

No. 850,519.

PATENTED APR. 16, 1907.

H. F. BUSCH.
APPARATUS FOR CUTTING CORK WAFERS.

APPLICATION FILED MAR. 26, 1906.

5 SHEETS—SHEET 1.

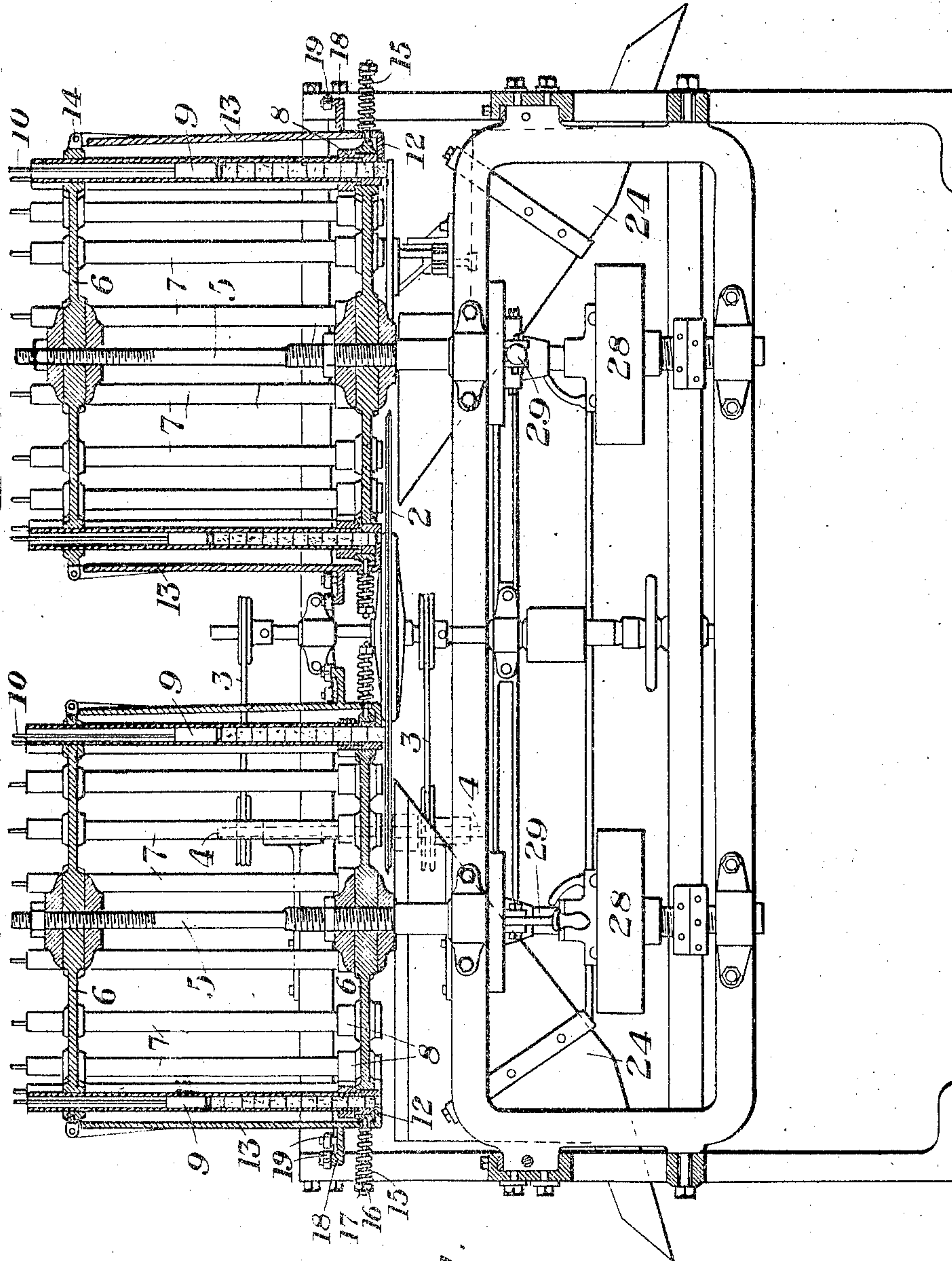


Fig. 1.

