

No. 786,825.

PATENTED APR. 11, 1905.

S. MAAS.
COMBINED STOVE AND ASH SIFTER.

APPLICATION FILED MAR. 19, 1903.

2 SHEETS--SHEET 1.

Fig. 1.

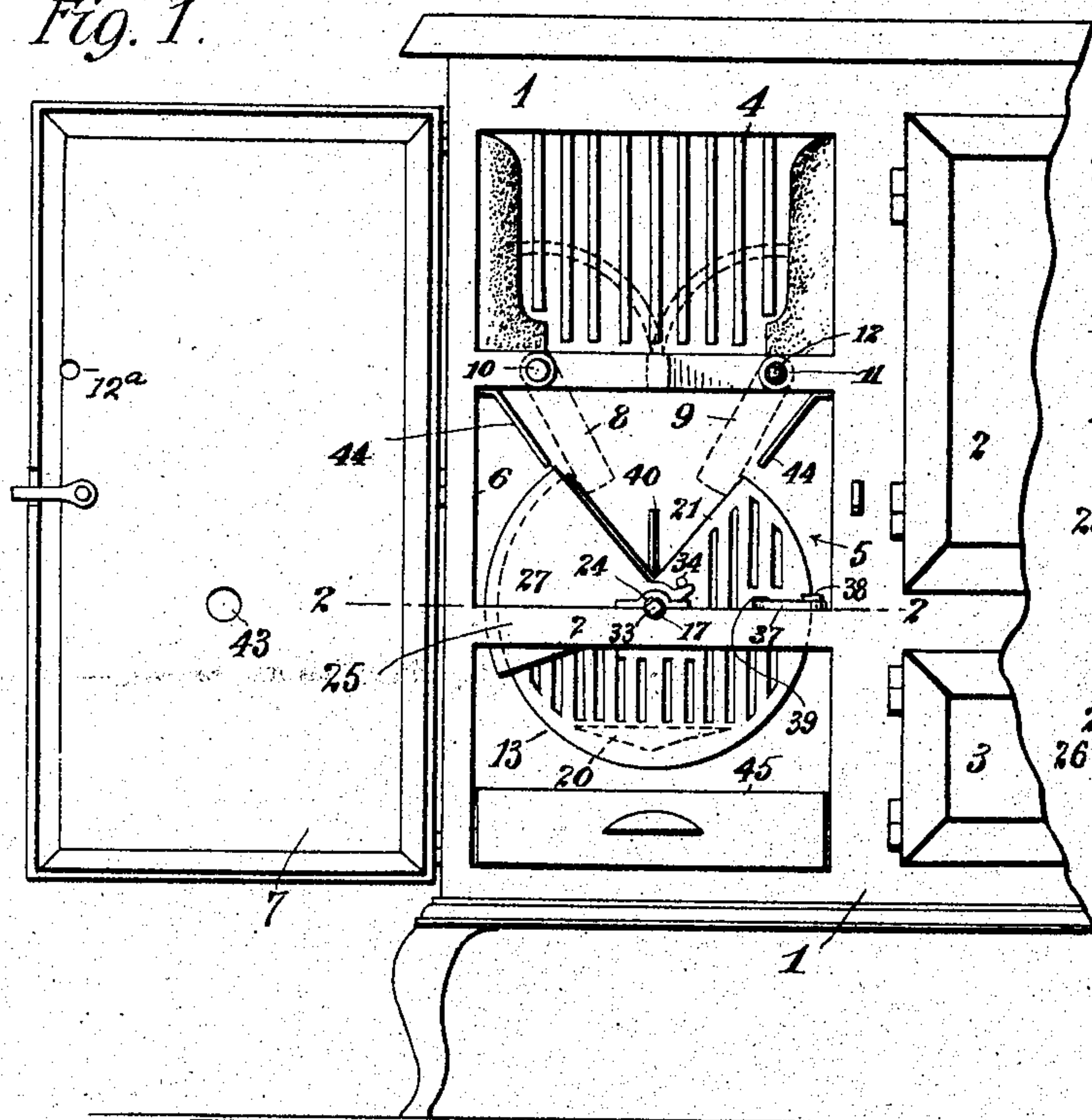


Fig. 2.

