

No. 832,151.

PATENTED OCT. 2, 1906.

C. S. NEWSOM.
COMBINED INCUBATOR AND NURSERY.

APPLICATION FILED NOV. 11, 1905.

4 SHEETS—SHEET 1.

Fig. 1

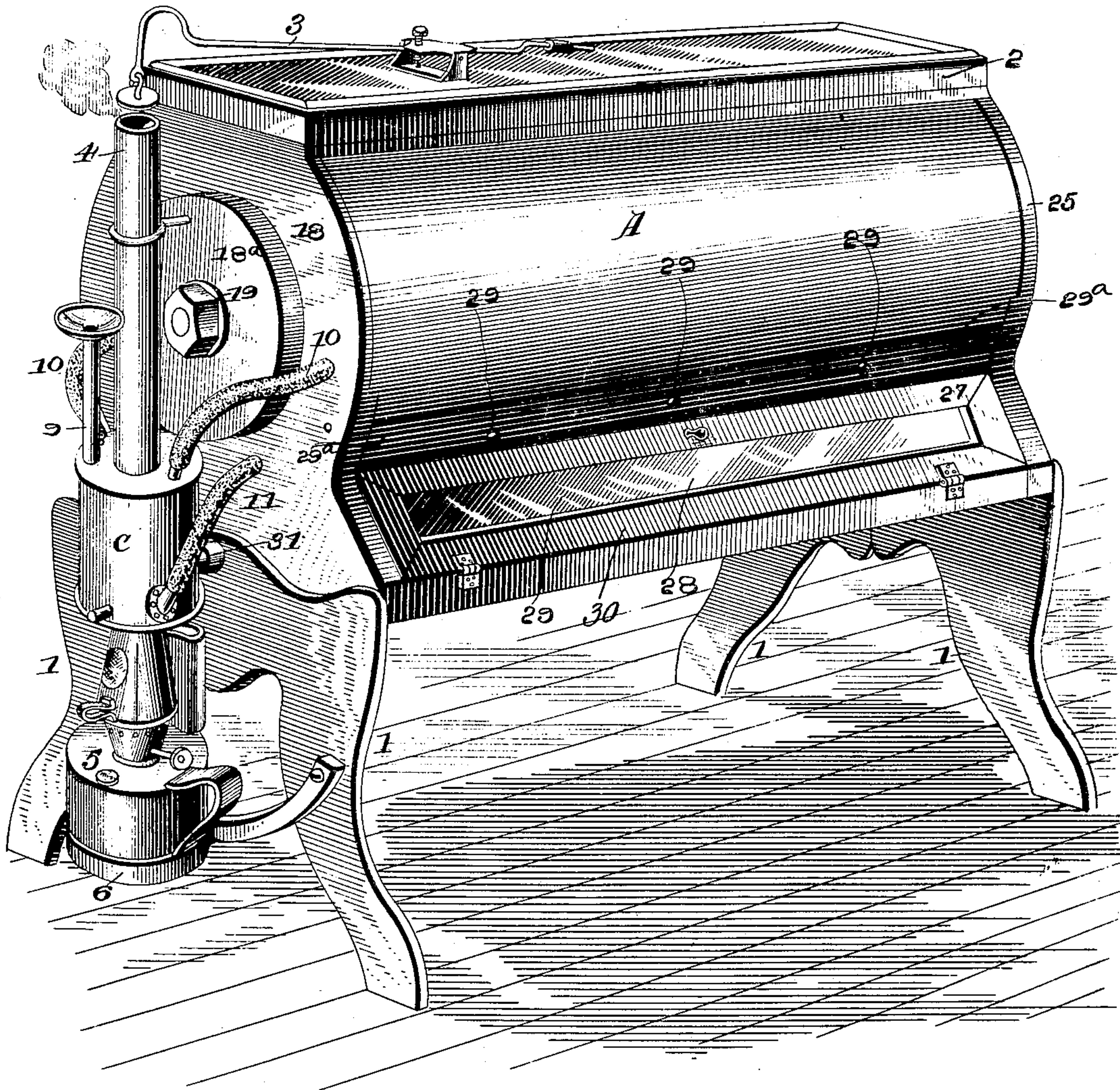
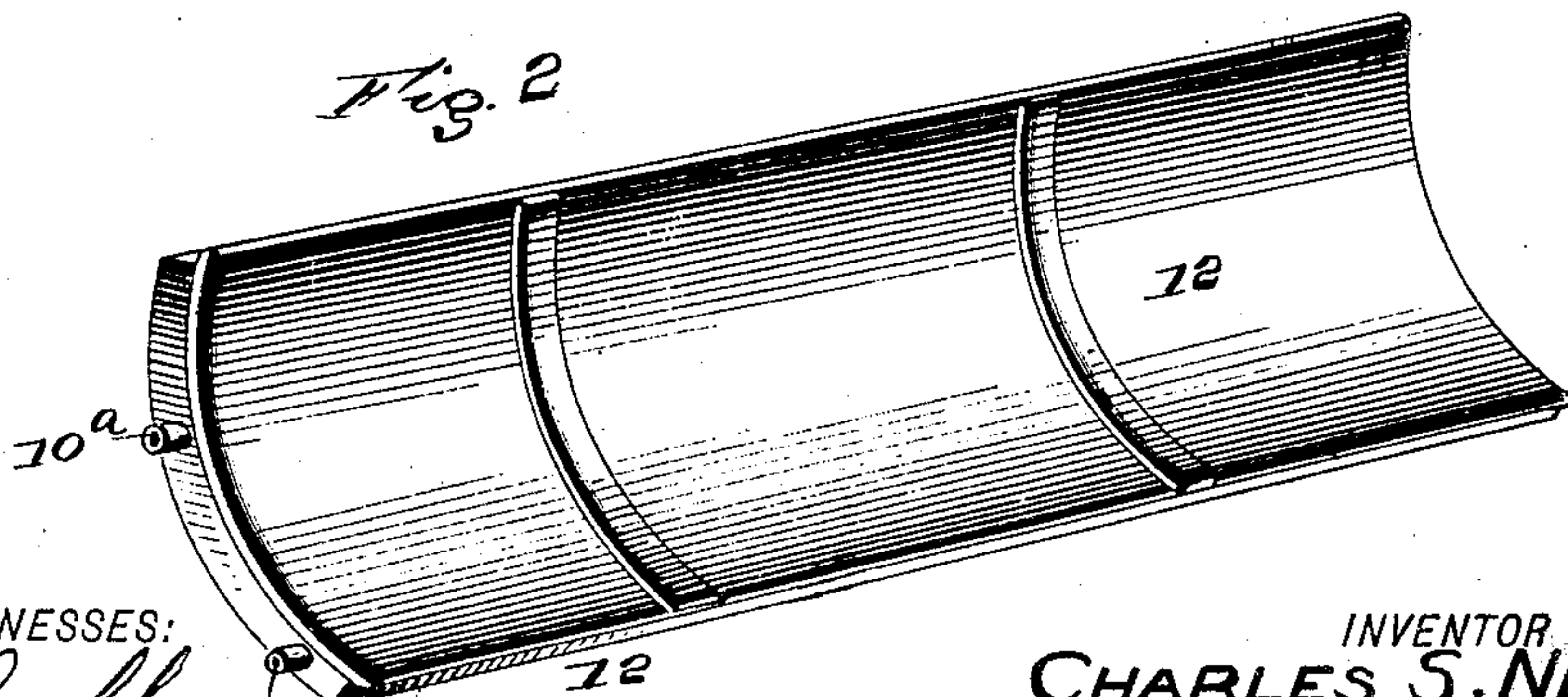


