

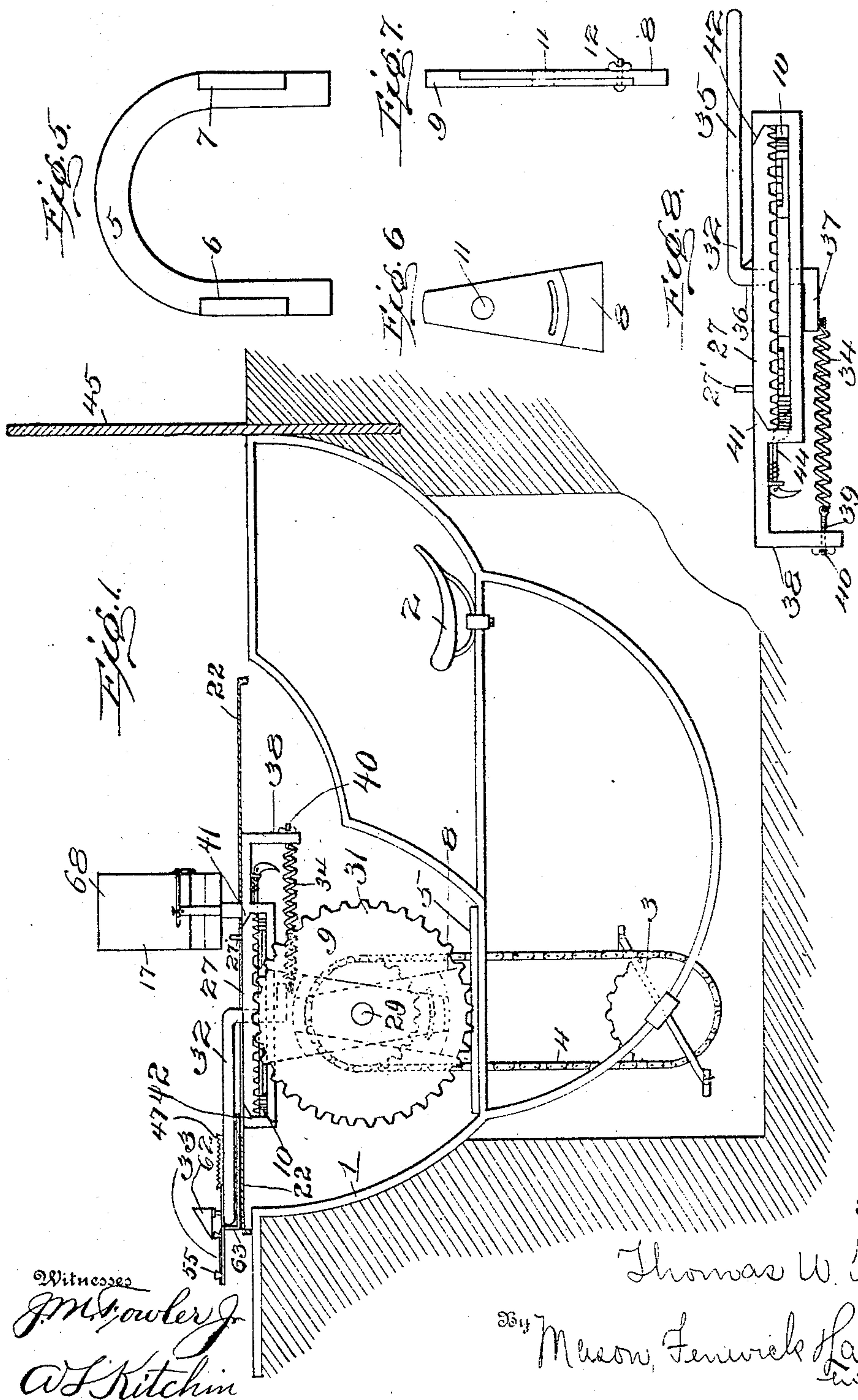
No. 880,219.

T. W. KAY.
PIGEON TRAP.

PATENTED FEB. 25, 1908.

APPLICATION FILED OCT. 19, 1906.

4 SHEETS—SHEET 1.



Witnesses
J. M. Fowler
W. L. Kitchen

Inventor
Thomas W. Kay
By
Mason, Fenwick Lawrence
Attorneys

No. 880,219.

PATENTED FEB. 25, 1908.

T. W. KAY.
PIGEON TRAP.

APPLICATION FILED OCT. 19, 1906.

