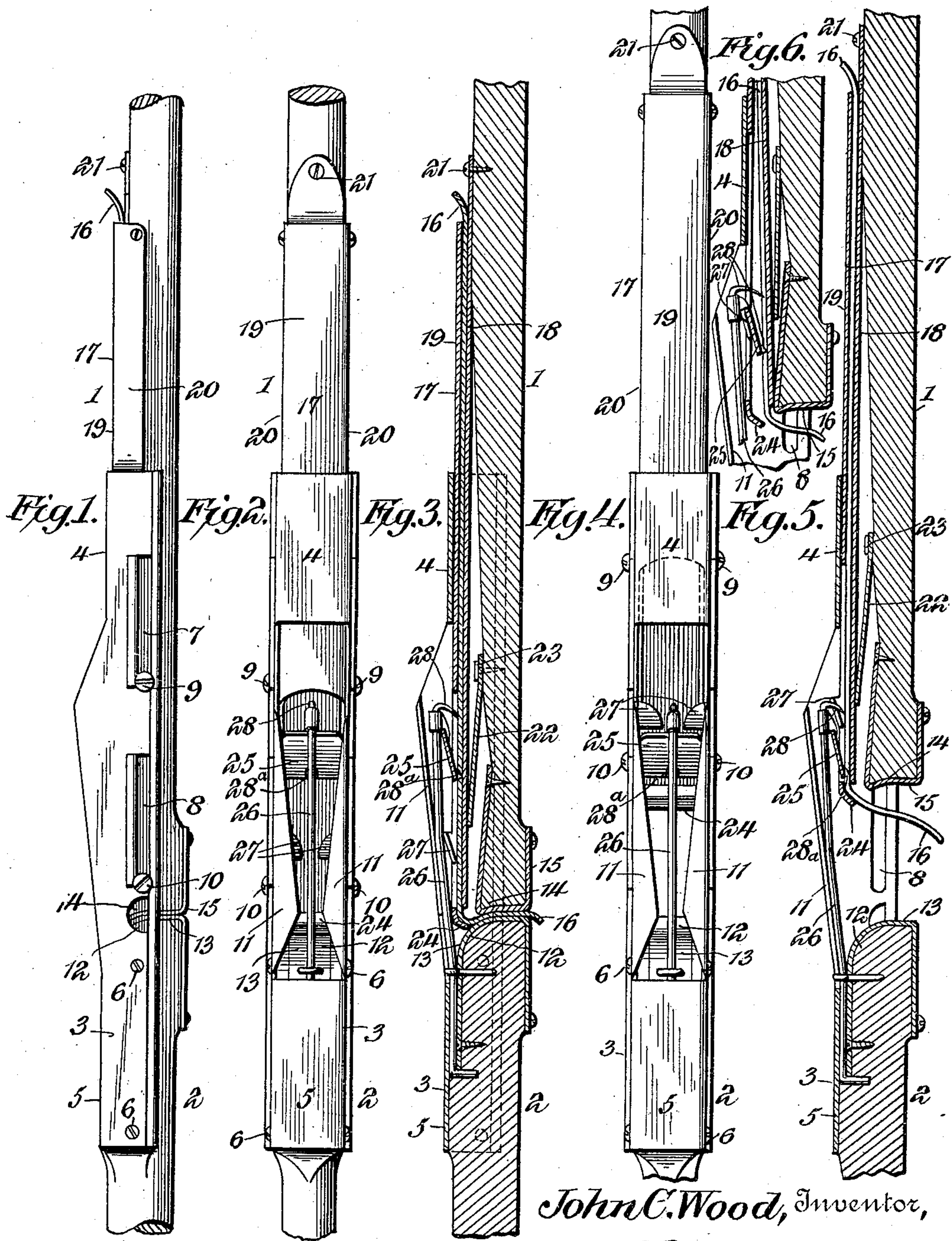


No. 840,983.

PATENTED JAN. 8, 1907.

