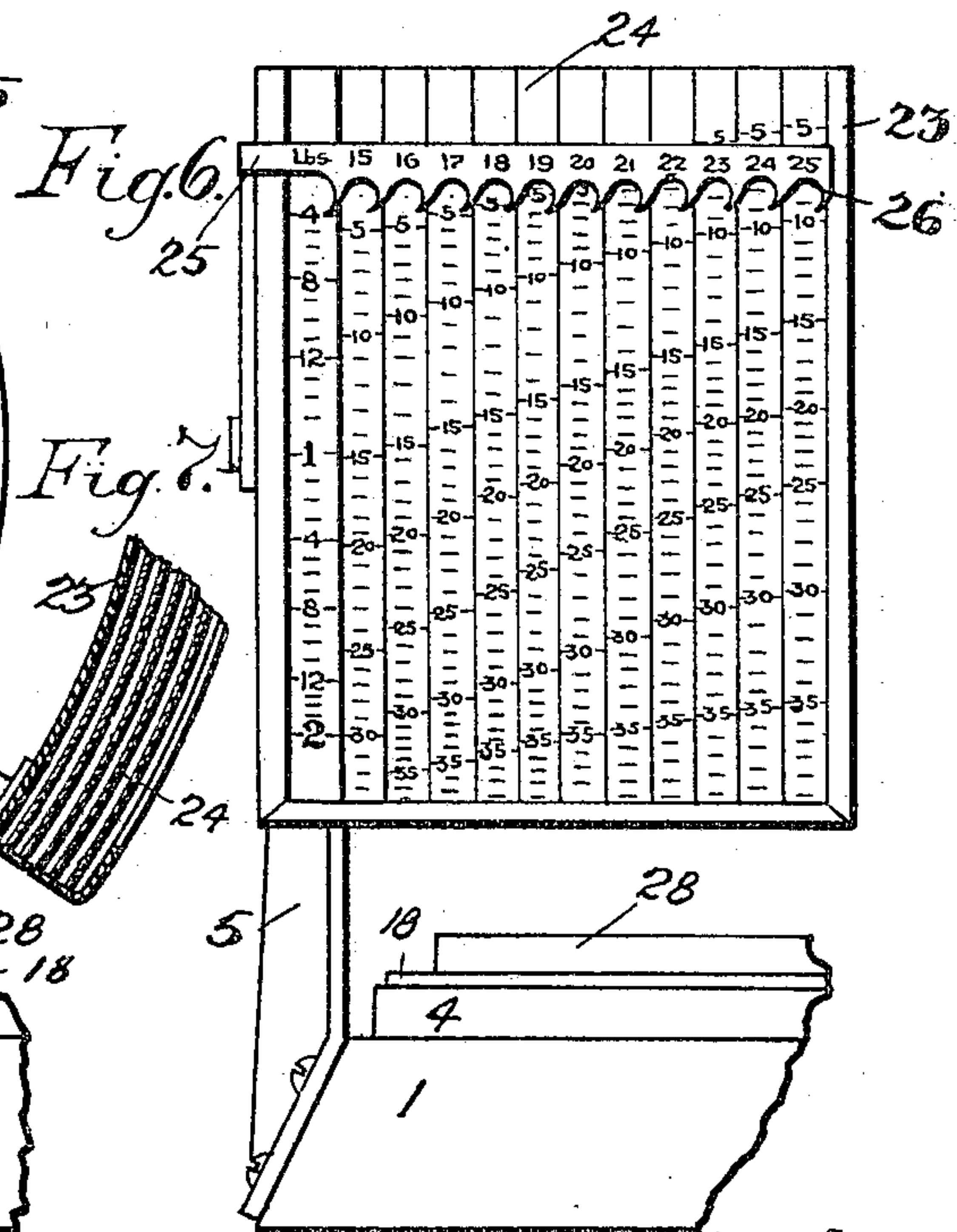
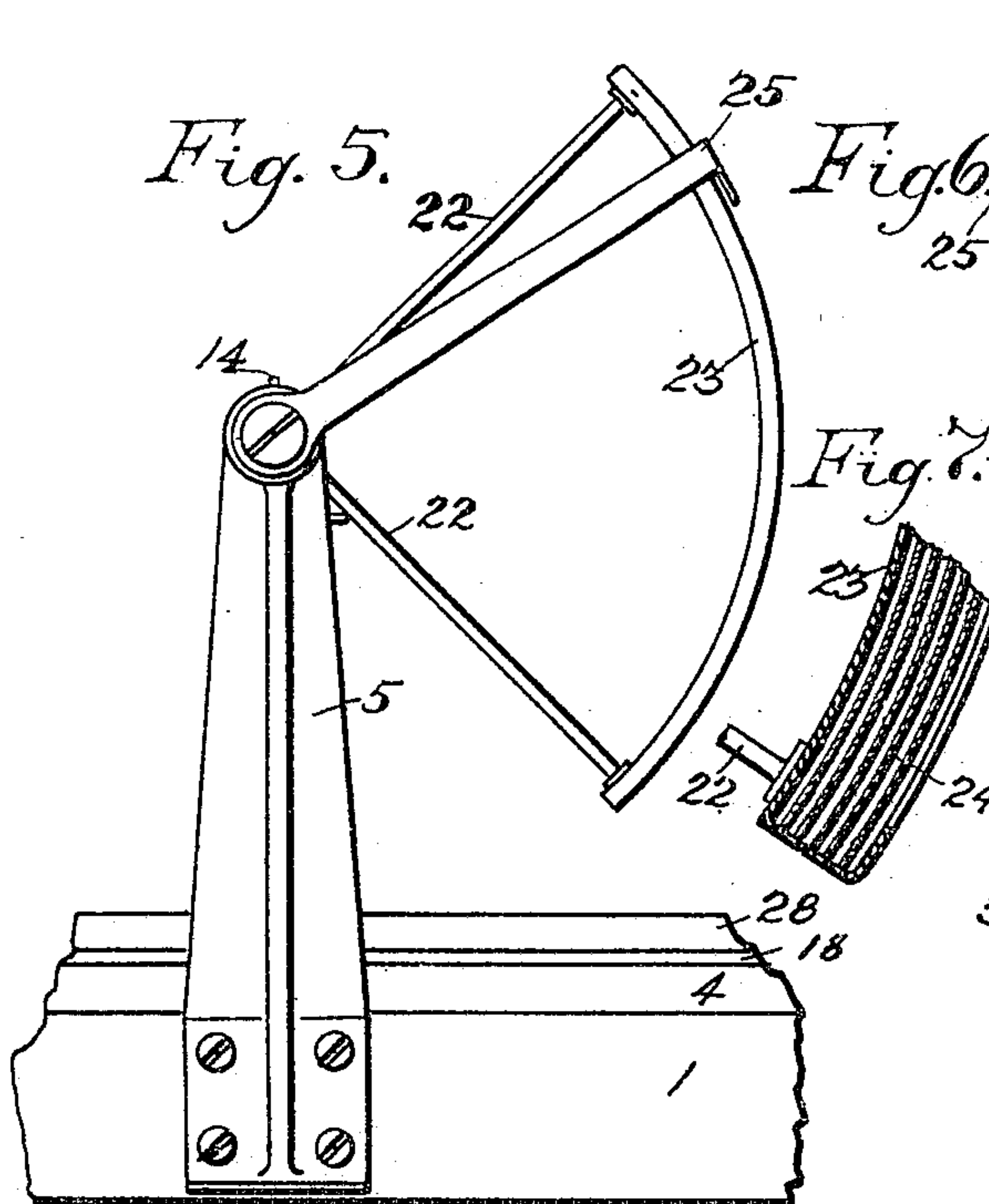