Fig. 2



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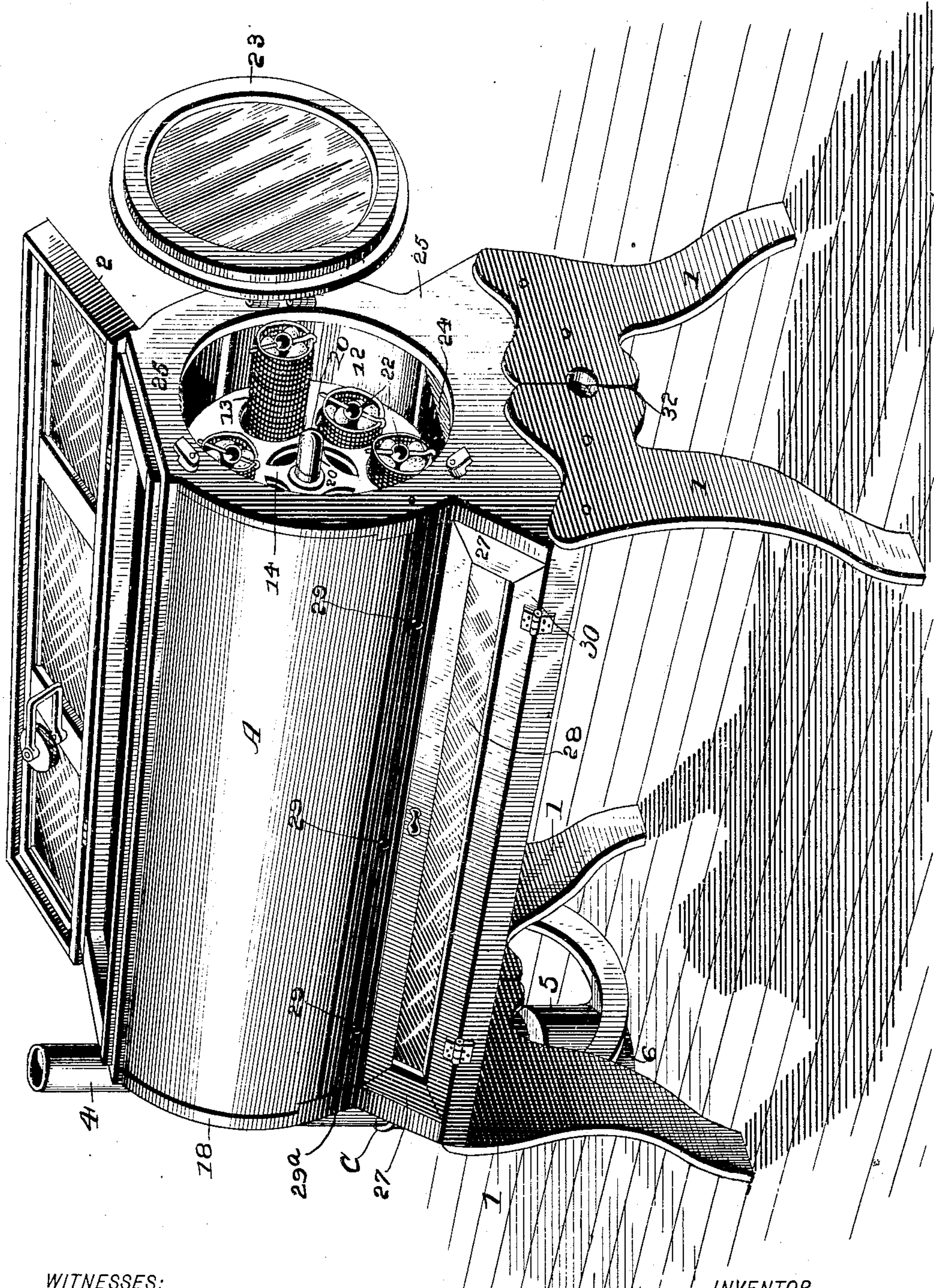
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4 SHEETS—SHEET 2.

