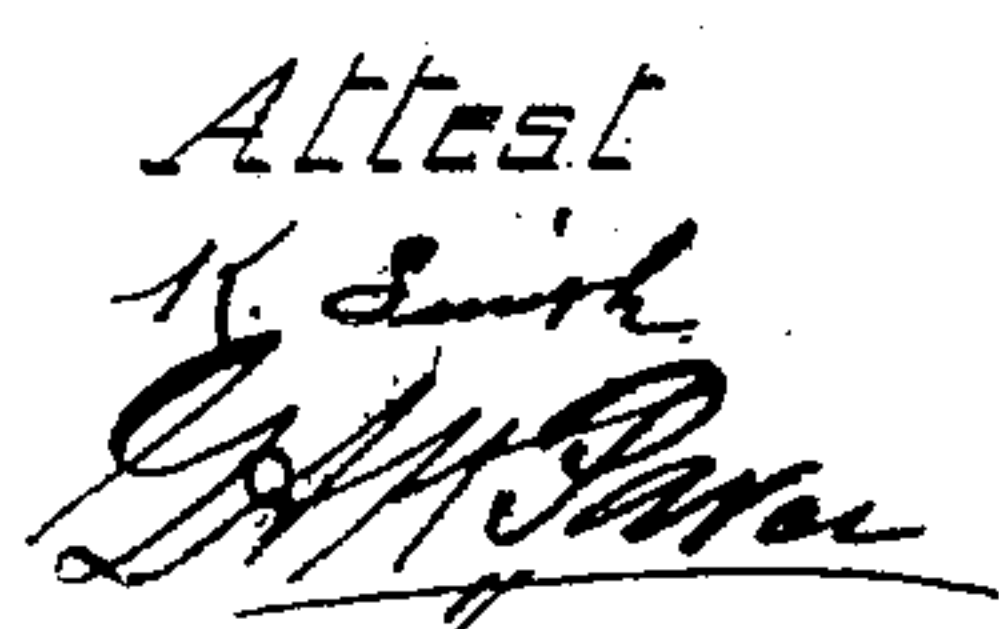


4 Sheets—Sheet 1.

No. 435,442.

Patented Sept. 2, 1890.



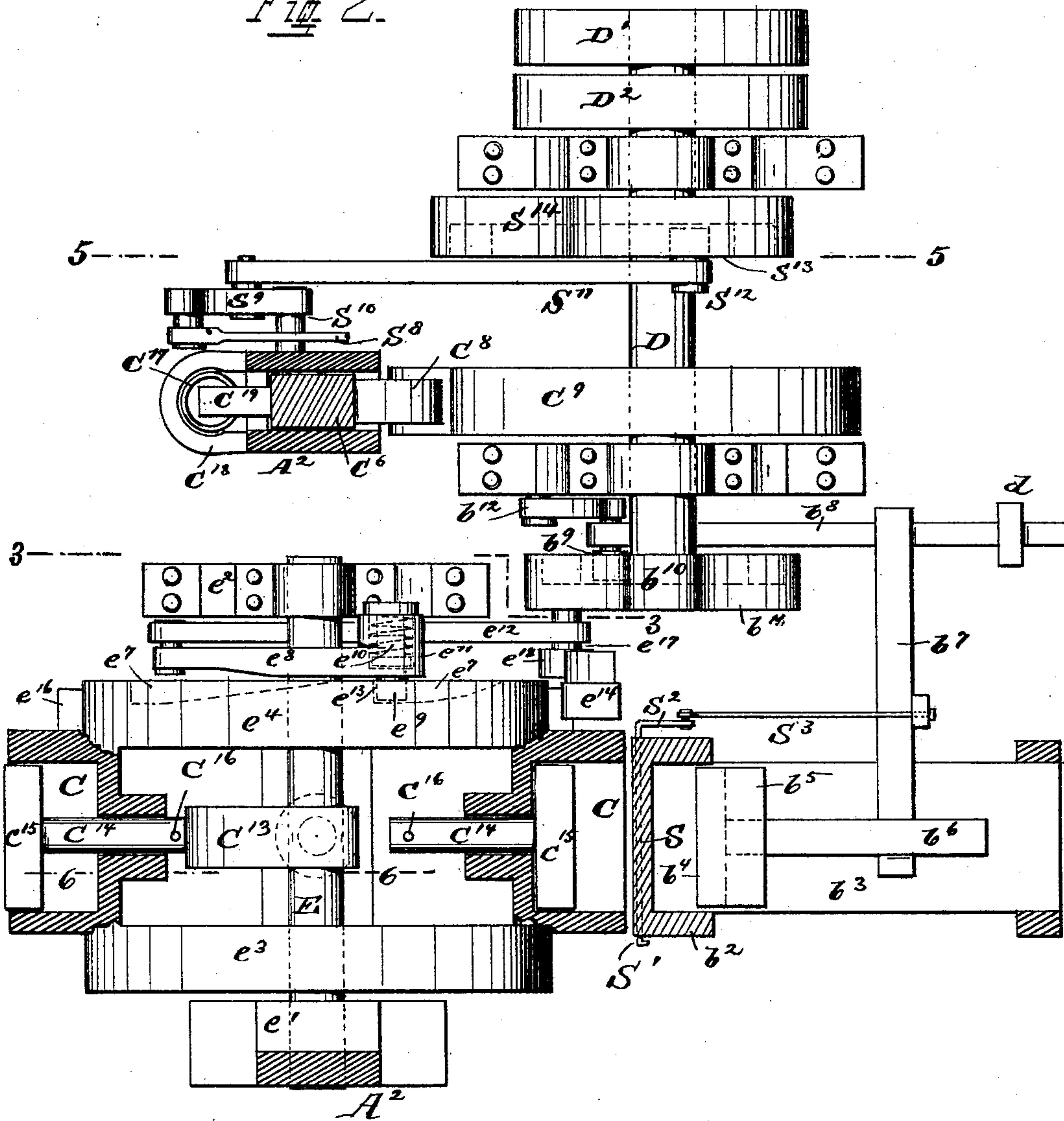
Inventor
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By Wm. Hubbell Fisher, Atty.

4 Sheets--Sheet 2.

No. 435,442.

Patented Sept. 2, 1890.

Fig 2.