WITNESSES

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INVENTOR

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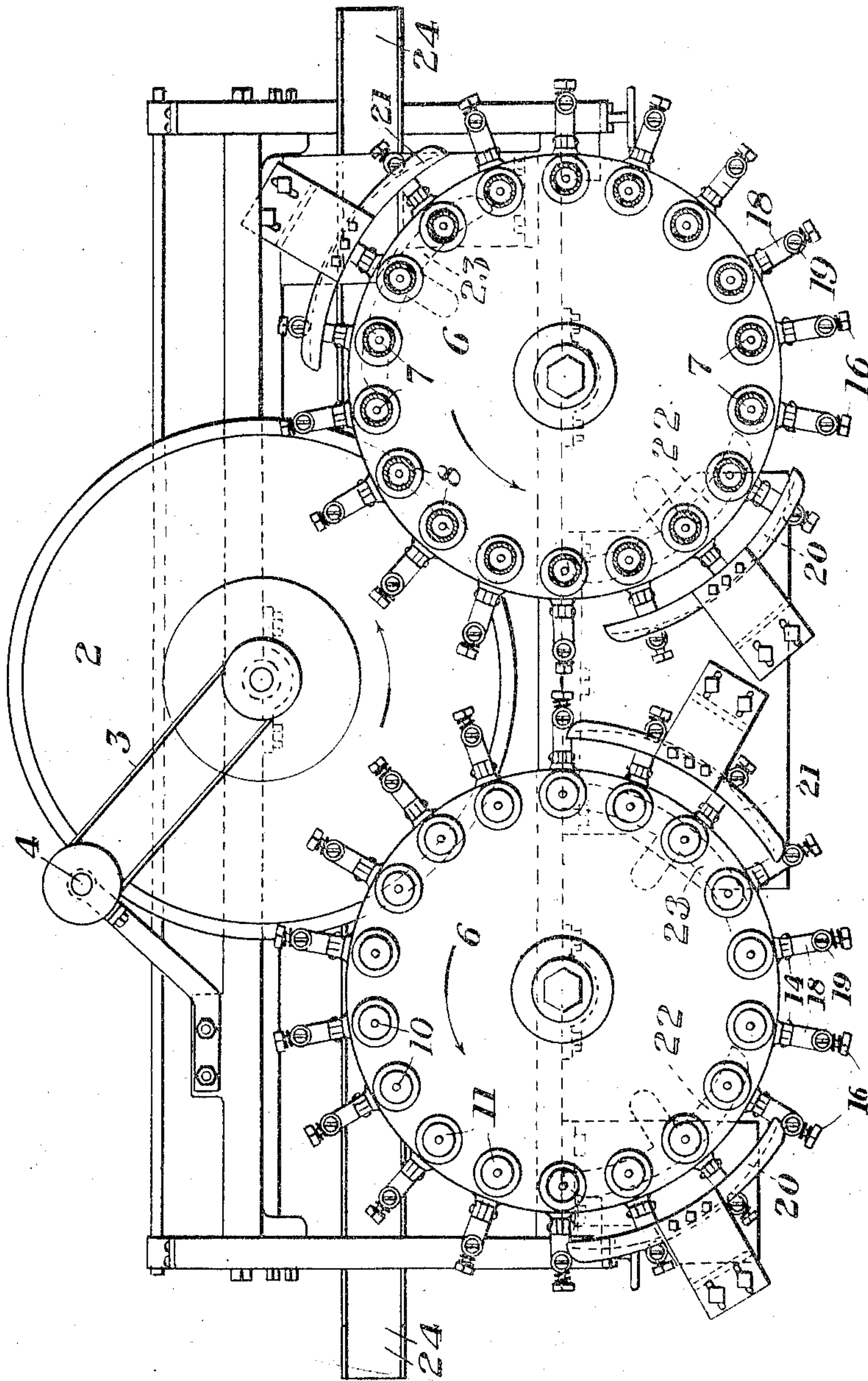
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5 SHEETS—SHEET 2.

Fig. 2.



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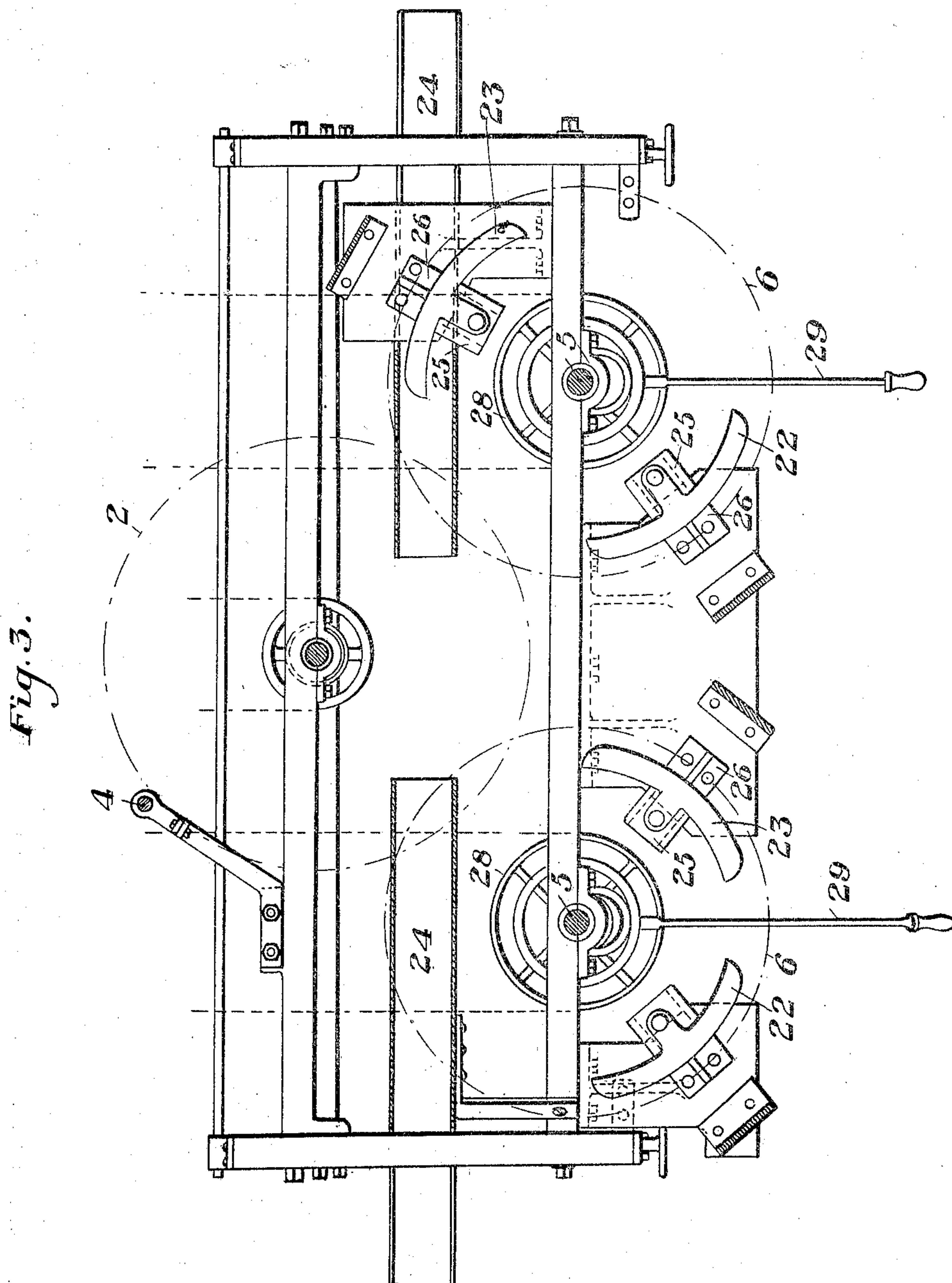
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5 SHEETS—SHEET 3.



