

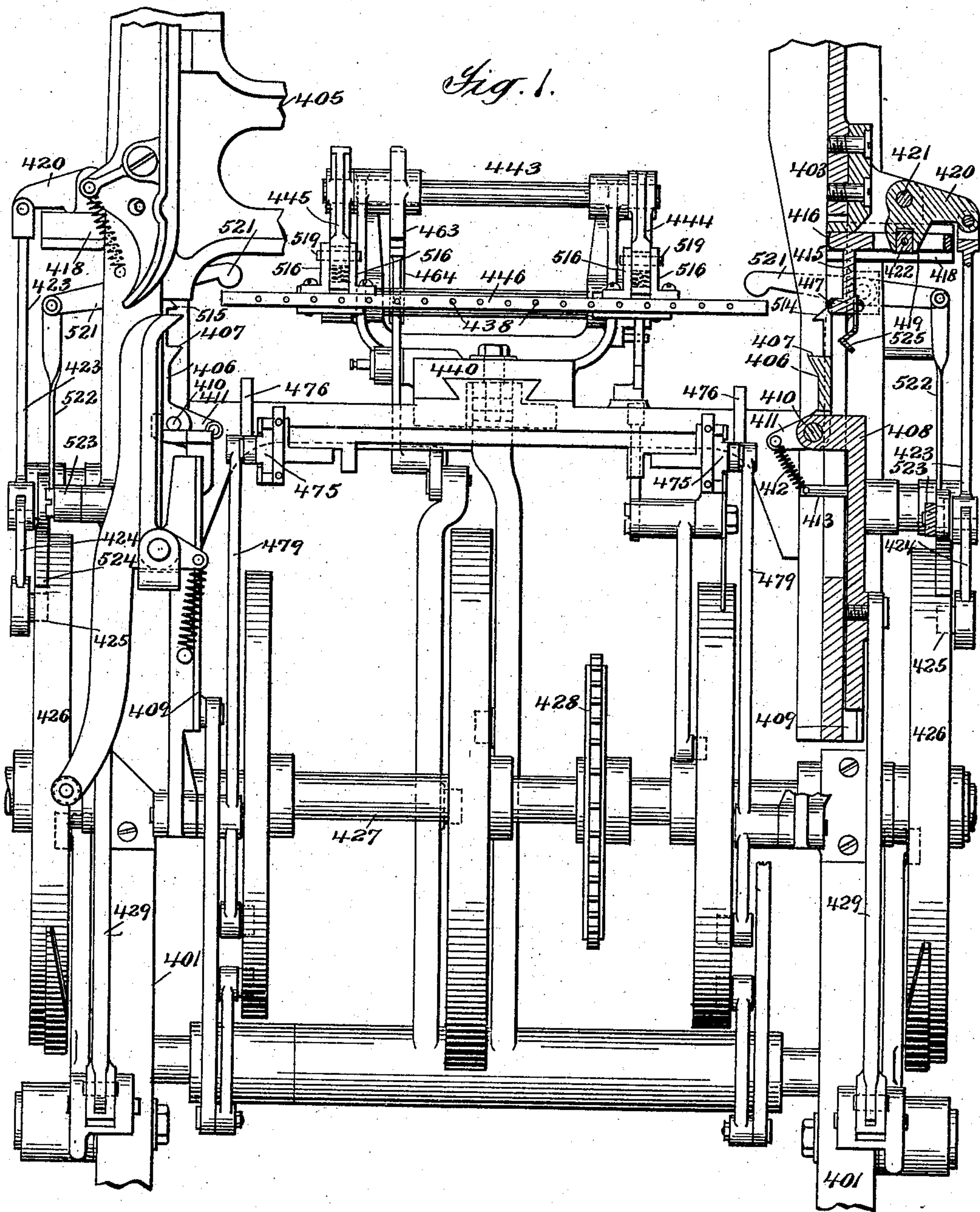
No. 815,359.

PATENTED MAR. 20, 1906.

W. S. LUCKETT.  
MACHINE FOR HANDLING CIGAR BUNCHES.

APPLICATION FILED APR 14, 1904.