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C. H. P. [Signature]

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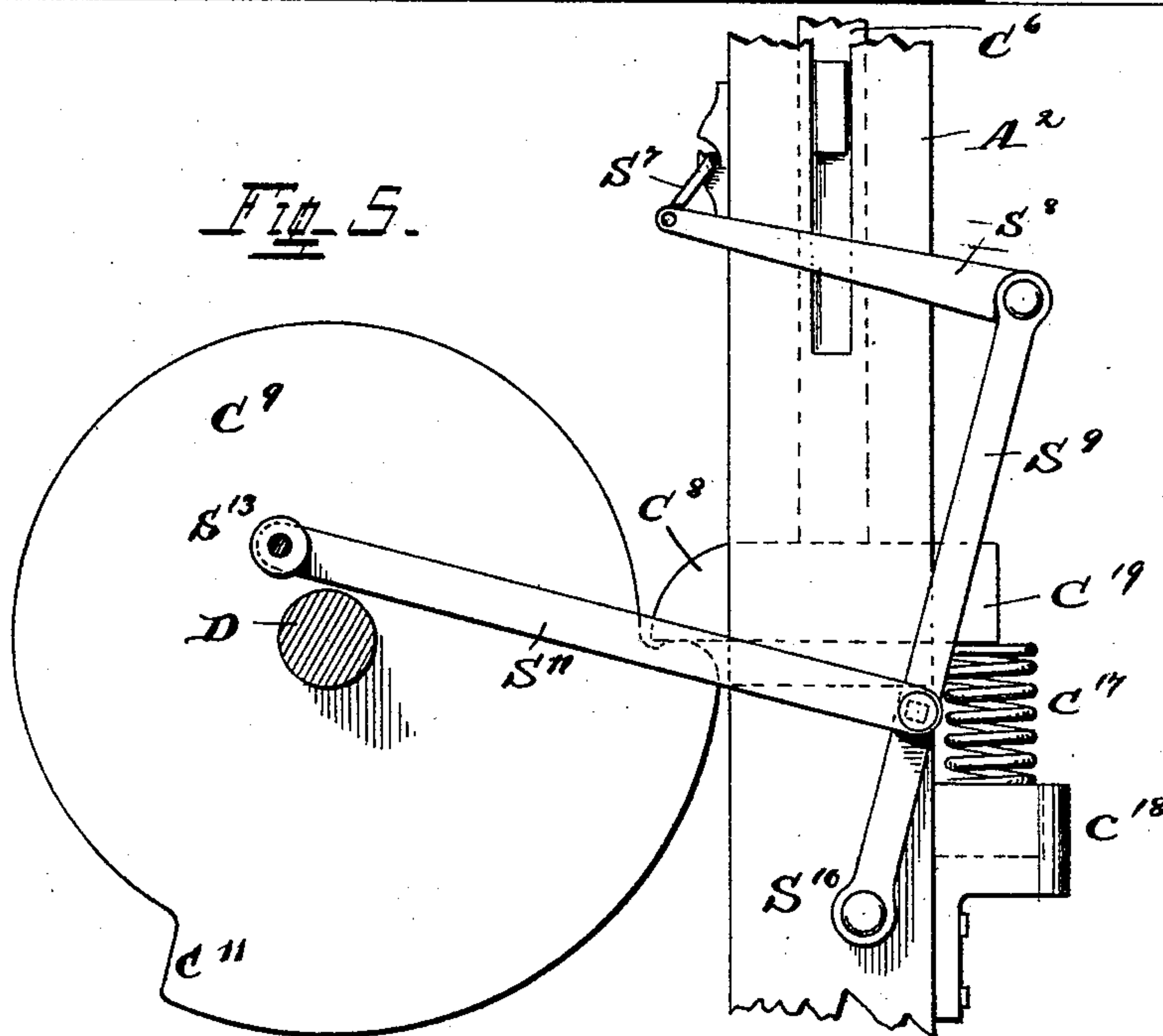
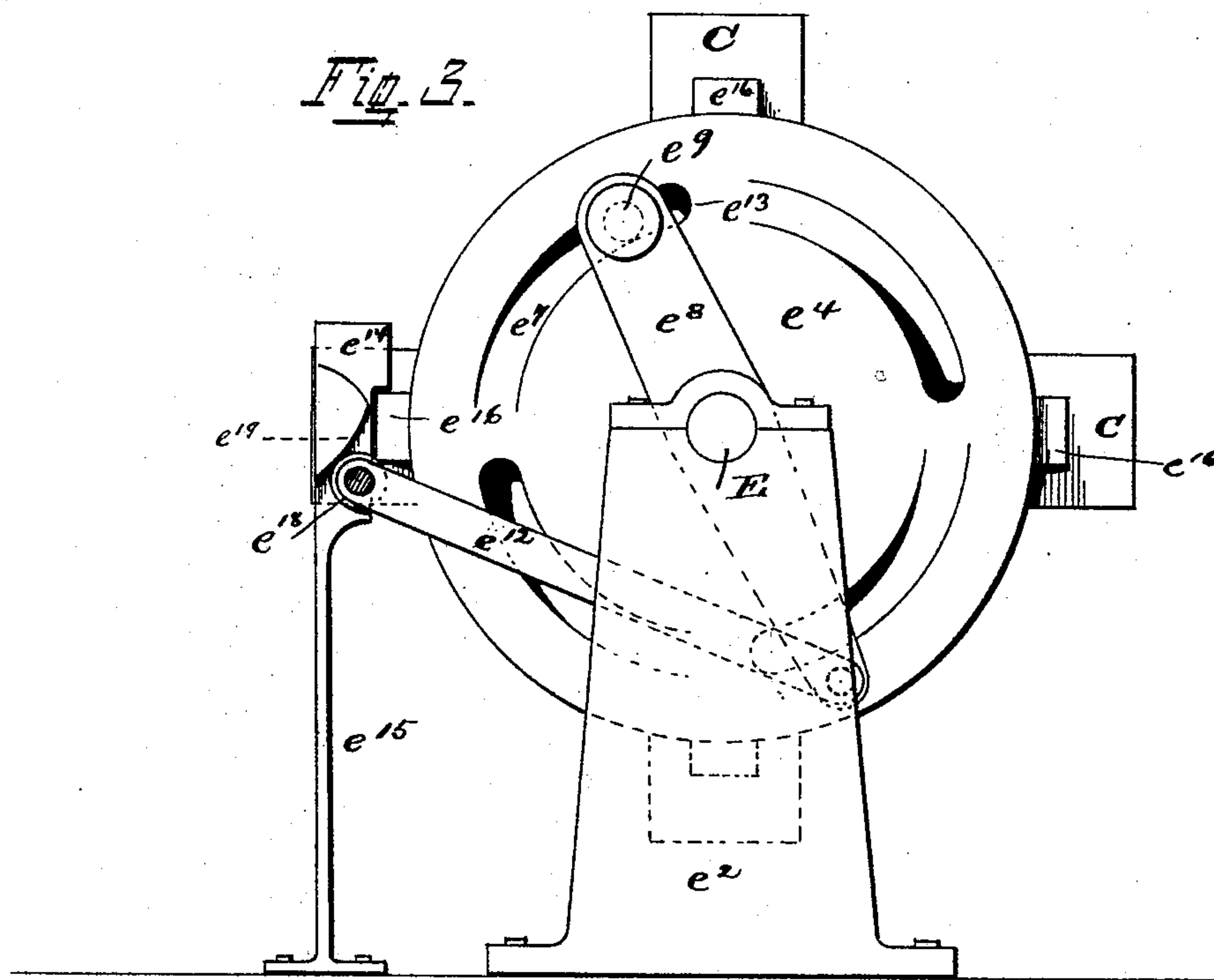
(No Model.)