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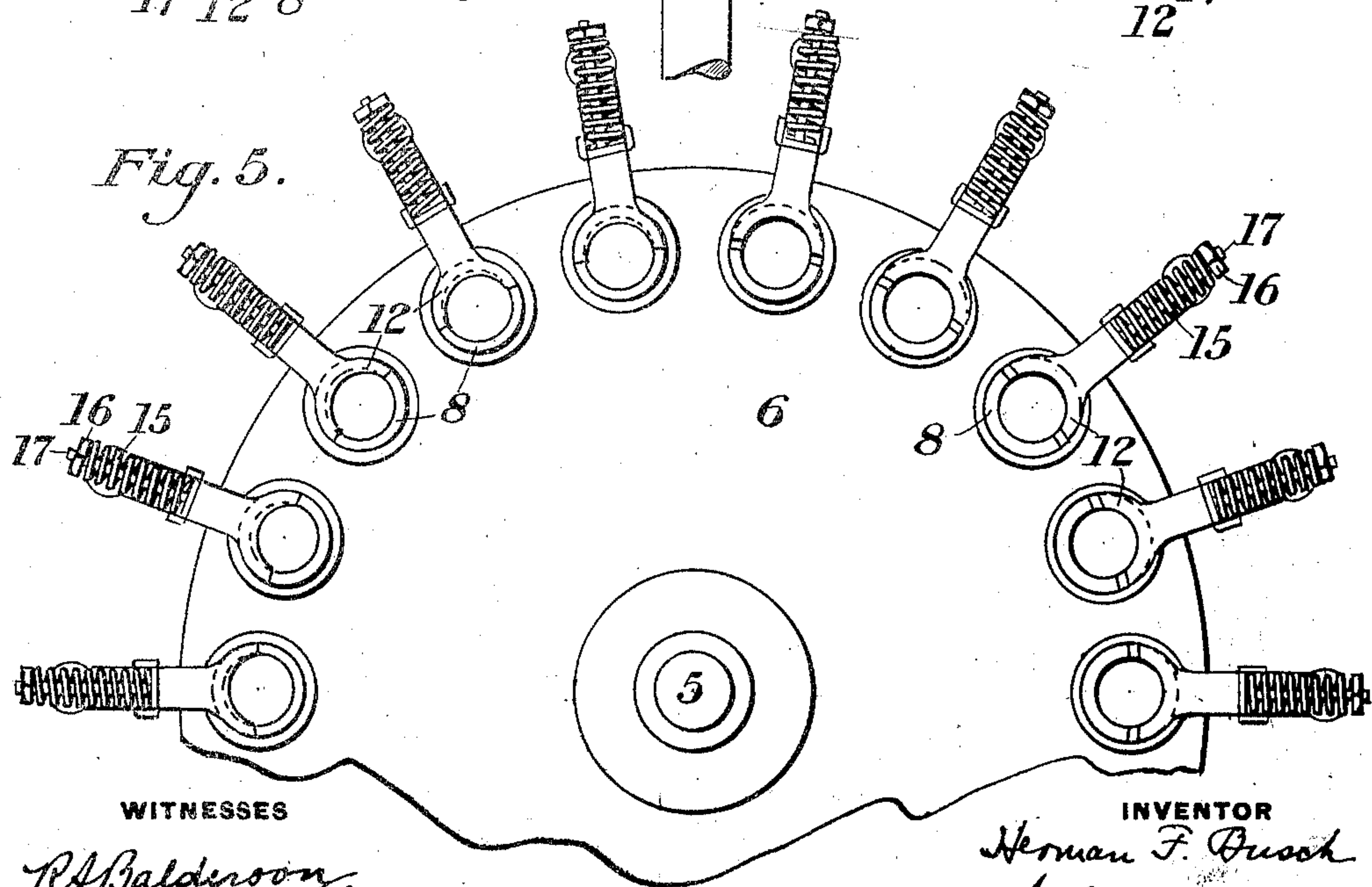
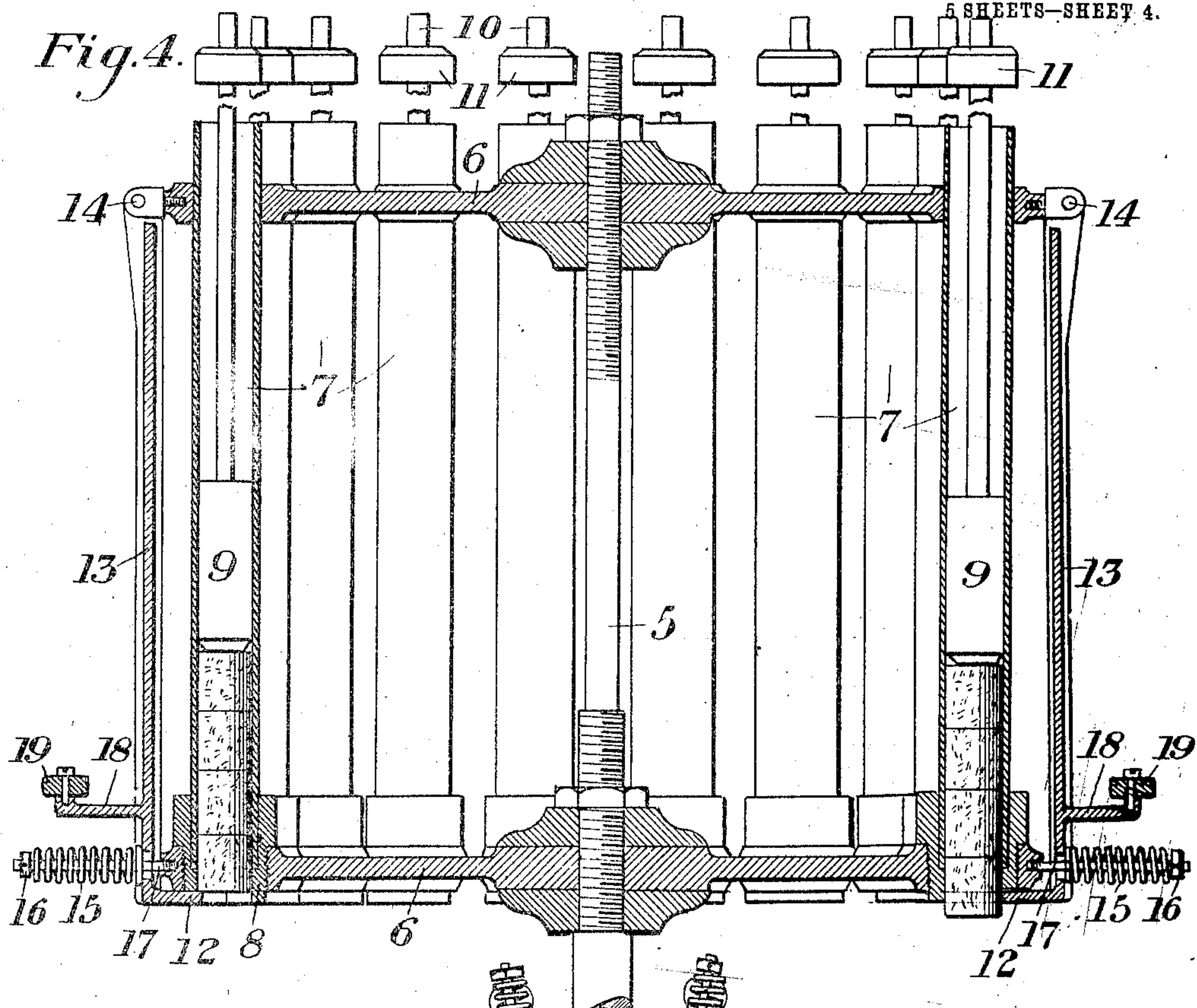
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5 SHEETS—SHEET 4.