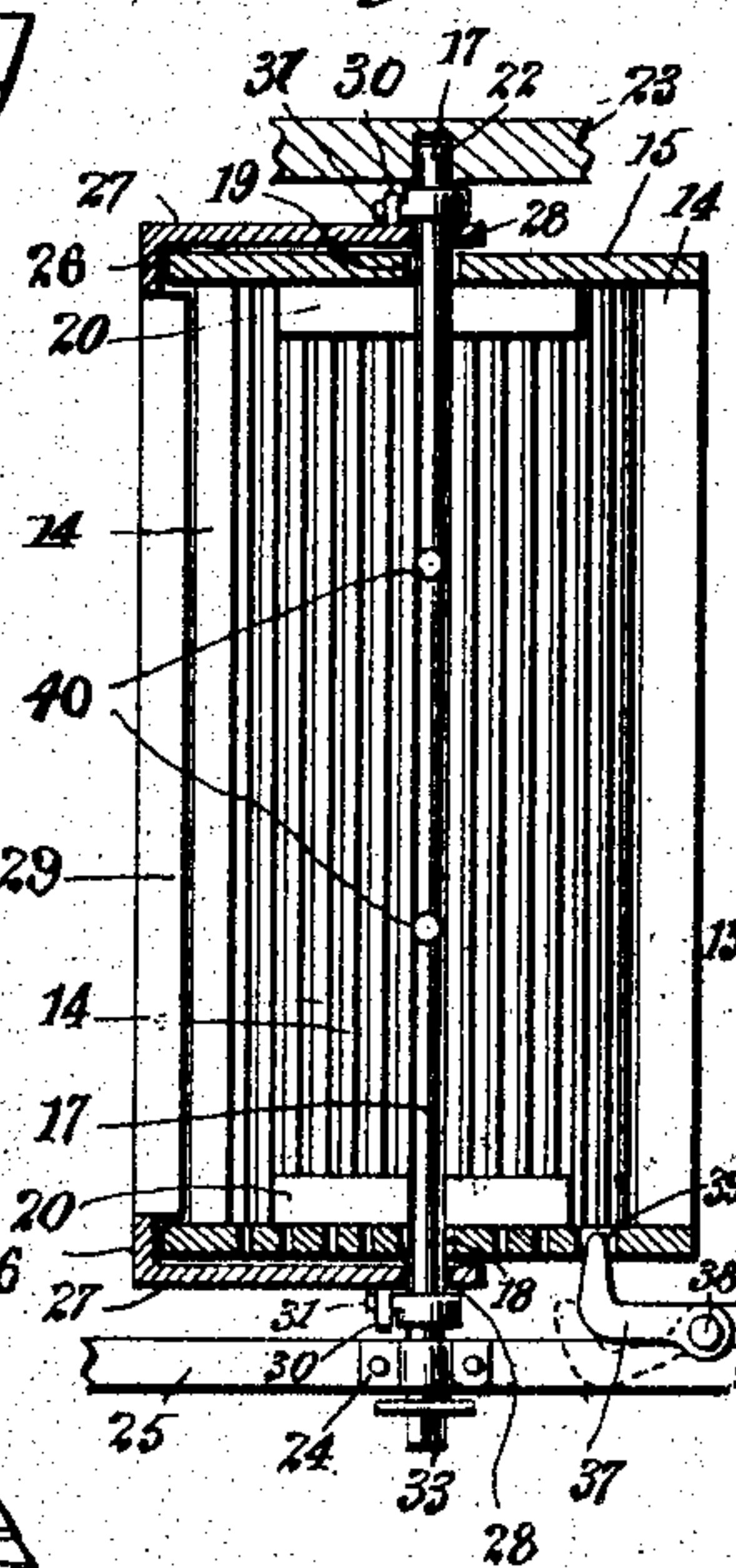


Fig. 3.

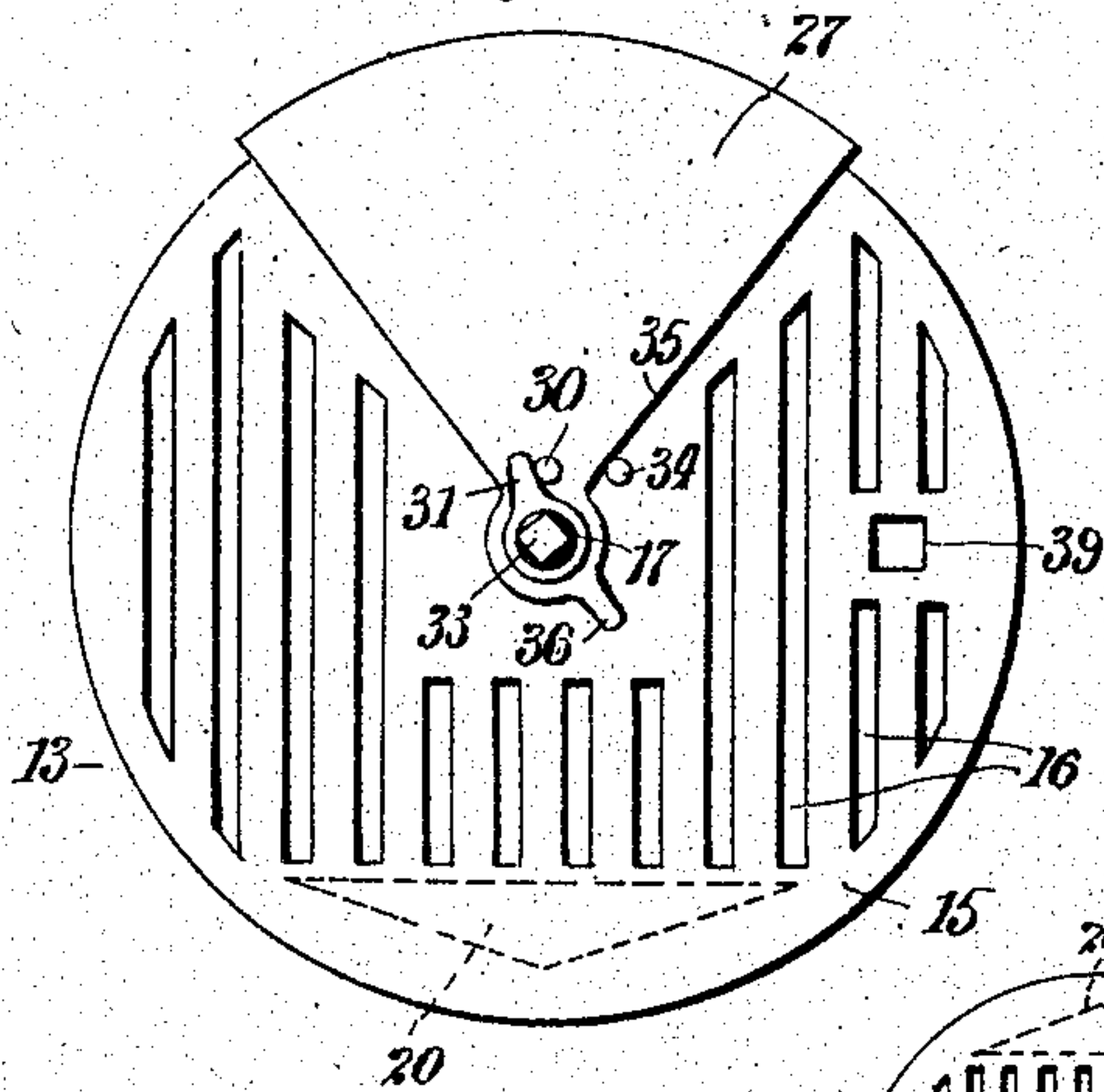


Fig. 4.