4 Sheets—Sheet 3.

C. MANNING.
MACHINE FOR STAMPING SOAP.

No. 435,442.

Patented Sept. 2, 1890.



Attest
H. Smith
C. H. Parer

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(No Model.)

4 Sheets—Sheet 4.

C. MANNING.
MACHINE FOR STAMPING SOAP.

No. 435,442.

Patented Sept. 2, 1890.

Fig. 4.

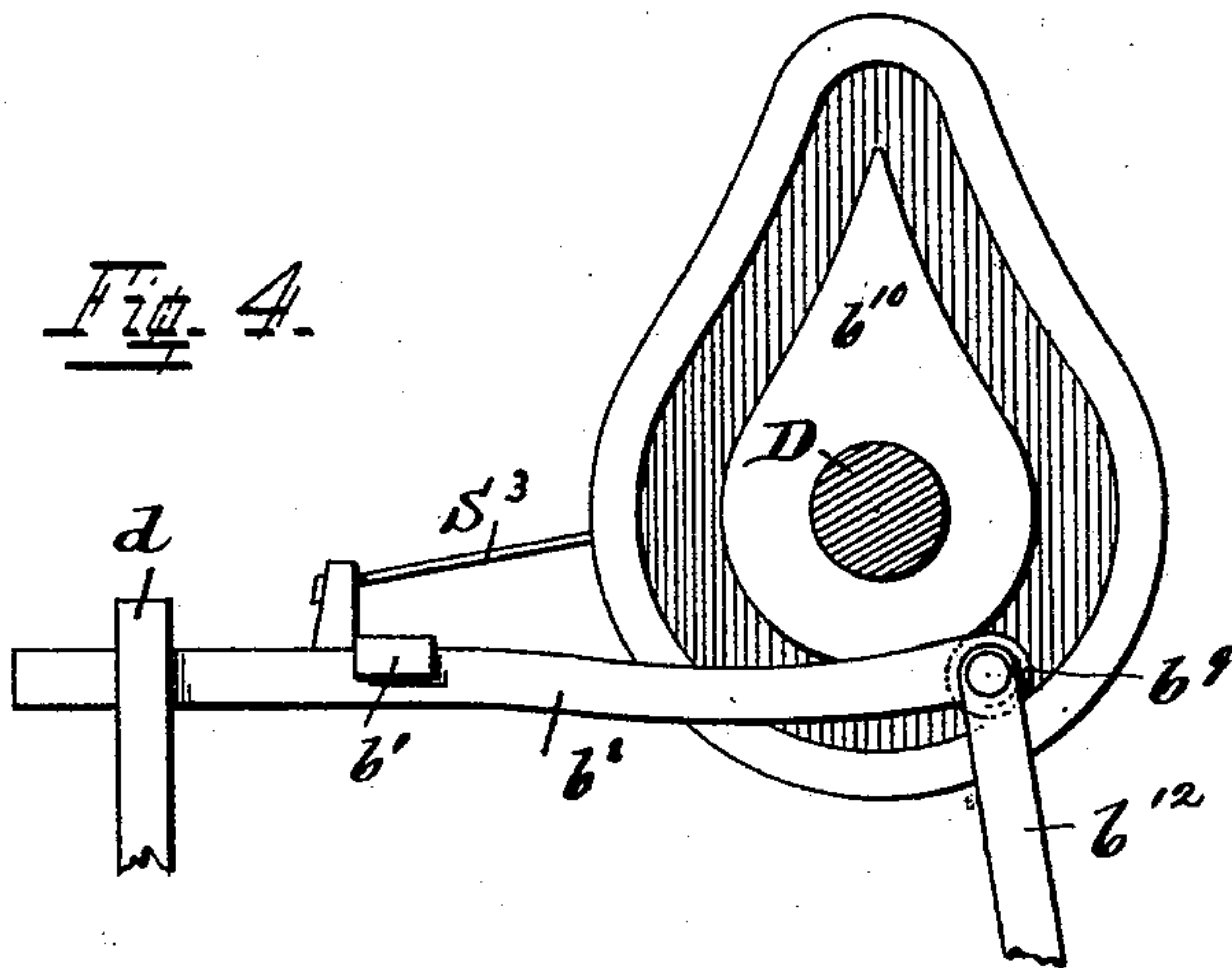


Fig. 7.

