

948,139.

J. A. HICKS.
MACHINE FOR CAPPING VESSELS.
APPLICATION FILED JUNE 22, 1906.

Patented Feb. 1, 1910.

3 SHEETS—SHEET 1.

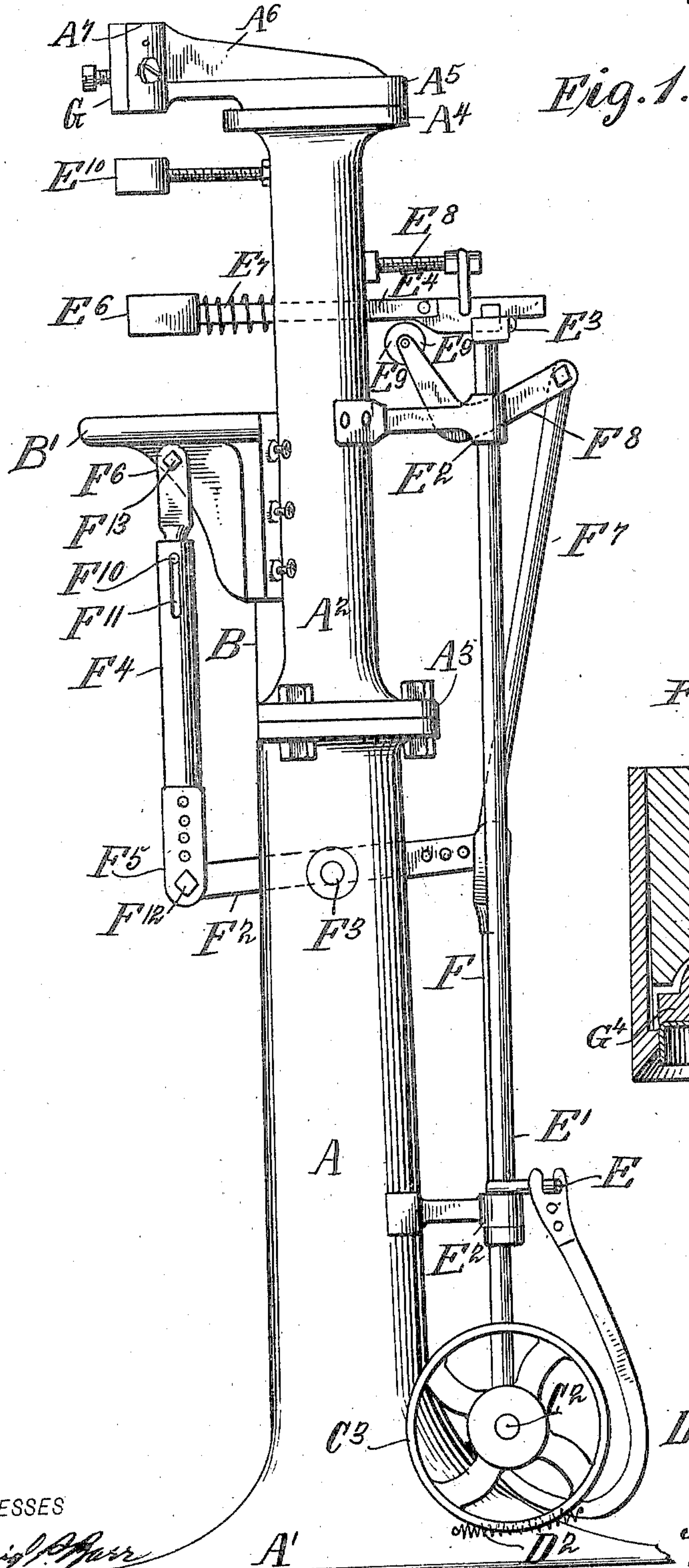
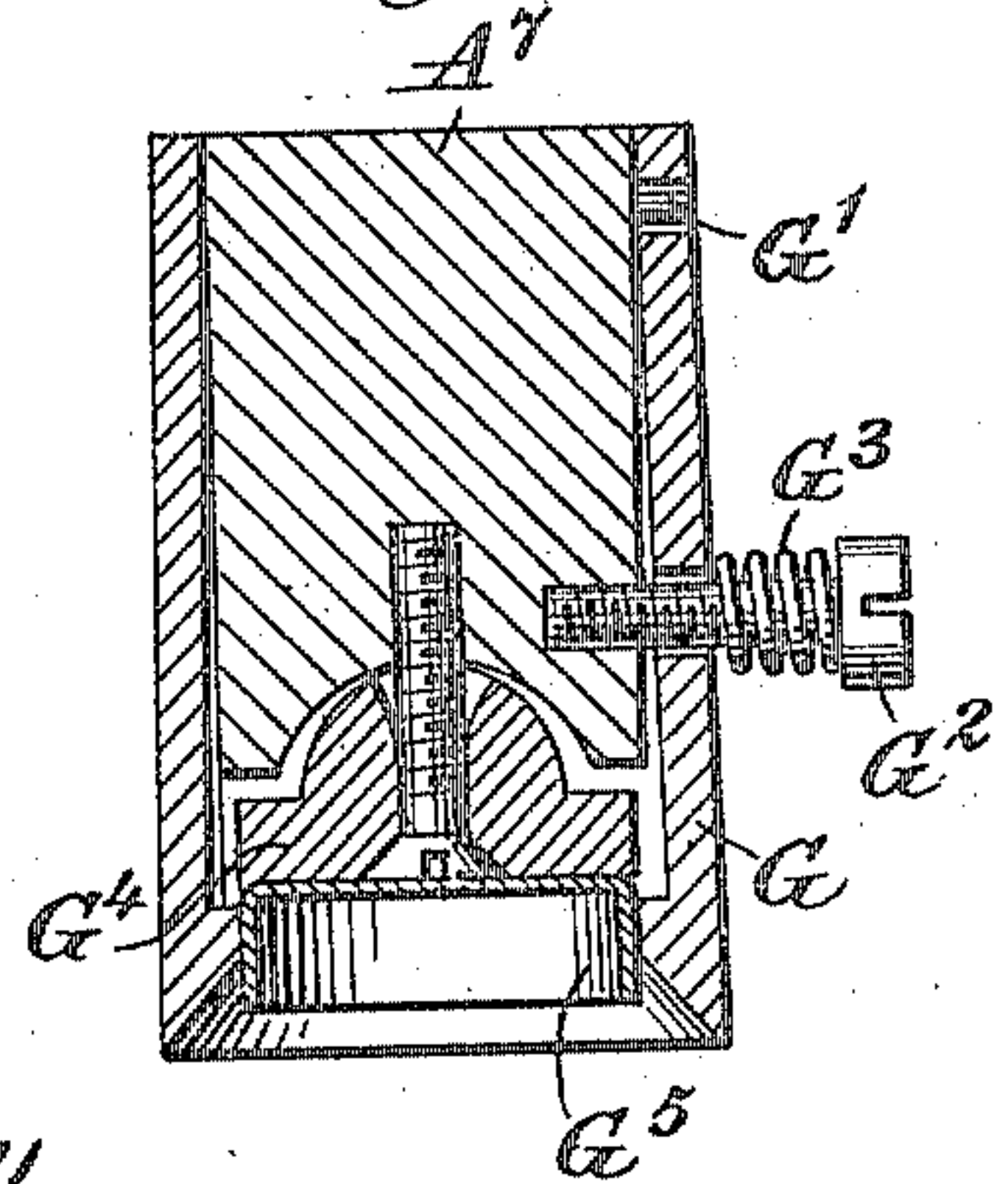