J. C. WOOD.
DETONATING TOY.
APPLICATION FILED JUNE 18, 1906.

2 SHEETS—SHEET 1.



John C. Wood, Inventor,

Witnesses
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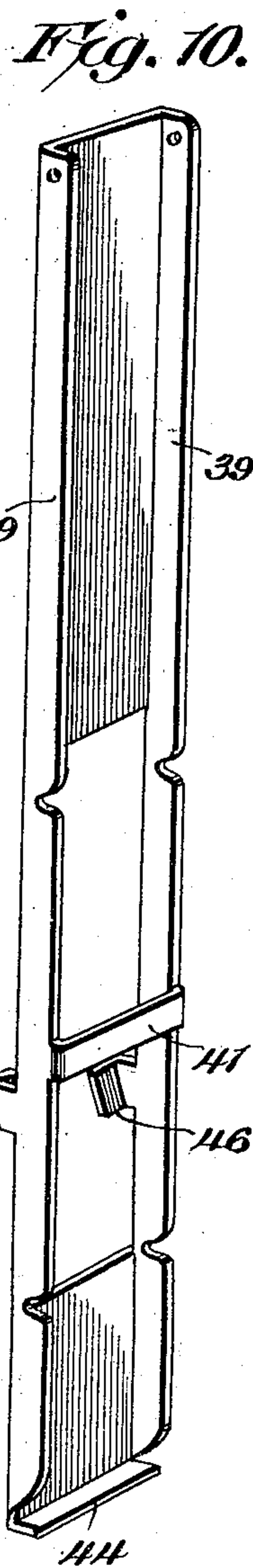
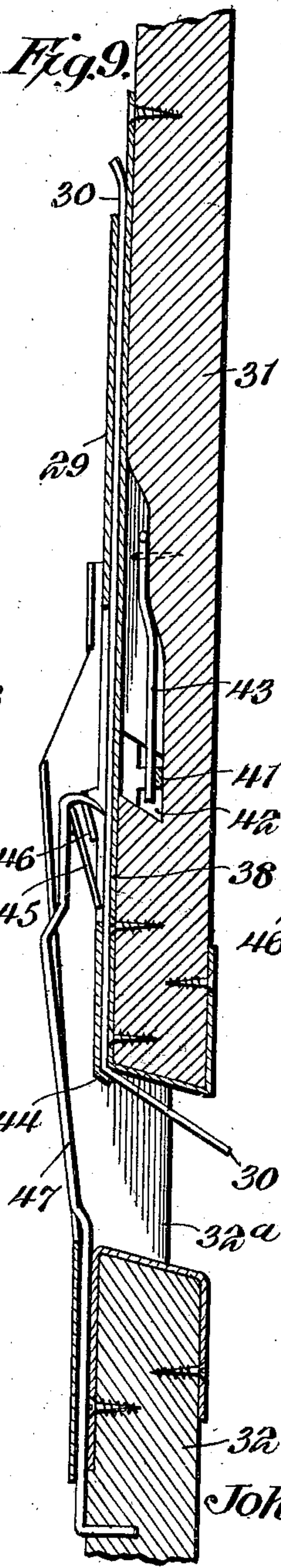
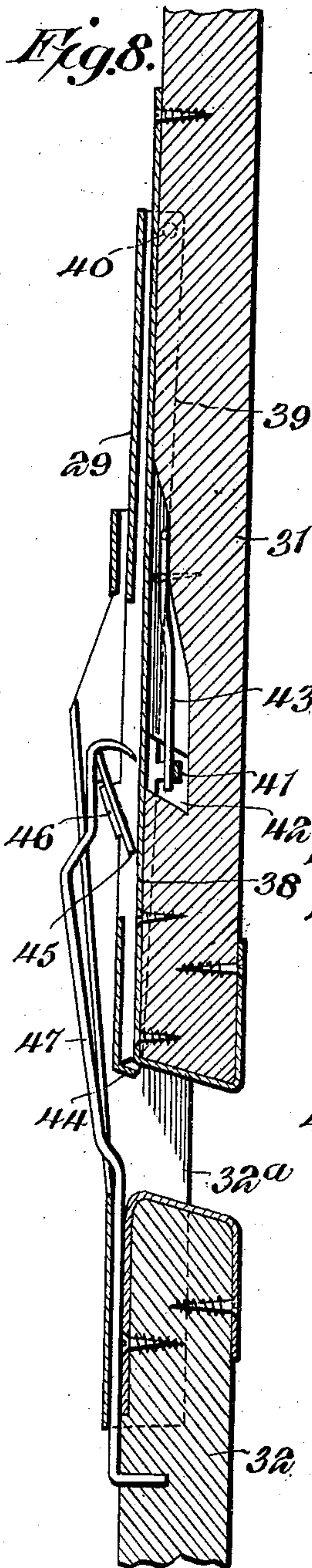
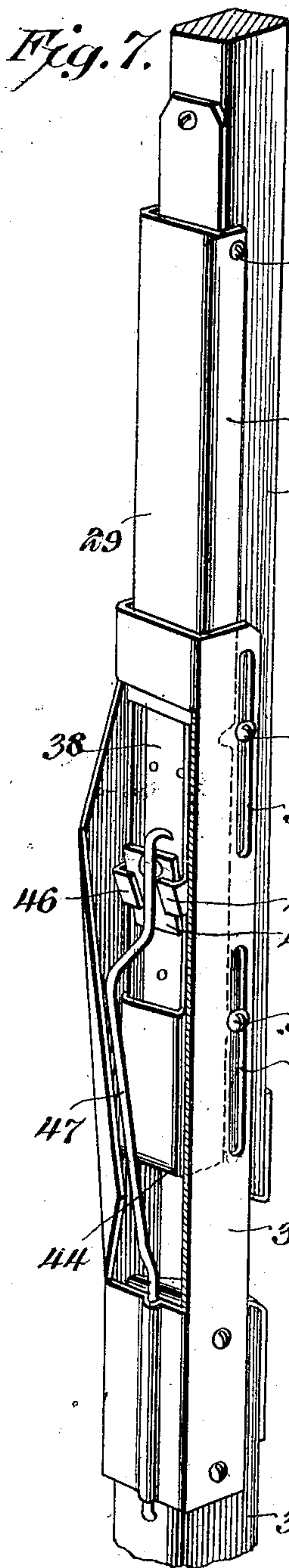
Attorney