4 SHEETS—SHEET 2.

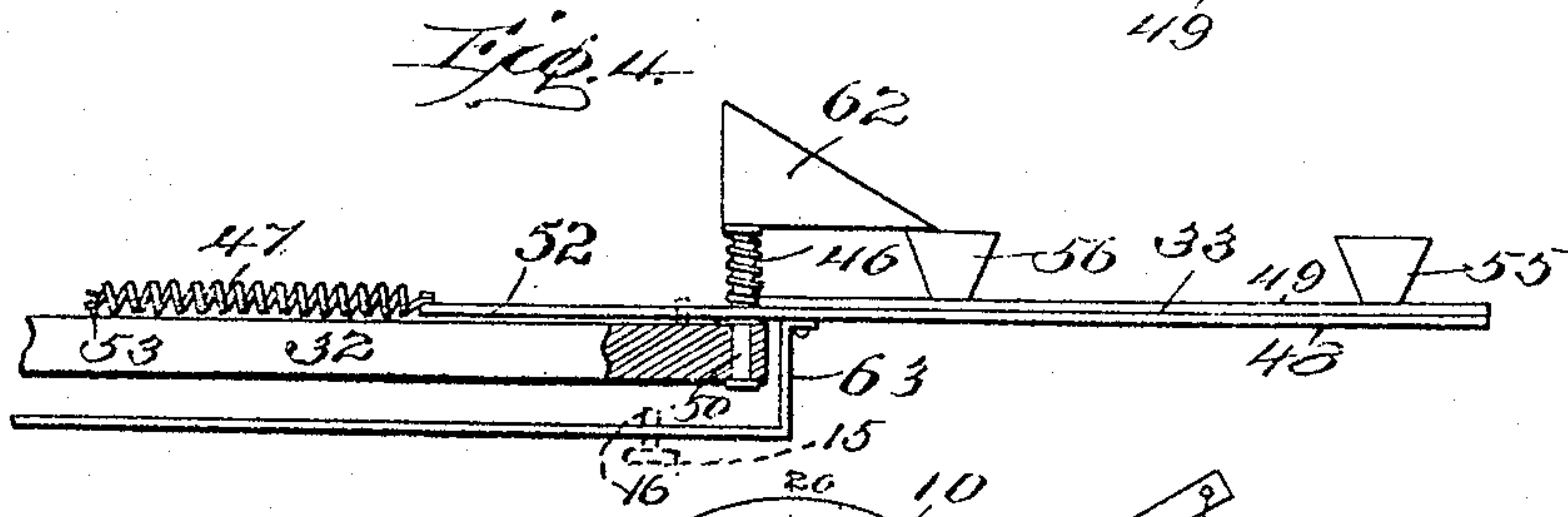
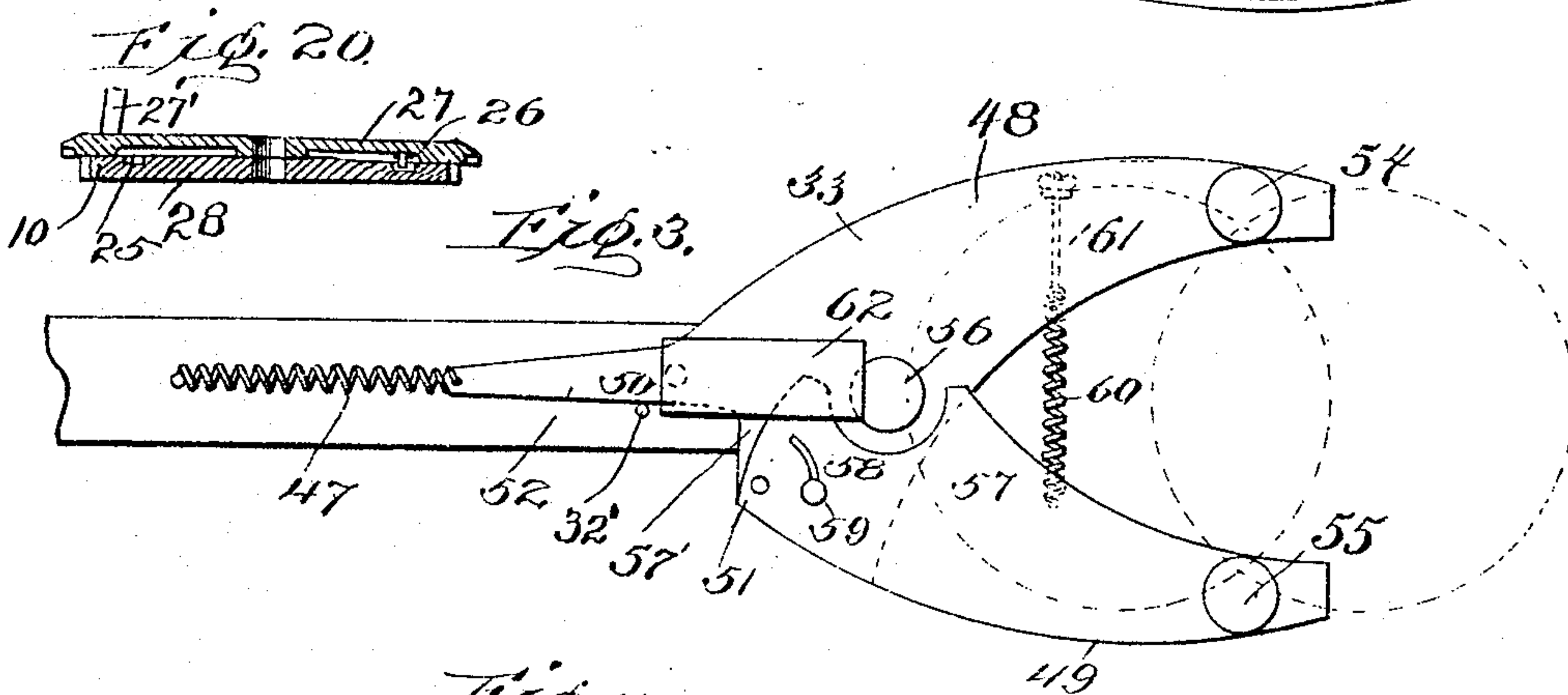
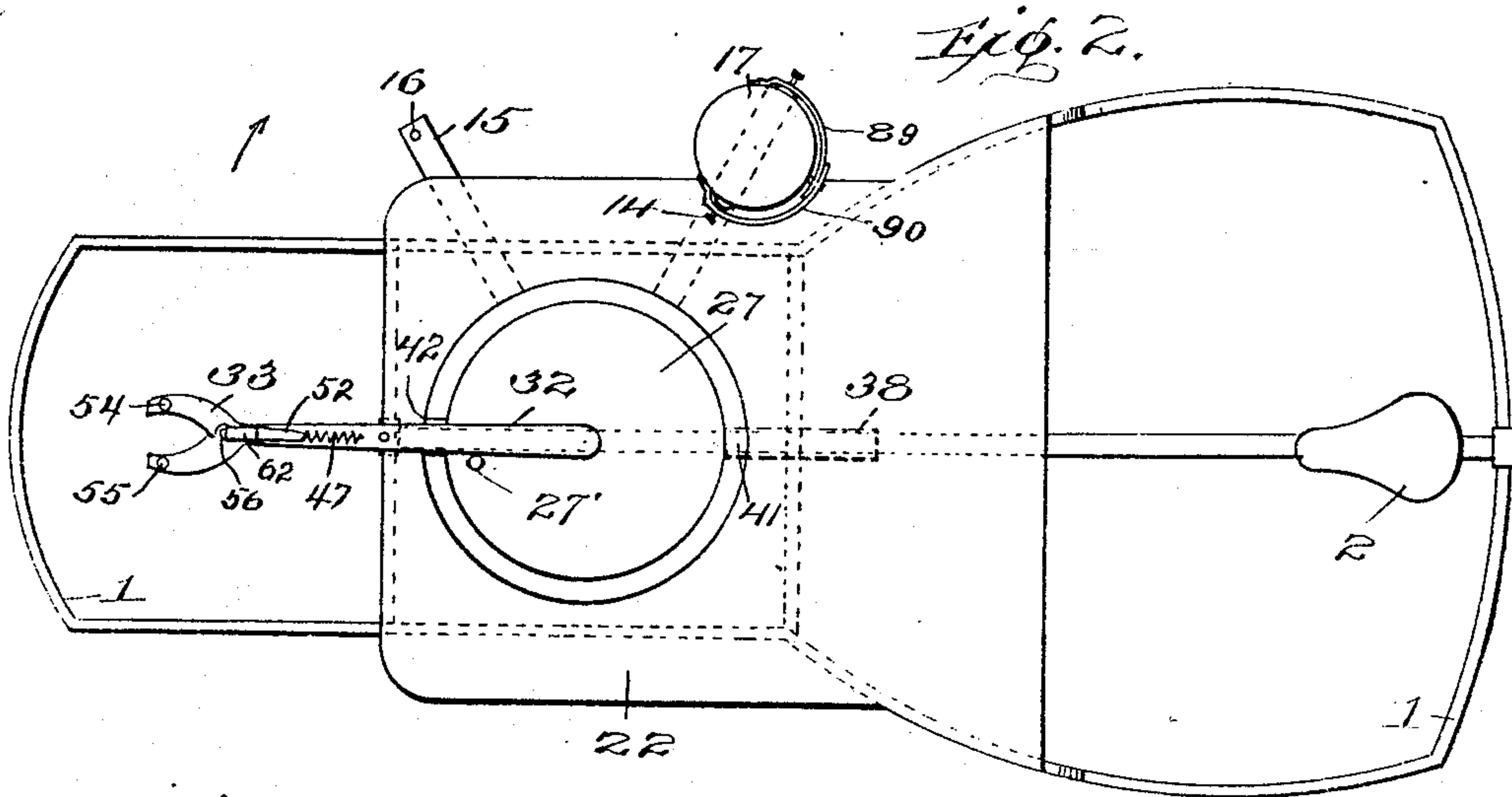