Fig. 5.

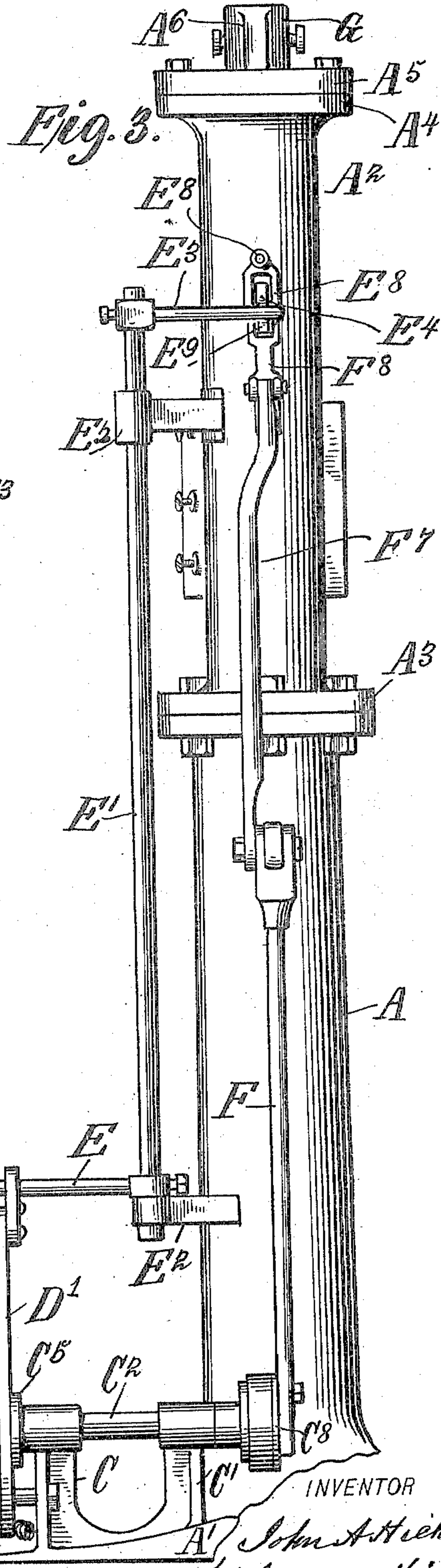


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3 SHEETS—SHEET 3.

Fig. 4.

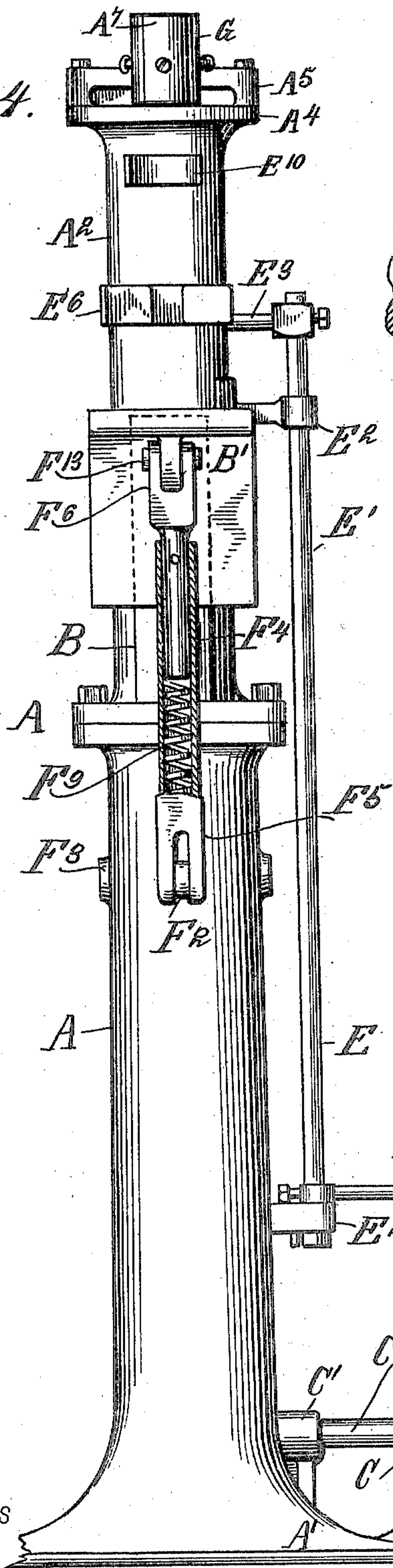


Fig. 8.