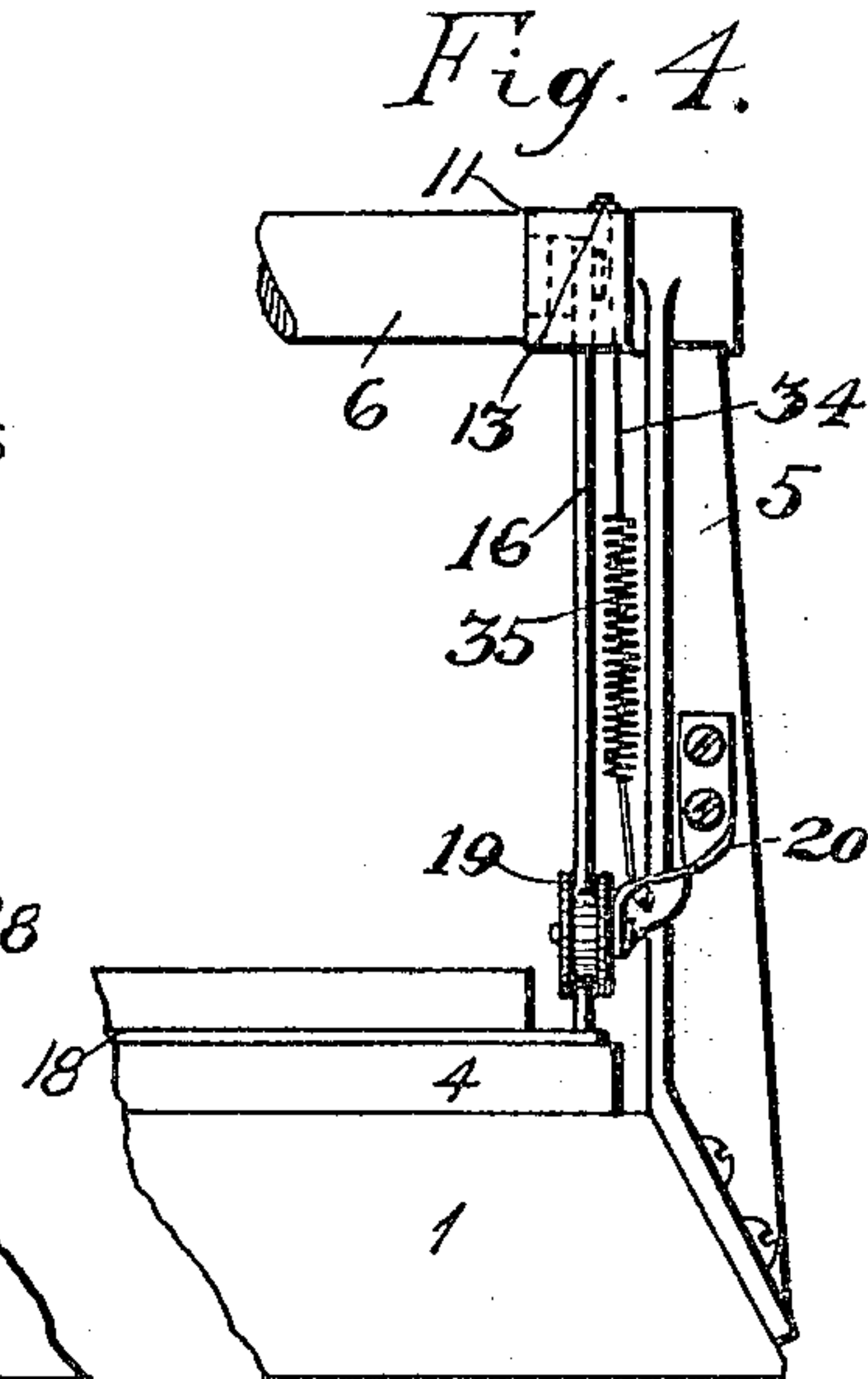