Fig. 19.

Inventor
Thomas W. Kay

Witnesses
J. M. Bowler
A. J. Kitchen

Mason, Fenwick Lawrence
his Attorneys.

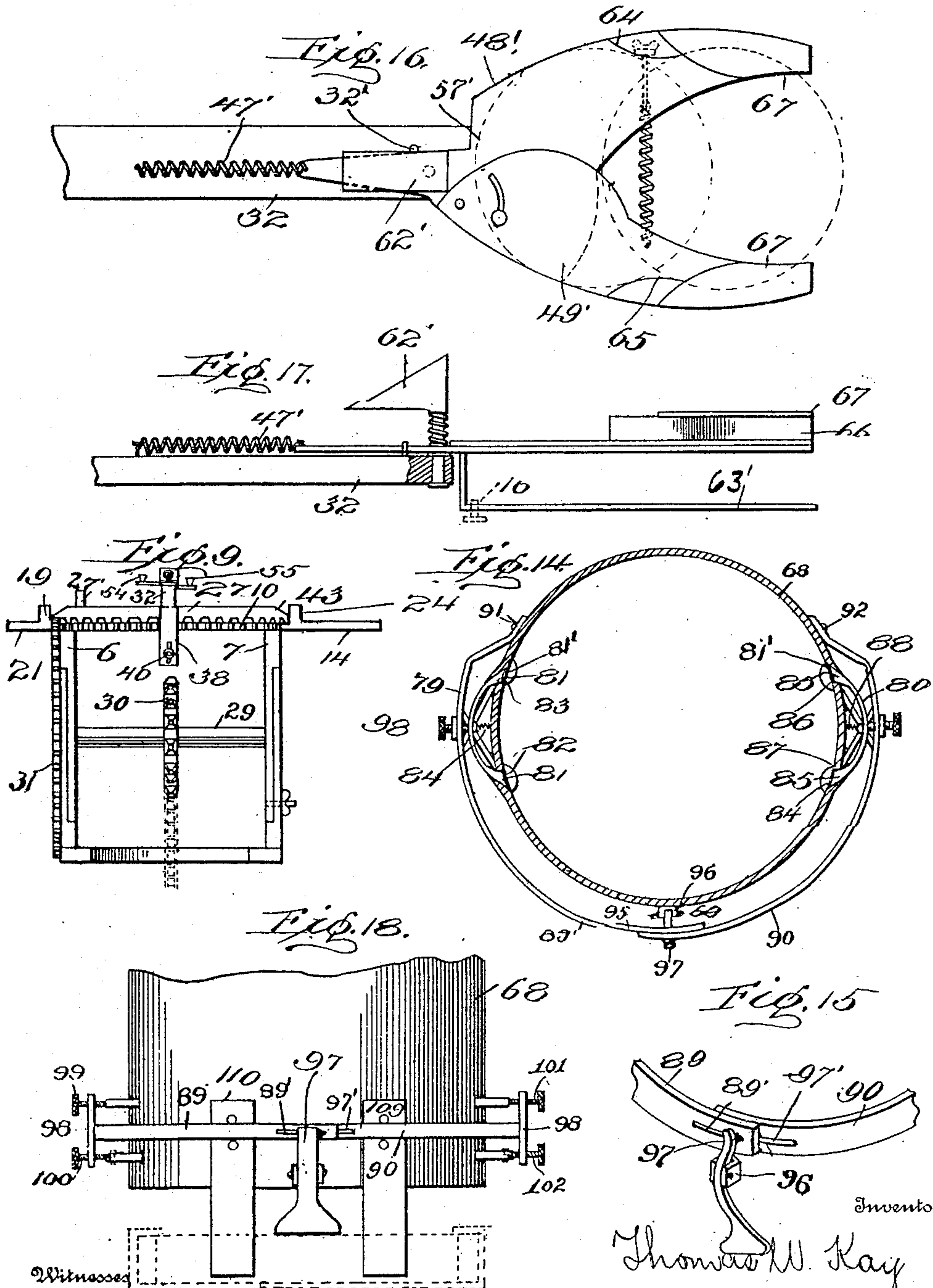
No. 880,219.

T. W. KAY.
PIGEON TRAP.

APPLICATION FILED OCT. 19, 1906.

PATENTED FEB. 25, 1908.