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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DETONATING TOY.

No. 840,983.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed June 18, 1906. Serial No. 322,262.

To all whom it may concern:

Be it known that I, JOHN C. WOOD, a citizen of the United States, residing at Portsmouth, in the county of Scioto and State of Ohio, have invented a new and useful Detonating Toy, of which the following is a specification.

The invention relates to improvements in detonating toys.

The object of the present invention is to improve the construction of detonating toys and to provide a simple, inexpensive, and efficient toy cane composed of two sections or members movable toward and from each other for exploding successively a strip or ribbon of paper or other percussion-caps and capable of automatically feeding the caps between the sections or members.

A further object of the invention is to provide a device of this character having means for automatically preventing any back flash from entering the magazine and igniting the strip or ribbon.

With these and other objects in view the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of a portion of a toy cane constructed in accordance with this invention, the sections being at the limit of their inward movement. Fig. 2 is a front elevation of the same. Fig. 3 is a longitudinal sectional view, the parts being arranged as shown in Figs. 1 and 2. Fig. 4 is a front elevation, the sections or members being separated. Fig. 5 is a longitudinal sectional view, the parts being arranged as shown in Fig. 4. Fig. 6 is a detail sectional view illustrating the manner of feeding the strip of caps and showing the cap-engaging dog arranged beneath the inclined or angularly-disposed guides and engaging the strip. Fig. 7 is a perspective view of a portion of a toy cane, illustrating a modification of the invention, in which the outer or front wall of the magazine

is yieldingly mounted for clamping the strip of caps to prevent the back flash from igniting the caps within the magazine. Fig. 8 is a longitudinal sectional view, the feeding-dog being in engagement with the opposite guides of the magazine for moving the yieldable front wall outwardly to free the strip during the feeding operation. Fig. 9 is a similar view, the yieldable front wall being in engagement with the strip. Fig. 10 is a detail perspective view of the pivotally-mounted yieldable front wall of the magazine.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 and 2 designate upper and lower sections of a detonating toy cane. These sections are slidably connected by means of a longitudinal casing 3, which is fixed to the lower section 2 and which is slidably connected with the upper section 1 of the cane. The casing is composed of two sides and transverse connecting end portions 4 and 5, which are located at the upper and lower sections, as clearly illustrated in Figs. 2 and 4 of the drawings. The lower portions of the sides of the casing are secured by screws 6 or other suitable fastening devices to the sides of the lower section of the cane. The sides are also provided with upper and intermediate longitudinal slots 7 and 8, which receive screws 9 and 10 or other suitable fastening devices, whereby the upper section 1 of the cane is slidably connected with the casing. The intermediate portion of the longitudinal casing is open between the upper and lower transverse portions 4 and 5, and the intermediate portions of the sides extend outwardly beyond the sections of the casing to receive the feeding mechanism hereinafter explained, and they are provided with inwardly-extending tapering flanges 11. The upper end of the lower section 2 of the cane is rounded and when constructed of wood will be provided with a metallic strip 13, which is arranged on the rounded end of the lower section and which extends along the front and rear faces of the section 2 and is suitably secured to the same. By this construction the lower end 14 of the upper section is slightly recessed and curved to present a concave face, which conforms to the configuration of