WITNESSES

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5 SHEETS—SHEET 5.

Fig. 6.

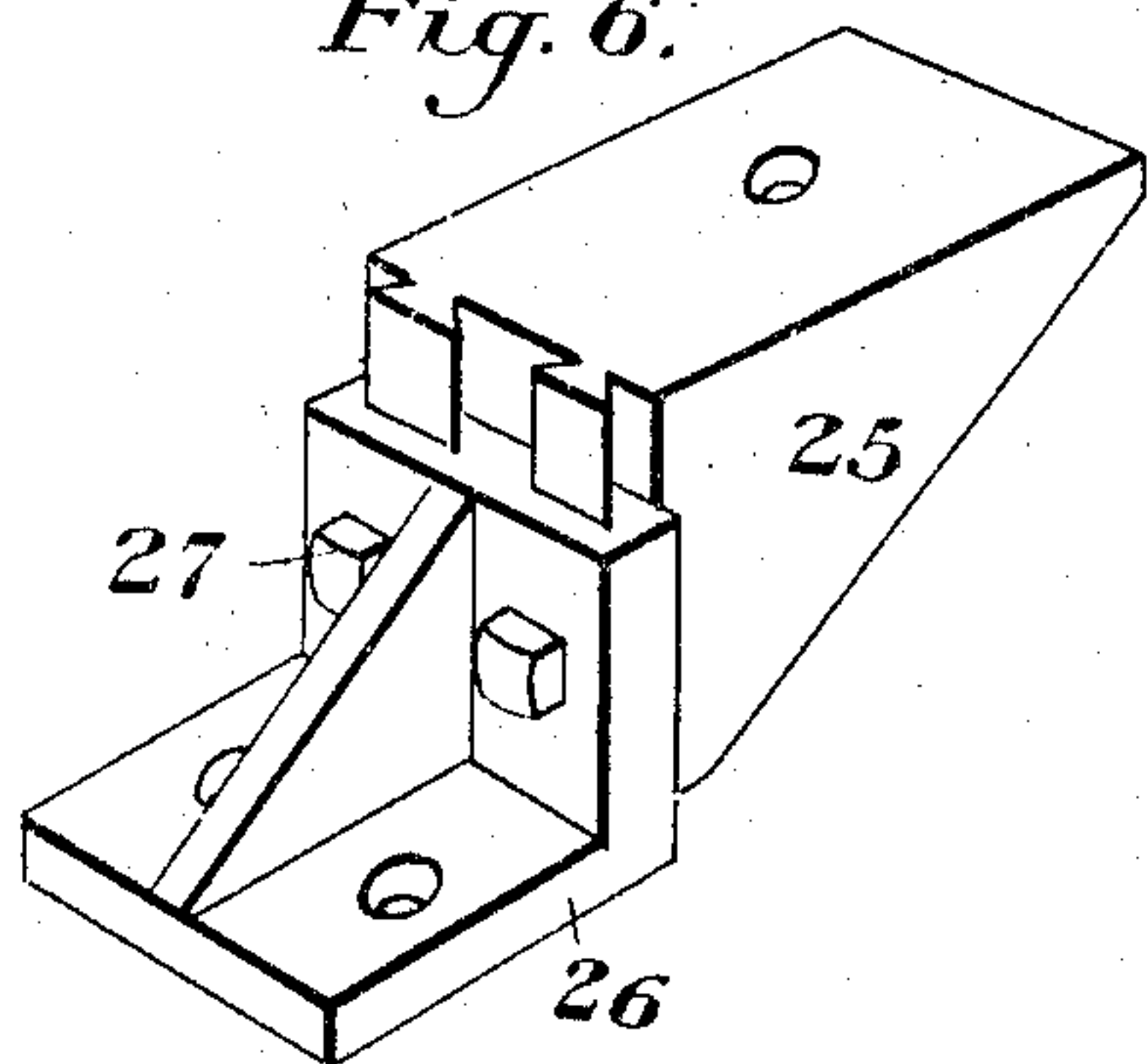


Fig. 7.