3 SHEETS—SHEET 1.



Attest:  
W. S. Kennedy  
J. J. Galvan

Inventor  
William S. Lockett  
By Philipp. Sawyn. Rice & Kennedy  
Attys

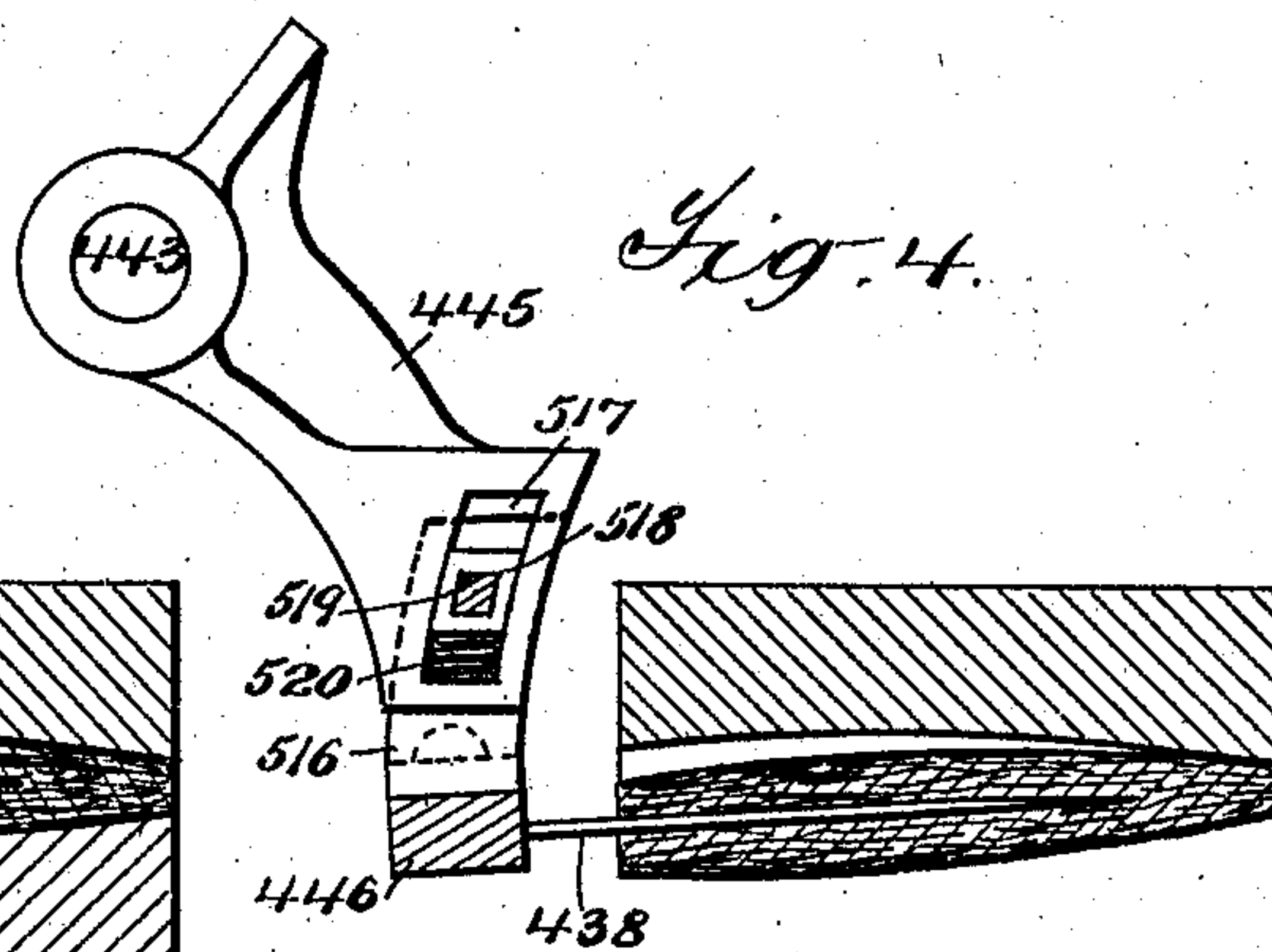
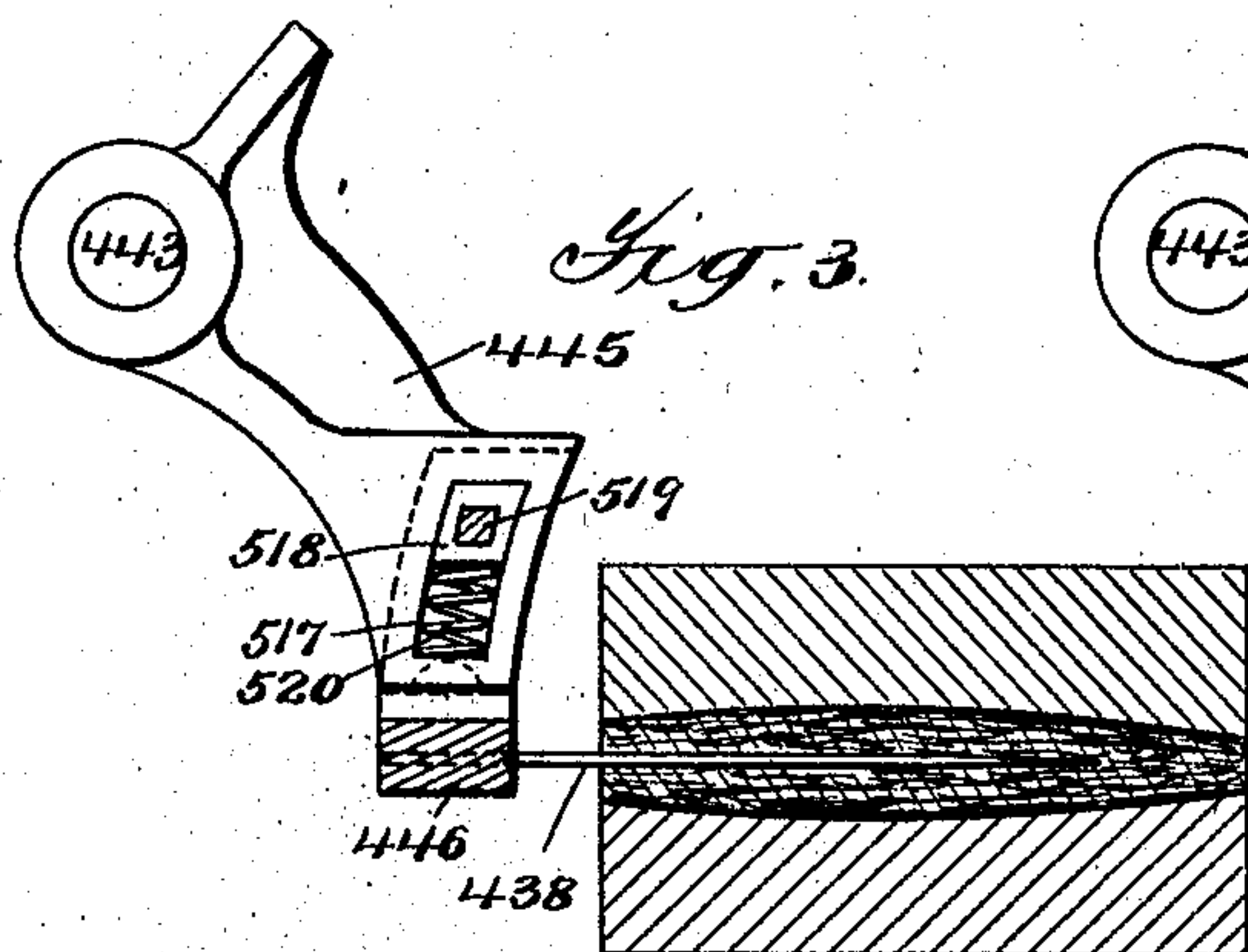
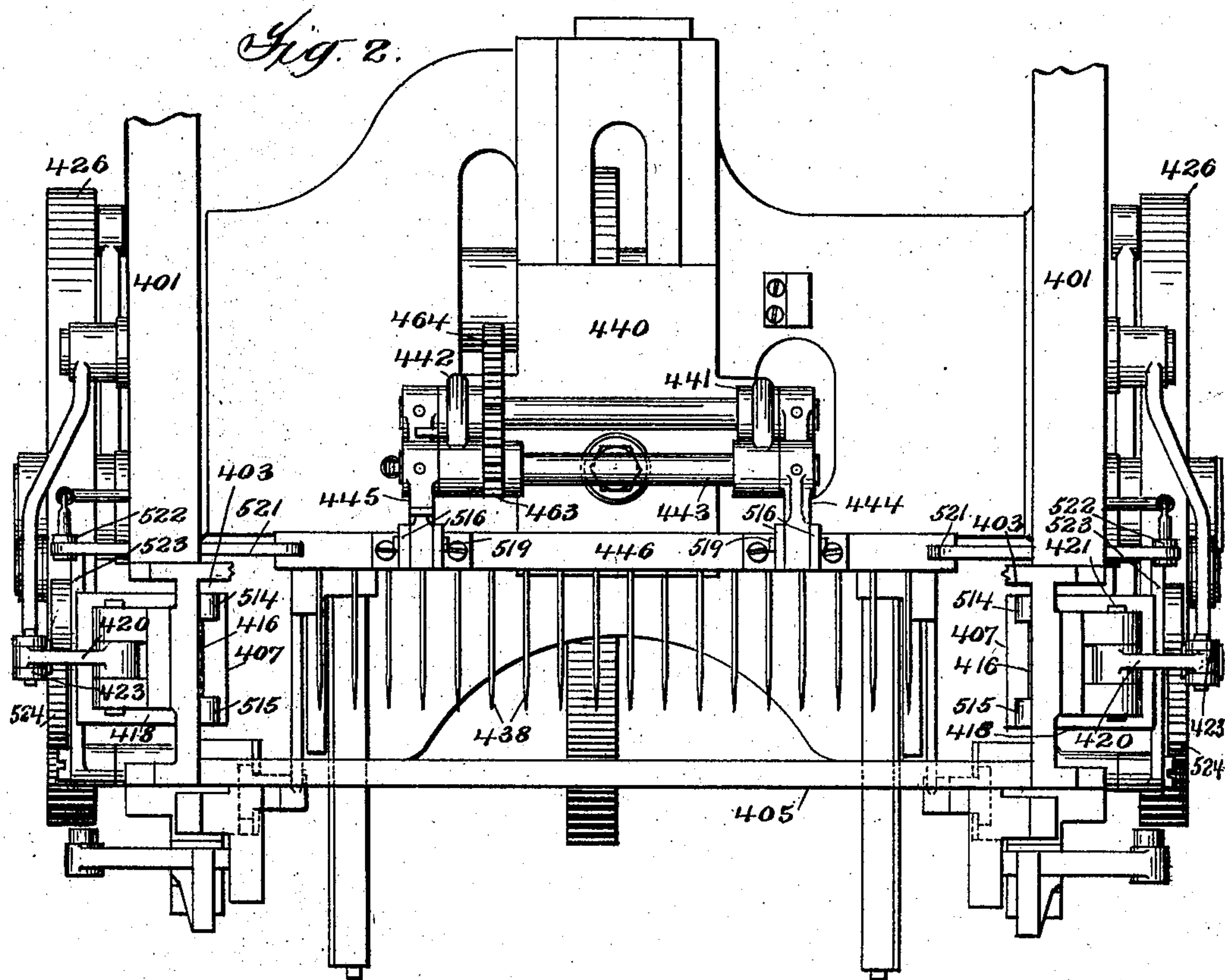
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3 SHEETS—SHEET 2.