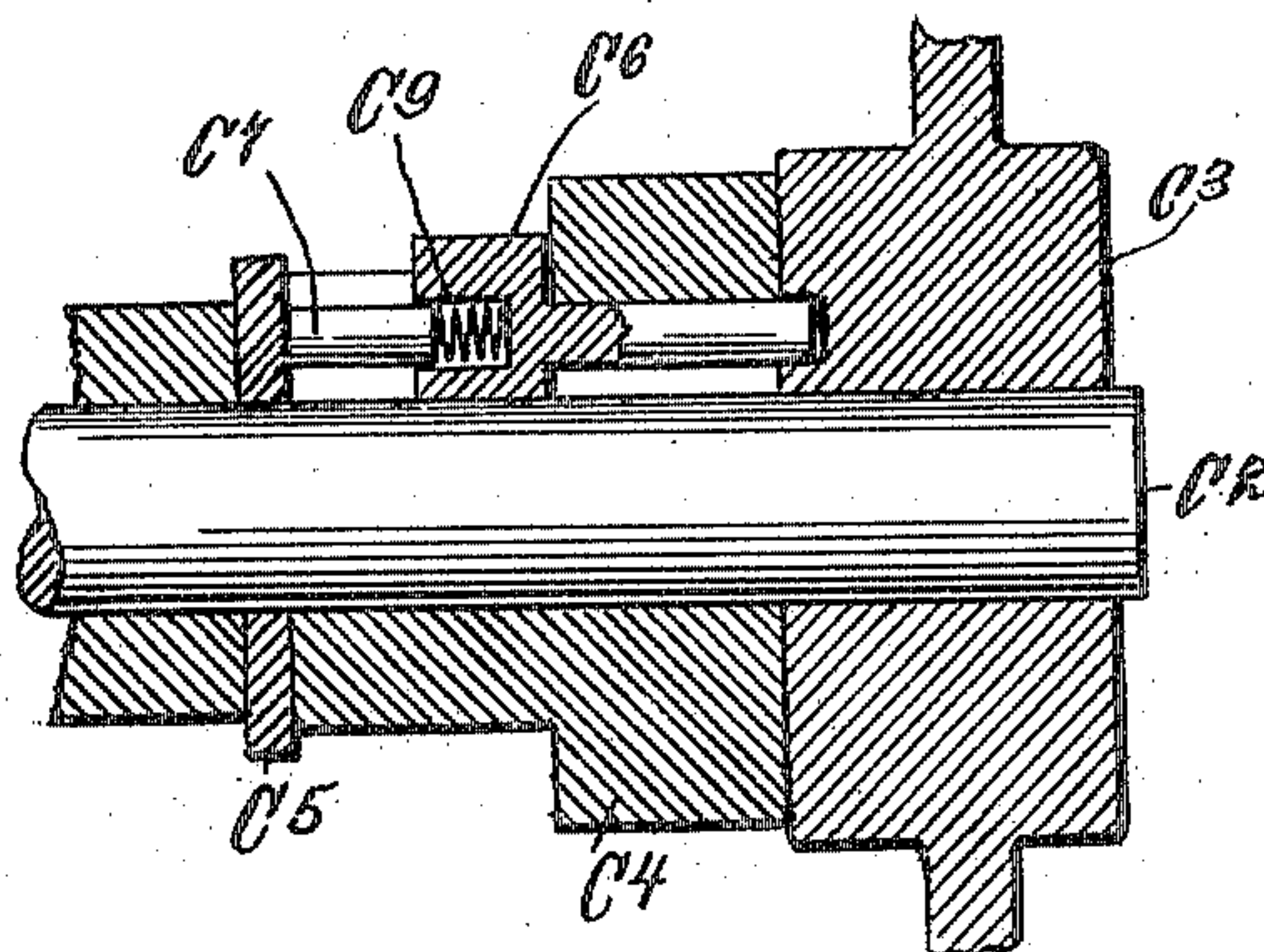


Fig. 6.