the upper end of the lower section and which is covered by a metallic strip 15, arranged on the lower end and the front and rear portions of the front and rear faces of the upper section and suitably secured to the same. These metallic strips form cap-engaging faces and are adapted to explode the caps of the strip 16, which is fed into the space between the sections when the latter are separated and which is exploded by forcibly bringing the sections together.

The strip 16 is arranged in a magazine 17, which extends longitudinally of the upper section of the cane, and the said magazine is composed of an inner or rear wall 18, an outer or front wall 19, and side walls 20, formed integral with the outer or front wall and rigidly secured to the upper section 1 of the cane. The magazine is substantially oblong in cross-section, and the front wall is cut away at the lower portion to expose the strip or ribbon of the caps to the feeding mechanism hereinafter explained. The inner wall of the magazine is secured at its upper end 21 to the upper section of the cane, and its lower portion is yieldably mounted and is engaged by a spring 22. The spring 22, which extends longitudinally of the upper section 1 of the cane, is secured at its upper end 23 to the same by means of a screw or other suitable fastening device, and the lower end of the spring is free and engages the rear wall of the magazine. The magazine is provided at its lower end with a transversely-disposed guide 24, which has a downwardly and inwardly inclined lower portion for guiding the strip or ribbon inwardly into the space between the contiguous ends of the sections of the cane. The transversely-disposed guide is preferably formed integral with the sides of the magazine and is located at the lower end of the inner wall. The rear wall, which is spring-actuated, is adapted to force the strip or ribbon against the guide 24, and it thereby closes the lower end of the magazine and prevents any back flash from igniting the strip or ribbon.

The strip or ribbon is fed by a yieldably-mounted substantially rectangular dog or member 25, which is secured to one end of the spring 26 and which is set at an angle or inclination, as clearly illustrated in Figs. 3 and 5 of the drawings. The spring consists of a piece of spring-wire or other resilient material, and it extends longitudinally of the cane, its lower end being secured to the lower member and its upper end being connected to the feeding-dog. The sides of the magazine are provided at the open portion of the casing with opposite guides 27, which are set at an angle or inclination and which are spaced apart to provide a passage for the spring. When the sections are separated, the feeding-dog is moved downward from the position shown in Figs. 2 and 3 of the draw-

ings, and it is caused to pass beneath the angularly-disposed guides 27, which force the dog inwardly into engagement with the strip, and the latter is carried downwardly with the feeding-dog a sufficient distance to bring another cap between the contiguous engaging ends of the sections of the cane. The feeding operation is effected while the dog is in engagement with the guides, and in order to render the feeding action positive the upper end of the spring is provided with an inwardly-extending spur 28, which is adapted to pierce the ribbon, so that the same will be drawn downwardly. The feeding-dog is provided at its lower engaging portion with a projecting spur 28^a, preferably formed integral with the dog by partially severing the metal thereof. When the feeding-dog passes downward beyond the guides, it is thrown outward by the spring and disengaged from the strip or ribbon.

The cap is exploded by striking the lower end of the cane violently against any hard substance. This brings the sections together and moves the dog upwardly. The dog in its upward movement passes over the guides. After a cap has been exploded the sections are separated by a quick upward movement of the cane.