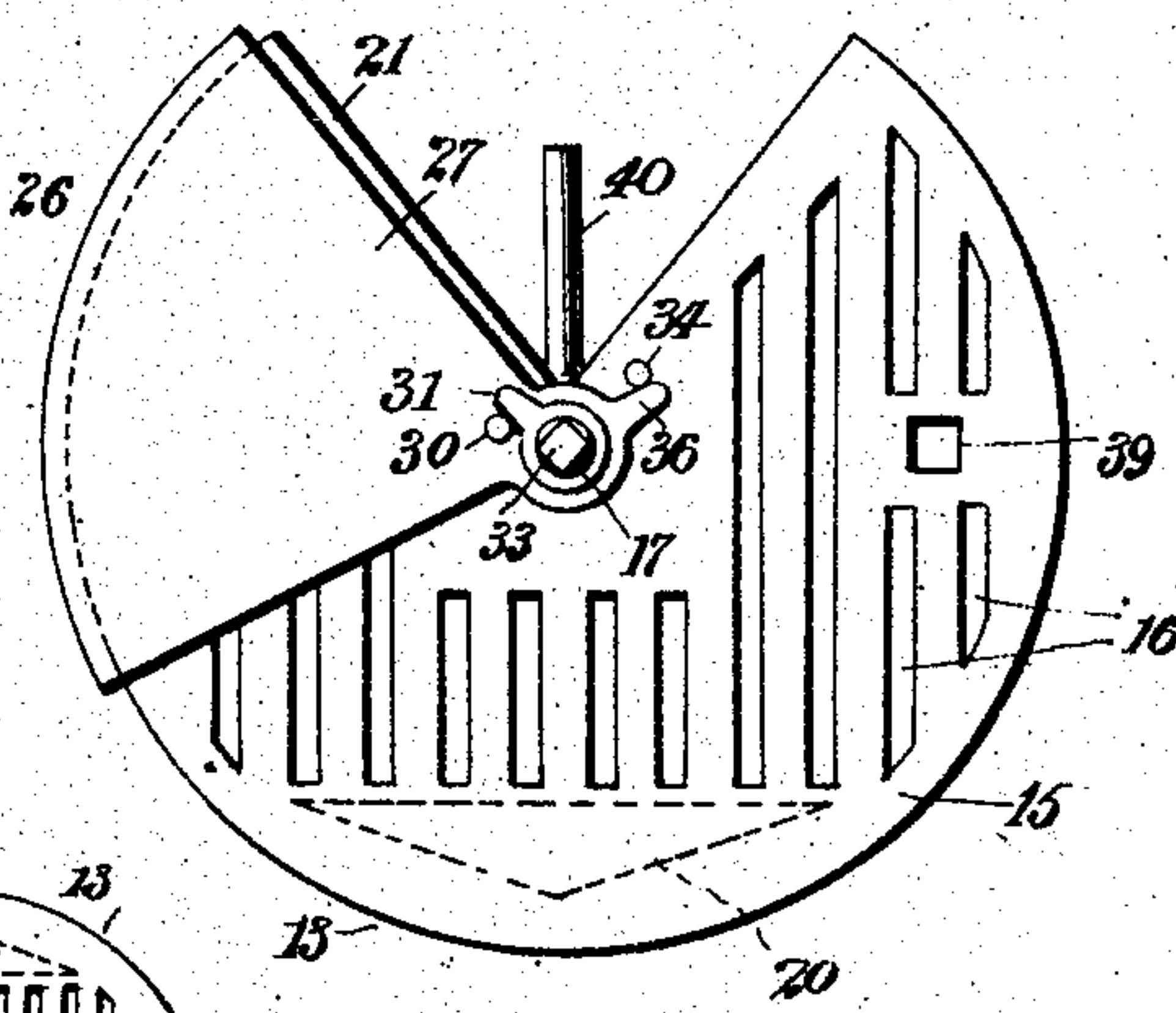
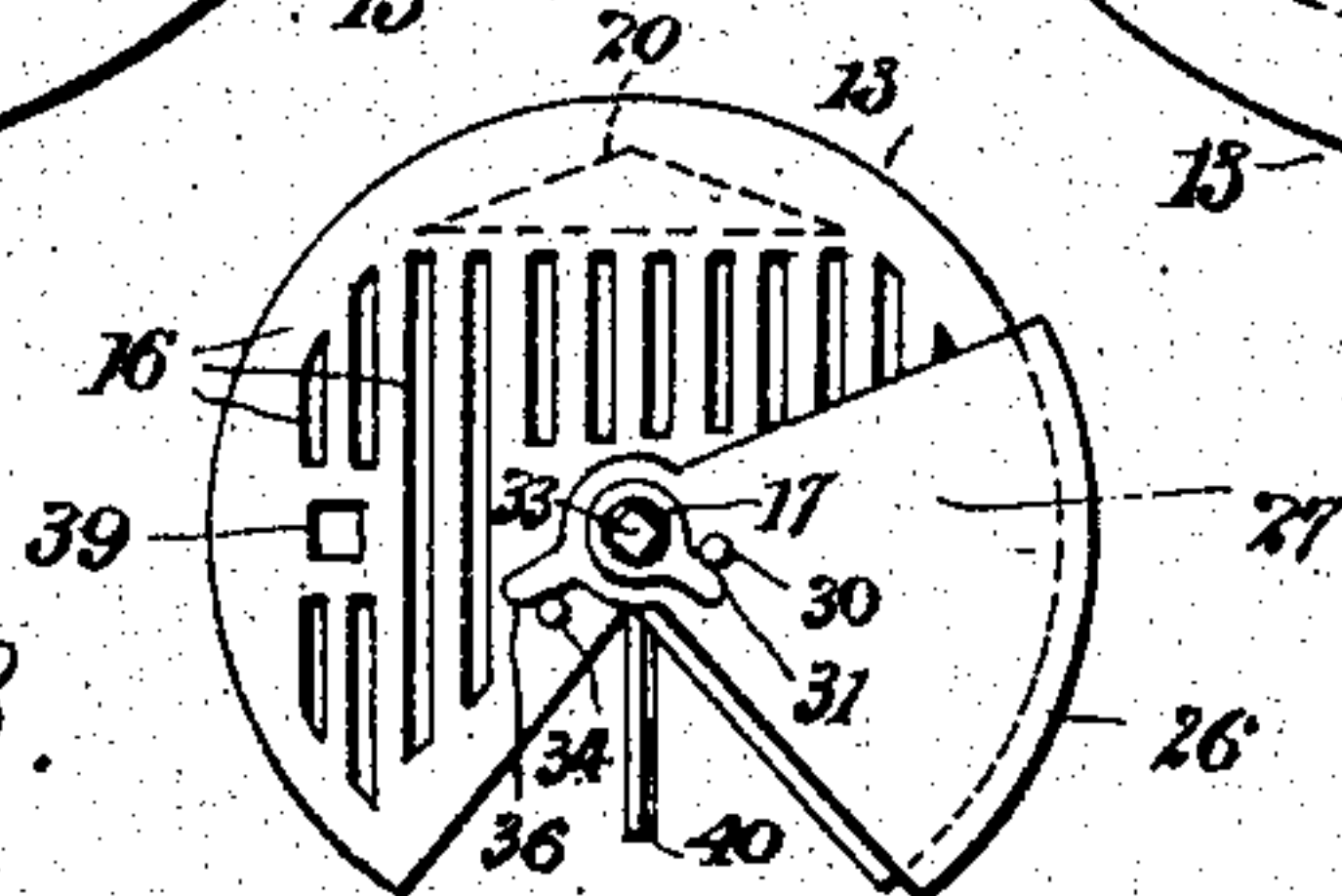