Attest:  
W. S. Kennedy  
J. Galiani.

Inventor:  
William S. Lockett  
Philip S. Sawyer, Rice & Kennedy  
Attys



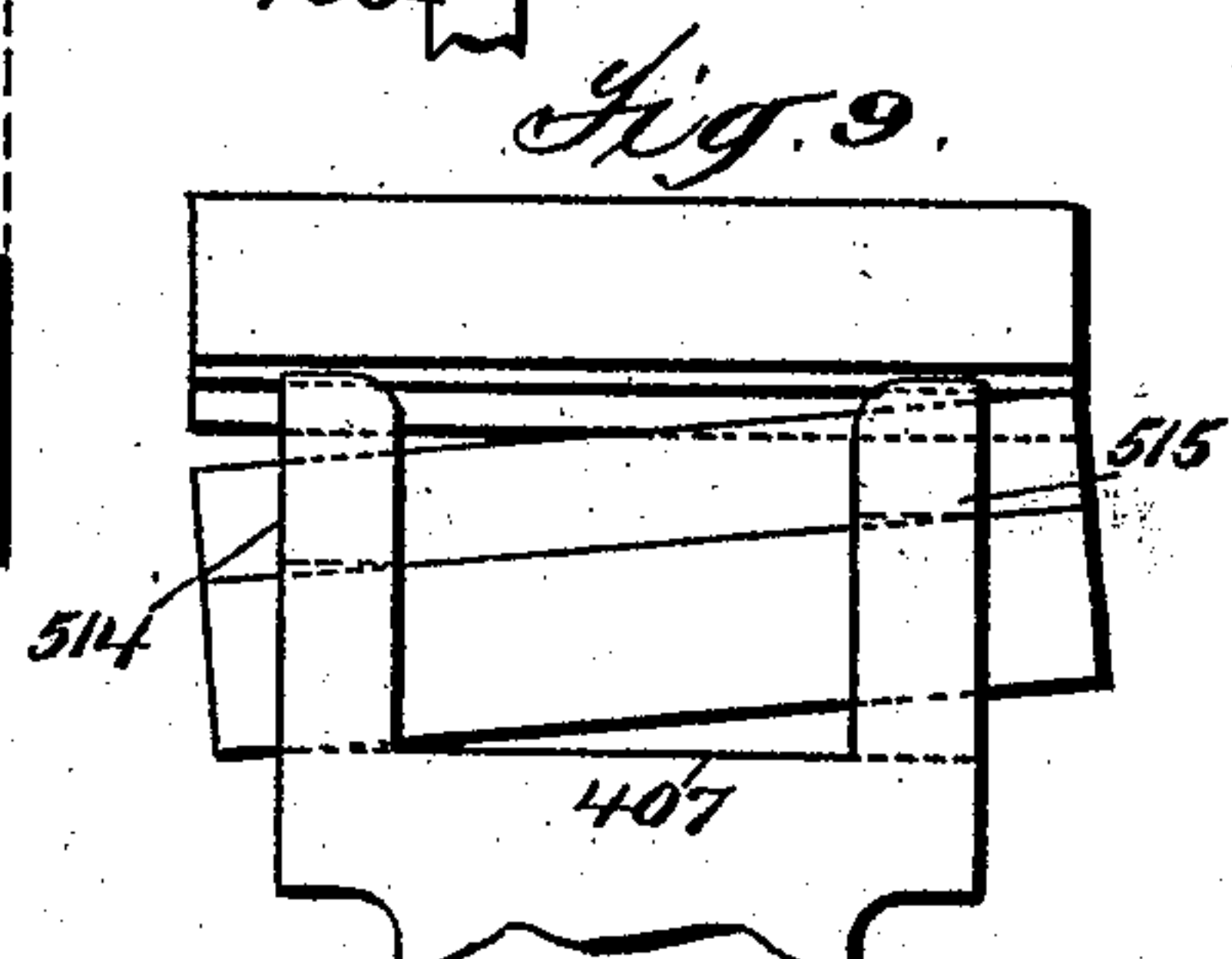