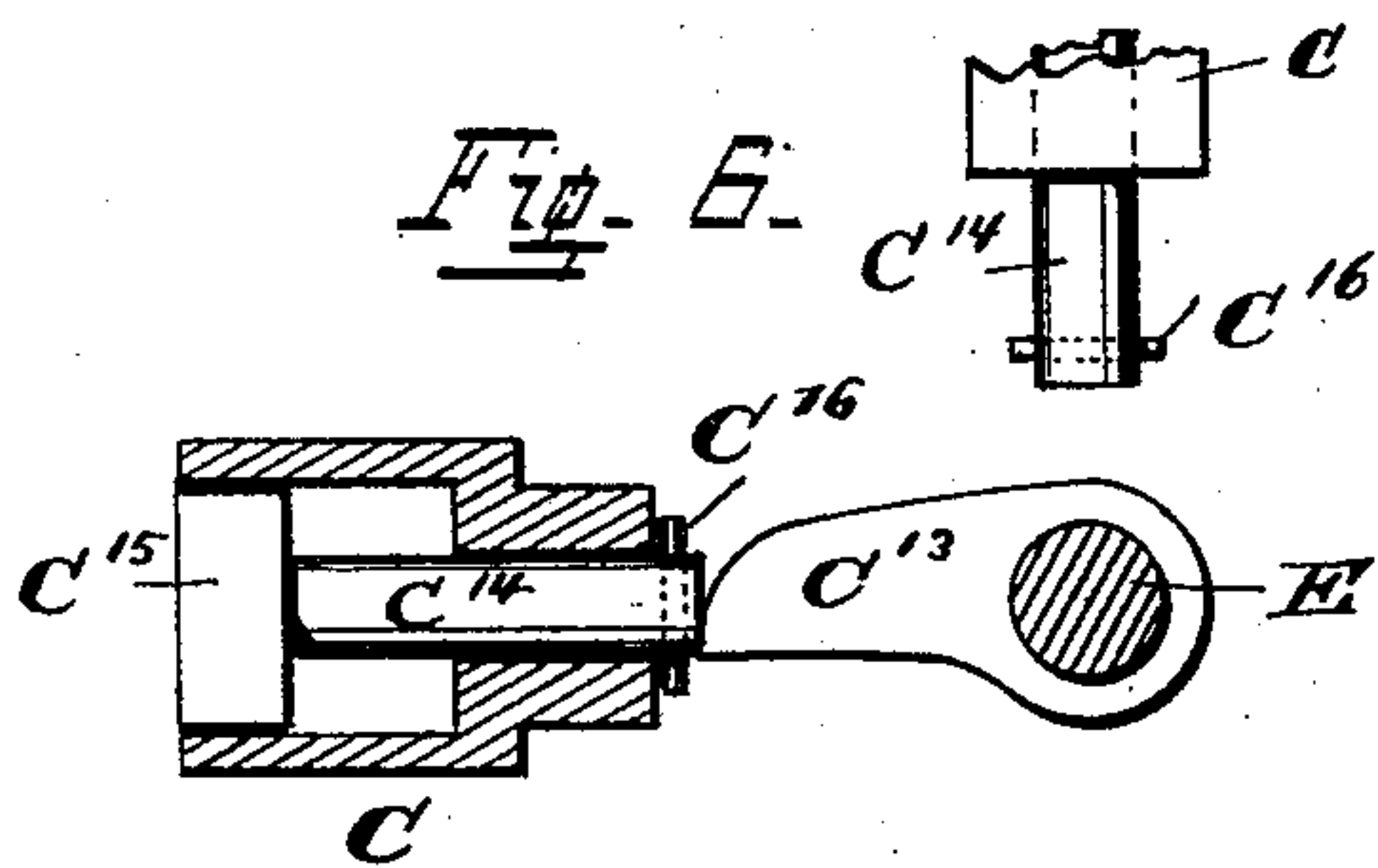
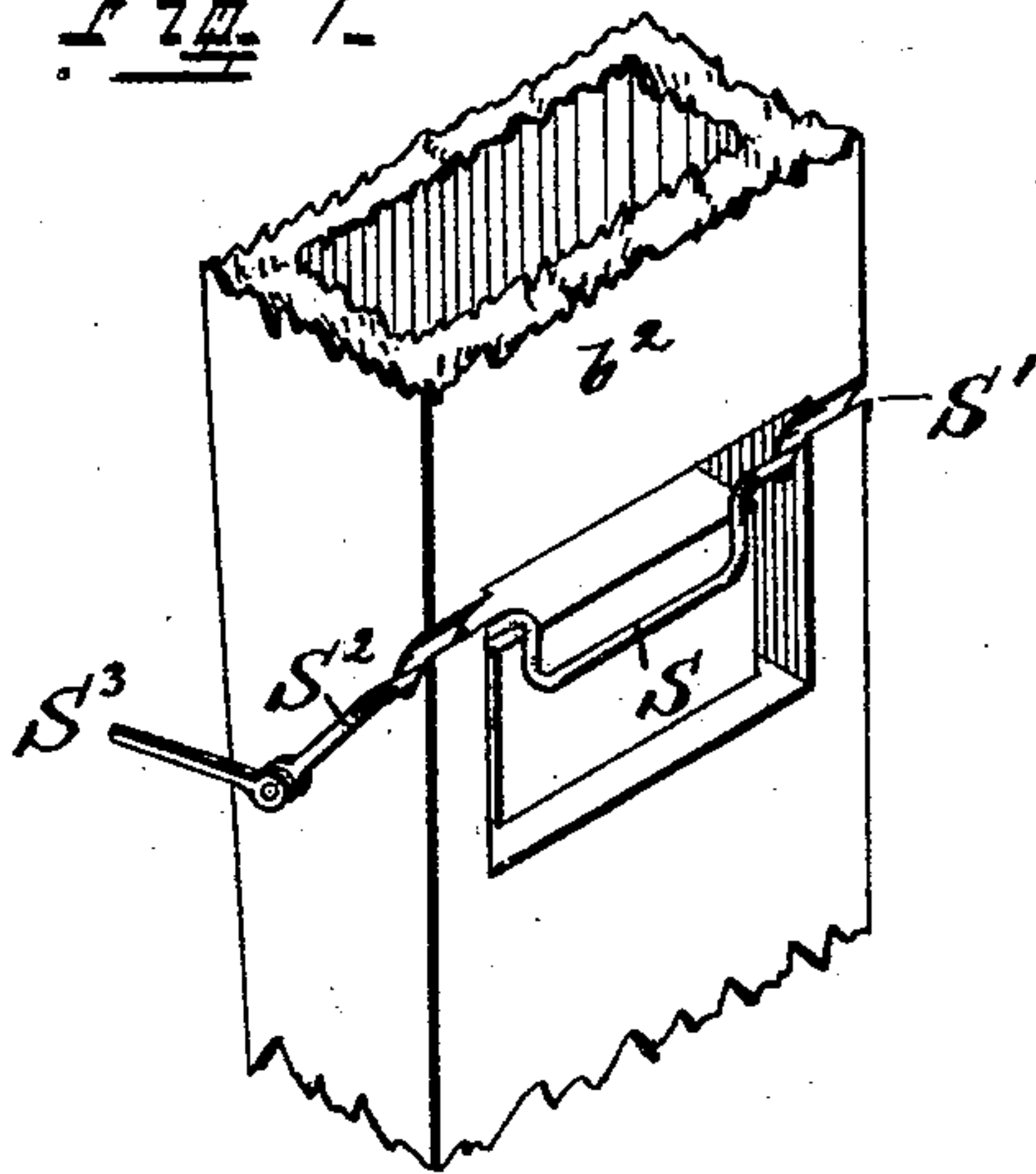