Fig. 8.



Witnesses

Witnesses
 Frank S. Ober
 William F. Stein

Inventor

Salomon Naas

By his Attorney,

Willis Fowler

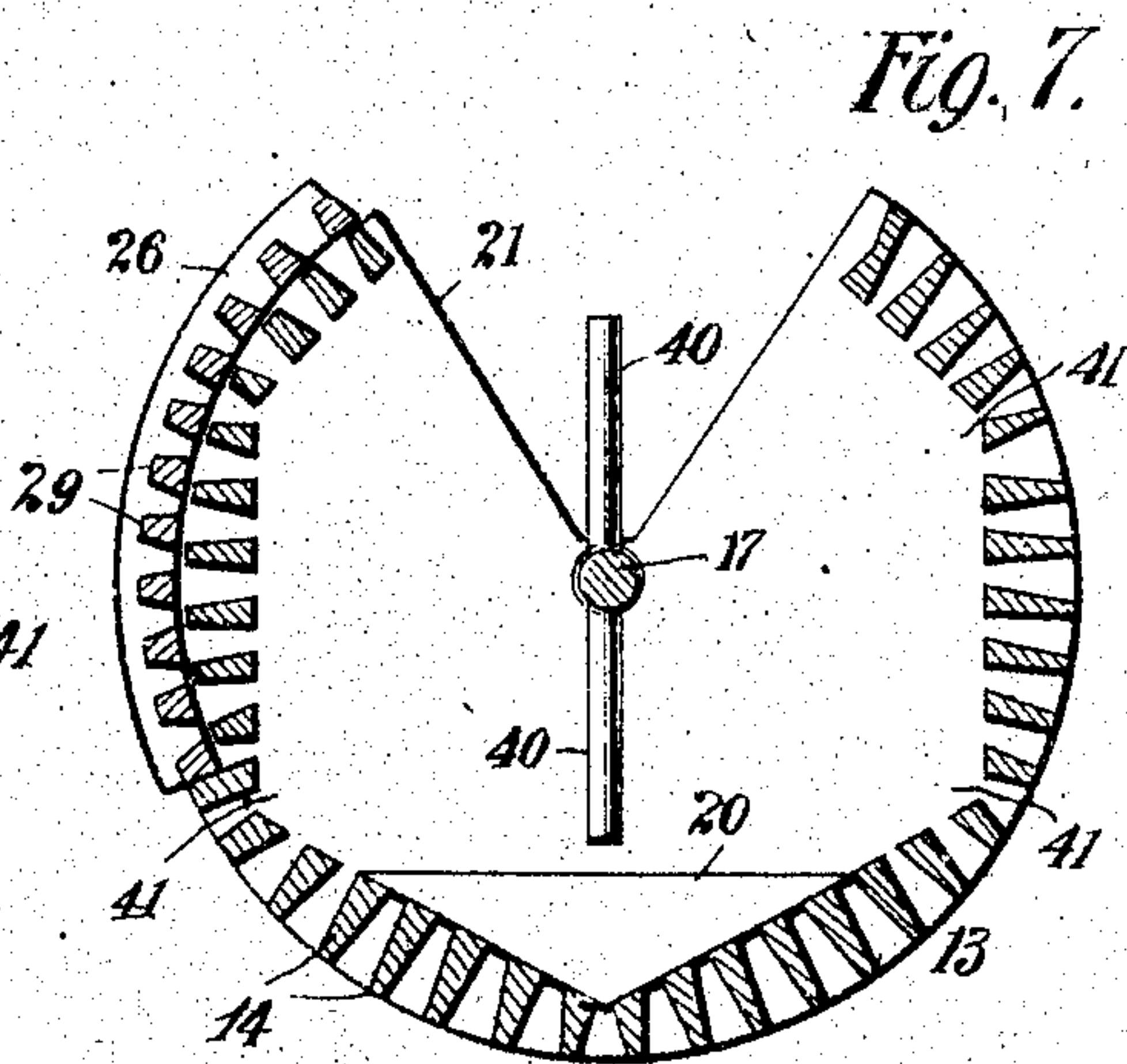