Fig 3



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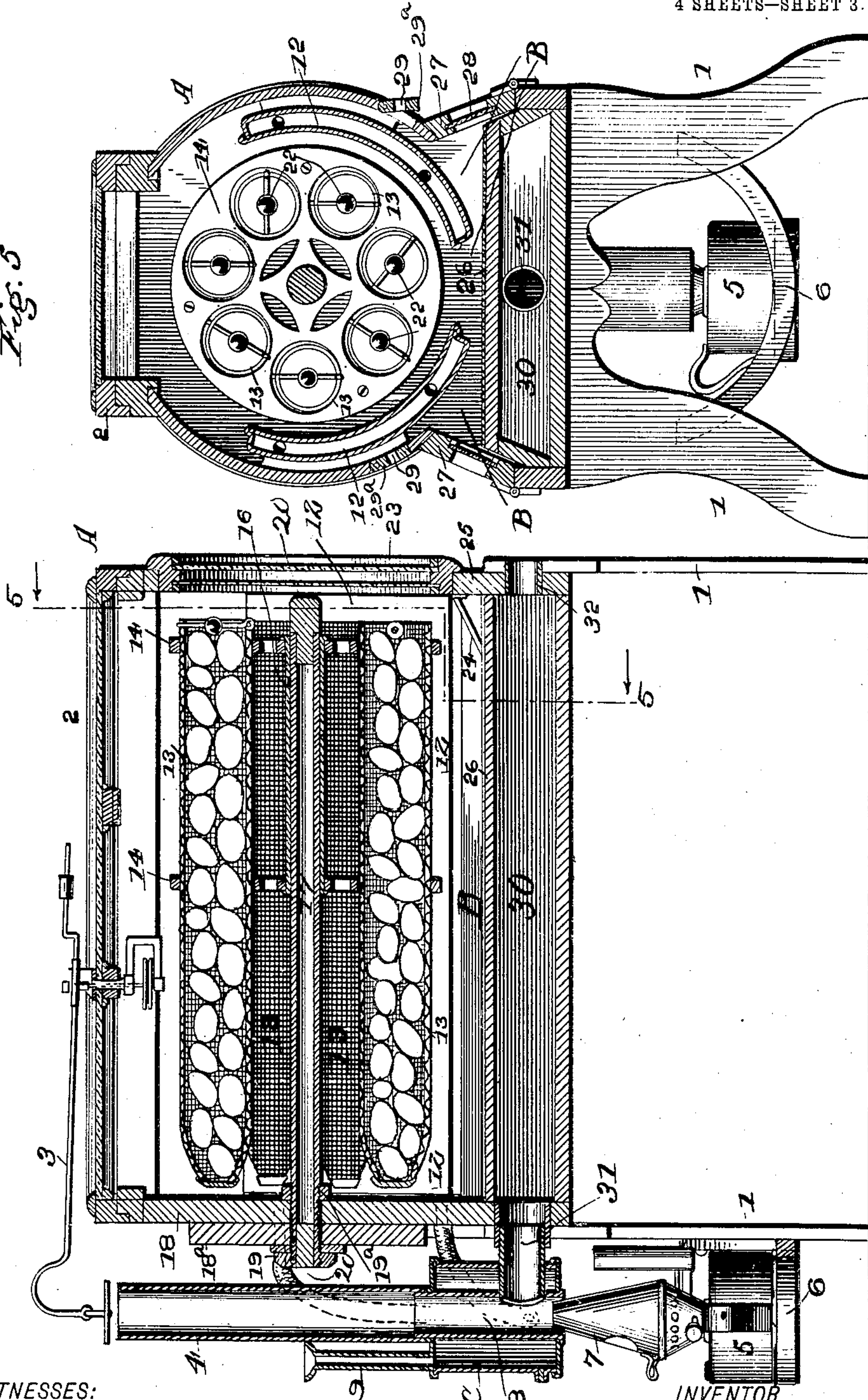
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4 SHEETS—SHEET 3.

Fig. 4.



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4 SHEETS—SHEET 4.