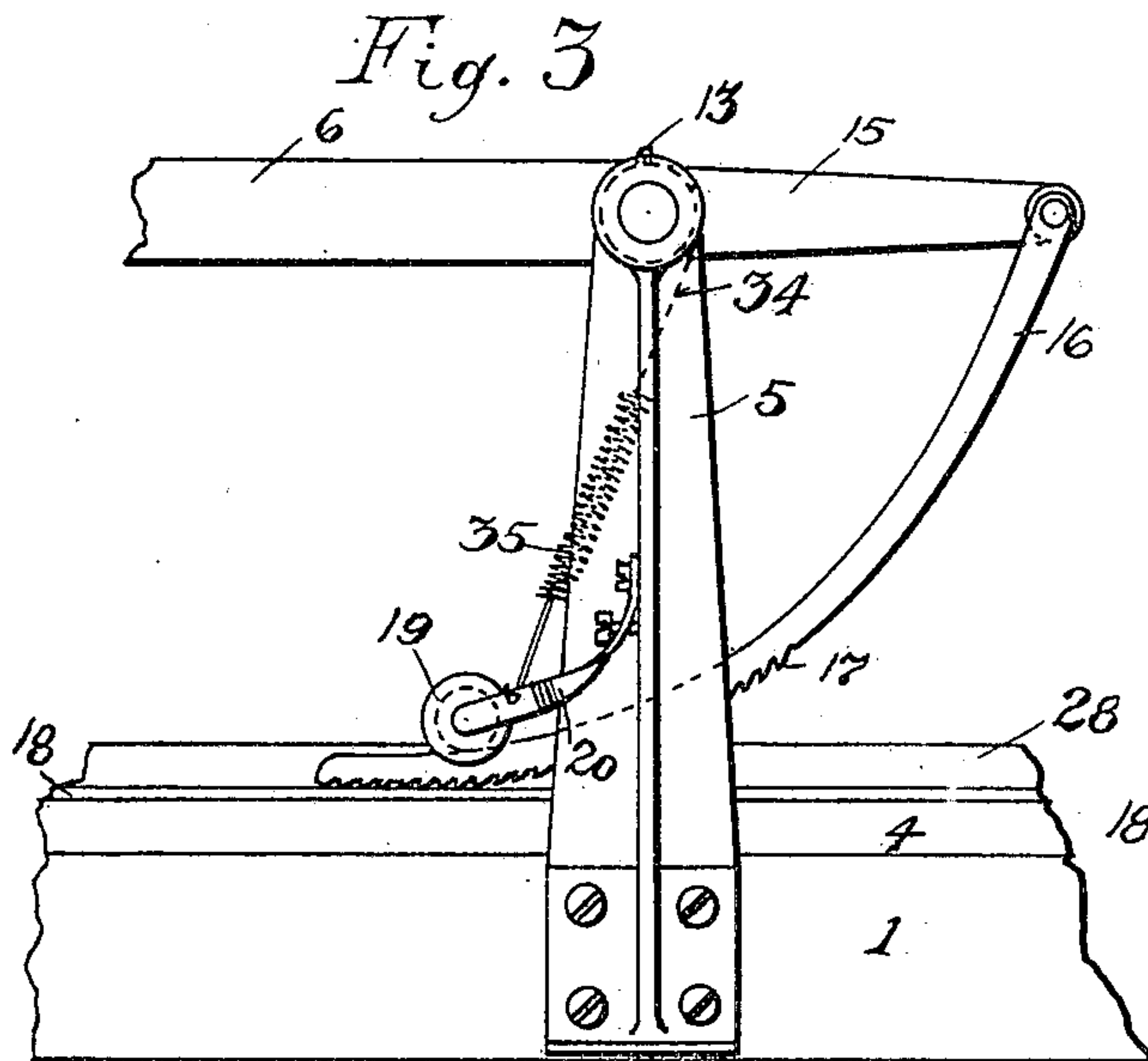
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UNITED STATES PATENT OFFICE.