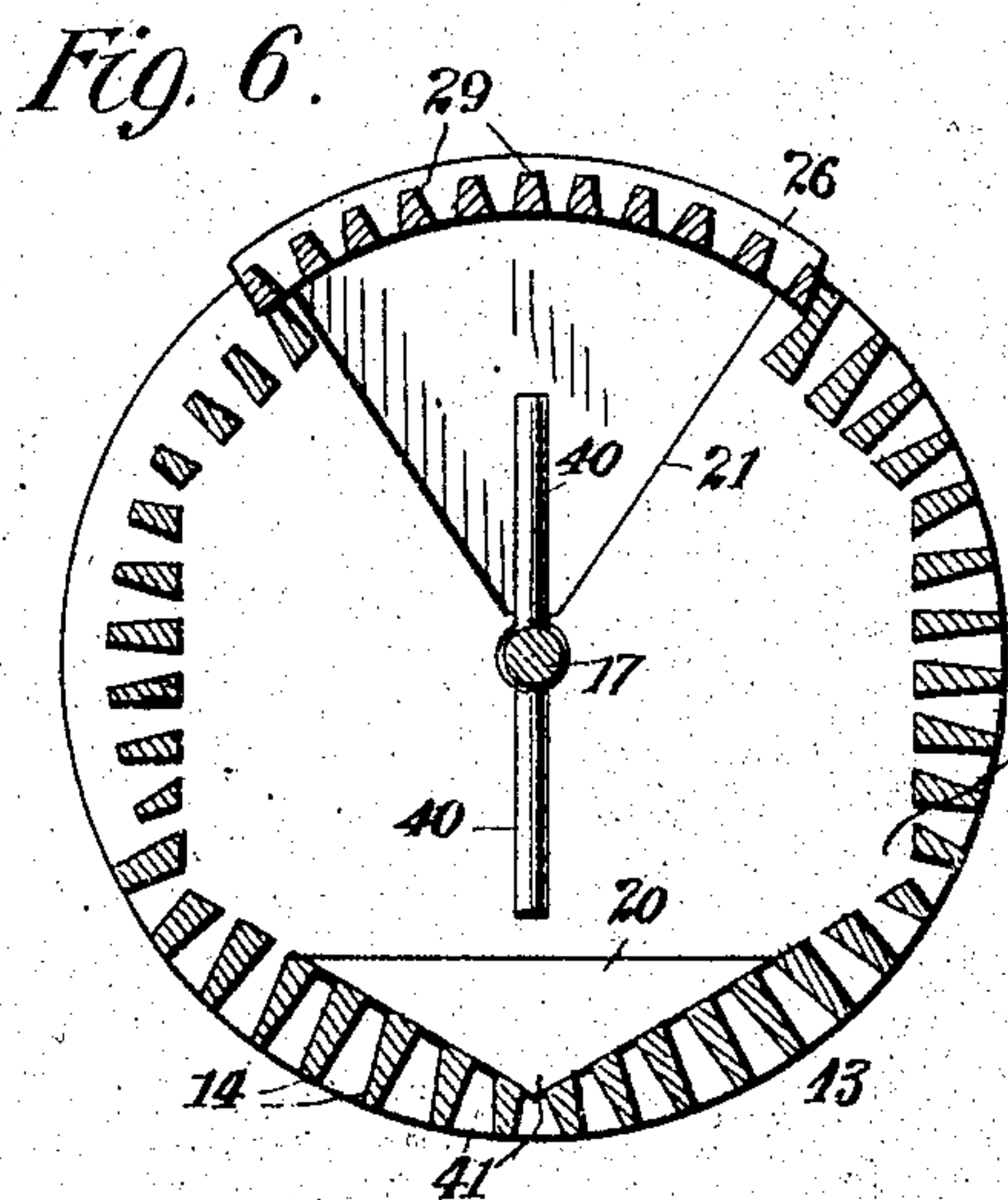
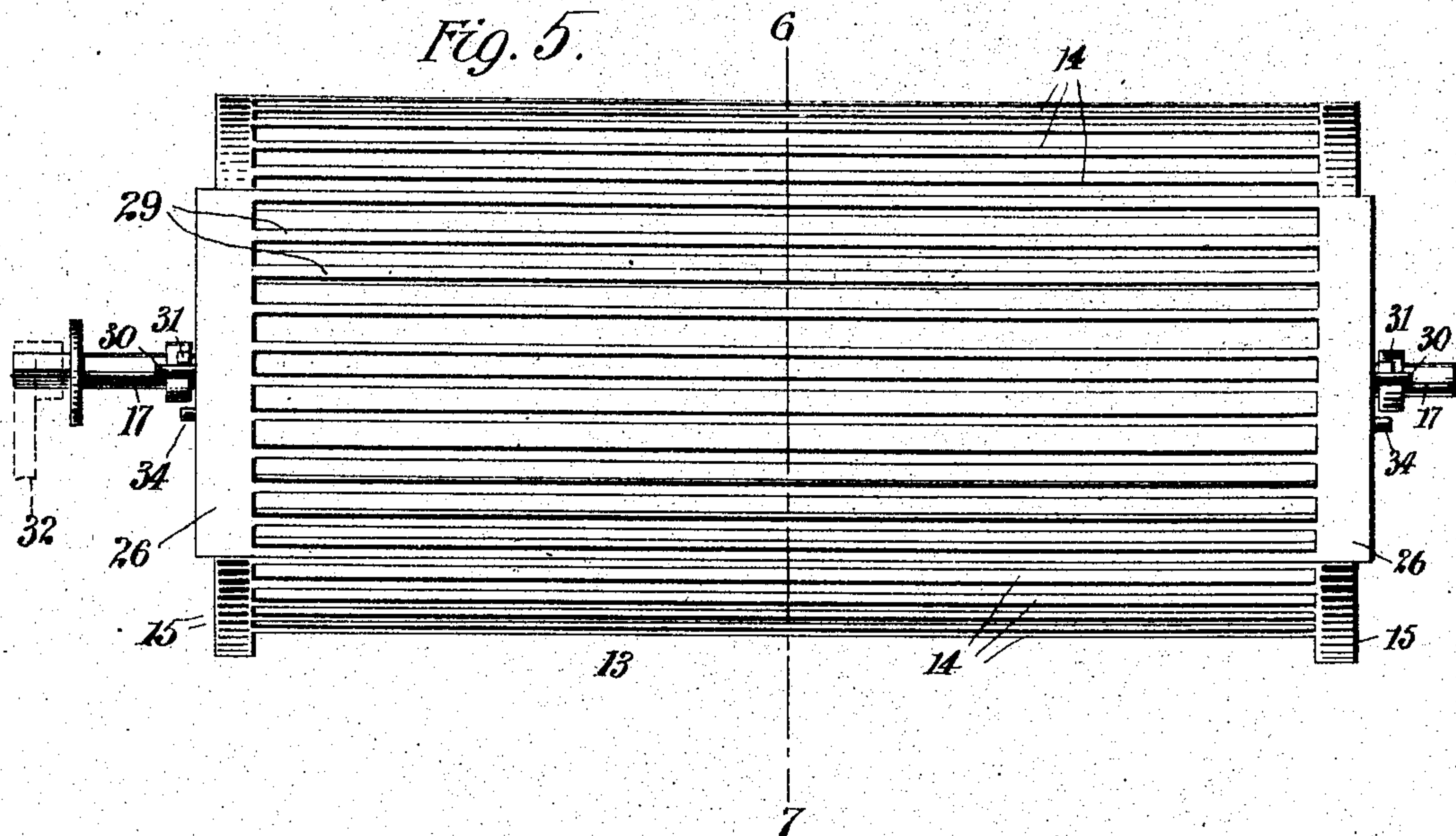
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