Fig. 6

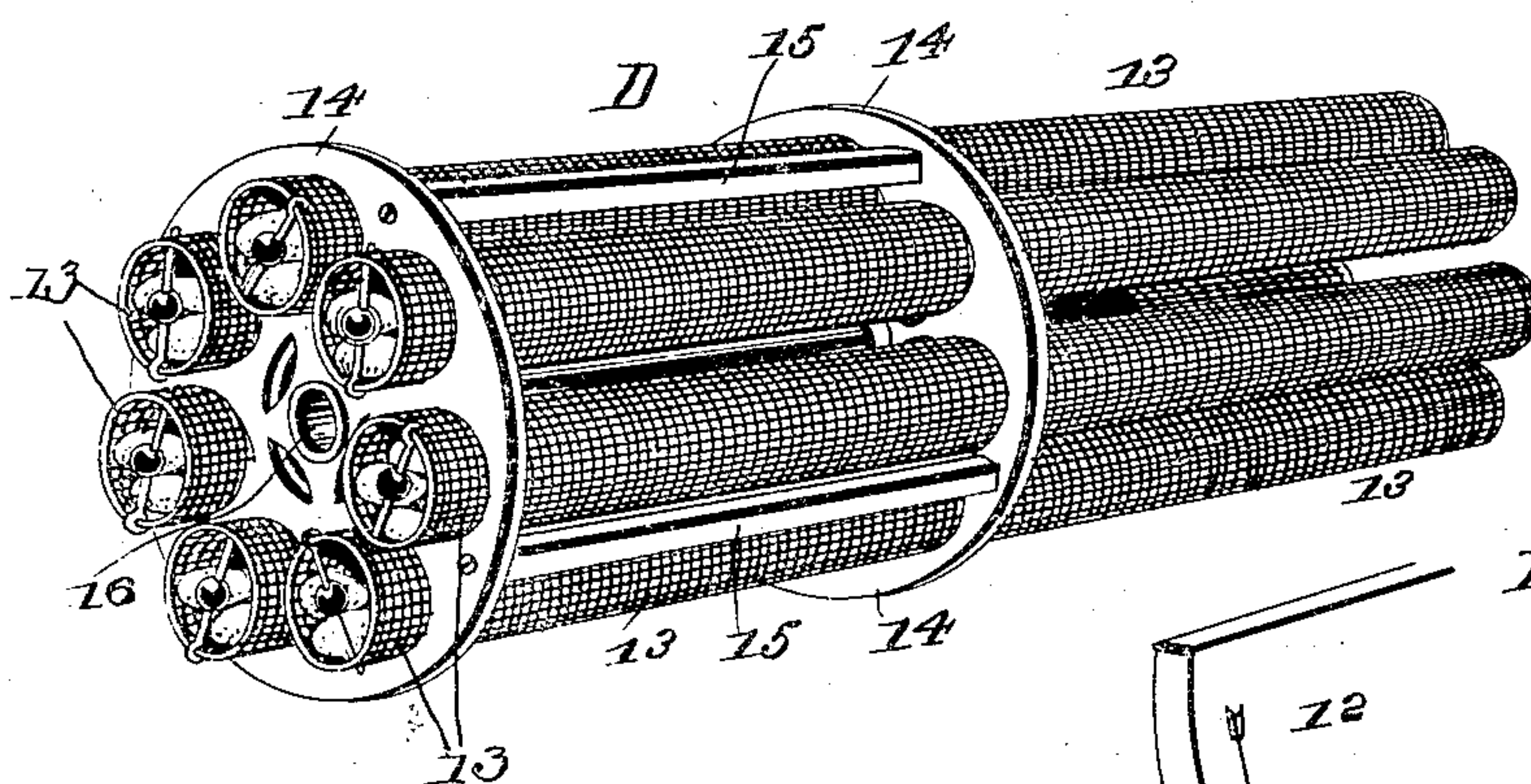


Fig. 8

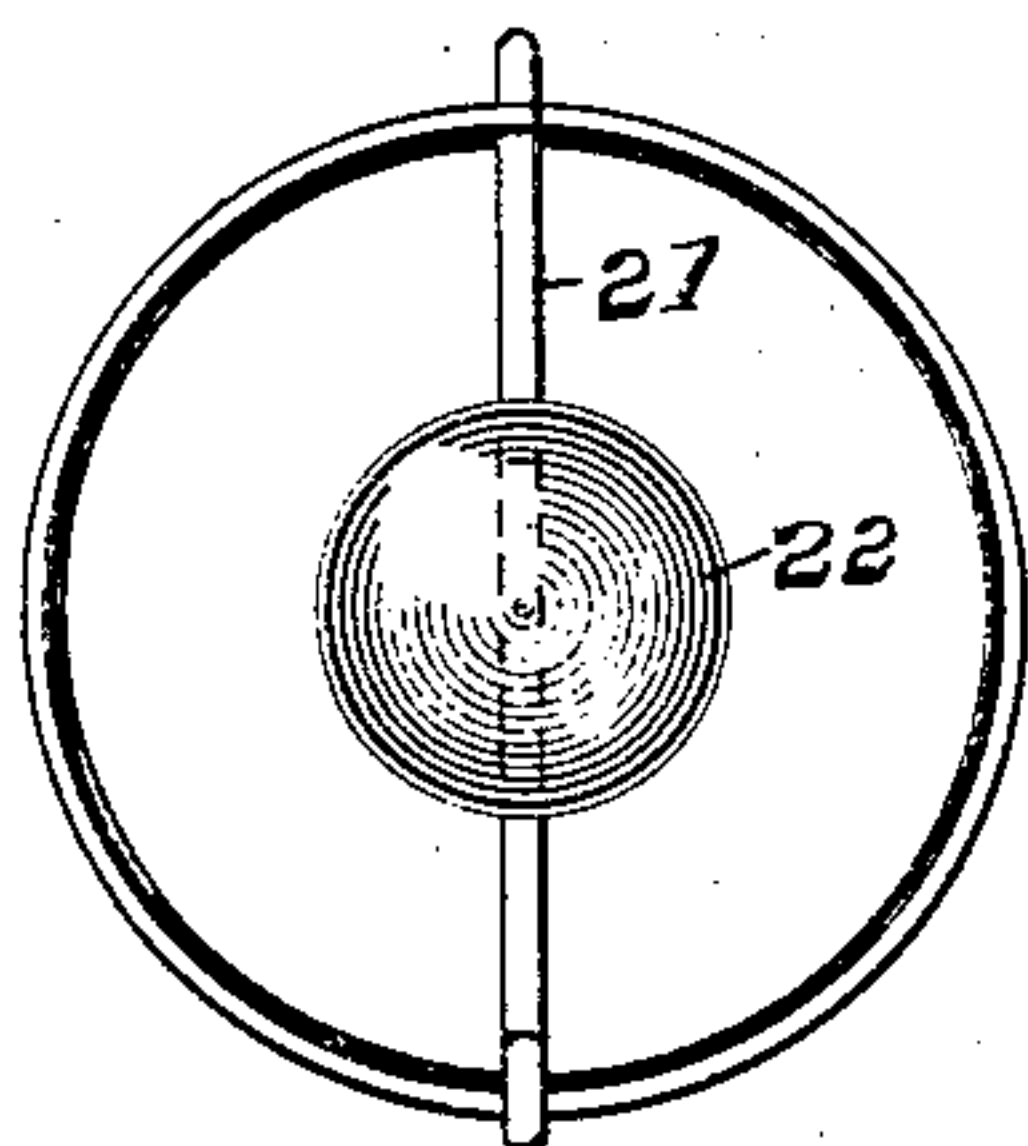
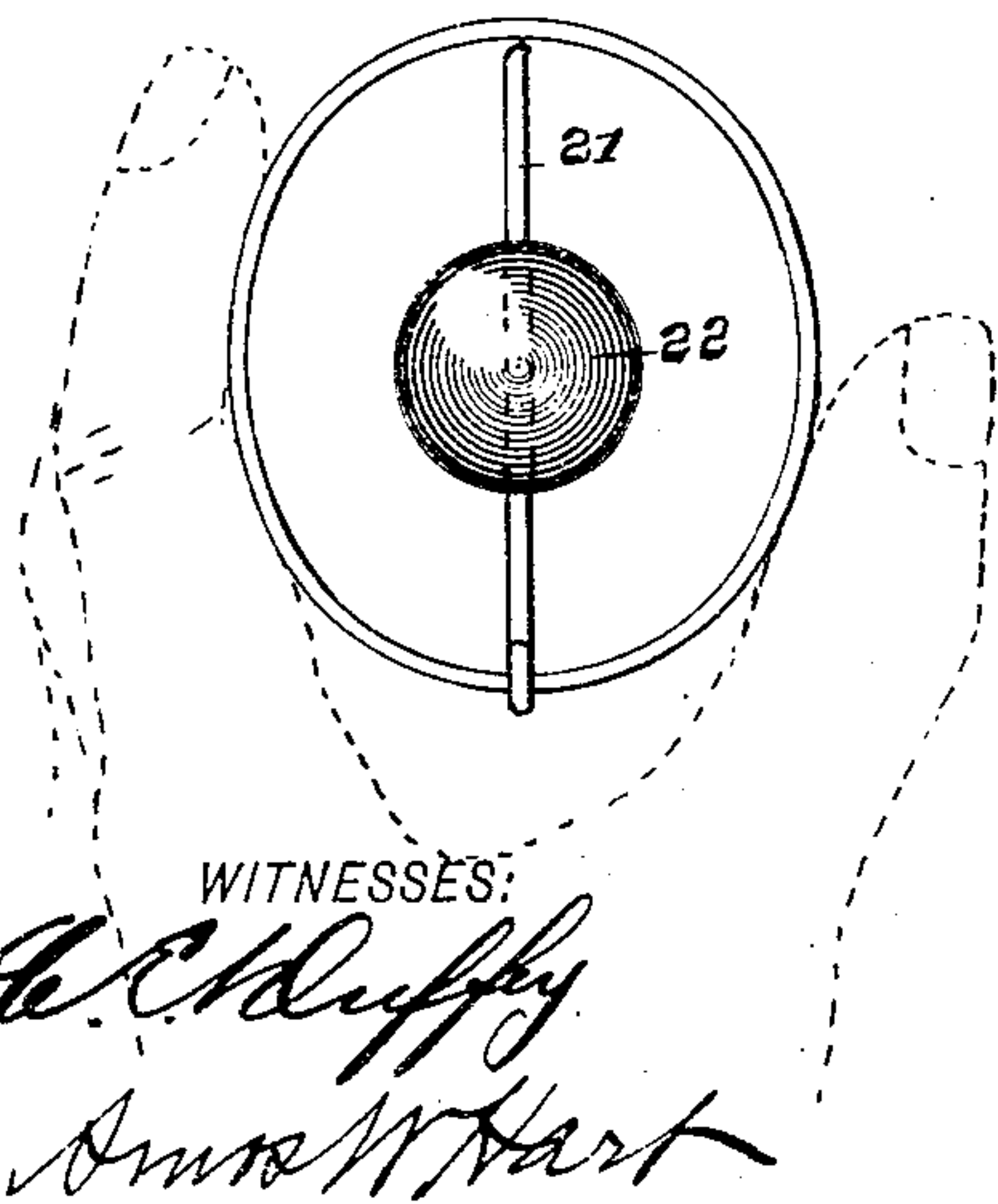