4 SHEETS—SHEET 3.



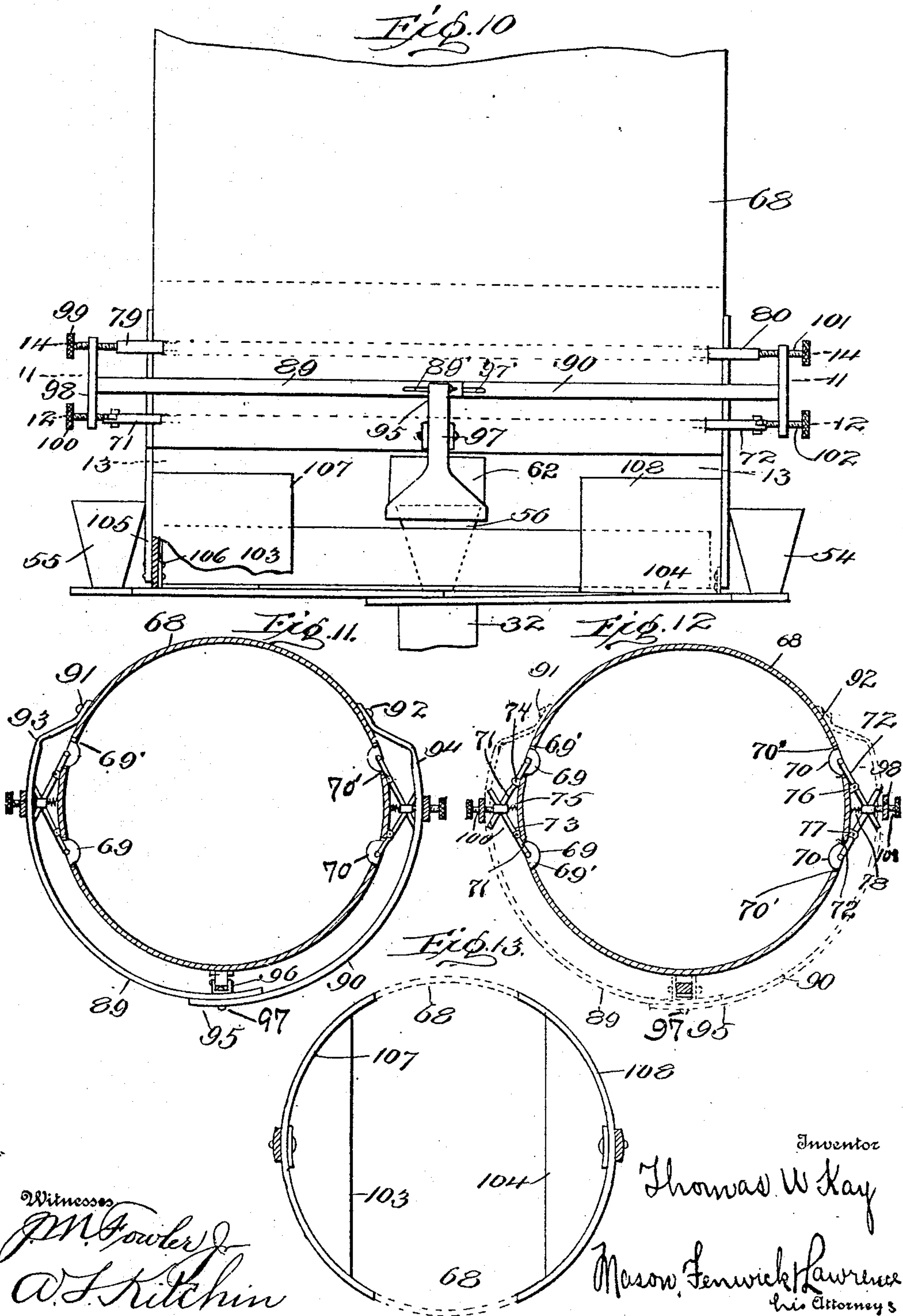
No. 880,219.

T. W. KAY.
PIGEON TRAP.

APPLICATION FILED OCT. 19, 1906.

PATENTED FEB. 25, 1908.

4 SHEETS—SHEET 4.



UNITED STATES PATENT OFFICE.

THOMAS W. KAY, OF SCRANTON, PENNSYLVANIA.

PIGEON-TRAP.

No. 880,219.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed October 19, 1906. Serial No. 339,711.

To all whom it may concern:

Be it known that I, THOMAS W. KAY, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Pigeon-Traps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in pigeon traps.

The invention comprises the production of a framework, pigeon throwing means mounted in said framework, and means for automatically feeding pigeons or targets to said throwing means.

The invention further comprises a framework, pigeon or target throwing means in said framework, means for feeding to said pigeon throwing means, and operating means for operating said pigeon throwing means.

The invention further comprises the production of a frame, pigeon throwing means mounted in said frame, means for continuously moving said throwing means, means for varying the angle at which said means is adapted to operate, and means for operating said throwing means.

The object in view is the production of a pigeon or target throwing device that is automatically provided with targets, and means for throwing the same at any angle.

Another object in view is the production of a pigeon throwing device having a continuously rotating arm, means for automatically feeding pigeons or targets thereto, means for changing the angle at which said arm is adapted to operate, and means for operating said arm.

With these and other objects in view, the invention comprises certain novel constructions, combinations and arrangements of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings;—Figure 1 represents a side elevation of my invention, shown in operative position. Fig. 2 is a top plan view of Fig. 1. Fig. 3 is a target carrying device forming a part of my invention. Fig. 4 is a side elevation of Fig. 3, certain parts being broken away to better disclose the invention. Fig. 5 is a supporting base member used in connection with my invention. Fig. 6 is one member of an upright

forming part of my invention, and showing a slot therein for adapting the same to be adjusted. Fig. 7 shows two sections of an upright secured together, the same forming a part of the present invention. Fig. 8 is a detail view of the throwing arm and surrounding parts used in connection therewith. Fig. 9 is a front elevation of the supporting members shown in Fig. 7, and surrounding parts used in connection therewith. Fig. 10 is an enlarged view showing the lower part of a pigeon or target magazine used in connection with and forming a part of the present invention. Fig. 11 is a section through Fig. 10 on line 11—11. Fig. 12 is a section through Fig. 10 on line 12—12. Fig. 13 is a section through Fig. 10 on line 13—13. Fig. 14 is a section taken through Fig. 10 on line 14—14. Fig. 15 is a detail, perspective, fragmentary view of the springs and lever for moving the same used in connection with the magazine. Fig. 16 is a top plan view of a slightly modified form of a carrier forming part of the present invention. Fig. 17 is a side elevation of Fig. 16, parts being broken away to better disclose the invention. Fig. 18 is a view of the lower end of the magazine forming part of the present invention, the same showing a plurality of springs for holding the pigeon in place. Fig. 19 is a plan view of a plate adapted to vary the angles at which the pigeons are thrown. Fig. 20 is a section on line 20—20 of Fig. 19, a revolving member and pawl being shown in connection therewith.