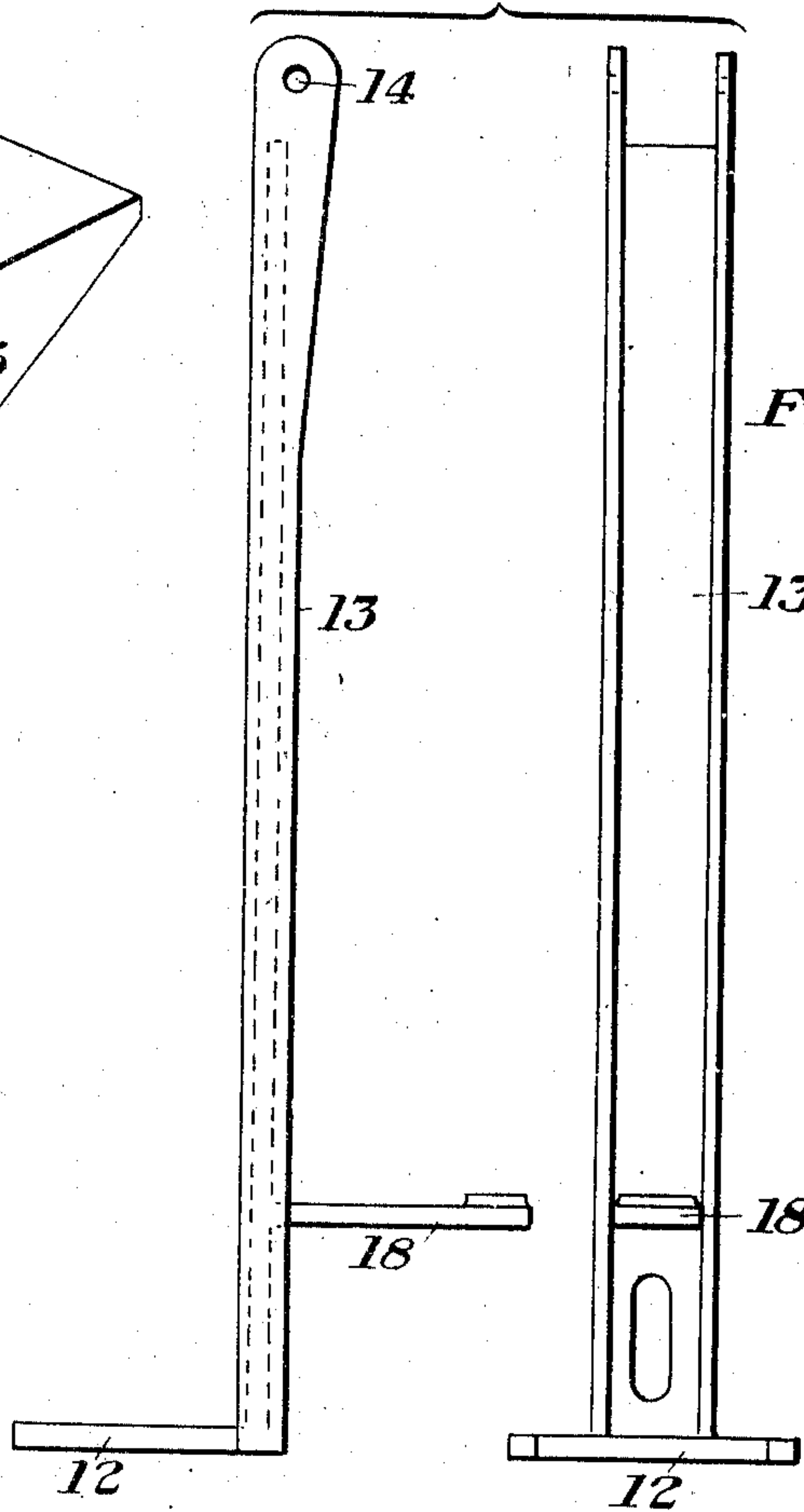


Fig. 8.