Fig. 10



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Fig. 7

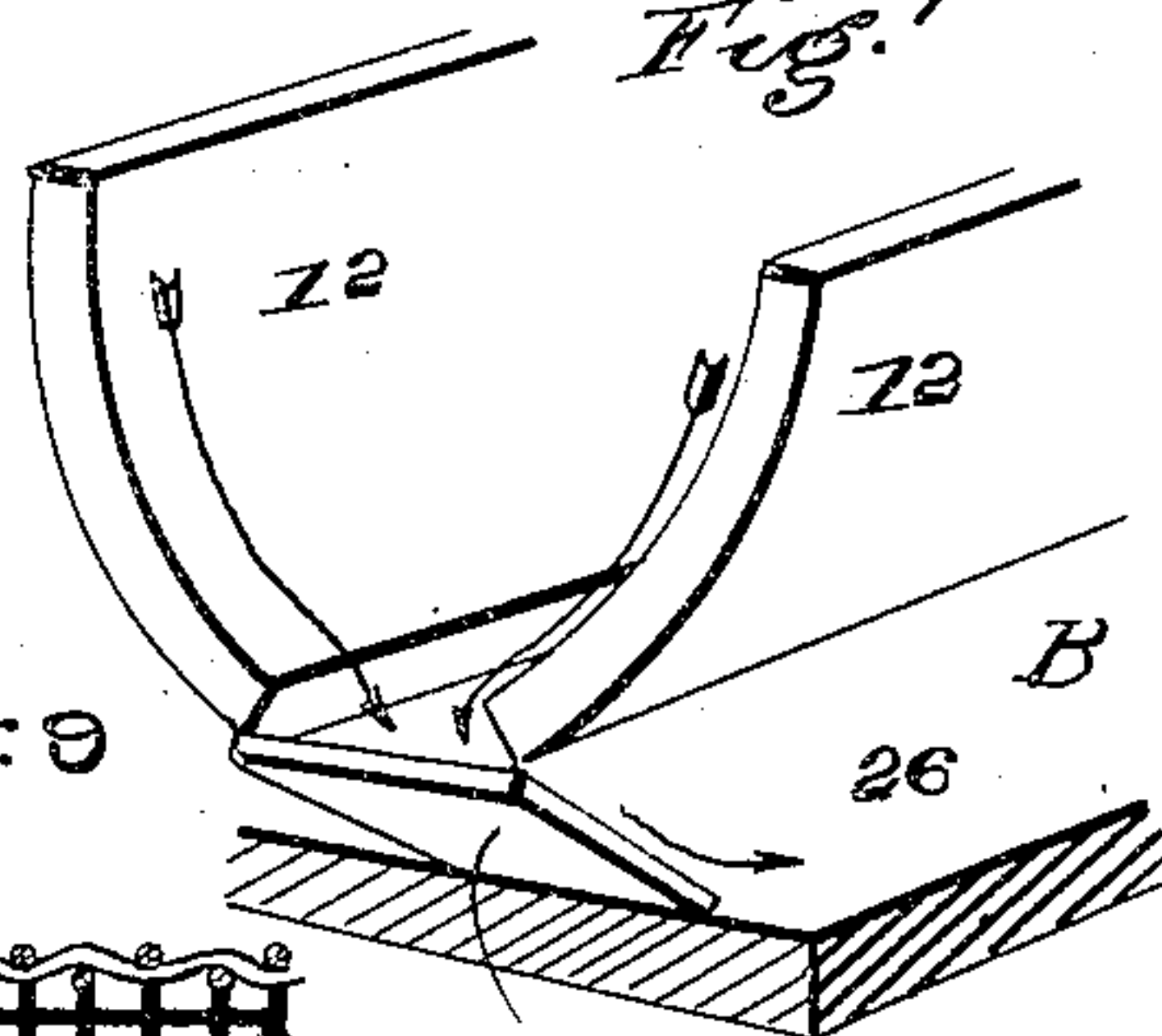


Fig. 9

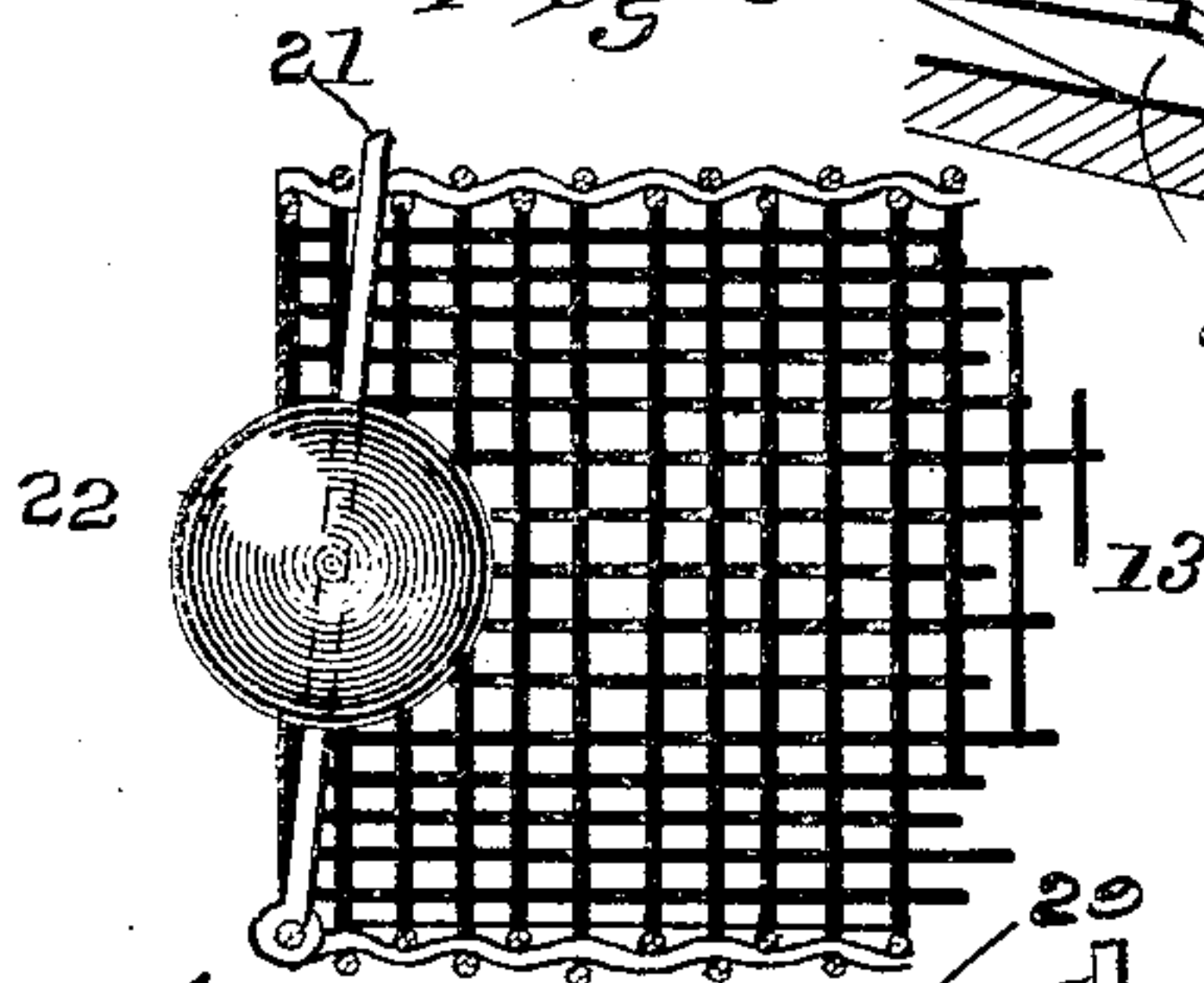
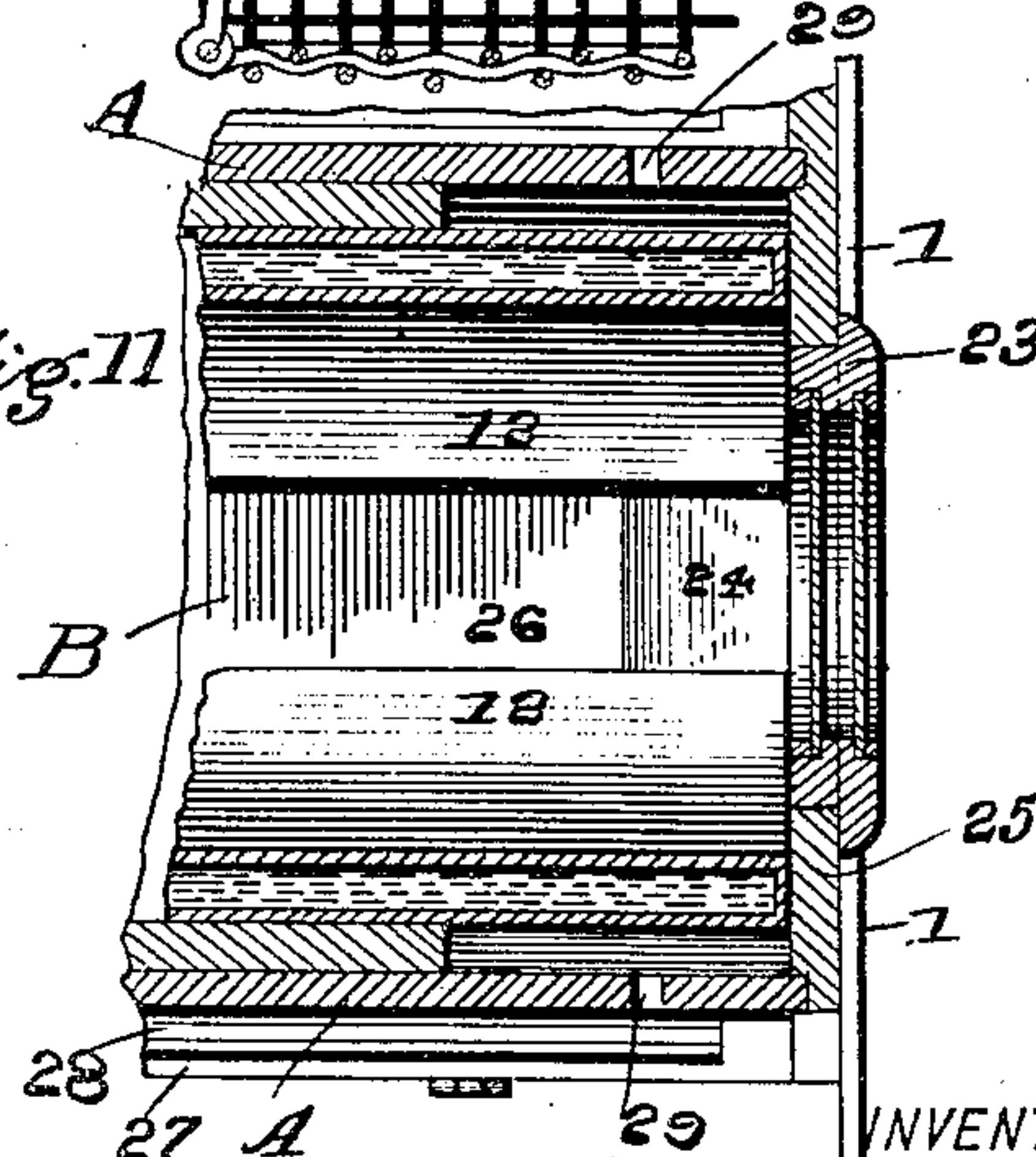


Fig. 11



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UNITED STATES PATENT OFFICE.

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COMBINED INCUBATOR AND NURSERY.

No. 832,151.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed November 11, 1905. Serial No. 286,873.

To all whom it may concern:

Be it known that I, CHARLES S. NEWSOM, a citizen of the United States, and a resident of Athens, in the county of Athens and State of Ohio, have invented a new and useful Combined Incubator and Nursery, of which the following is a specification.