In the production of pigeon or target throwing devices, it has been found desirable to produce a device that will continuously operate and discharge pigeons or targets at predetermined intervals, and also to discharge them at various angles as may be desired. Various mechanisms have been provided to accomplish these results with more or less success, and it is to this class of devices that the present invention relates.

Referring more particularly to the drawings, 1 indicates a frame of any suitable material positioned in the earth so that the top is preferably on substantially the same horizontal plane as the surface of the earth. Secured to this frame in any suitable manner is a seat 2 upon which the operator sits and operates the driving mechanism 3, as will be clearly seen in Fig. 1 of the drawings. Motion is transmitted from the driving mechanism 3 to the various operating members by

2

any suitable mechanism, as chain 4. Mounted upon the frame 1 is a base or support 5, which has secured thereto, in any desirable manner, uprights 6 and 7. The uprights 6 and 7 are made in two parts, as 8 and 9, as clearly seen in Fig. 7 of the drawings. The portions 8 of the uprights 6 and 7 are rigidly secured in any convenient manner to the base 5 at the lower end preferably by being cast integral therewith, and the portions 9 are rigidly secured to a member 10, preferably by being cast integral therewith, the member 10 being preferably circular in contour. The parts 8 and 9 of the uprights 6 and 7 are pivotally mounted at 11, and are firmly secured together by suitable adjusting means, as a clamp or bolt 12. By thus having the upper portion 9 of the uprights 6 and 7 rigidly secured to or formed integral with the member 10, and the member 8 of the uprights 6 and 7 rigidly secured to or formed integral with the base 5, and having the same pivotally mounted at 11, permits the member 10 to be moved or tilted at any angle that may be desired in relation to the support 5. The support 5 is preferably rigidly secured to the frame 1 in a substantially horizontal plane, and the member 10 may be tilted or set at any desired vertical angle, as will be clearly seen in Fig. 1 of the drawings. When the member 10 has been set at any desired vertical angle the clamp or bolt 12 is screwed firmly in place and consequently holds the members 8 and 9 rigidly in place, which in turn firmly holds the member 10 at the desired angle. As will be evident when the member 10 is tilted all the mechanism connected therewith will also be tilted. This structure is provided so that the throwing arm, hereinafter more clearly described, which is carried by the plate 27 will be permitted to rotate at any desired angle, and consequently throw targets or pigeons in any direction.

The plate or member 10 has rigidly secured thereto or formed integral therewith, arms or projections 14 and 15. Upon arm 14 is mounted a magazine 17 for automatically feeding targets to the throwing mechanism, which will be hereinafter more fully described. Arm 15 is adapted to carry a pin 16, which is used for turning the carrier, hereinafter to be more fully described, in such a position as to readily grasp pigeons from the magazine 17. Arms 18 and 19 are also formed on plate 10, and have formed thereon uprights 20 and 21 upon which a plate 22 (Fig. 2) is adapted to rest. Projections 23 and 24 are also formed on extensions 14 and 15, and are also adapted to assist in supporting the plate 22. Formed on the plate 10 near the periphery thereof is a series of teeth or projections 25 which are adapted to be engaged by a pawl 26, pivotally mounted on the lower surface of the revolving plate

or member 27. The plate 10, as heretofore described, is held against any movement except tilting, and consequently when the rotating plate 27 is moved the pawl 26 engages the teeth 25, and consequently prevents any backward movement of the member 27. Formed at any convenient point around the periphery of the member 10 are notches as 28, for engaging the latch secured to the mechanism used in changing the angle of the horizontal throwing arm, to be hereinafter more fully described. The notches 28 are preferably formed only partially around the periphery of the member 10, at the quadrant nearest the operator.

Passing through the openings 11 is a shaft or journal 29 upon which is a sprocket wheel 30, which receives power from the operating means 3 through the chain 4. From the sprocket wheel 30 through the shaft 29 power is transmitted to the gear wheel 31 secured on one end of the shaft 29, and near the outside of the upright 6. The sprocket wheel 31 is adapted to rotate the disk or plate 27 which is mounted upon the substantially stationary member 10. Passing through a suitable aperture positioned centrally of plate 27 is a throwing arm 32. The arm 32 at one end is adapted to carry a pigeon or target carrier 33, and at the other end is connected to a spring 34.

As will be clearly seen from Fig. 8 of the drawings, the arm 32 is made with a comparatively long throwing portion 35, a short portion 36 acting as an axle upon which another member rotates the bent portion 36 being bent at a right angle to the portion 35, and a comparatively short portion 37 bent at right angles to the portion 36. Secured to the portion 37 is a spring 34 of any desired strength, and is secured to a guiding member or frame 38 at 39 by means of any suitable tensioning device, as bolt 40. The frame 38 is adapted to pass beneath the members 10 and 27 and has also slight projections 41 and 42 for slidably engaging the beveled portion 43 of the member 27. The portions 41 and 42 thus hold the member 27 in position for always engaging the teeth of gear wheel 31. Mounted upon the frame 38 is a latch 44 which normally engages the notches 28 of the member 10, but is adapted to be retracted, in order to permit movement of the frame 38 to a different position around the member 10. When the frame 38 is moved, the spring 34 and arm 32 is also moved therewith, and will continue to operate in their new position. This will cause the member 32 to throw the pigeons or targets at a different horizontal angle than when in the original position, as will be evident. By this structure the direction of the flight of the target or pigeon may be easily varied at any time, and to any degree. As heretofore described, when the angle is

changed at which the pigeon is desired to be thrown in relation to the surface of the earth, the member 10 is tilted or rocked for giving this angle. By these two adjustments any angle may be secured in any direction for the flight of any pigeon. As also will be evident, the changes in the angle, and the degree, and the direction of the flight of the pigeon may be made quickly, and if desired, changed for each pigeon or target.