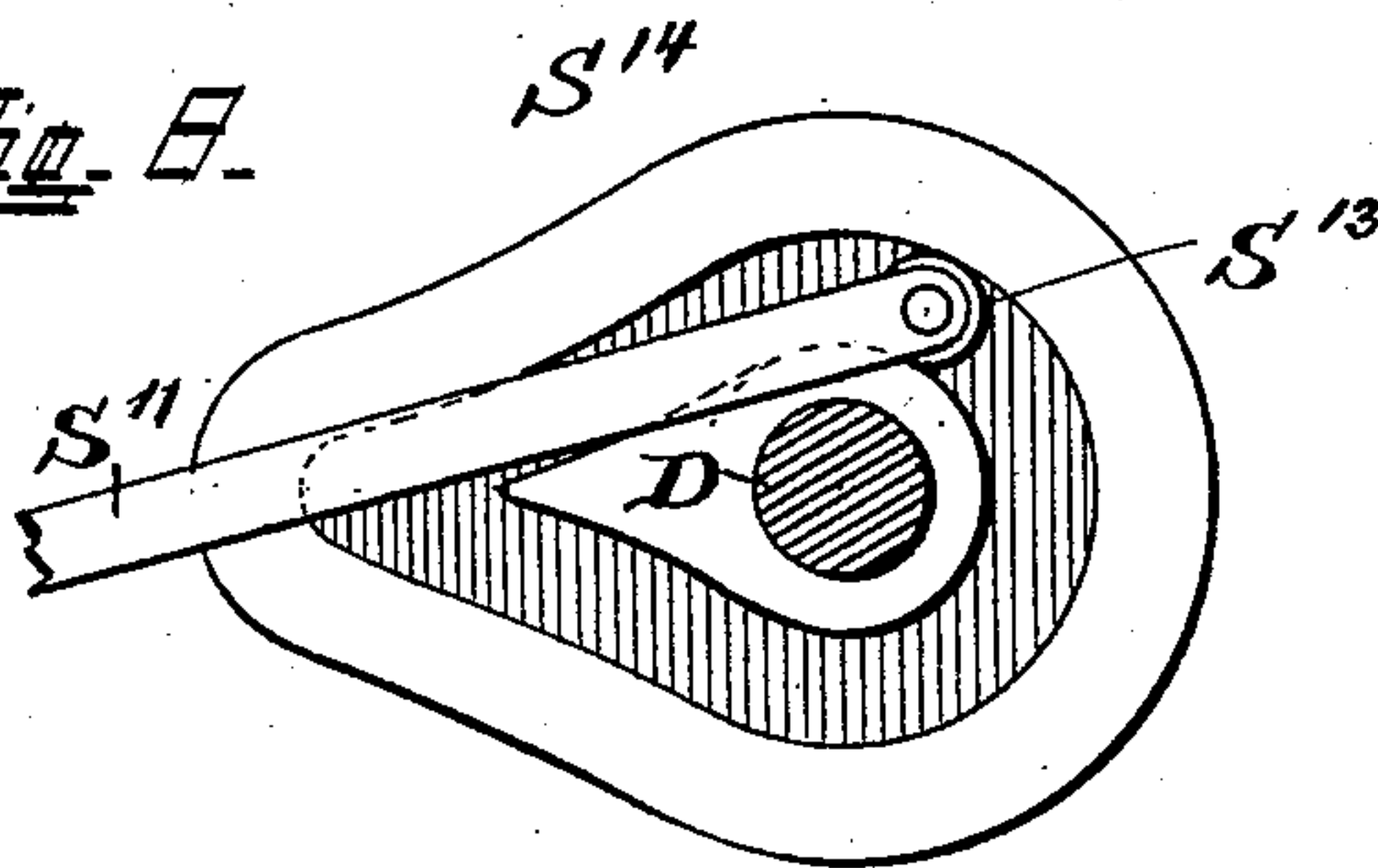