My invention includes improvements in an incubator proper and an attachment thereof adapted to serve as a nursery or preliminary receptacle for chicks as hatched in the incubator above. These two parts—to wit, the incubator and nursery—are constructed and arranged to coöperate in a novel and advantageous way, and each includes features that are of great practical importance in hatching, caring for, and protecting chicks.

The details of construction, arrangement, and operation of parts are as hereinafter described, the novel features being specifically indicated in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the combined incubator and nursery. Fig. 2 is a perspective view of one of the segmental water-heaters. Fig. 3 is a perspective view of the incubator and nursery combined, one of the egg-trays or cylinders being shown partly withdrawn and the top being shown open. Fig. 4 is a central vertical longitudinal section of the apparatus. Fig. 5 is a vertical transverse section on line 5 5 of Fig. 4. Fig. 6 is a perspective view of the multiple-cylinder egg-holder. Fig. 7 is a perspective view of portions of the segmental water-heaters, together with the slide upon which the newly-hatched chicks slide down into the nursery. Fig. 8 is an end view of one of the wire cylinders containing the eggs to be hatched. Fig. 9 is a longitudinal section of the front end of one of such cylinders. Fig. 10 is a front view illustrating the compression of the front end of an egg-holder cylinder for the purpose of releasing the device which normally closes the same; and Fig. 11 is a horizontal section of the front end portion of the apparatus, which particularly illustrates the arrangement of the water-heaters, and a slide arranged between and below them for conducting chicks into the chamber below which constitutes the nursery.

A indicates the body or casing of the incubator proper, and B the nursery or brooding-chamber below it. These two parts are constructed so as to form a compact whole and supported by pairs of legs 1.

The incubator is provided with a hinged top door 2, (see especially Fig. 3,) and a thermostat 3 (see Fig. 1) is applied thereto and so arranged as to regulate the escape of heat through the tube or chamber 4, which forms an attachment of the water-heaters C. (See Fig. 4.) A lamp 5 is arranged upon a bracket 6, the chimney of which projects to the lower end of the tube 8, heated air and gases passing through the center of the heater C. A filling-tube 9 is provided for the heater, and at long intervals a little water is required to be supplied to the heater, the same filling an annular space therein and circulating through the tubes 10 and 11, (see Fig. 1,) which communicates with segmental drums or water-heaters 12. (See Fig. 2.)

It will be understood that the tubes 10 conduct hot water, and the somewhat cooler or less heated water returns by the tubes 11 to the heater C. Thus a circulation is maintained in each of the heaters 12, there being two tubes 10 11 connected with each, as shown. As shown in Fig. 2, the respective tubes 10 and 11 connect with the heaters at points 10^a and 11^a.

The arrangement of the heaters 12 in the casing A are as illustrated in Fig. 5, (see also Figs. 3, 7, and 11)—that is to say, they are arranged opposite each other along the curved sides of the body A, but spaced therefrom and also from the multiple-cylinder egg-holder D, so that air may circulate freely around them. The heaters 12 extend the entire length of the casing A, and their lower edges are separated somewhat widely, as indicated in Fig. 5, so that a suitable space exists between them for a purpose hereinafter stated.

The egg-holder D is constructed and arranged as follows: It is composed of a series of long woven-wire cylinders having a rather fine mesh, and the same are arranged in a circle in two parallel disks 14, (see Fig. 6,) having a corresponding series of openings from which the cylinders may be withdrawn, but in which they are held normally by friction, so as to retain their due position. The two disks 14 are connected by wooden bars 15. The supporting-frame formed by means of said disks and bars is provided with a central tube or hollow axle 16, which is adapted to receive and slide upon a hollow axle 17, (see Fig. 4,) the same being fixed in the rear end 18 of the casing A. Its ends are closed

by removable wooden plugs 20, which have no other function. The reinforcing-plate 18^a is secured to said end 18, and a nut 19 is applied to the outer threaded end of the axle 17, and a corresponding nut 19^a is arranged on the inner side of the head or end 18 of the casing. When the multiple-cylinder egg-holder is mounted upon the fixed axle or shaft 17, it is adapted to revolve easily on the axle for the purpose of turning the eggs as required during the hatching operation. Each of the wire cylinders 13 is open at its front end and provided thereat with a closure (see Figs. 6, 8, 9, and 10) comprising a wire or cross-bar 21 and a ball or disk 22, applied to the middle portion thereof. The said wire is hinged on one side of the cylinder, and its opposite or free end projects normally through the meshes on the other side of the cylinder, as shown in Figs. 6, 8, 9. In such position the closure prevents eggs rolling out of the cylinder; but space is provided on each side of the bar and the ball for chicks to pass out. In order to release the closure as required for the insertion of eggs, the end of a cylinder is compressed laterally, as indicated in Fig. 10, whereby the two corresponding sides are separated more widely, so that the free end of the bar 21 is drawn out of mesh, as will be readily understood.

It will be understood that for the purpose of filling the egg-holder with eggs the cylinders may be removed and filled individually or separately or that the entire holder comprising the cylinders and the frame in which they are held may be removed altogether.

It will be noted in Fig. 4 that while the rear closed ends of the several egg cylinders or tubes 13 are close to the rear end of the casing A their front open ends are spaced from the front end of the casing or particularly from the door 23 thereof. Since light has access to the interior of the hatching-chamber through the glass door, the chicks will promptly find their way to the front of the tubes, where they will drop from the tubes 13 in the space between them and the end of the casing and slide down onto the floor 26. (See Figs. 3, 4, 7, and 11.) The incline 24 is formed by means of a metal sheet or wooden plate arranged at an angle of thirty-five to forty-five degrees and is attached at its upper end to the front end 25 of the casing A, while its lower inner end rests upon the floor 26, and the latter is the top of a box or chamber 30. As shown, the slide 24 is arranged at one end of the space that separates the two segmental side water-heaters 12, and since the latter extend up to the front end of the casing it is obvious that they also form side slides upon which the chicks will pass down onto the said slide 24 in case they fall first upon such heaters instead of the central slide.

A space which serves as nursery or brooding-chamber for the newly-hatched chicks

lies between the top 26 of the heating-box 30, the sides of the casing A, and the lower portion of a multiple egg-tray and the side heaters 12.