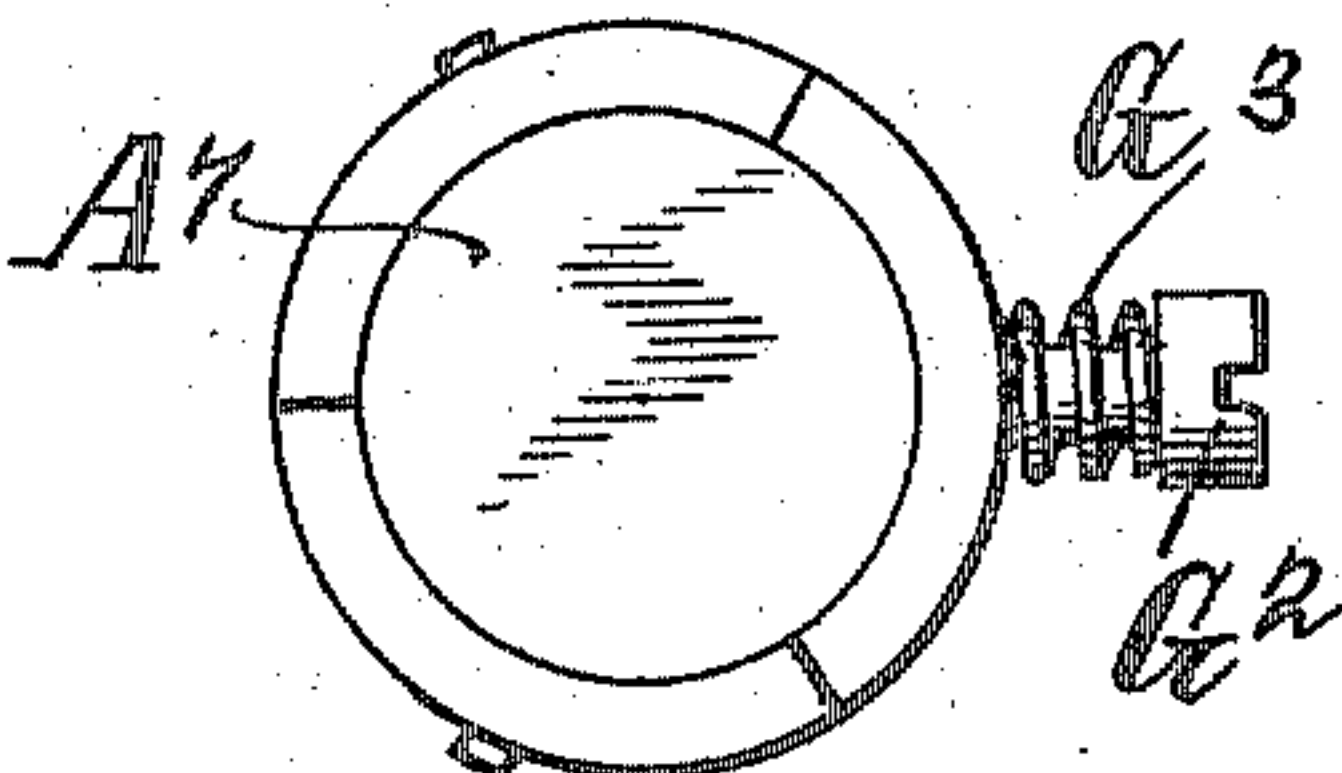