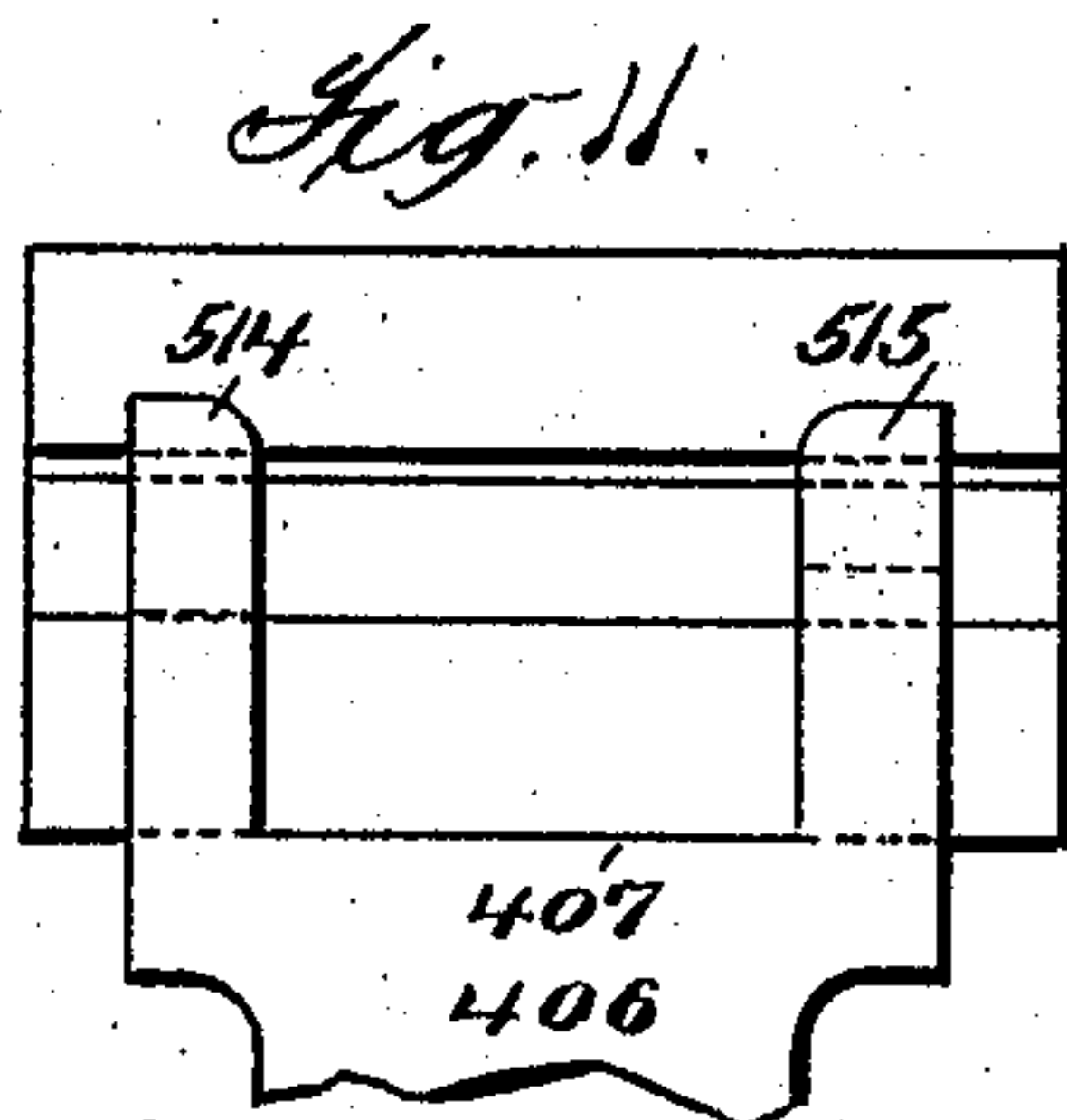
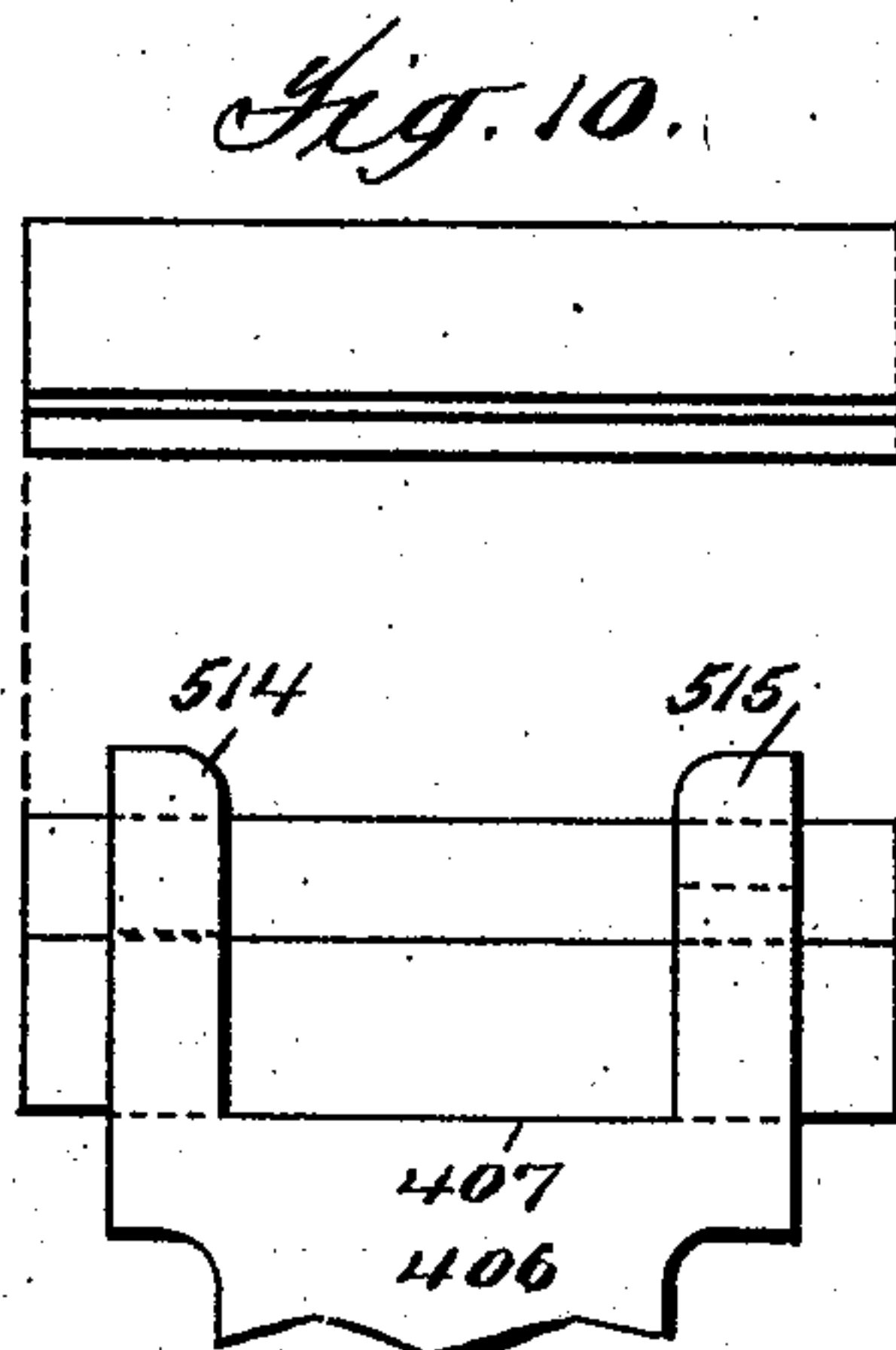
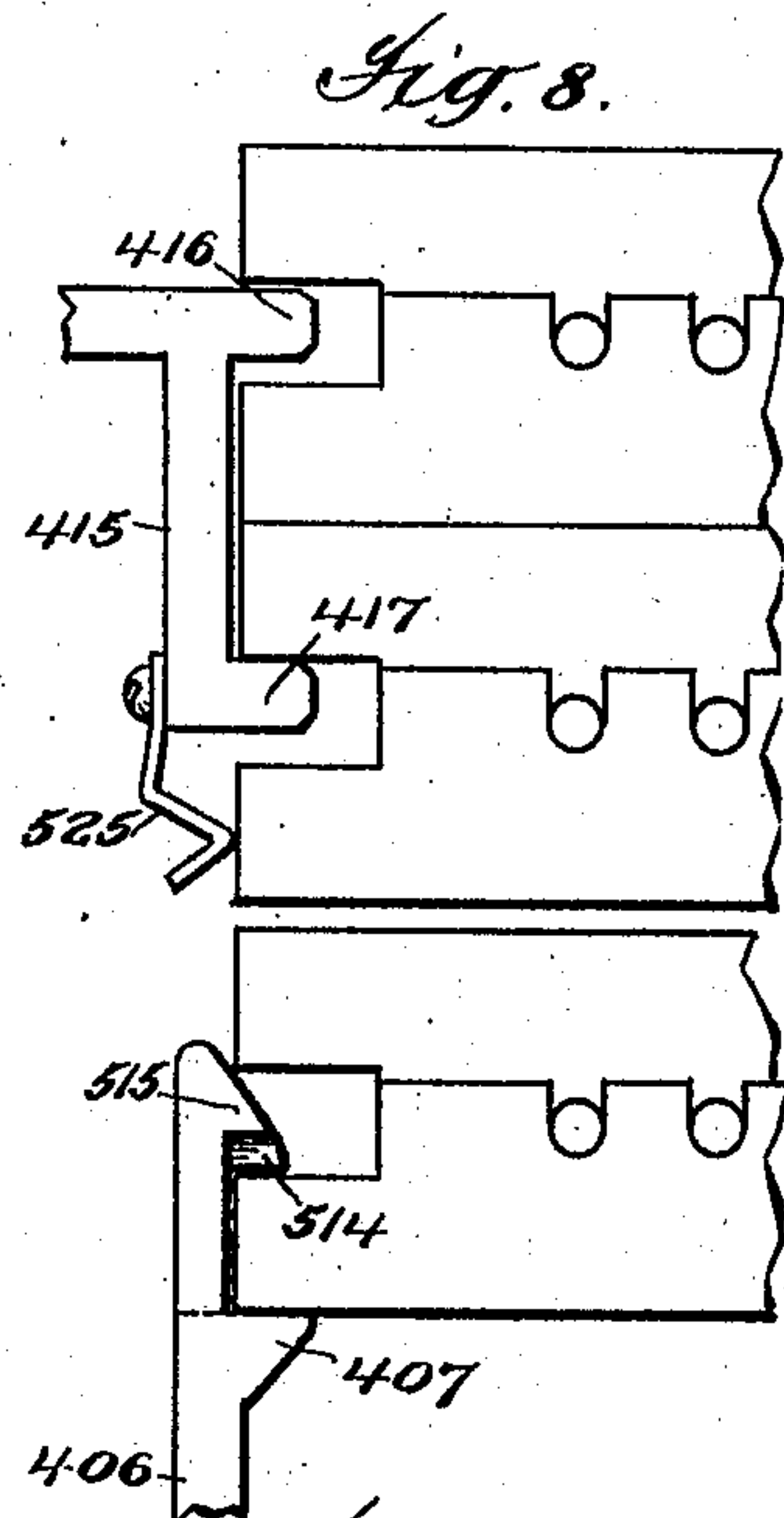
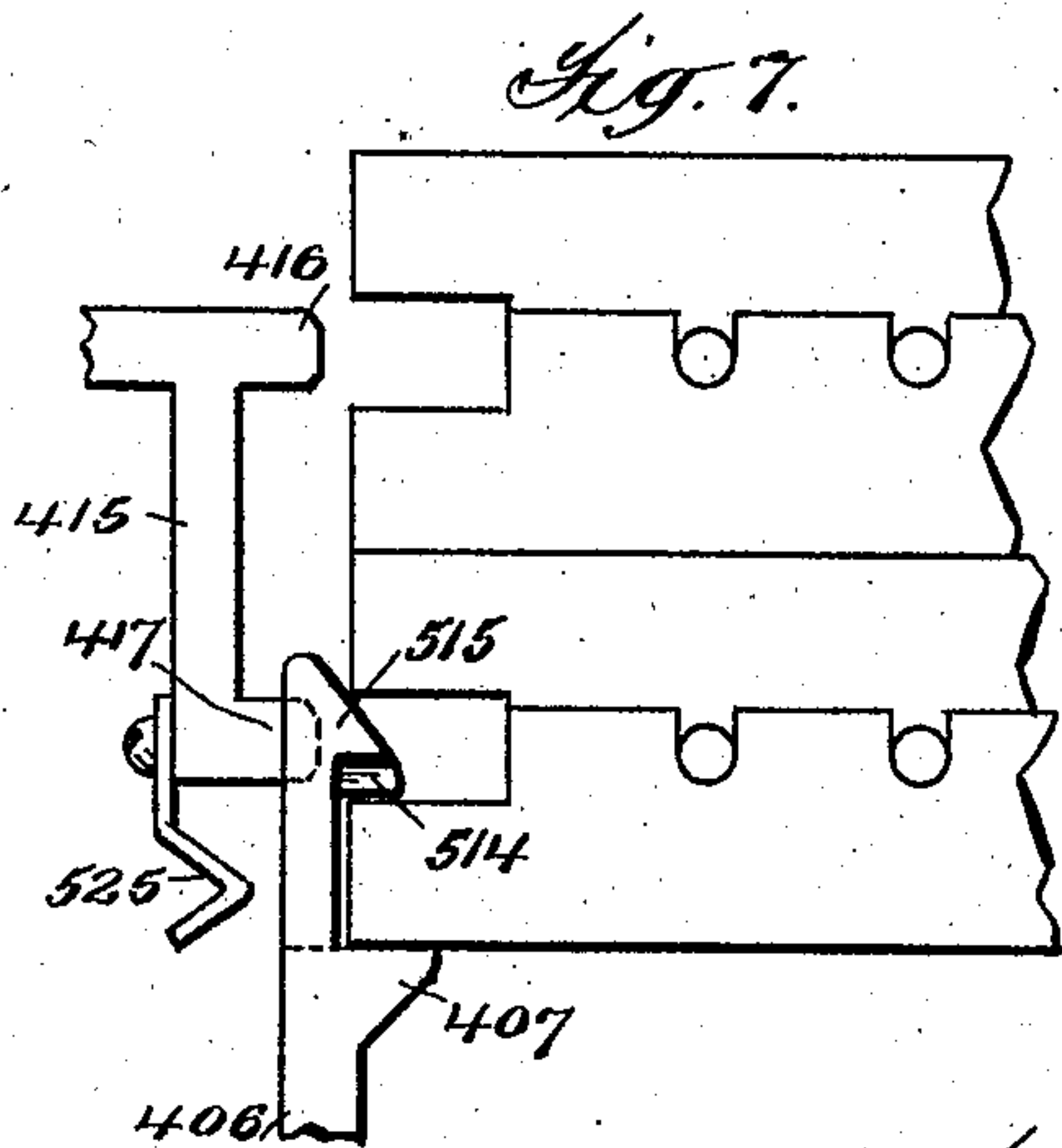