SOLOMON MAAS, OF NEW YORK, N. Y.

COMBINED STOVE AND ASH-SIFTER.

SPECIFICATION forming part of Letters Patent No. 786,825, dated April 11, 1905.

Application filed March 19, 1903. Serial No. 148,613.

To all whom it may concern:

Be it known that I, SOLOMON MAAS, a citizen of the United States, residing in the city, county, and State of New York, have invented a new and useful Combined Stove and Ash-Sifter, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a combined stove and ash-sifter; and the principal objects of the invention are to provide an efficient sifter by means of which the cinders and ashes from the fire-chamber may be completely separated within the stove itself and to so construct the apparatus that this operation of separating the ashes and the cinders may be done by manipulating the apparatus from the exterior of the stove, whereby upon closing the stove the sifting process may be carried out without the dust or ashes escaping to the exterior of the stove.

With these and other objects in view my invention consists in the various novel and peculiar arrangements and combinations of the several parts of the apparatus, all as hereinafter fully described and then pointed out in the claims.

I have illustrated a type of my invention in the accompanying drawings, wherein—

Figure 1 is a front view of part of a cooking-stove having my invention embodied therein, the door which covers the opening of the fire-chamber, as well as the opening in the ash-pit, being shown as swung into open position and the stove being shown as broken away at the right-hand side. Fig. 2 is a view in horizontal section taken centrally through the rotary ash-sifter on a plane indicated by the line 2 2, Fig. 1. Figs 3 and 4 are enlarged end views of the rotary sifter shown as detached and with the door or cover thereof shown as closed in one view and as open in the other. Fig. 5 is an enlarged plan view of the rotary ash-sifter shown as detached and with the cover or door thereof in closed position and with the operating hand-crank, which lies to the exterior of the stove,

shown in part in dotted lines. Figs. 6 and 7 are vertical sectional views of the rotary sifter, taken centrally thereof on a plane indicated by line 6 7 in Fig. 5 and with the door of the sifter closed in one view and open in the other. Fig. 8 is an end view of the sifter turned into dumping position with the door open.

Referring to the drawings, in which like numbers of reference indicate like parts throughout, 1 is a stove having the usual ovens 2 and 3 and provided at one end with a fire-chamber 4, having an ash-pit 5 beneath the same, the openings of the fire-chamber and ash-pit being covered by a swinging door 7, which is hinged to one side of said openings and which in Fig. 1 is shown in open position.

The bottom of the fire-chamber 4 is provided with a grate formed in two swinging portions 8 and 9, which are pivoted, respectively, at 10 and 11 and are operated in a manner well known to dump the contents of the fire-chamber into the ash-pit along the center line of length of the fire-chamber, as indicated in dotted lines in Fig. 1, the grate being operated by a key or suitable device applied to the squared end 12 of the shaft 11 of one-half of the grate.