In Figs. 7 to 10, inclusive, of the drawings is illustrated a modification of the invention in which the magazine is provided with a yieldable front or outer wall 29, adapted to engage and clamp the strip or ribbon 30 of the caps to prevent any back flash from igniting the strip or ribbon within the magazine when a cap is exploded. The upper and lower sections 3 and 32 are slidably connected by means of a longitudinal casing 32^a, which is constructed substantially the same as that heretofore described. The lower portion of the casing is secured by screws or other suitable fastening devices to the lower section 32 of the cane, and the casing 32^a is provided at opposite sides with longitudinal slots 34 and 35, through which pass screws 36 and 37, whereby the upper section 31 is slidably connected with the casing. The magazine consists of the outer movable wall 29 and an inner relatively fixed wall 38, which is secured by suitable fastening devices to the upper sections of the cane. The outer or front wall 29 is provided with longitudinal side flanges 39, which are pierced at their upper ends by pivots 40 for securing the outer or front wall to the upper section 31 of the cane. The side flanges 39 are connected at an intermediate point by a cross-piece 41, which extends beneath or in rear of the inner wall 38. The cross-piece 41, which operates in a recess 42, is engaged by a spring 43, also located within the recess and having one end secured to the upper section 31. The other end of the spring is free and engages the cross-piece 41 at the outer or front face thereof and is adapted-

ed to move the front or outer wall inwardly to carry a lip or flange 44 in engagement with the strip 30. The lip or flange 44, which extends across the lower end of the front or outer wall of the magazine, is set at an angle, and it forms a guide for directing the strip 30 inwardly into the space between the upper and lower sections 31 and 32 of the cane. When the outer or front wall is free to move inwardly, the angularly-disposed guiding lip or flange is held tightly against the strip 30, as clearly illustrated in Fig. 9 of the drawings. The yieldable pivotally-mounted front or outer wall of the magazine is forced outwardly during the feeding movement of the device by means of the dog 45, which is set at an angle or inclination and which is adapted to engage a pair of oppositely-disposed inclined guides 46, connected with the side walls or flanges 39 of the magazine. The inclined or angularly-disposed dog is connected with one end of a spring 47, which is constructed substantially the same as the spring 26, heretofore described, but which is bent or bowed outwardly between its ends to clear the outer wall or portion of the magazine. The inclined angularly-disposed guides 46 are arranged in the path of the dog 45, and the operation of the device to feed the strip and explode a cap is the same as that heretofore described.

It will be seen that in each of the forms the feeding mechanism, through the angularly-disposed dog and the angularly-disposed guides of the yieldable wall or portion of the magazine, is adapted to positively engage the strip or ribbon to feed the same and is capable of opening the yieldable wall or portion of the magazine during such feeding movement.

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

1. A toy of the class described comprising two members slidably connected, a magazine mounted on one of the members and adapted to receive a strip or ribbon, a feeding device mounted on the other member and sliding with the same, means mounted on the first-mentioned member for causing the feeding device to engage the strip or ribbon.

2. A toy of the class described, comprising two members, means for slidably connecting the same, a magazine mounted on and extending longitudinally of one of the members and adapted to receive a strip or ribbon, a dog mounted on and sliding with the other member and movable longitudinally of the magazine, and means mounted on the first-mentioned member and located at the magazine for causing the feeding device to engage the strip or ribbon during one of the sliding movements of the members.

3. A toy of the class described comprising two slidably-connected members, a magazine

mounted on one of the members and adapted to receive a strip or ribbon, a feeding device mounted on the other member, and means located in the path of the feeding device for causing the same to engage the strip or ribbon to feed the same.

4. A toy of the class described comprising two slidably-connected members, a magazine mounted on one of the members and adapted to receive a strip or ribbon, a feeding device mounted on the other member, and means located in the path of the feeding device for causing the same to engage the strip or ribbon during a portion of one of the sliding movements of the members.

5. A toy of the class described comprising two slidably-connected members, means carried by one of the members for guiding a strip or ribbon, a feeding-dog connected with the other member, and relatively fixed guiding means arranged in the path of the dog for holding the same in engagement with the strip or ribbon to feed the same.

6. A toy of the class described comprising two slidable members, a feeding-dog connected with one of the members, and a relatively fixed angularly-disposed guide arranged in the path of the dog for engaging the same.

7. A toy of the class described comprising two slidable members, a feeding-dog connected with one of the members, and a pair of spaced relatively fixed guides arranged in the path of the dog for engaging the same, whereby the dog is moved inwardly.

8. A toy of the class described comprising two slidable members, a spring mounted on one of the members, a feeding-dog carried by the spring, and a pair of relatively fixed angularly-disposed guides mounted on the other member and arranged in the path of the dog, said guides being spaced apart to provide a passage-way for the spring.

9. A toy of the class described comprising two slidably-connected members, a yieldably-mounted feeding-dog carried by one of the members, and relatively fixed guiding means mounted in the other member and arranged in the path of the dog for moving the same inwardly.