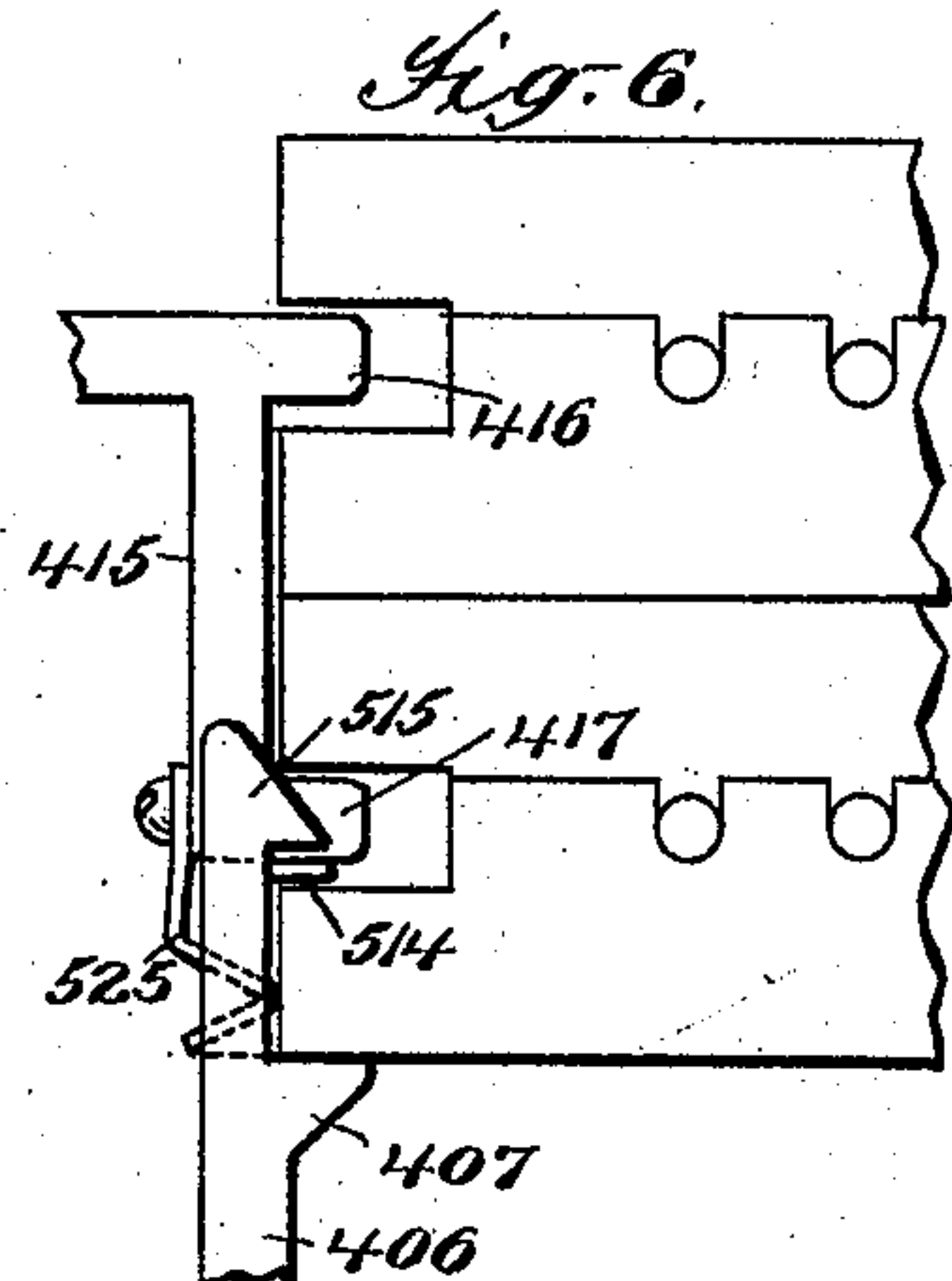
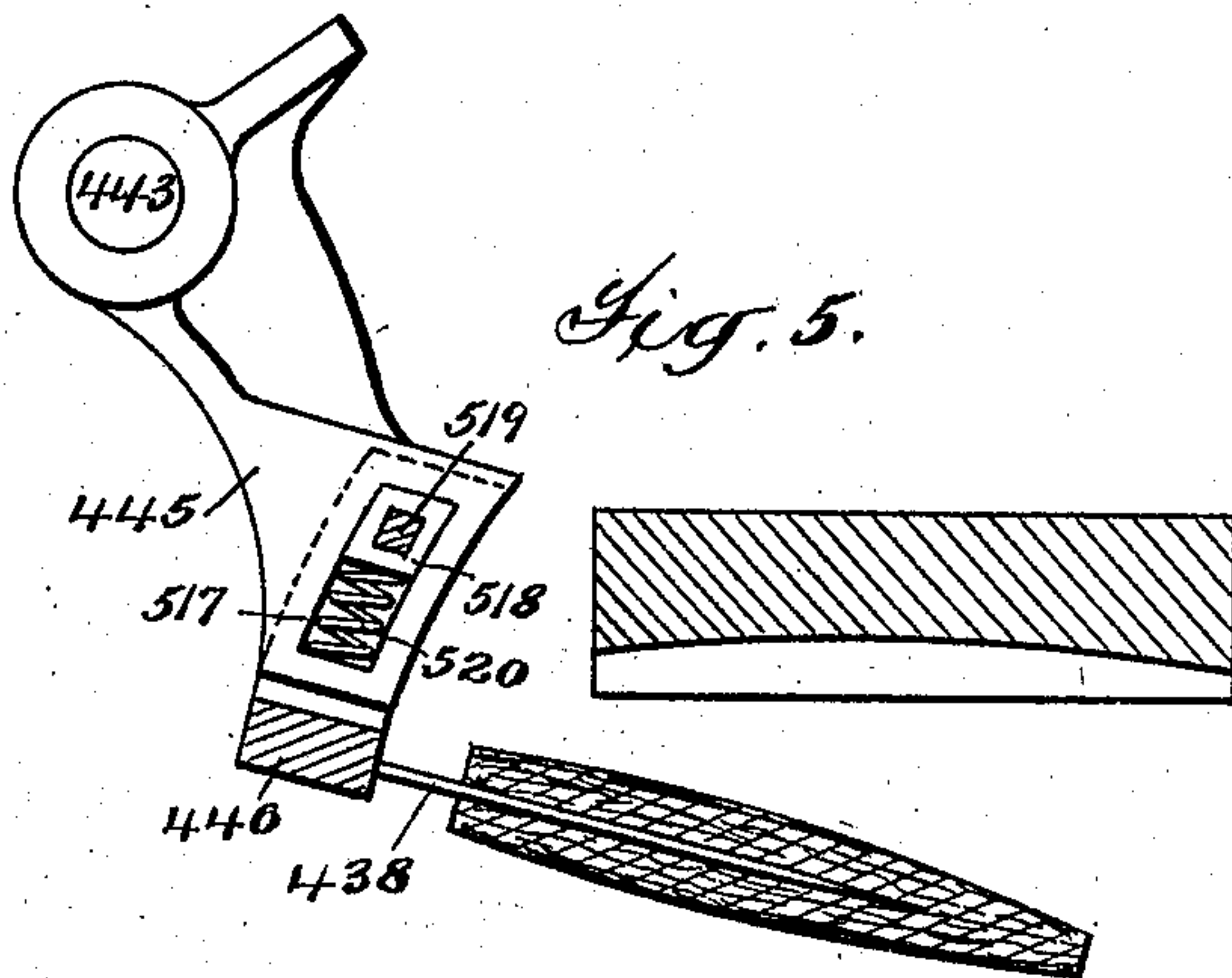
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W. S. LUCKETT.  
MACHINE FOR HANDLING CIGAR BUNCHES.