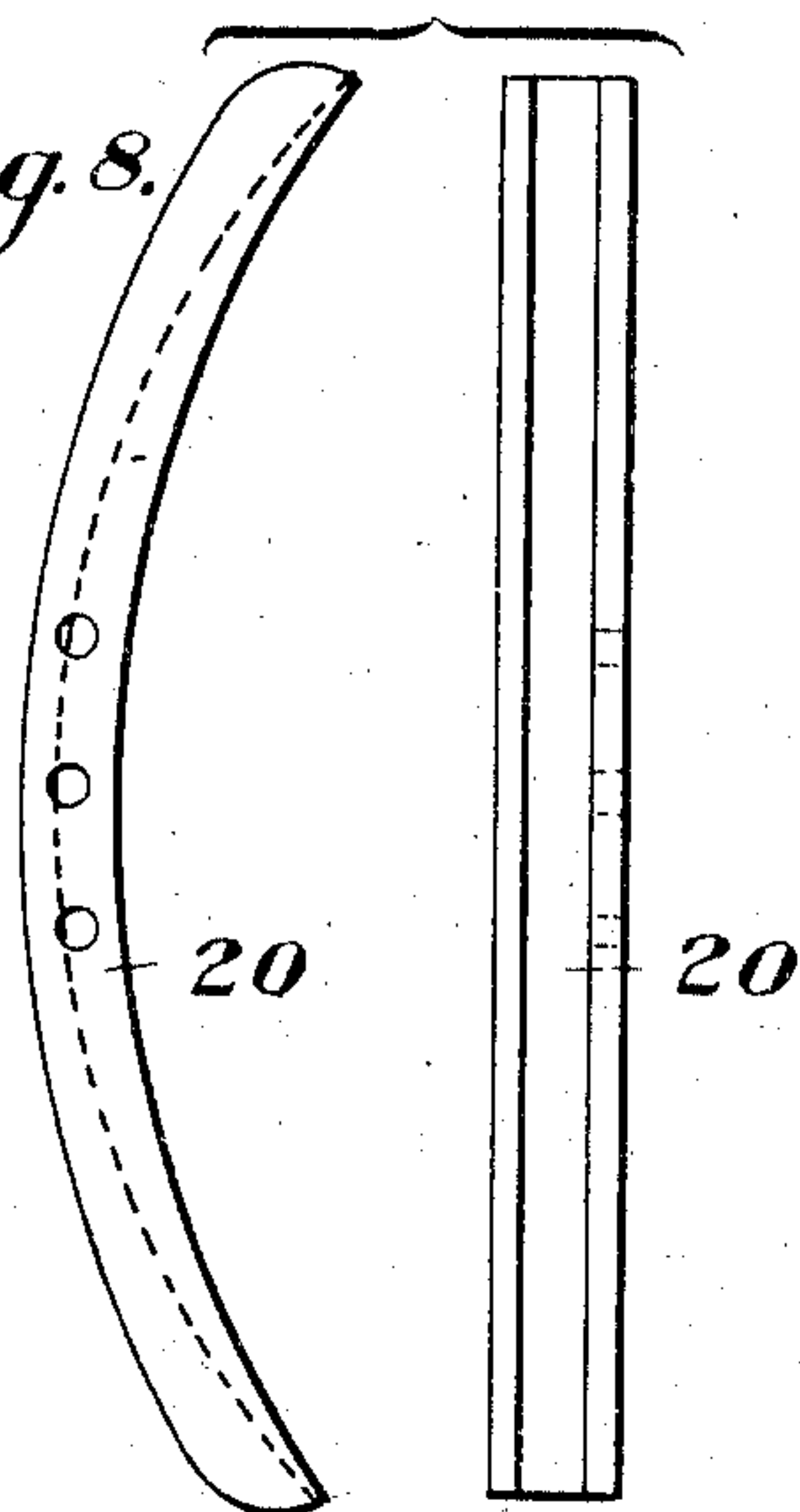
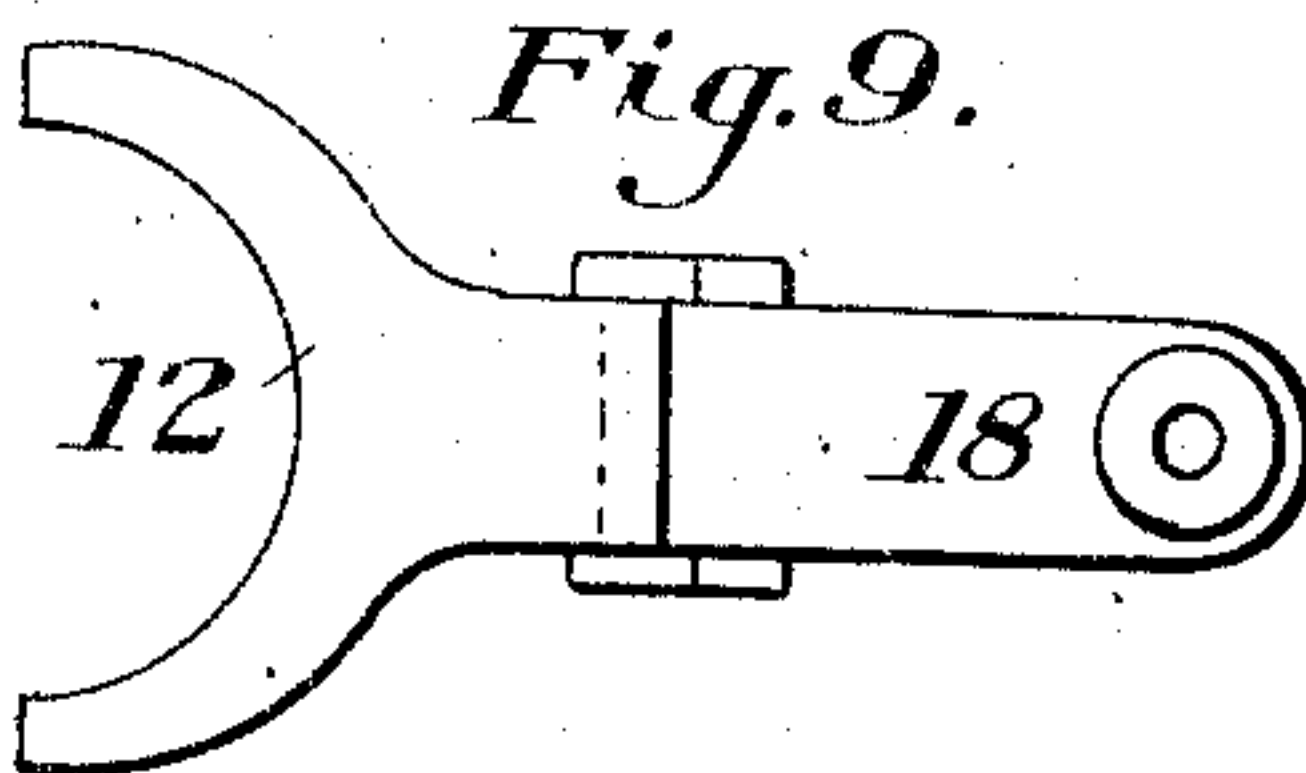


Fig. 9.



WITNESSES

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UNITED STATES PATENT OFFICE.

HERMAN F. BUSCH, OF MILLVALE, PENNSYLVANIA, ASSIGNOR TO ARM-STRONG CORK COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

APPARATUS FOR CUTTING CORK WAFERS.

No. 850,519.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed March 26, 1906. Serial No. 307,985.

To all whom it may concern:

Be it known that I, HERMAN F. BUSCH, of Millvale, Allegheny county, Pennsylvania, have invented a new and useful Apparatus for Cutting Cork Wafers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional side elevation of my improved machine. Fig. 2 is a top plan view, partly in section. Fig. 3 is a transverse section between the cams and the gages. Figs. 4 and 5 are enlarged detail views of the magazine mechanism, and Figs. 6, 7, 8, and 9 are detail views of parts hereinafter referred to.

My invention relates to the cutting of cork wafers or disks such as are used in bottle-caps.

The object of the invention is to provide a simple and effective apparatus which will enable a stationary rotating knife to be used and which will cut the disks successively to any desired gage and drop them from the machine. The disks are cut one at a time, and means are provided for feeding the cork lengths and clamping them in proper position to be acted upon by the knife successively.