Fig. 8.



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UNITED STATES PATENT OFFICE.

CHESTERFIELD MANNING, OF SHARONVILLE, ASSIGNOR OF ONE-HALF TO
GEORGE NIXON, OF MONROE, OHIO.

MACHINE FOR STAMPING SOAP.

SPECIFICATION forming part of Letters Patent No. 435,442, dated September 2, 1890.

Application filed September 26, 1889. Serial No. 325,156. (No model.)

To all whom it may concern:

Be it known that I, CHESTERFIELD MANNING, a citizen of the United States, residing at Sharonville, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Machines for Stamping Soap, of which the following is a description.

The several features of my invention and the various advantages resulting therefrom will be fully apparent from the following description and claims.

In the accompanying drawings, making part of this specification, Figure 1 is a view in perspective of a machine embodying my invention. Fig. 2 is a top view of the machine, with the following exceptions: Above the disks e^3 and e^4 all mechanism has been omitted, including the die C (shown in Fig. 1) at the top of said disks. The upright A^2 next to the spectator is consequently shown in section. So, also, all the mechanism above the shoulder C^8 at the other side of the machine is removed, and the parts of the upright there located are therefore shown in section. These sections of the uprights are taken in a horizontal plane just above the tops of the disks e^3 e^4 . Those parts of the dies C C and the forward portion S of the feeding device which are located in a horizontal plane passing through the axial center of said disks are likewise shown in horizontal section in said last-named plane. The upper portions b^2 b' of the chute or guideway B of the said feeding device and the rear uprights supporting the rear part of the trough or chute b' are likewise removed, the said uprights being shown in horizontal section, the section thereof being taken at a plane above the parts b^6 and b^5 . The omission from Fig. 2 of certain parts of the machine, as aforementioned, contributes to the more perfect understanding and comprehension of the remaining parts of the machine therein illustrated. Fig. 3 is a vertical section of the machine, taken at the dotted line 3 3 of Fig. 2 and looking at that side of the section which faces toward the upper end of the sheet in which Fig. 2 is contained, and omitting from view the mechanism pertaining directly to the feeding of the

soap to the dies. Fig. 4 is a view of that side of the cam b^{10} which is toward the upperside of the sheet in Fig. 1. Fig. 5 is a section of that part of the machine immediate to said section and taken at the dotted line 5 5 of Fig. 2 and looking at that side of the section which faces toward the upper end of the said Fig. 2. Fig. 6 is a side elevation of the guideway for operating the ejector for ejecting the stamped soap cake from the die. Fig. 7 is a view in perspective of the stop for holding the cakes of soap within the guide until the empty die comes opposite the plunger. Fig. 8 is a view of that side of the cam S^4 which is toward the bottom of Fig. 2.

The machine rests upon a suitable supporting-base A.

B indicates the channel or guideway for conducting the cut-up bars or cakes of soap to the devices for feeding the cakes of soap to the mechanism for stamping the cakes. This guideway consists of two portions, an inclined part b' , connected and leading into a vertical part b^2 . The cake passing down through the guideway b^2 falls on the floor b^3 , which is at the bottom of the guideway. Upon this floor or upon a horizontal plane therewith is the reciprocating feed-plunger b^4 . This feed-plunger has at top a horizontal table b^5 fixed to it. The function of this table is to prevent the cakes in guideway b^2 from descending while the plunger is pushing the cake in front of it into the adjacent soap-dies C of the stamp.

The plunger b^4 is provided with a suitable stem or connection b^6 , to which is connected the mechanism for reciprocating the plunger. This mechanism consists of arm b^7 , rigidly attached to the reciprocating bar b^8 , whose rear end is secured and slides in a guide d . The forward end of bar b^8 is provided with a rotating wrist or roll b^9 , rolling in a pear-shaped cam-groove b^{10} in the cam b^{11} , fixed upon and turned by shaft D. The forward end of the reciprocating bar b^8 is pivoted to one end of an oscillating bar b^{12} , whose other end is pivoted to the lower portion of the upright A^2 or other suitable support. The function of the oscillating bar b^{12} is to uphold the adjacent end of the reciprocating bar b^8 and

its revolving roll b^9 . The revolution of cam b^{11} causes the bar b^8 and the plunger b^4 to properly reciprocate.

A shaft E is journaled in supports, as $e' e^2$.
 5 Between these latter and on the shaft E are the two circular supports or disks $e^3 e^4$, which hold the soap-dies C in position. The number of such soap-dies C may be varied, the preferred number here shown being four, arranged at equal distances apart around the
 10 shaft E. The periphery of one of the disks, as e^3 , is provided with a series of stops e^5 , arranged to engage consecutively a spring-finger e^6 (whose fixed end is connected to the
 15 floor A or equivalent support) at the time that an empty soap-die comes opposite to the feed-plunger b^4 . The soap-dies C and their supporting-disks $e^3 e^4$ rotate in the direction of the arrows marked on the disk e^3 .
 20 The mechanism for stopping the empty soap-die when opposite to the feed-plunger b^4 and for holding it there while the plunger is feeding a cake of soap in the die and for then releasing it and for rotating the disks
 25 $e^3 e^4$ and the soap-dies is as follows: In the outer side of the disk e^4 are four curved grooves, as e^7 , each deepening in the direction in which the disk e^4 rotates. On the shaft E is pivoted a lever e^8 . The upper end of this
 30 lever carries a stud e^9 , which works successively in said grooves e^7 . This stud is pressed forward against the disk e^4 by means of a spring e^{10} , contained in the head e^{11} of the lever e^8 . The lower end of this lever e^8 is pivotally
 35 connected to one end of a connecting-rod e^{12} and is reciprocated thereby. As the lever e^8 is moved forward—that is, toward the guideway B—the stud ascends the inclined bottom of one of the curved grooves, and the stud e^9
 40 is pressed back into the head e^4 of the lever e^8 until the stud e^9 comes opposite the deepest part of the succeeding groove e^7 , at which time it will there enter said groove, as shown in Fig. 2.
 45 As soon as the feed-plunger b^4 has inserted a cake of soap in the die C adjacent thereto the lever e^8 is reciprocated from right to left, and the stud e^9 impinges against the abutment e^{13} of the groove e^7 , in which it (the stud) is
 50 resting, and moves the disks $e^3 e^4$ and the dies C forward in the direction of the arrows ll one-quarter of an entire revolution—viz., until the empty soap-die next following the one filled is brought opposite to the feed-plunger
 55 b^4 . This die being filled with a soap cake and the lever e^8 reciprocated, the stud e^9 , acting against the abutment of the succeeding groove, carries the disk around another quarter of a circle and presents another empty die to the
 60 feed-plunger to be filled. In this manner the empty soap-dies are successively presented to be filled.