FRANK F. WEAR, OF SAN FRANCISCO, CALIFORNIA.

AUTOMATIC COMPUTING CHEESE-CUTTER.

No. 819,679.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed May 12, 1904. Serial No. 207,634.

To all whom it may concern:

Be it known that I, FRANK F. WEAR, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Automatic Computing Cheese-Cutters, of which the following is a specification.

My invention relates to an improved automatic computing cheese-cutter, the object of my invention being to provide a device whereby there may be accurately cut off from a circular flat cheese of the ordinary form any desired quantity reckoned either by weight or by price.

My invention therefore resides in the novel construction, combination, and arrangement of parts for the above ends, hereinafter fully specified, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the apparatus. Fig. 2 is a broken side elevation of the same. Fig. 3 is an enlarged detail side elevation of the rack for advancing the cheese. Fig. 4 is a front elevation of the same. Fig. 5 is an enlarged side elevation of the computing-scale. Fig. 6 is a front view of the same. Fig. 7 is an enlarged section of the lower end of the value-chart carrier. Fig. 8 is an enlarged transverse section of the knife-frame trunnion. Fig. 9 is a detail of a modification, showing ratchets on the disk.

Referring to the drawings, 1 represents a stationary base having a central step or boss 2. 3 is a washer around said step, and 4 is a disk resting on said base and rotating on the same around the pivot-step 2. Upon standards 5, secured to the base, is pivotally mounted a cutter-frame 6, having secured therein a knife or cutter 7 and having attached thereto a handle 8. The frame is preferably in two halves, which are secured together by bolts 9, which bolts pass through the back of the knife, and also by other bolts 10, which pass through the two halves of the frame adjacent to the outer end of the knife. Upon the trunnions of the cutter-frame, within the bearings therefor, are loosely-supported slotted collars 11 12, and said trunnions have pins 13 14, which work in said slots. From the collar 11 extends rearwardly an arm 15, which is jointed to a curved rack-carrier 16, having ratchet-teeth 17, engaging a ring 18, of vulcanized fiber, secured upon the rotating

disk. A roller 19, carried by a spring 20, bears down upon the upper edge of the rack-carrier and forces it into engagement with said ring 18. The value of the vulcanized fiber in this construction is that the ratchet-teeth 17 engage the fiber to advance the same immediately upon contact therewith, so that there is no lost motion, as would be the case with a circular rack. A further advantage is the noiselessness with which the parts come in contact.

In Fig. 9 is shown a circular rack 21 as a modification of the ring 18.

The other collar 12 has attached thereto by arms 22 a curved chart-carrier which carries a series of value-charts 24, having values marked thereon corresponding to different weights and prices per pound of the cheese. For each size of cheese there would be a separate chart, as one for a twenty-pound cheese, another for a thirty-pound cheese, and so on. On putting the cheese upon the disk the proper chart would be exposed in the carrier. The carrier moves underneath an index-pointer 25, having marked thereon a series of prices per pound of the cheese and formed with curved recesses 26 on the lower edge to indicate the value of the amount cut off.

The cheese is laid upon a glass circular plate 28 upon the rotary disk, and through said plate extend sharp blades 29, which when the cheese is laid thereon enter the bottom of the cheese and hold it firmly against turning. As soon as a sector has been cut out from the cheese the surfaces of the cheese so exposed are protected against dust and insects, the one surface by a glass plate 30, which is supported against said surface by a wire frame 31, and the other by the knife itself, which remains in position covering said surface until a fresh cut is made. The knife always descends in the same plane, and the quantity of cheese cut will be proportioned to the angular distance through which the cheese has been rotated since the last cut. This again is determined by the height to which the knife is raised before making the cut in the following manner: As the knife is raised the chart-carrier begins to move from zero position, not, however, until the edge of the knife has cleared the cheese. This is caused by the fact that the pin 14 on the frame moves loosely in the slot in the collar 12 until the edge of the knife clears the cheese. When the knife has reached that

position, then both pins have reached the ends of their slots, and as the knife is moved still farther upward the collars begin to rotate. The rotation of the collar 12 slowly moves the value-chart upward beneath the pointer, and the rotation of the collar 11 by means of the ratchet-teeth engaging the ring 18 causes the cheese to rotate. There is thus a certain angular movement of the cutter which produces no effect, either to rotate the cheese or to move the chart-carrier, and this may be termed the "minimum" angular movement of the cutter. This minimum movement of the cutter is fixed or constant, being the same every time the cutter is raised and being determined by the length of the slots in the collars 11 12. This minimum movement is arranged to be sufficient to permit the knife to clear the cheese, so that it can do so before the rotary disk begins to rotate. The angle of rotation of the disk will depend upon the excess of movement of the cutter above said minimum.

To illustrate the use of the value-charts, let us suppose that a customer calls for twenty-five cents' worth of cheese and the cheese is then selling at twenty-one cents a pound. Then the salesman as he raises the knife notes the ascent of the value-chart and arrests it as soon as the figure "25" in the column underneath the figure "21" on the index-pointer has risen to the circle in the lower side of the index-pointer. Then he again brings down the knife, making the cut. As soon as the knife begins to descend a wire 34, attached to the knife-frame and also at its lower end to the roller 19 and having a spring 35 therein, is drawn up, thus withdrawing the roller 19 out of engagement with the rack-carrier 16 and allowing the ratchets to slip back over the ring 18 on the disk which supports the cheese. The cheese itself is, however, prevented from returning by the engagement of the knife therewith, the knife having begun to cut the cheese.

I claim—

1. In combination, a base, a rotating disk, a pivoted cutter - frame, a cutter carried thereby, and means operated by the upward movement of the cutter only after a constant minimum angular movement thereof for rotating the disk through an angle exactly proportionate to the excess of the angular movement of the cutter above said constant minimum angular movement, said means being inoperative to rotate the disk during the downward movement of the cutter to cut the cheese, substantially as described.