In the drawings, in which I show a duplicate form of the machine in which two sets of magazines are used in connection with a single rotary knife, 2 represents the rotating knife. This may be of any desirable construction, and I have shown it as having a shaft with cords or belts 3, connected to shafts 4, having at their ends whetters for sharpening the knife during its rotation. Near the knife are two vertical spindles 5 5, having top and bottom disks 6 6, through which extend the annular row of magazines 7. These magazines consist of tubes, the lower ends of which are provided with chucks 8, which are screwed into holes in the lower disk. The disks are preferably cut from the outer bark side to the inner bark side of the cork wood. These cork lengths are then dropped into the magazines one above the other and preferably with their outer bark side uppermost. After each magazine is filled to the desired height a weight 9 is dropped in upon the corks. This weight 9 is preferably provided with an upwardly-ex-

tending rod 10, which preferably has a collar 11 at such a height that it will rest on the top of the magazine-tube before the weight has dropped below the lower end of the tube. I thus prevent any contacting of the weight with the cutting-knife.

The chuck 8 at the lower end of each magazine is cut away in its outer portion for a thickness preferably about one-eighth of an inch. This cut-away portion preferably extends half-way around a circle, and in this recess is fitted the semicircular chuck 12, which is secured to a hanging-link 13, pivoted to the upper disk at 14. The link is normally forced inwardly by a spiral spring 15, bearing against nut 16 on a pin 17, secured to and projecting radially from the lower disk. Each lever is also provided with an arm 18, carrying a roller 19, which is adapted to ride against cams 20 and 21, as shown in Fig. 2. These cams are suitably shaped so as to force back the chucks 12 against the pressure of the springs to a slight amount and sufficient to allow the cork blanks to drop down against gages 22 and 23, which are shown in Fig. 3. These gages are of arc shape and are adjustably secured below the magazines. The gage-plate 23 may be set to allow a slightly-greater drop of the blank than the plate 22, or it may set the same as the plate 22. Either of the plates may be adjusted so as to give disks of any desired thickness. By using two gage-plates a gap is left between these plates for dropping out the waste outer bark portion of each blank. If the blank has been cut down to this bark-wafer portion, it will drop out on the gage-plate 22. The next blank will drop upon it and will then move it along the gage-plate until it drops down between the two gage-plates. The blank which has dropped upon it will then be dropped on the next gage-plate the proper distance to give the desired thickness of wafer. After passing this cam the grippers engage the lowermost blank and hold it while passing the knife, which cuts off a wafer therefrom. The cut wafers drop into the chutes 24, which are inclined, so as to feed them out of the machine.

The movable gripping-chuck for each magazine is preferably made quite thin. The reason for this is that the corks necessarily differ slightly in diameter, and if the gripper

were of sufficient width it might be held back by the second cork from the bottom in such a way as to allow the bottom cork blank to drop out or be sufficiently loose to prevent the proper cutting of a disk therefrom.

Each gage-plate is preferably secured to a block or bracket 25, which has dovetail guide connection with a stationary guide 26. Set-screws 27 are provided for holding the gage-support so that the gage will be at the desired height.

In the use of the machine the sets of magazines may be fed in any desirable manner. The operator or operators may fill the magazines of one rotary carrier and then start it into action, or they may fill the magazines of both and start them into action, or they may partly fill the magazines of one or both and work alternately or in any other desired manner.

The magazine-carriers are driven by means of pulleys 28, which have clutch connection with the spindle-shafts 5, the clutches being operated by projecting handles 29. When either carrier is in operation, it is turned continuously and preferably in the direction of the arrows shown in Fig. 2, while the knife rotates in the opposite direction, as also shown by the arrow.

The advantages of my invention result from the large output which may be obtained and from the uniformity and high character of the cork disks or wafers obtained. The knife is carried in stationary bearings, and as its bearings are not moved its action is accurate. The knife acts upon the projecting portions of the blanks as they successively pass it, and as there is no gage on which the cork rests during the cutting action the knife may act freely, and the disks or wafers will drop by gravity and free themselves from the machine.

While I preferably employ an endless carrier having a series of the magazines or holding-tubes, I may do away with the carrier and simply use one or more tubes, which are moved toward and away from the cutting-knife in any desirable manner. Other types of cutting-knives may be used and many other variations may be made in the form and arrangement of the parts without departing from my invention.

I claim—

1. In cork-wafer-cutting mechanism, a holding-chuck, a guide for cork blanks extending therefrom, a gage-plate, and means for projecting the cork blanks against the gage-plate, the gage-plate being arranged to project the blanks a distance at least as great as the width of the holding-chuck; substantially as described.

2. In cork-wafer-cutting mechanism, a holder or magazine, a chuck at its end, and means for projecting the blanks to a predetermined distance, the thickness of the gripping-chuck being not substantially greater than the thickness of the projected cork portion; substantially as described.

3. In cork-wafer-cutting mechanism, a movable carrier, a series of holding-chucks thereon, magazines for the chucks each arranged to hold a series of cork blanks, mechanism for actuating the chucks, and separated gages against which the cork blanks are moved successively to allow the cork wafer to drop between said gages; substantially as described.

In testimony whereof I have hereunto set my hand.

HERMAN F. BUSCH.

Witnesses:

C. P. BYRNES,
H. M. CORWIN.