When in operation, the operator sits upon the seat 2, as shown in Fig. 1 of the drawings, and is protected from any stray shots from those shooting by any suitable means, as a sheet of metal 45, placed near the operator. In operation the operator may actuate the device at any speed desired, and at the same time may easily change the various angles of the flight of the pigeons by simply moving the frame 38, or the angle of the member 10, or both.

Mounted in the same horizontal plane as the top surface of the member 27 is a plate 22 which is adapted for protecting the operator from the mechanism of the pigeon thrower, and also for catching any pigeons that might accidentally drop out of the carrier, to be hereinafter more fully described.

Pivotally secured to the outer end of the portion 35 of the throwing arm or member 32 is a pigeon or target carrier 33. As will be clearly seen from Figs. 3 and 4 of the drawings, the carrier 33 is pivotally mounted upon the arm 32 and is held securely in position by springs 46 and 47. The spring 47 is intended to normally hold the carrier 33 in such a position as to be substantially a continuation of the arm 32, and the spring 46 is adapted to firmly hold the carrier against the arm 32 so as to be always in position for operation. The carrier 33 is provided with a pair of jaws 48 and 49. The jaw 48 is pivotally secured at 50 to the arm 32, and the jaw 49 is pivotally secured to the jaw 48 at 51. The jaw 48 is formed with an extension 52, Figs. 3 and 4, which is adapted to engage the spring 47 for normally holding the same in the position shown in Fig. 3. The spring 47 is secured in any suitable manner to the arm 32 at 53. Secured to the jaws 48 and 49 are rubber projections 54, 55 and 56, preferably conical in shape. As will be seen in Fig. 3 of the drawings, the jaw 49 is made with a cutout portion 57 for permitting the jaw to allow the projections 54 and 55 to come in proximity to each other. A slot 58 is also formed in the jaw 49 for accommodating a bolt or rivet 59, which has provided on one end thereof an enlarged head. The bolt 59 operating in the slot 58 securely holds the jaw 49 in position, but permits the same to freely move on the pivot 51. Secured to the jaw 49 is a spring 60 which in turn is secured to an adjusting bolt 61 mounted upon the jaw 48. By means of the adjusting bolt 61

the spring 60 may be given any tension, and consequently the jaws 48 and 49 may be regulated to grasp the pigeon or target at any desired pressure. Mounted upon the pivot 50 is a wedge-shaped member 62 that is adapted to operate the magazine 17, to be hereinafter more fully described.

When the arm 32 is operated and in its movement passes the lug 16 on extension 15, a strip or bar 63 engages the lug 16 and as the arm 32 continues to move, turns the carrier from a position that is substantially a continuation of the arm 32, to a position that is substantially at right angles thereto, so as to have the outer ends of the jaws 48 and 49 squarely strike the magazine 17. As the rubber projections 54 and 55 on the carrier 33 strike the magazine 17, they will be opened or spread apart, and as the arm 32 continues to move will gradually pass around the periphery of the magazine 17, but the projection 56 will pass directly through the center of the lower part of the magazine 17, as will be clearly seen in Fig. 10 of the drawings. By thus forcing the projection or member 56 directly through the center of the magazine 17, a pigeon or target will be forced therefrom and grasped between the members 54, 55 and 56. After the members 54 and 55 are out of contact with the periphery of the magazine, the spring 47 will return the carrier to its original position in line with the arm 32. After the carrier has received a pigeon and taken its original position it will continue to travel being pushed by pin 27' on rotating plate 27 until the portion 37 of the arm 32 has passed the center of the line between the portion 36 and the securing bolt 40. When it has passed this position, the spring 34 which has been brought under tension will contract and quickly swing the portion 35 of the arm 32 around to its starting point, and as it swings the arm to its starting point it at the same time releases the pigeon. The upright 27' is rigidly secured to rotating plate 27 and is carried thereby and in its travel catches the arm 32 and brings it around until it passes the center and then follows the arm as plate 27 rotates until the arm 32 is again picked up and rotated while the spring 34 is put under tension again.

Figs. 16 and 17 show a slightly modified form of carrier that is adapted to be used in connection with my throwing arm and magazine. In the modification shown in Figs. 16 and 17, a pair of jaws 48' and 49' is formed and secured in position in substantially the same way as the first structure shown in Figs. 3 and 4. In the modification, however, the rubber projections, or members 54, 55 and 56 are not used, but instead a pair of springs 64 and 65. Upon each jaw is formed a short wall or member 66, and a securing plate 67. Beneath the securing

plate 67 are located the springs 64 and 65, which are adapted to grasp the pigeon or target as the carrier passes beneath the magazine 17. Secured to the jaw 48' is a strip or bar 63' which is adapted to engage the lug 16, and will consequently turn the carrier at right angles to the arm 32, but in such a position that the wedge-shaped member 62' will engage the magazine 17 before the outer ends of the carrier. As the wedge 62' passes through the lower part of the magazine 17 it will cause a pigeon or target to drop down upon the jaws 48' and 49' and thereafter be forced between the springs 64 and 65 by mechanism to be hereinafter more fully described. After the carrier has received the pigeon and passed beyond the magazine 17 it will resume its normal position through the action of the spring 47'.

A pin 32' is placed on the outer end of the arm 32 and is adapted to engage a notched-out portion 57' formed in jaw 48'. When the carrier turns to be forced beneath the magazine 17 the notched portion engages the pin 32' and prevents the carrier from turning too far but is so positioned as to hold the carrier firmly in line for receiving the pigeons.