When an empty soap-die is brought opposite the feed-plunger b^4 , it is firmly held in position by the following means: A stop e^{14} is fixed to an elastic spring-plate e^{15} , fixed to the bed A or frame of the machine. On the pe-

riphery of disk e^4 are four studs e^{16} , one for each soap-die—viz., one accompanying and adjacent to a soap-die. As the disks $e^3 e^4$ are
 70 rotated, one of these studs e^{16} impinges against the stop e^{14} when the adjacent empty soap-die is directly opposite plunger b^4 and in position to be filled. The stop e^{14} thus holds the disk
 75 secure from forward rotation, while the spring-finger e^6 , fitting under and against stop e^5 , prevents the return or back movement of the disks and soap-dies. Thus the dies C are firmly held in a fixed position while the feed-plunger is filling a die with a cake of soap.
 80

The rod e^{12} is reciprocated by a crank movement. As shown herein, the rear end of this rod e^{12} is pivoted to a crank pin or wrist e^{17} , fixed in the side of cam b^{10} and operated by
 85 shaft D. The same crank-pin operates to retract the stop e^{14} and thus disengages it from the stud e^{16} , with which it has been in contact. For this purpose the free end of this pin is provided with a friction-roller e^{18} , which
 90 as the crank-pin reciprocates comes into contact with the bearing e^{19} of the stop e^{14} and pushes the stop e^{14} back out of contact with the stud e^{16} of the disk e^4 . This disengagement of the stop e^{14} from stud e^{16} takes place
 95 immediately before the reciprocation of the rod e^{12} and lever e^8 and causes the disks and soap-dies to be advanced one-quarter of a circle. While one soap-die is held in position for being filled another with an unstamped cake of soap is under the soap-stamp,
 100 and while the first-named die is receiving its empty cake of soap the soap in the later-named die is being stamped. Thus the mechanism which holds the disks stationary for an empty die to be filled at the same time
 105 holds the die under the stamp stationary while the soap in the latter is being filled. The soap-stamp C' is of the usual form, and is operated by a shaft C², sliding through a guide C³.

The stamp is elevated by the following
 110 means, viz: A vertical square shaft C⁶ slides in a vertical guideway C⁷. This shaft C⁶ is provided with a lower arm C⁴ and an upper arm C⁵, whereby it is rigidly connected to the stamp-shaft C². The arm C⁴ passes through
 115 and slides in close-fitting slots, forming the guideway C⁷. One of these slots is shown in Fig. 1 and the other is opposite thereto on the other side of the guideway. Thus the arm C⁴ and the stamp C' always travel in fixed ver-
 120 tical planes, and the stamp always properly strikes the cake of soap in the die directly beneath it and entering the die stamps the soap cake. The shaft C⁶ and the stamp C' are elevated by a cam C⁹, provided with an abut-
 125 ment C¹⁰, which strikes against a shoulder C⁸, rigidly fixed to the shaft C⁶. The cam C⁹ is fixed on shaft D. After the shoulder C⁸ has mounted onto the abutment C¹⁰ it remains on the higher peripheral surface of the abutment
 130 until it comes to an abrupt end C¹¹ of said abutment, when it is free to fall and does rapidly descend until it impinges upon the lower peripheral surface of the cam. The shaft C⁶ is

thus elevated during one revolution of the shaft D. The stamp C' and shaft C⁶ are depressed by gravity, and the rapidity of their descent and the force with which the stamp strikes the soap are regulated by a greater or less number of weights, as C¹², placed upon the top of shaft C², and also when desired on the shaft C⁶. After the stamp has struck the soap and stamped the latter, it is immediately raised up from the soap to the position shown in Fig. 1, where it is above the top of the die. The latter is thereby free to be rotated with the disks e³ e⁴. The means whereby the stamp is raised to the position shown in said Fig. 1 consists of the spring C¹⁷, fixed on stationary seat C¹⁸ of the frame and elastically pressing against the stud C¹⁹, fixed to the shaft C⁶. The further elevation of the stamp is effected by the cam C⁹, as hereinbefore described.

A device is present for ejecting the soap cake from the die after said cake has been stamped, and consists of a stationary curved ejecting-guide C¹³. Each die has a false bottom, which is capable of freely moving in the die toward the mouth of the latter or toward the bottom of the latter. This false bottom C¹⁵ may be termed an "ejector." It is provided with a shank C¹⁴, which passes through the real bottom of the die, and is provided with the pin C¹⁶ to prevent the shank from sliding so far through the die-bottom as that the false bottom shall leave the die. As the dies are rotated, the free end of the shank C¹⁴ of the die just leaving the soap-stamp impinges against the ejecting-guide C¹³, and as the disks are rotated the ejecting-guide forces shank C¹⁴ outward and the ejector is thereby moved outward, through the die to the mouth of the latter, and the stamped cake of soap therein is ejected and received on a proper table or in a suitable receptacle.

For the proper cleansing of the false bottom of the die a swab T is provided, attached to the bar T'. As the dies move forward, their false bottoms are successively cleaned against the swab.

A bar S' is pivoted at the sides of the vertical guide b² and is worked by a crank-arm S², in turn operated by a rod S³, at one end pivoted to crank-arm S² and at the other end pivoted to a connection of the bar b⁷. Thus the reciprocation of the bar b⁷ operates the rod S³, in turn operating rock-arm or crank S², which latter operates the stop S. (See Figs. 2 and 7.) The loose cakes of soap within the guide B are thereby held within the guide until an empty die has come opposite the plunger b⁴. As the plunger advances and presses the lowest cake in the guide forward into the adjacent die, the stop S is lifted out of the way and the cake is free to pass out of the guide into the die. As the plunger, after inserting a cake into the empty die, retracts, the stop descends and keeps the remaining cakes of soap in the guide until the plunger advances and fills the next empty die.

A receptacle, as V, is filled with a suitable

liquid for the swabs, to use in cleaning the false bottom of the die and the bottom of the stamp. This liquid is conveyed to swab T by a conduit T² and to swab S⁴ by a conduit T³. The flow of liquid through these conduits is regulated by faucets, as V³. The swab S⁴ cleans the bottom of the stamp C'. This swab is fastened on the crank-wrist of the crank S⁵, operated by the rod S⁶, pivoted to the uprights A² A² of the frame, and provided with the crank S⁷, at its free end pivotally connected with the rod S⁸, pivotally connected to the oscillating end of bar S⁹, at its lower end pivoted at S¹⁰ to the frame and operated by a bar S¹¹ at one end fixed to it. The bar S¹¹ has at its other end a roller-stud S¹², fitting into a cam-groove S¹³ in the side of the cam S¹⁴, fixed on shaft D. After the stamp has been elevated to the top of its vertical stroke, and before it is dropped, the swab S⁴ passes over its face, washing it and removing therefrom any particles of soap that may be adhering thereto.