2. In combination, a base, a rotating disk, a pivoted cutter - frame, a cutter carried thereby, means operated by the upward movement of the cutter for rotating the disk, said means being inoperative during the downward movement of the cutter to cut the cheese, an indicator for indicating the amount

cut, and means operated by the upward movement of the cutter to actuate said indicator, substantially as described.

3. In combination, a base, a rotating disk, a pivoted cutter - frame, a cutter carried thereby, means operated by the upward movement of the cutter for rotating the disk, said means being inoperative during the downward movement of the cutter to cut the cheese, a value-chart carrier, a stationary index-pointer thereover, and means operated by the upward movement of the cutter to actuate said carrier, substantially as described.

4. In combination, a base, a rotating disk, a pivoted cutter - frame, a cutter carried thereby, means operated by the upward movement of the cutter for rotating the disk, said means being inoperative during the downward movement of the cutter to cut the cheese, indicating elements consisting of means for supporting a value-chart, an index-pointer thereover, and means operated by the upward movement of the cutter for moving one of said elements relatively to the other, substantially as described.

5. In combination, a base, a rotating disk, a pivoted cutter - frame, a cutter carried thereby, means operated by the upward movement of the cutter for rotating the disk, said means being inoperative during the downward movement of the cutter to cut the cheese, a value-chart carrier arranged to hold a plurality of charts, an index-pointer having marked thereon the price per pound, and means operated by the upward movement of the cutter for moving one of said latter elements relatively to the other, substantially as described.

6. In combination, a base, a rotating disk, a ring of vulcanized fiber thereon, a pivoted cutter-frame, a cutter carried thereby and a rack-carrier jointed to said frame and arranged to engage the ring to impart rotary motion to the disk on the upward movement of the cutter - frame, substantially as described.

7. In combination, a base, a rotating disk, a pivoted cutter - frame, a cutter carried thereby, a rack-carrier jointed to said frame, means for causing said rack to engage the disk to impart rotary motion thereto on the upward movement of the cutter-frame but only after a constant minimum movement thereof, said rack being disengaged from said disk upon the downward movement of the cutter, substantially as described.

8. In combination, a base, a rotating support, a pivoted cutter, and means operated by the movement of the cutter only after a constant minimum angular movement thereof for rotating the support through an angle proportionate to the excess of the angular movement of the cutter above said minimum, substantially as described.

9. In combination, a base, a rotating sup-

port, a movable cutter and means operated by the movement of the cutter only after a constant minimum movement thereof for rotating the support through an angle exactly proportionate to the excess of the movement of the cutter above said minimum, substantially as described.

10. In combination, a base, a rotating support, a movable cutter, means for moving said cutter, and means operated in unison with the movement of the cutter only after a constant minimum movement thereof for rotating the support through an angle exactly proportionate to the excess of the movement of the cutter above said minimum, substantially as described.

11. In combination, a fixed support, a movable support, a movable cutter, and means operated in unison with said cutter only after a constant minimum movement thereof for moving said movable support through an angle exactly proportionate to the excess of the movement of the cutter above said minimum, substantially as described.

12. In combination, a fixed support, a movable support, a movable cutter, means for moving said cutter and means operatively connected with said latter means for moving said movable support only after a constant minimum movement of the cutter and through a distance exactly proportionate to

the excess of movement of the cutter above said minimum, substantially as described.

13. In a cheese-cutter the combination with a pivotally-supported cutting-knife and a handle therefor, a carrier, means whereby the raising of the said knife rotates the carrier, an index-pointer operated by the motion of said handle and an indicator-card coacting with said index - pointer to indicate the amount of cheese which would be cut at any point were the knife there lowered as and for the purpose specified.

14. In a cheese-cutter in combination a pivotally - supported cutting - knife, a lever connected thereto, a cheese - carrier, and means whereby the operating of the lever rotates the cheese-carrier as and for the purpose specified.

15. In a cheese-cutter the combination with an indicator-card comprising a column giving the weight placed transversely to a column giving the price, of an indicator operated by the rotation of the cutting-knife and adapted to coact with the aforesaid indicator-card as and for the purpose specified.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANK F. WEAR.

Witnesses:

FRANCIS M. WRIGHT,
BESSIE GORFINKEL.