Referring more particularly to Figs. 10, 11, 12 and 13, a structure is seen which is adapted to feed or discharge pigeons or targets into the carrier carried by the arm 32. A tank 68 of any desired height is provided. The tank 68 is made of sufficient diameter to permit an ordinary clay pigeon to fit loosely therein. The tank 68 is not provided with a bottom, and pigeons contained therein are normally held from dropping down by means of projections 69—69 and 70—70 that are operated by levers 71 and 72. The projections 69—69 being adapted to move in apertures 69'—69', and the projections 70—70 being adapted to move in apertures 70'—70'. The levers 71 are fulcrumed at 73 and 74 so as to permit the projections 69—69 to be moved from beneath the pigeons when pressure is exerted on the levers 71 at their point of crossing. A spring 75 is positioned between the point of crossing of the levers 71 and the tank 68 for normally holding projections 69—69 beneath the pigeons or targets in the tank 68. The levers 72 are also fulcrumed at 76 and 77 for allowing the projections 70—70 to be moved from beneath the pigeons when pressure is applied at the point of crossing of the levers 72. A spring 78 is positioned at the point of crossing of the levers 72 for normally holding the projections 70—70 beneath the pigeons or targets contained in tank 68. Positioned above the levers 71 and 72 are another set of devices that act in a somewhat similar manner, but in substantially a reversed direction. The devices just mentioned are positioned the distance of one and one-half pigeon above the

levers 71 and 72, and are provided with flat spring members 79 and 80. Secured to the ends of the spring 79 are a pair of wedge-shaped members 81—81, which are adapted to reciprocate through apertures 82 and 83. A spring 84 is used to normally hold the spring member 79 in such position as to keep the wedge-shaped members 81—81 from projecting into the tank 68. Positioned opposite the spring member 79 is another spring member 80 which has secured to the end thereof wedge-shaped members 85—85. The wedge-shaped members 85—85 are adapted to reciprocate through suitable openings 86 and 87. A spring 88 is provided for normally keeping the wedge-shaped members 85—85 retracted or out of the path of the movement of the pigeons that are contained in the tank 68.

The projections 69—69 and 70—70 are normally adapted to hold the pigeons contained in tank 68 in position, but when it is desired to permit the lower pigeons to drop down or be fed into the carrier, heretofore described, the levers 71 and 72 are operated for removing the projections 69—69 and 70—70, and at the same time the wedge-shaped members 81—81 and 85—85 are forced inward against the next lowest pigeon in the manner of a wedge, and consequently will support all the pigeons in the tank 68, except the bottom one, which drops down as soon as the projections 69—69 and 70—70 are entirely removed from the interior of the tank 68. In order to more firmly wedge or grasp the pigeon a rubber shoe or cushion 81' is placed on the wedges 81 and 85. In order to accomplish the removal of the projections 69—69, a pair of leaves 89 and 90 are positioned so as to almost entirely surround the tank 68. The leaf 89 is secured at 91 to the tank 68, and the leaf 90 is secured to the tank 68 at 92. The leaves 89 and 90 are bent outwardly from their securing points 91 and 92, and then inwardly again at 93 and 94 where they are made slightly thinner for allowing a spring or hinge motion, and are then brought around to the front and slidably secured together at 95. A lever 97 is pivotally mounted in a pair of ears 96 formed on the surface of the tank 68. Secured to the leaf 89 is a cross-arm 98 which has mounted in the end thereof adjusting members, 99 and 100 respectively. The adjusting member 99 is adapted to normally rest against the spring member 79, and the adjusting member 100 is adapted to normally rest against the cross arms 71. When the adjusting members 99 and 100 are in their correct position for operation, and the leaf 89 is also in correct position for operation, the adjusting members 99 and 100 are resting against the members 79 and 71, so that any movement of the leaf 89 will be communicated to the members 79 and 71. Positioned opposite the

members 99 and 100 are adjusting members 101 and 102 and surrounding mechanism, the same in every respect as the adjusting members 99 and 100 and surrounding mechanism, and, therefore, they need no further description. The leaf 90 is adapted to operate the adjusting members 101 and 102 and surrounding mechanism in the same manner as the leaf 89 is adapted to operate the adjusting members 99 and 100 and surrounding mechanism.

In operation when the carrier 33 is passed beneath the tank 68, the wedge-shaped member 62 carried thereby will contact with the lever member 97 and raise the lower end thereof, the upper end resting against the levers 89 and 90 at the point of crossing, and pressing the same toward the tank 68. When the lower end of the lever 97 is thus moved outward, the leaves 89 and 90 are also moved inward, and the point at which they are connected with the adjusting members 99 and 100, and 101 and 102, will be moved inwardly which, as will be evident, will move the wedge blocks 81—81 and 85—85 into the tank 68 against the next to the lowest pigeon, thus preventing the movement of all the pigeons, except the lowest one, that are contained in said tank, and at the same time will act on the levers 71 and 72, and move the projections 69—69 and 70—70 out of the path of movement of the lowest pigeon and permit the same to drop. By this means when the block 62 on the carrier 33 moves the lever 97, a pigeon or target will be dropped downward and rest upon a pair of supports 103 and 104, as will be clearly seen in Fig. 10 of the drawings. The support 103 is secured to an upright 105 at 106. An arc shaped spring member 107 is also secured to the upright 105 at 106. The spring 107 is adapted to hold the pigeon that has been dropped down upon the supports 103 and 104 in place until the extension or member 56 has forced the pigeon outward, and the same has been grasped by the members 54 and 55 carried by the carrier 33. The spring 107 is only secured at one point, as 106, so as to permit the end to freely give as the pigeon is forced from the supports 103 and 104. Another spring 108 is provided to act in the same relation to the support 104 as the spring 107 does to support 103, and, therefore, needs no further description. By thus providing supports 103 and 104 and spring retaining members 107 and 108, a pigeon may be dropped from the magazine and held in readiness to be grasped by the carrier when the carrier passes beneath the magazine. Upon the first revolution of the arm 32 carrying the carrier 33 with its wedge-shaped member 62, it will operate the levers 97 and connecting mechanism, and drop one pigeon down upon the supports 103 and 104, but will not receive a pigeon or target between

the members 54, 55 and 56. Upon its second revolution, however, it will grasp the pigeon dropped during the first revolution and carry it forward and throw it at any desired angle. As it grasps the pigeon that has been first dropped, the wedge members 62 will again operate the lever 97 and connecting mechanism, and drop another pigeon upon the supports 103 and 104 just after the former pigeon has been removed therefrom by the carrier 33. As the arm and carrier continues to revolve the pigeons will be grasped by the carrier and removed from the supports 103 and 104, and new pigeons fed downward on said supports to be ready for feeding into the carrier 33. This action will be continued as long as the device is operated, and the tank 68 is provided with pigeons or targets.