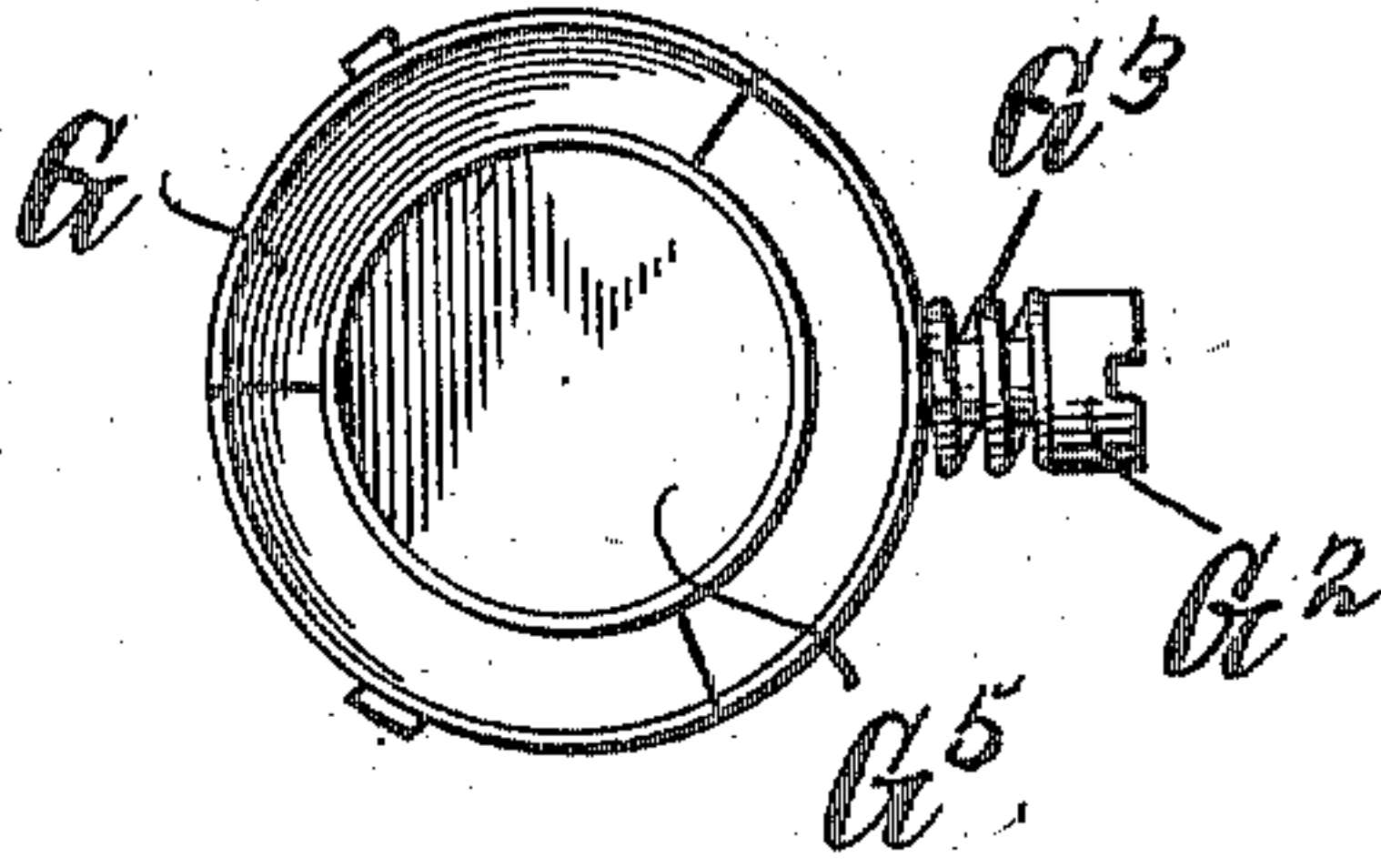