The side doors 27 are narrow and extend the length of the casing A and are provided with glass panes 28, which admit light to the nursery. The doors are suitably secured in practice by means of buttons or other fastenings and may be opened to admit fresh air, when desired, and also for removing the chicks and for other purposes. Directly above the doors 27, the sides of the casing, Figs. 1 and 5, small openings 29 are provided for admission of air. The said openings are formed in a long narrow hinged flap or door 29^a, which may be opened, as shown by full lines on the right of Fig. 5, when it is desired to allow freer admission of fresh air than the openings 29 would permit. The floor 26 is preferably covered with chaff. The air-chamber 30 (see Figs. 4 and 5) receives heat from the lamp through the medium of the tube 31 and which is provided with an air-discharge tube 32 at the front end of the apparatus.

It will be understood that a current of heated air or unconsumed gases of combustion pass constantly into and through the chamber 30 when the apparatus is in use, and the top of the tube 4 (see Fig. 4) is closed by the damper. In other words, the chamber 30, with its end tubes 31 32, serves as a draft for the lamp when the tube 4 is closed. Thus the heat of the lamp not needed for heating the water in the reservoir C and the side drums 12 is utilized for the nursery proper and also equalizes the heat in the lower portion of the incubator proper. The separation or division between the edges of the water-heaters 12 allows free passage of heated air. The division of the heaters and their arrangement in the casing A facilitates their insertion and removal through the end door 23 of the casing. Their opposite ends are adjustably connected with the tubes 10 and 11, which are constructed of rubber or thin metal, and thus possess a due degree of flexibility.

It will be perceived that the chicks in the nursery, being entirely clear of the hatching-chamber, breathe air of a lower temperature and that the air may be freshened or renewed at will by the side doors 27, which also permit convenient removal of the chicks at any stage of the hatching process, while facilitating examination or feeding of the chicks, as may be required.

It will be understood that the chicks when hatched and dried will, as a rule, find their way to the front of the egg-holder without serious difficulty. If the chicks do not all come forward and drop into the nursery, they may be allowed to remain in the incubator until the hatching is complete.

In the drawings, Fig. 4, the wire cylinders are shown crowded to their full capacity; but in practice a single row of eggs within a cylinder will be the ordinary condition.

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

1. In an incubating apparatus, the combination with a casing and a fixed axle-support, 10 of a rotatable and removable egg-holder, comprising parallel disks rigidly connected and provided with corresponding openings and an axle to receive the said support, and a series of wire cylinders or egg-trays, having 15 one end closed and the other open and provided with a temporary detachable closure, the cylinders being arranged slidably in the support, as shown and described.

2. In an incubating apparatus, the combination with a casing and an axle fixed in one 20 end of the same and thus supported rigidly in the center, of a rotatable and removable egg-holder comprising circular supports and egg-trays therein, and a central axis adapted 25 to slide and rotate upon the said central support, substantially as described.

3. In an incubating apparatus, an egg-holder having a series of wire cylinders for 30 holding eggs, the same being open at one end and provided thereat with a rotatable closure which serves to retain the eggs in the cylinders, substantially as described.

4. In an incubating apparatus, the combination with an egg-holding tray made in cylindrical form and of flexible material and 35 constructed with one end open, of a closure or device for holding eggs in the cylinder, the same consisting of a bar hinged at one side of the cylinder and its free end projecting 40 through the opposite side and provided with a centrally-projecting portion, substantially as described.

5. In an incubating apparatus, an egg-holder comprising a flexible wire cylinder 45 having an open end provided with a device adapted for closing the same to prevent escape of eggs, and separated from the sides of the cylinder to allow space for passage of chicks, substantially as described.

50 6. In an incubating apparatus, an egg-holder comprising a flexible wire receptacle having an open end and a closure comprising a bar which is hinged at one side of the receptacle and its free end held normally in the 55 mesh on the opposite side, the end of the cylinder being compressible, whereby the said device may be released in the manner described.

7. In an incubating apparatus, the combination with an egg-holder having an open 60 end, of a device attached thereto and extending across the mouth of the holder, a space being left on the side of the device for passage of chicks, substantially as described.

65 8. In an incubating apparatus, a multiple-

cylinder egg-holder, comprising a rotatable frame or support having a central opening for the reception of an axle, and a series of wire cylinders held detachably in such support and arranged in a circle therein, substantially as described. 70

9. In an incubating apparatus, the combination with a casing having a circular end door, of segmental water-heaters arranged at 75 opposite points within the casing and made of less width than the diameter of the door-opening, substantially as described.

10. In an incubating apparatus, the combination with a casing and a water-heater, of 80 water-holders 12, made in segmental form and arranged within the casing at opposite points, and tubes connecting one end of the same with the water-heater proper at different heights on the latter, whereby a circulation of hot water is maintained in the hold- 85 ers 12, substantially as described.

11. In a combined incubator and nursery, the combination with the casing and combined water-holders and heaters arranged on 90 opposite sides of said casing interiorly, and spaced apart at their lower edges, of an egg-tray arranged between the said water-holders and heaters, and means for heating the bottom of the casing as shown and described.

12. The improved incubator and nursery 95 combined, the same comprising a casing, water-heaters arranged within the same and on opposite sides thereof, an egg-holder arranged between the said heaters, a heating box or chamber arranged in the lower portion of the 100 casing, its top forming the bottom of the chamber in which the egg-holder is located and the hatching occurs, a lamp and water-holder located exteriorly to the casing, tubes 105 connecting said water-holder with the water-heaters in the hatching-chamber and a tube extending from the lamp to the heating-box below the nursery, whereby heat from the lamp is utilized in the hatching-chamber and 110 for the bottom of the same, substantially as described.

13. The combination with the casing, of an egg-holder arranged therein, segmental water-heaters arranged below and laterally 115 from such egg-holder, and separated at their lower edges, a heat-receiving chamber arranged below the water-heaters, whereby the said heaters serve as slides upon which chicks may descend into the space between and below them, substantially as described. 120

14. The combination with the casing, an egg-holder arranged in its chamber, segmental water-holders arranged on opposite 125 sides of the egg-holder and separated at their lower edges, and a slide arranged at the front end of the casing below and intermediately of the water-heaters, and a heated box, whose top forms the bottom of the chamber containing the said water-holders, substantially as described. 130

15. The combination with the chambered casing and egg-holder therein, of a floor forming the bottom of the casing-chamber in which the egg-holder is located, the latter being spaced from the front end of the casing, and the ends of the egg-trays being open for passage of chicks, and a slide 24 arranged below the egg-holder and at the end of the casing and projecting inward and downward, whereby it is adapted to guide chicks upon the floor when escaping from the egg-holder, substantially as described.
- 5

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Witnesses:

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