APPLICATION FILED APR 14, 1904.

3 SHEETS—SHEET 3.



Attest:  
W. S. LUCKETT.  
J. G. JALIANI.

Inventor  
William S. Lockett  
By Philipp. Sawyer. Rice & Kennedy



# UNITED STATES PATENT OFFICE.

WILLIAM S. LUCKETT, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO  
INTERNATIONAL CIGAR MACHINERY COMPANY, OF NEW YORK, N. Y.,  
A CORPORATION OF NEW JERSEY.

## MACHINE FOR HANDLING CIGAR BUNCHES.

No. 815,359.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed April 14, 1904. Serial No. 203,197.

*To all whom it may concern:*

Be it known that I, WILLIAM S. LUCKETT, a citizen of the United States, residing at East Orange, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Machines for Handling Cigar Bunches, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The present invention relates to certain improvements in machines for handling cigar bunches.

In an application filed by Oluf Tyberg, March 28, 1901, for a machine for removing cigar bunches from molds, Serial No. 53,211, there is disclosed an automatic machine by which cigar-molds are automatically opened in succession, the bunches automatically removed therefrom by suitable devices, and the molds then automatically closed and delivered from the machine. In an application filed September 17, 1902, by Oluf Tyberg and Leon Lake, Serial No. 123,980, for machine for removing cigar bunches from molds are disclosed certain improvements applicable to the type of machine illustrated in the Tyberg sole application above referred to. In the machines illustrated in the applications referred to the separation of the two parts of the mold is effected by pulling one part of the mold straight away from the other part—that is to say, that side of the moving part of the mold which is next to the tuck end of the cigar moves away from the stationary part of the mold simultaneously with that side of the moving part which is next to the tip end of the cigar. As molds are ordinarily constructed the cup and plunger fit each other and the cigar bunch very closely, and when both ends of the cup or plunger, as the case may be, move away from the bunch simultaneously the suction thus set up between the bunch and the moving part tends to and sometimes does injure the bunch. Furthermore, in that class of machines in which the separation of the mold is effected by pulling the lower part of the mold away from the upper part of the mold and in which the lower part of the mold is unsupported between operations except by its frictional contact with the upper part of the mold it has been found that in some in-

stances, especially where the molds have been operated for some time, this frictional contact is not strong enough to hold the lower part of the mold against the upper part and it drops, thus interfering with the operation of the machine. Furthermore, in the machines heretofore constructed the bunches are removed from the mold after the mold is opened by means of impaling devices, which penetrate the cigar bunches. These impaling devices after penetrating the cigar bunches have been given a swinging movement to lift the bunches out of the mold, this swinging movement being of such a character as to first lift out of the mold the end of the bunch opposite to that which was penetrated by the impaling devices. In other words, inasmuch as the impaling devices are caused to penetrate the tuck end of the bunch the swinging of the impaling devices operates to first lift out of the mold the tip end of the bunch. The impaling devices are shorter than the bunch, and aside from this fact the bunches are weaker at the tip end than at the tuck end, because their diameter is less at that end. The impaling devices, therefore, in breaking out the bunches from the mold are apt to injure the bunches, the suction between the mold and bunches holding the bunches so strongly that the pins tear out of the bunches.