Fig. 7.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR CAPPING VESSELS.

948,139.

Specification of Letters Patent.

Patented Feb. 1, 1910.

Application filed June 22, 1906. Serial No. 322,867.

To all whom it may concern:

Be it known that I, JOHN AUGUSTUS HICKS, a citizen of the United States, residing at Summit, county of Union, State of New Jersey, have invented certain new and useful Improvements in Machines for Capping Vessels, of which the following is a specification.

My invention relates to power machines for placing sealing caps on vessels and it consists in certain elements and combination of elements fully specified and claimed hereinafter.

The object of my invention is to seal vessels with metallic sealing caps by mechanism thrown into and out of operation by means of a clutch operated in exact unison with the operation of alining the vessel with the cap applying mechanism and before the vessel support is thrown up to bring the vessel nose into position to operate the capping mechanism.

In order that those skilled in the art to which my invention appertains may understand, construct and use my invention, I will proceed to describe it referring to the accompanying drawings forming part of this specification in which—

Figure 1 is a side elevation of my invention. Fig. 2 is the same from the side reverse of Fig. 1. Fig. 3 is a rear elevation of the same. Fig. 4 is a front elevation. Fig. 5 is a longitudinal central sectional view of the jaws and resistance post of the equalizing plate which take part in holding the cap and directing it when being forced upon the vessel. Fig. 6 is a top view of the same and Fig. 7 is a bottom view. Fig. 8 is an enlarged sectional view of the clutch mechanism.

A is the standard which supports the various elements having a base A¹. A is made preferably in two parts an upper and lower section. A² is the upper section bolted to the lower one at A³. It has a flange A⁴ at the top of A² on which is bolted a head plate A⁵.

A⁶ is a projecting arm carrying at its extremity a vertical post A⁷ to which the cap holding jaws are attached in the manner shown in detail in Fig. 6.

On the front of standard section A² a guide plate B is formed and on this guide plate B a vertically movable table B¹ takes to support a bottle on its upper surface.

Base plate A¹ supports bearings C C¹ in which shaft C² is journaled. On shaft C² a loose pulley wheel is secured and a clutch mechanism consisting of hub C⁴ fastened to shaft C², endwise movable clutch dog C⁶ and guide pin C⁷ carried by hub C⁴ and collar C⁵ secured to shaft bearing C, shown in detail Fig. 9.

To bearing C a stud D is secured on which a clutch operating lever D¹ is arranged to swing, which lever D¹ has a forked end in which an arm E takes to operate it. This arm E is secured on a vertical rod E¹ held in bearings E² E² on standard A A². A spring D² is fastened at one end to base plate A¹ and at the other to the clutch lever D¹. On the other end of shaft C² beyond bearing C¹ a slotted eccentric plate C³ is fastened and a connecting rod F takes at its lower end by a bolt and sliding dog. The upper end of connecting rod F takes onto a cross lever F² pivoted in the standard A at F³. Cross lever F² passes through standard A and connects with a pitman F⁴ at F⁵. Pitman F⁴ takes onto sliding table B¹ at F⁶ so that when pulley C³ is revolved the table B¹ is moved up and down, when the clutch mechanism is thrown into operative connection therewith through the operation of the vertical rod E¹. The rod E¹ carries an arm E³ at its upper end and in its normal position shown in Figs. 1 and 2 a sliding arm E⁴ having a cut out E⁵ engages with said arm E³ so that when arm E⁴ is pushed backward horizontally the arm E³ is forced backward, turning rod E¹ and the operating arm E in forked lever D¹ which movement moves the clutch lever D¹ out of engagement with clutch pin C⁶ and allows the spring C⁹ to engage the hub C⁴ with the hub of pulley C³ and to operate the table B¹ up and down through the intermediate connections. The clutch pin C⁶ is held normally out of connection with pulley hub C³, by the tapering end of the lever D¹ which lever D¹ is held in said position by spring D². The sliding arm E⁴ passes through a slot in standard A², and its rear end is jointed to enable it to be lifted upward. An adjustable guide E⁸ straddles E⁴ and limits the backward throw of E⁴ by contact with the shoulder on the pivotal joint in E⁴, so that the guide E⁸ determines the position of the vessel with regard to its alinement with the center line of post A⁷, and at the same time determines

the time of operating the clutch mechanism to accord with the alinement of the vessel so that the clutch mechanism may not operate the vessel upward to cap it until this perfect accord is effected. The arm E^4 is 5 jointed between cut out E^5 and the back of standard A^2 , so that the rear end can be thrown up out of engagement with arm E^3 . A guide arm E^8 is bolted to the back of 10 standard A^2 which is located above arm E^4 and straddles said arms to guide it and limit the throw of arm E^4 . To the upper end of connecting rod F a rod F^7 is pivoted, which at its upper end takes onto one end of a 15 bell crank F^8 which bell crank is pivoted to and supported on bearing arm E^2 and the other end of bell crank F^8 carries a roller E^9 which takes under the arm E^4 so that the loose end of arm E^4 can be thrown up by 20 the roller E^9 by the descent of connecting rod F . The pitman F^4 is made in two pieces and the upper end slides in the lower end. There is a spring F^9 inclosed in the lower end between the two sections and a pin F^{10} 25 on the upper section passing through a slot F^{11} in the lower section limits the length of pitman F^4 . The pitman F^4 is held to cross lever F^2 by a pin bolt F^{12} and to table B^1 by a pin bolt F^{13} .