10. A toy of the class described comprising two slidably-connected members, means mounted on one of the members for guiding a strip or ribbon, a reciprocatory feeding device carried by the other member and provided with a spur or projection for engaging the strip or ribbon, and relatively fixed members located in the path of the feeding device for moving the spur or projection inwardly into engagement with the strip or ribbon.

11. A toy of the class described comprising two slidably-connected members, means mounted on one of the members for guiding a strip or ribbon, a spring carried by and sliding with the other member and having a ter-

minal projection or spur for engaging the strip or ribbon, and relatively fixed means for moving the spring inwardly to engage the spur or projection with the strip or ribbon.

5 12. A toy of the class described comprising two slidable members, angularly-disposed guides mounted on one of the members and spaced apart, a spring secured to the other member and having a terminal projection, 10 and a feeding-dog carried by the spring and arranged to be engaged by the said guides, whereby the dog and spur are moved inwardly.

13. A toy of the class described provided 15 with a magazine and having means for feeding a strip or ribbon, and means for normally closing the end of the magazine from which the strip or ribbon is fed, whereby any back flash is prevented from burning the strip or 20 ribbon within the magazine.

14. A toy of the class described provided with a magazine for holding and guiding a strip or ribbon, said magazine being provided with a yieldable wall arranged to close the 25 magazine to prevent any back flash from burning the strip or ribbon within the magazine.

15. A toy of the class described comprising 30 two movable members having engaging faces, a magazine mounted on one of the members and having means for guiding a strip or ribbon between the engaging faces of said members, and means for closing the end of the magazine from which the strip or 35 ribbon is fed to prevent any back flash from igniting the strip or ribbon within the magazine.

16. A toy of the class described comprising 40 two movable members, a magazine mounted on one of the members and provided with a guide for directing the strip or ribbon between the said members, and yieldable means cooperating with the guide for closing the magazine to prevent any back flash from 45 igniting the strip or ribbon within the magazine.

17. A toy of the class described comprising 50 two movable members, a magazine mounted on one of the members and provided with a guide and having a yieldable wall cooperating with the guide for closing the magazine, and means operated by the members for feeding a strip or ribbon through the magazine.

55 18. A toy of the class described comprising two movable members, a magazine mounted on one of the members and adapted to receive a strip or ribbon and having a yieldable wall for closing the end of the magazine from 60 which the strip or ribbon is fed, relatively fixed guides mounted on the magazine, and feeding means carried by the other member

and arranged to be engaged by the said guides.

19. A toy of the class described comprising 65 two movable members, a magazine mounted on one of the members and having a yieldable wall and provided with a guide cooperating with the said wall to close the magazine at one end, a spring engaging the said wall, and 70 feeding mechanism operated by the said members.

20. A toy of the class described comprising two movable sections or members, a casing having terminal portions fixed to one of the 75 sections or members and slidably connected with the other, said casing having an intermediate open portion, a magazine mounted on one of the sections or members and having relatively fixed guiding means, and a yield- 80 ably-mounted feeding device carried by the other section or member and arranged to be engaged by the said guiding means.

21. A toy of the class described comprising 85 two movable members, a magazine mounted on one of the members and adapted to receive a strip or ribbon and having a yieldable wall for closing the magazine to prevent any back flash from igniting the strip or ribbon within the same, and feeding mechanism 90 operated by the said members for feeding the strip or ribbon and for opening the yieldable wall of the magazine during such feeding movement.

22. A toy of the class described comprising 95 two movable members, a magazine mounted on one of the members and having a yieldable wall, a feeding-dog connected with the other member, and an angularly-disposed guide connected with the yieldable wall of 100 the magazine and arranged in the path of the dog.

23. A toy of the class described comprising 105 two slidable members, a magazine mounted on one of the members and adapted to receive a strip or ribbon and provided with a yieldable wall for closing the magazine to prevent any back flash from igniting the strip or ribbon therein, a feeding-dog connected with the other member, and angularly-disposed guides connected with the 110 yieldable wall of the magazine and spaced apart and arranged in the path of the dog for forcing the same into engagement with the strip or ribbon and for actuating the 115 yieldable wall to open the same during the feeding movement.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN C. WOOD.

Witnesses:

HELEN WALSH,
MARVIN C. CLARK.