Within the ash-pit 6 and directly beneath the grate 8 9 I arrange a cylindrical rotary ash-sifter 13, the cylindrical wall or side of which is made up of a series of longitudinal bars 14, which are like ordinary grate-bars, but are arranged closer together than the bars of the grate for the purpose of retaining within the sifter the cinders, but permitting the fine ashes to escape therefrom. The ends of the cylindrical sifter are shown as composed of plates 15, having suitable slots or openings 16 therein of small size to permit the ashes to drop through from the interior of the cylinder. This cylindrical body forming the sifter may be made in any well-known suitable manner, and it can be cheaply made by casting it in suitable metal, the idea being in any case to provide the rotary body forming the sifter with a large area of perforated surface to enable the ashes to quickly escape from the interior of the cylinder when the same is actuated. The cylinder 13 is mounted

in horizontal position loosely upon a horizontal shaft 17, which extends through openings 18 and 19 in the respective end plates 15, and at times the cylinder may be turned freely on the shaft 17, and suitable weights 20 are arranged at such points on the periphery of the cylindrical body to cause it to gravitate into such position that the opening 21, which extends longitudinally throughout the length of the cylinder, may be brought into uppermost position, as will be hereinafter described. The inner end of the actuating-shaft 17 is mounted to turn in a socket 22, formed in a fixed part 23 of the stove, while the forward end of the shaft is provided with a bearing 24, arranged on a fixed horizontal cross-piece 25, which extends across the front opening of the ash-pit 6.

The cylindrical sifter 13 is formed throughout the length thereof with a side opening 21, which is sufficiently large to readily receive the contents of the grate when the same is dumped into the open cylinder, as shown in Fig. 1. This opening 21 is also used to discharge from the sifter the cinders after the sifting operation. The opening 21 of the cylinder 13 is provided with a sliding door 26, which is curved to conform to the periphery of the cylinder and is provided with side plates 27, which are perforated at 28 for the operating-shaft 17 to pass loosely therethrough. (See more particularly Fig. 2.) This door or cover 26, with its end plates 27, is formed like a longitudinal segment of the cylinder itself, and the cover is made up of a set of longitudinal bars 29 for the ashes to drop through. At a similar point on the center line of each side plate 27 of the door is an outwardly-projecting fixed piece 30, with each side of which a lug or projection 31, fixed on the shaft 17, is adapted to engage. It is through means of this fixed piece 30 and the engaging lug 31 of the shaft that both the door of the cylinder is operated as well as the cylinder itself, and the same is done as follows: Normally the door 26 of the sifter stands open. (See Figs. 1, 2, and 4.) If it be desired to close the door, a key or operating-crank 32 (shown in dotted lines in Fig. 2) is applied to the squared end 33 of the shaft 17, which is then turned in the direction in which the hands of a clock move. This movement of the shaft continues idly until the fixed lug 31 thereon meets with the left-hand side of the fixed piece 30 on the door, whereupon the continued turning of the shaft carries the door around to the right and into closed position, as shown in Fig. 3. At this point the door is stopped in its movement by a fixed pin 34 on the cylinder being met by the edge 35 of the side 27 of the door, as shown in Fig. 3. The continued turning of the shaft 17 will now cause the cylinder to be rotated with the door closed, and this may be continued as long as it is desired to operate the sifter for the sifting process. The

ashes being thus separated from the cinders and discharged from the sifter and then removed, the operating key or crank 32 is reversed in its direction of movement, being now turned in the reverse direction to that in which the hands of a clock move. This turns the shaft 17 backward and carries the fixed lug 31 away from the side of the fixed part 30 and around to the opposite side of such fixed part 30 and pushing upon the same swings the door back and open and until a fixed lug 36 on the side 27 of the door engages the fixed pin 34 on the end of the cylinder 13, whereupon the continued reverse movement of the shaft through means of the described engagement will turn the cylinder in the same direction as the shaft and bring the opening 21 around to the under side of the cylinder to discharge therefrom the cinders after the sifting operation, as shown in Fig. 8.

In order to hold the sifter securely in fixed position when the door 26 thereof is open for the contents of the fire-chamber to be dumped therein, as shown in Fig. 1, I provide a hand-operated latch 37, which is pivoted at 38 on cross-piece 35 and is adapted to engage with a notch or opening 39, formed in the end part 15 of the cylinder, as will be understood more particularly from Figs. 1 and 2, wherein the latch is shown in locked position in full lines, the open position being shown in dotted lines in Fig. 2.

The operating-shaft 17 is provided with fixed projections 40, extending therefrom at suitable points for the purpose of stirring or agitating the contents of the cylinder to expedite the sifting process. I prefer to have the interior of the cylinder broken in its formation—that is to say, not to have it cylindrical, as in the latter case the contents thereof would slide around the interior of the cylinder when it is rotated, and this would prevent the quick separation of the ashes from the cinders. I therefore have shown the interior of the cylinder as made hexagonal in cross-section, as shown in Figs. 6 and 7, the annular points 41 thereof serving to retain the contents at rest for a while during the movement of the cylinder and then permit the same to be tossed or thrown from such points, and thereby agitate the contents with considerable force and cause the ashes to be shaken out.

The door 7, which covers the opening of the ash-pit, is provided with a suitable opening 43 for the end of the shaft 17 to project through, so that the squared end thereof may be engaged by the operating-key 32 when the stove-door 7 is closed, thereby enabling the device to be operated with the stove in closed condition.

In order to insure the contents from the fire-chamber being discharged into the opening 21 of the sifter when open, I provide the upper part of the ash-pit with suitable deflectors 44 for directing the falling contents of the fire-

chamber or grate into the opening in the cylinder.