The mode in which my invention operates as an entirety is as follows: The cakes of soap to be stamped are fed to the feed-guideway B. The lower one of these cakes of soap is inserted by the plunger b⁴ into the adjacent soap-die C. A partial revolution of the crank-shaft carries this die under the stamp, and a fresh empty die comes opposite the plunger. While the plunger is feeding another cake to the empty die the stamp is raised, swabbed, and dropped, and stamps the cake in the die immediately beneath it. A second partial (quarter) revolution of shaft D ejects the stamped cake from its die and presents an empty die to be filled in front of the plunger and a filled die under the stamp. Thus the operations of filling a die with a soap cake and stamping the cake in the preceding die and ejecting the stamped cake from a die preceding the last are continued until all of the soap to be stamped has passed through the machine.

It will be observed that all of the before-named mechanical movements are made by one shaft D. This one shaft may be rotated in any suitable manner. Band-pulleys (the one D' being tight and the other D² being loose) are here shown as one means for rotating said shaft D.

While the various features of my invention are preferably employed together, one or more of the said features may be used without the remainder, and in so far as applicable one or more of the said features may be used in connection with soap-stamping machines of a description other than the one herein specifically described.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. The soap-dies and the discal supports, in combination with the vertical guideway B and the horizontally-reciprocating feed-plunger b⁴, provided with table b⁵, substantially as and for the purposes specified.

2. The soap-dies and the discal-supports carrying the studs e^{16} and the reciprocating stop e^{14} and reciprocating feed-plunger b^4 , substantially as and for the purposes specified.
- 5 3. The soap-dies and the discal supports carrying the studs e^{16} , and reciprocating stop e^{14} , and the spring-finger e^6 , engaging a stop e^5 on the discal support, and the feed-plunger, substantially as and for the purposes specified.
- 10 4. The soap-dies and the discal supports carrying studs e^{16} , and reciprocating-stop e^{14} , mounted upon spring-plate e^{15} , and the feed-plunger, substantially as and for the purposes specified.
- 15 5. The combination of the soap-dies and discal supports provided with inclined grooves e^7 and abutments e^{13} , and the lever e^8 , having stud e^9 , pressed forward by spring e^{10} and operating in said grooves and against said abutments, and crank b^{11} e^{17} , rod e^{12} , connecting the said lever e^8 and said crank, and friction-roller e^{18} , on crank-pin e^{17} , engaging the stop e^{14} , substantially as and for the purposes specified.
- 20 6. The soap-dies and the discal supports carrying studs e^{16} , and the stop e^{14} , and stamp and feed-plunger, substantially as and for the purposes specified.
- 25 7. The soap-dies mounted on supports revolving around the shaft E and the curved stationary ejecting-guide C^{13} , each of the dies having a false bottom C^{15} , provided with shank C^{14} , passing through the true bottom of the die and engaging said guide C^{13} , substantially as and for the purposes specified.
- 30 8. The soap-dies and the stamp C' , and vertical shaft C^2 , and shaft C^6 , and the guideways C^3 A^2 , and arms C^5 C^4 , the latter engaging in the slots C^7 in the upright A^2 , stud C^8 , fixed to shaft C^6 , and cam C^9 , having abutment C^{10} and abrupt end C^{11} , substantially as and for the purposes specified.
- 40 9. The soap-dies and the stamp C' , and vertical shaft C^2 , and shaft C^6 , and the guideways C^3 A^2 , and arms C^5 C^4 , the latter engaging in the slots C^7 in the upright A^2 , stud C^8 , fixed to shaft C^6 , and cam C^9 , having abutment C^{10} , and abrupt end C^{11} , and spring C^{17} , and stud C^{19} fixed to shaft C^6 , substantially as and for the purposes specified.
- 50 10. The soap-dies and feed-plunger b^4 , stem b^6 , bar b^7 , bar b^8 , guide d , and wrist b^9 on end of lever b^{10} and engaging cam b^{10} b^{11} , the free end

of the bar b^8 being pivotally connected to the crank-pin of said wrist, substantially as and for the purposes specified. 55

11. The soap-dies and feed-plunger b^4 , and rod b^6 , laterally-reciprocating bar b^7 , stop-rod S' , pivoted at the face of the guideway B and provided with a stop-crank S, and operating-crank S^2 , whose free end is pivoted to one end of rod S^3 , the other end of the latter being connected to the bar b^7 , substantially as and for the purposes specified. 60

12. In a soap-stamping machine, the combination of the reciprocating stamp C' and rod S^6 , journaled to the frame and provided with swab-crank S^4 , carrying the crank S^7 , connected to reciprocating rod S^8 , which latter in turn is pivotally connected to the lever S^9 , having its fulcrum pivoted at S^{10} to the frame, and the rod S^{11} , operating lever S^9 and operated by cam S^{13} S^{14} through the agency of roller-stud S^{12} , substantially as and for the purposes specified. 65 70 75

13. The soap-dies, circular disks, stud e^{16} , stop e^{14} , abutments e^{13} , stud e^9 , lever e^8 , rod e^{12} , crank-pin e^{17} , pivoted to rod e^{12} and carrying roller-stud e^{18} , engaging stop e^{14} , the crank-pin e^{17} , fixed in the cam b^{11} , fixed on shaft D and having groove b^{10} , in which operates wrist b^9 , carried by rod b^{12} and connected to reciprocating bar b^8 , fixed to bar b^7 , attached to rod b^6 , carrying plunger b^4 , substantially as and for the purposes specified. 80 85

14. The soap-dies, circular disks, stud e^{16} , stop e^{14} , abutments e^{13} , stud e^9 , lever e^8 , rod e^{12} , crank-pin e^{17} , pivoted to rod e^{12} and carrying roller-stud e^{18} , engaging stop e^{14} , the crank-pin e^{17} , fixed in the cam b^{11} , fixed on shaft D and having groove b^{10} , in which operates wrist b^9 , carried by rod b^{12} and connected to reciprocating bar b^8 , fixed to bar b^7 , attached to rod b^6 , carrying plunger b^4 , and shaft C^6 , having stud C^8 , engaging cam C^9 on shaft D, and cam S^{13} , fixed to said shaft D, and bar S^{11} , having roller-stud S^{12} in said cam and connected to lever S^9 , in turned connected to rod S^8 , pivoted to crank S^7 of rod S^6 , carrying crank S^4 , and stamp-swab, and reciprocating soap-stamp C' , substantially as and for the purposes specified. 90 95 100

CHESTERFIELD MANNING.

Attest:

A. L. HERRLINGER,
G. A. W. PAVER.