It is one of the objects of this invention to produce an improved machine in which molds are operated upon to enable the bunches to be removed therefrom, in which the parts of the mold shall be separated in such a manner that the two parts of the mold are separated on one side in advance of their separation on the other side, so as to avoid breaking the bunches.

A further object of the invention is to provide a machine in which molds are operated upon to enable the bunches to be removed therefrom, in which machine devices are provided to prevent the accidental separation of the parts of the mold at the wrong time.

A further object of the invention is to produce a machine in which molds are operated upon to enable the bunches to be removed therefrom, in which machine the bunches are removed from the mold by impaling devices, that end of the bunch which is entered by the



impaling devices being broken out of the mold before the other end is broken out, thus avoiding injury to the bunches.

With these and other objects not specifically referred to in view the invention consists in certain constructions and in certain parts, improvements, and combinations, as will be hereinafter fully described and then specifically pointed out in the claims hereunto appended.

In the accompanying drawings, Figure 1 is a front elevation, partly in section, of so much of a machine for operating on cigar-molds as is necessary to an understanding of the invention. Fig. 2 is a plan view of the construction shown in Fig. 1. Figs. 3, 4, and 5 are diagrammatic detail views illustrating the operation of the breaking-out devices for the mold. Figs. 6 to 11, inclusive, illustrate diagrammatically the operation of the various devices by which the molds are opened, are held in position during the removal of the bunches, and are closed after the bunches have been removed.

Referring to said drawings, the machine which has been selected to illustrate the invention is in general construction similar to the machine disclosed in the Tyberg and Lake application above referred to, although it is to be understood that the improvements might be embodied in machines which differ materially therefrom.

The side frames in which the operative parts of the machine are supported are marked 401, and in the particular construction shown these side frames are provided with recesses 403, in which a stack of molds to be operated upon may be guided. The side frames are tied together by means of a cross-bar 405. In the particular construction illustrated the means for supporting the stack of molds will be of such a character as to permit the cigar bunches in the bottom mold of the stack to be engaged by bunch-moving means for the discharge of the bunches, the mold being then closed and transported away from the stack, after which another mold is operated upon. Preferably, as in the machine of the application referred to, an abutment is employed on which the mold to be operated upon may at times be supported and also on which the stack of molds, when a stack is being operated upon in the machine, may at times be supported. In the construction illustrated this abutment consists of two movable blocks 406, one of these blocks being located on each side of the machine and each of them being provided with a supporting-shoulder 407. The operating means by which the abutment is given the movements necessary for the discharge of its functions may be varied; but they will preferably, as in the machine of the Tyberg and Lake application above referred to, consist of slides 408, mounted to move in

suitable ways 409, the blocks being pivoted to the slides by pivots 410. Each of the blocks 406 is provided with a projection 411, to which is secured a spring 412, the other end of the spring being connected to a pin 413, extending inward from each of the slides referred to. The purpose of these springs will be hereinafter stated.

A mold being positioned on the supporting-faces of the shoulders 407, devices are brought into operation which separate the two parts of the mold. The molds on which the machine which has been selected to illustrate the invention is intended to operate are the ordinary two-part molds now commonly commercially used, these molds being shouldered at each end so that a space is left at the ends between the upper and lower parts of the mold. In the particular machine illustrated, therefore, the separating devices are caused to engage the molds at the ends and in the specific form illustrated by the shoulders referred to, though these engaging devices might be differently constructed and would be if molds of different constructions were to be operated upon by the machine. The construction of the separating devices themselves may be varied within wide limits; but in the particular construction shown the separating devices for the lower part of the mold consist of retaining projections 514 515, which are carried on the blocks 406, though they might be otherwise mounted. In the machine shown the lower part of the mold in order to reach the supporting-shoulders of the abutment passes between the projections, which are hooked at their upper ends, as shown. The springs 412 permit the blocks 406 to move outward, and thus permit the passage of the mold, the springs throwing the blocks inward after the mold has passed between the projections, so that they are thus brought into operative position.

The upper part of the mold is held during the opening operation by devices which may be varied widely in form and construction. When, as in the construction illustrated, an abutment is relied upon to assist in the separation of the parts of the lowest mold of a stack of molds, it is obvious that means must be provided for sustaining in position the upper part of the lowest mold and the molds in the stack above said part. While these means may be of any suitable construction, they will preferably be similar to those shown in the Tyberg and Lake application referred to for the same purpose—that is to say, engaging projections 416 417 are provided, these projections being so spaced that the projections 417 take into the spaces of the lowest mold of the stack and the projections 416 take into the spaces of the mold which is next above the lowest mold. These projections are preferably, as in the machine of the application referred to, mounted on supports



415, which are arranged in the form of slides and which move in ways 184, secured to the side frames. The projections 417 are, further, in the particular construction shown of such a width as to pass into the spaces between the retaining projections 514 515. The means for operating these projections 416 417 may be of any desired construction. When, however, the projections are mounted on or form a part of slides, as shown, the operating construction will preferably be similar to that of the machine of the Tyberg and Lake application above referred to—that is to say, there is provided on each side of the machine a bell-crank 419 420, said bell-crank being pivoted at 421 in suitable bearings formed on the machine-frame. The arm 419 of each bell-crank is slotted and engages a pivoted block 422, mounted in slots in the slides 415. The arms 420 of the bell-cranks are connected by links 423 to cam-levers 424, the said levers being pivoted on the sides of the machine and being provided with bowls 425, which engage in grooves in cams 426. These cams 426 are mounted on the main shaft 427 of the machine, said shaft being driven by a sprocket 428 or in any other desired manner.

It is apparent that when the stack of molds is in position in the machine with the lowest mold resting on the shoulders 407 of the blocks 406 the retaining projections 514 515 of these blocks will enter the space between the upper and lower parts of the mold which rests on the abutment. If now the slides 415 be moved inward, it is further apparent that the projections 417 of these slides will lie between the projections 514 515 and will enter the same spaces which these projections have entered and that the projections 416 will enter similar spaces in the mold above. (See Fig. 6.) If now the two sets of projections be separated, as may be done by moving either set of projections, the two parts of the mold will be separated.

It has been before stated that the means for separating the two parts of the mold to be opened may be varied widely in construction. Whatever the variation in construction of these devices may be, however, they will be of such a character as to cause the mold to be separated on one side prior to the separation on the other side. In the machine which has been selected to illustrate the invention this operation is effected by constructing the hooked projections 514 so that their operating faces are nearer the supporting-face of the abutment 406 than are the operating-faces of the projections 515. It will of course be understood that there is a pair of projections 514 515 for each end of the mold, and these projections are further constructed so that the projections 514 engage the same on one side of its longitudinal center, and the projections 515 engage the mold on the other

side of its longitudinal center. It follows, therefore, that when the separation occurs between the projections 417 and the pairs of projections 514 515 the projections 514 will come into operation before the projections 515, and consequently that that side of the mold on which these projections operate will be separated before the separation on the other side of the mold occurs. In the construction shown the separation of the parts of the mold is effected by giving a downward movement to the projections 514 515, and this movement is effected through the slides 408, to which the blocks 406, which carry these projections, are connected. These connections while they may be of any suitable character will preferably be similar to those shown in the Tyberg and Lake application referred to—that is to say, each of the slides 408 is connected, by means of a link 429, to a suitable cam-operated lever. The particular construction by which the desired movements are effected is not necessary to an understanding of this invention, and in the interest of brevity the description of it is omitted. Reference is made, however, to said Tyberg and Lake application for a full disclosure of operating means suitable for this purpose.