In the bottom of the ash-pit is an ordinary removable ash-pan 45, which upon receiving the ashes from the sifter is removed and then replaced by another similar ash-pan for receiving the cinders from the sifter, though of course one ash-pan may be used for both of these purposes after the ashes have been removed from the ash-pan.

The opening 21 of the rotary sifter may be made much larger, if desired, in order to insure the easy dumping of the contents of the fire-chamber into the sifter; but I think the proportions herein illustrated are practically sufficient for the purpose. If desired, the door 26 may be made about half the size of the cylinder itself instead of being somewhat less than a quarter thereof, as illustrated.

It will be observed that the sifter is operated to effect the separation of the ashes from the cinders with the stove closed, so that the ashes or dust which usually results from sifting ashes does not escape to the exterior of the stove, and in this way much of the usual trouble accompanying this operation is avoided. The rotary form of sifter is also easy to operate, requiring only an easy turning movement of the operating-key by the person using the device. At the same it is an effective form of sifter, in that it tosses or throws the contents about the interior of the cylinder with considerable violence.

As already herein stated, the freely-swinging sifter is provided with suitable counterbalancing-weights 20 for the purpose of causing the sifter when unrestrained to gravitate in such position that its opening 21 will lie uppermost whether the door thereof be opened or closed. This will insure the opening of the sifter being automatically brought into position for the filling of the sifter with the contents of the fire-chamber. This is an important feature of the present construction, and as a precaution against the sifter being accidentally displaced from the proper position to receive the contents from the fire-chamber I provide the hand-operated latch 37, as already described; for locking at will the sifter in the position with the opening 21 uppermost.

The grate 8 9 has the operating-shaft 11 thereof provided with an annular head 12 for receiving an operating-key, which is not shown. In order that the grate may be dumped while the stove-door 7 is closed, such door is formed with a hole 12^a, through which the end of shaft 11 projects for receiving the key or crank.

While I have shown the end plate 15 at the rear end of the rotary sifter as a solid plate without openings, it will of course be understood that the plate at that end may be made the same as the one at the forward end. However, I prefer to have it solid in order to pre-

vent the ashes from dropping from that part of the sifter, as in such case the ashes would be apt to drop down back of the ash-pan.

Though I have illustrated only a cylindrical form of sifter 13, it will of course be understood that other well-known forms may be adopted for this part, and it will also be seen that instead of the sifter being composed of closely-set grate-bars it may be made of suitable wire or of heavy wire-gauze. The sifter may be made as compact as its functions will permit, and it may be mounted in various different ways in position to receive the contents from the fire-chamber. I therefore wish it to be understood that I do not limit my invention to the specific construction of the various different parts thereof as herewith set forth, as many modifications may be made in respect to such parts without, however, departing from the spirit of the invention.

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

1. The combination of a stove provided with a fire-chamber, a rotary ash-sifter mounted beneath the said fire-chamber and provided with an opening in its side for receiving the contents from the fire-chamber when dumped therefrom and also for discharging the contents from the sifter after the sifting process, a door for said opening in the ash-sifter and means extending from the exterior of said stove to the said sifter and its door and being operatively connected with both said sifter and door, whereby the said door may be both opened and closed and the sifter rotated from the exterior of the stove, substantially as and for the purpose set forth.

2. The combination of a stove provided with a fire-chamber, a rotary sifter mounted beneath the said fire-chamber and provided with an opening for receiving and discharging material, a movable door for said opening, a rotary shaft and means operatively connecting said shaft with the door and the said door with the rotary sifter but the said shaft being loose with respect to both said sifter and door whereby the turning of the shaft in one direction closes the door and rotates the sifter, while the turning of the shaft in the opposite direction opens the door and turns the sifter in the reverse direction, substantially as and for the purpose set forth.

3. The combination of a stove provided with a fire-chamber, a rotary sifter mounted beneath said fire-chamber and provided with an opening for receiving and discharging the ashes, a movable door for said opening, a rotary shaft and means operatively connecting said shaft with the door and the said door with the rotary sifter but the said shaft being loose with respect to both said sifter and door whereby the turning of the shaft in one direction closes the door and rotates the sifter, while the turning of the shaft in the opposite

direction opens the door and turns the sifter in the reverse direction, the said shaft extending to the exterior of the stove from where it may be actuated to operate said sifter, substantially as and for the purpose set forth.

4. The combination of the fire-chamber of a stove, a rotary ash-sifter turning on a horizontal axis and provided with an opening for receiving the contents of the fire-chamber, a rotary shaft upon which said sifter is mounted, a sliding door for controlling said opening and mounted loosely upon said shaft, a fixed piece on said door and a lug or fixed member on said shaft whereby the turning of the shaft in one direction causes the lug on the shaft to engage the fixed piece on the door upon one side to close the door and rotate the sifter and the turning of the shaft in the reverse direction causes the lug to engage the fixed piece on the door upon the opposite side to open the door, and a fixed piece on the said sifter engaged by the door when in closed position for transmitting the motion of the shaft to the sifter, substantially as and for the purpose set forth.

5. The combination of the fire-chamber of a stove, a rotary ash-sifter turning on a horizontal axis and provided with an opening for receiving the contents of the fire-chamber, a rotary shaft upon which said sifter is mounted, a sliding door for controlling said opening and mounted loosely upon said shaft, a fixed piece on said door and a lug on the said shaft for engaging the fixed piece on the door on one side when the shaft is turned in one direction and upon the opposite side when the shaft is turned in the opposite direction, a fixed piece on said sifter adapted to be engaged by the door when the same is closed to transmit the motion of the shaft to the sifter, and a fixed piece on the door for engaging said piece on the sifter when the door is open, substantially as and for the purpose set forth.

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

SOLOMON MAAS.

Witnesses:

WILLIS FOWLER,
ISAAC MAAS.