In Fig. 18 will be seen a slightly modified form of means for holding the pigeon that has been dropped from the magazine until the carrier has grasped the same. In this modification the pigeon is directly dropped upon the jaws of the carrier as the same pass beneath the magazine 17, and is held from accidental movement by a pair of springs 109 and 110. In this modification, the modified form of carrier, as shown in Figs. 16 and 17, is preferably used. When the carrier, shown in Figs. 16 and 17, is used, the rod or member 63' will revolve the carrier in such a direction as to permit the arm 32 to pass beneath the magazine 17 before the jaws of the carrier passed through, and consequently the wedge-shaped member 62' will engage the lever 97 before the carrier has passed beneath the tank 68. As soon as the wedge-shaped member 62' has operated the member 97 and connecting mechanism, a pigeon will be dropped downward, as above described. However, instead of the pigeon dropping down upon the supports 103 and 104, it will drop directly down upon the carrier, and as the carrier continues to move beneath the tank 68, the springs 109 and 110 will resist movement of the pigeon until the same has been forced between the springs 64 and 65 of the carrier shown in Figs. 16 and 17 of the drawings. When the pigeon has been forced in between the springs 64 and 65 it will resist the action of the springs 109 and 110, and consequently be moved from beneath the tank 68 and carried around with the arm 32 and thrown in the manner above described. From this it will be seen that in the modified form the pigeon is fed directly upon the carrier and forced into the gripping portion thereof, while in the preferred form it is dropped upon supports, and the carrier comes by and grasps the same.

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

1. A target trap comprising a primary

frame, an auxiliary frame mounted in said primary frame, a rotating plate mounted on said auxiliary frame, a pivotally mounted frame partially inclosing said plate and holding same in position, means for rotating said plate, a rotating arm passing through said plate and adapted to be partially rotated by said plate, a spring for continuing the rotation of said plate at an accelerated speed independent of said plate, and means for changing the tension of said spring.

2. A device of the character described, comprising a rotating arm, means for supporting said arm, means for partially rotating said arm, a spring for completing the rotation of said arm at an accelerated speed, a framework partially surrounding said arm rotating means and movably supported thereby, said frame and said spring being connected, and means permitting the variation of the position of said frame and said spring whereby the angle of the discharge of a target from said arm will be varied.

3. A device of the character described comprising a rotating target throwing arm, means for supporting the same in position, means for partially rotating said arm, a spring for completing said rotation at an accelerated speed, means for varying the tension of said spring, and an adjustable pivotally mounted frame inclosing the arm-rotating frame and holding the latter in position, and formed with a spring supporting arm for holding said frame in correct position.

4. A device of the character described, comprising a primary frame, an auxiliary frame, said auxiliary frame comprising a stationary support and a pivotally mounted support secured to said stationary support, a plate mounted on said pivotally mounted support having notches formed therein on the periphery thereof, a target throwing arm passing through said plate, means for adjusting the angle at which said target throwing arm is adapted to throw the target, and means carried by said adjusting means for engaging the notches in said plate.

5. A device of the character described, comprising a primary frame, an auxiliary frame mounted therein, said auxiliary frame comprising a base, supports, and a plate mounted on said supports, said plate having formed therein on one side thereof a plurality of notches means for engaging the notches and holding the plate in position, a target throwing arm mounted in said auxiliary frame, a rotating member mounted on said plate for partially rotating said arm, means mounted between said rotating member and said plate for preventing said rotating member from revolving backward, and means for completing the rotation of said arm at an accelerated speed.

6. A device of the character described

comprising a primary frame, an auxiliary frame mounted therein, a stationary plate carried by said auxiliary frame and formed with notches on one side thereof, a rotating member provided with beveled upper edges mounted on said stationary plate, a pivotally mounted frame partially inclosing said rotating member, lugs on said pivotally mounted frame for engaging the beveled portion of said rotating member, a pawl pivotally mounted on said rotating member, said pawl engaging the notches in said stationary member for preventing rearward motion of said rotating members, a target throwing arm mounted in said rotating member for partially rotating said arm, and means for completing the rotation of said arm.

7. A device of the character described, comprising a frame, a target throwing arm mounted in said frame, means for actuating said arm, and a target carrier pivoted on the end of said arm, said carrier comprising a plurality of jaws, means for normally holding said jaws as a continuation of said arm, means for gripping a target between said jaws, and a bar for turning said carrier at right angles to said arm for receiving a target.

8. A device of the character described, comprising a target throwing mechanism, a carrier mounted thereon, and an automatic feeding mechanism for placing targets on said carrier, said mechanism comprising a receptacle for containing targets, a plurality of supports for sustaining said targets in said receptacle, operating members partly encircling the receptacle, an arm at one end of each of said operating members, target holding devices secured to the upper ends of said arms, target holding devices secured to the lower ends of the arms, the latter holding devices being released when the former are operated.

9. A device of the character described, comprising a target throwing mechanism, a carrier mounted on said mechanism, and an automatic actuated magazine for feeding targets to said carrier, said magazine comprising a receptacle for containing targets, means for supporting said targets in said receptacle, a lever and spring for actuating said supports, said lever being actuated by said carrier, means for permitting one of said targets contained in said receptacle to drop down from said receptacle, a support for holding said target in the path of movement of said carrier, and means for preventing accidental displacement of said target.

10. A device of the character described, comprising a target throwing mechanism, a carrier mounted on said mechanism, and means for feeding targets to said carrier, said means comprising a receptacle, means adapted to be operated by said carrier for holding the targets successively before they

are discharged, means adapted to be operated by said carrier for permitting one of said targets to leave said receptacle, adjusting means for varying the action of said mechanism for permitting a target to leave said receptacle, and a plurality of supports for sustaining said target in the path of movement of said carrier after the same has left said receptacle.

10 11. In a device of the character described, a frame, a target throwing arm pivoted in said frame, means for actuating said arm, and a target carrier mounted on the end of the arm, said carrier comprising a plurality

of jaws, means for normally holding said jaws as a continuation of said arm, means for gripping a target between the jaws, a device on the arm for releasing targets from a receptacle, and a bar for turning said carrier at right angles to said arm for receiving a target. 15 20

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS W. KAY.

Witnesses:

W. W. BAYLOR,
J. M. SHEFFIELD.