Fig. 8 shows the clutch dog C^6 in engagement with the hub of pulley C^3 as it would be when operating the capping mechanism. The lever D^1 has an inclined end D^{12} which engages with clutch dog C^6 and throws the 30 said clutch dog out of engagement with the hub pulley C^3 , when the mechanism is in its normal position, and inoperative.

E^{10} is a curved shaped guide to adjust the alinement of the bottle neck under the 40 cap holding jaws G affixed as seen at Fig. 5 to a vertical resistance post A^7 by pins G^1 and adjustable screws G^2 on which screws G^2 are springs G^3 to press the jaws G against the post A^7 . At the bottom of resistance post A^7 an equalizing plate G^4 is 45 secured, held to post A^7 by a screw, the top of plate G^4 and the bottom of post A^7 are curved so that the plate G^4 can swing and accommodate itself to the angle needed to 50 force the cap over the bottle when the top of the bottle is not in proper position to receive the cap otherwise.

The operation of my invention will be apparent from the previous description of the 55 various parts and their offices. The several elements being in their normal positions as shown in all the figures except Fig. 8 (which shows the clutch mechanism in engagement with the driving pulley C^3) with the clutch 60 mechanism out of gear. The operator places a bottle on table B^1 in the bight of the guide arm E^{10} , and then he pushes the guide arm E^9 with his hand, backward, this throws the arm E^4 backward and the 65 cut out E^5 in arm E^4 against the arm E^3

on upright rod E^1 backward which turns rod E^1 so that arm E engaging with lever D^1 through its forked end throws the arm D^1 backward and around its pivotal point or stud D thus moving the taper end D^{12} 70 from under the clutch dog C^6 and allowing spring C^9 to throw the said clutch dog into the hub of pulley C^3 as shown at Fig. 8. Thus the pulley C^3 being in connection with the operative parts of the capper forces the 75 table B^1 upward with the bottle resting on it, until the nose of the bottle enters the cap held in the jaws G as shown at Fig. 5 and forces the flange of the cap G^5 onto and over a bead upon the bottle neck as shown in my application for patent filed March 31st, 1905, 80 No. 253,155. The cap being of smaller internal diameter than the bead upon the bottle neck the upward thrust of the bottle against the cap and resistance post A^7 is 85 received primarily by the elasticity of the metal of the cap flange in pressing the cap flange over the bottle bead. When bottles of varying lengths are being capped the spring pitman operates to prevent breakage. 90 This operation completes the capping. To prevent the table from rising more than once at each operation, provision is made by a rod F^7 connected to cross arm F^2 and to bell crank F^8 to throw the rear end of arm 95 E^4 upward and out of engagement with arm E^3 by the roller E^9 which raises it up and out of such engagement so that the spring D^2 may throw the lever D^1 into engagement with clutch dog C^6 and throw it out of en- 100 gagement with pulley C^3 so that only one movement can take place at a time. The next bottle repeats the operation.

Having now fully described my invention and the manner in which I have embodied it 105 what I claim as new and as my invention and desire to secure by Letters Patent is—

In a capping machine of the character described, the combination with the standard 110 carrying a capping head, and a reciprocating vessel support, beneath and in alinement with the capping head, of mechanism for moving the vessel support toward and from the capping head, set in motion by means 115 of a combined adjustable vessel guide and clutch trip, operated above said vessel support, all constructed, arranged and combined to operate to cap a vessel with a metallic sealing cap, when the vessel is in perfect 120 alinement with said sealing head only, substantially as specified.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this 21st day of June 1906.

JOHN AUGUSTUS HICKS.

Witnesses:

JAMES M. HICKS,
NATHANIEL P. BARR.