In the machine which has been selected to illustrate the invention the bunches are removed after the mold is opened by suitable removing means, which may be varied in their construction, but which, in accordance with the present invention, include impaling devices. When such impaling devices are employed, they will preferably be constructed to operate in such a manner that they will break out of the mold that part of the bunch which is penetrated by the impaling devices before they break out the other part of the bunch. The impaling devices, as herein shown, consists of a plurality of pins 438, which may be mounted and operated in any desired manner. In the construction shown these pins are mounted on a bar 446, carried on a support which, as herein illustrated, comprises a pair of arms 444 445. This bar is mounted in its support in such a way as to enable the bar and pins to be given a movement independent of the movements of the support, which movements will be hereinafter referred to. The particular manner of mounting the bar and support may be varied within wide limits. As shown, the bar is provided with two pairs of angle-brackets 516, one pair of brackets taking on each side of the arm 444 and the other pair taking on each side of the arm 445. These arms 444 445 are provided with slots 517, and in each of these slots is located a faced block 518, the blocks being connected to the angle-brackets by faced pins 519. The blocks are shorter than the slots, and in the space between the bottom of the slots and the under side of the



blocks are placed springs 520. It is apparent that the bar 446 can be forced downward by pressure applied thereto against the tension of the springs 520, thus giving the bar and pins a movement independent of the movement of the arms.

The support which carries the bar and pins is preferably so mounted as to have a downward movement after the mold is opened to clear the bunches from the mold, after which the arms are moved outward away from the mold, the pins at this time carrying the bunches, and the arms are then given a rotating movement to bring the bunches into position to be delivered. To effect these various movements, the arms are in the construction shown mounted on a shaft 443, said shaft being carried in upwardly-extending arms 441 442, mounted on a slide 440, which moves in suitable ways in the bed-plate of the machine. The construction by which the slide is moved and the shaft is operated to give the pins the movements referred to is unnecessary to an understanding of this invention and is omitted in the interests of brevity and clearness. Reference is made, however, to the application of Tyberg and Lake, before referred to, for a full disclosure of means which may be employed for this purpose.

Prior to the swinging movements of the arms referred to the pins are given the movement referred to by which the bunches are broken out of the mold at the end penetrated by the pins, which will usually be for obvious reasons the tuck end of the bunch. The construction by which this downward movement is effected may be varied within wide limits; but, as shown, there are provided two levers 521, said levers being suitably pivoted in the frame of the machine and being connected by suitable links 522 to cam-levers 523, said levers being operated by cams 524, carried on the cam-disk 426 before referred to.

In the operation of the machine which has been selected to illustrate the invention after a mold has been positioned on the faces of the abutment 406 the impaling-pins are caused to penetrate the bunches in this mold. This might be effected either by causing the mold to move against the impaling-pins, as in the Tyberg application referred to, or by causing the pins to move toward the mold, as in the construction in the Tyberg and Lake application referred to. The latter construction is the preferable one, and reference is made to said application for a full disclosure of a means by which this may be accomplished. Inasmuch, however, as the particular means by which the bunches are caused to be impaled by the impaling devices is not necessary to an understanding of the invention, a description thereof is omitted from this specification in the interest of brevity.

After the bunches have been impaled the blocks and their projections 514 515 are given

the downward movement through their operating connections to separate the parts of the mold, one side of the mold being separated before the other side, as is indicated, for instance, in Fig. 9. After the two parts of the mold have been thus separated the levers 521 come into operation to produce the bunch-breaking-out movement referred to, the operation being that indicated in Fig. 4, after which the support for the pins is given in the machine illustrated a downward swinging movement to entirely clear the bunches from the molds. (See Fig. 5.) The means by which this movement is effected may be of any desired character. As shown, the shaft 443, on which these arms are mounted, is provided with a segment-gear 463, which meshes with a segment-arm 464, operated through suitable connections from the cam-shaft of the machine. Reference is made to the Tyberg and Lake application above referred to for a full description of a suitable means by which this movement may be effected.

After the bunches are clear of the mold the slide 440 is operated through suitable connections, not necessary to describe here, to so position the bunch-removing devices with respect to the mold that the delivery operations by which the bunches are removed from the pins are carried out. These delivery operations may be effected in any desired manner, but may be effected by the means fully described in the said Tyberg and Lake application.

As soon as the bunches have been removed from the mold the blocks 406, comprising the abutment, are given an upward movement to close the mold. The slides 415 are then withdrawn, so as to disengage the projections 416 417 from the space in the mold, the position of the parts being illustrated in Fig. 7. In this position of the parts the entire stack of molds being operated upon is supported on the operating-faces 407 of the blocks 406. These blocks are now given a downward movement, lowering the entire stack an amount equal to the vertical height of one mold. When, in the movement of the stack, the projections 416 417 come opposite the spaces between the second and third molds above the one resting on the blocks 406, (see Fig. 8,) the slides 415 are again operated to cause these projections to engage the spaces. This inward movement of the slides occurs slightly before the blocks 406 have reached their lowest position, so that there is a clearance between the lowest mold and the mold just above it. This lowest mold, which has been emptied in the manner described, is now removed from the machine by any desired means—as, for instance, by means of ejectors 476, mounted on slides 475, these slides being operated by cam-levers 479. Reference is made to the said Tyberg and Lake application for a full disclosure of a



suitable ejector construction and the means for operating it.

After the empty mold has been ejected from the blocks 406 and prior to the time when these blocks move up so that their projections 514 515 engage the lowest mold it will be seen (see Fig. 8) that the bottom of the lowest mold, which mold at this time is held by the projections 417, if not supported in any other way than by these projections, might, if the frictional contact between the two parts of the mold were not strong enough, drop away from the top part, thus interfering with the operation of the machine, and it has been found in actual operation that this sometimes occurs, especially with molds that have been worked for a considerable length of time. To prevent this untimely separation of the parts of the mold, supplemental holding devices are preferably provided. While these supplemental holding devices might be of any desired description and mounted and operated in any desired manner, in the construction shown they consist of springs 525, which are secured to the slides which carry the projections 416 417. These springs will preferably be of the form shown in the drawings and will be strong enough to prevent the untimely separation of the parts of the mold referred to or in any way interfere with the separation of the mold at the proper time.

It is to be understood that while the drawings illustrate a preferred form of the construction changes and variations may be made therein without departing from the invention. The invention is not, therefore, to be limited to the specific construction hereinbefore described, and illustrated in the accompanying drawings.

What is claimed is—

1. In a machine for handling molds for cigar bunches, the combination with means for holding a two-part mold for containing a plurality of bunches the parts of the mold being unconnected, of mold-opening means, said means operating to separate the parts of the mold on one side at one end of the bunches in advance of the separation on the other side, substantially as described.

2. In a machine for handling molds for cigar bunches, the combination with means for holding a two-part mold for containing a plurality of bunches the parts of the mold being unconnected, of mold-opening means arranged to engage the mold to one side of its longitudinal center, whereby the parts of the mold are separated on one side prior to their separation on the other side, substantially as described.

3. In a machine for handling molds for cigar bunches, the combination with means for holding a two-part mold for containing a plurality of bunches, of mold-opening means arranged to engage the mold on both sides of

its longitudinal center, the opening means on one side of said center being brought into operation before the opening means on the other side, whereby the parts of the mold are separated on one side prior to their separation on the other side, substantially as described.

4. In a machine for handling molds for cigar bunches, the combination with means for holding in position a two-part mold for containing a plurality of bunches the parts of the mold being unconnected, of projections for engaging one part of the mold, and means whereby said projections are caused to separate the parts of the mold on the side nearest one end of the bunches in advance of the separation on the other side, substantially as described.

5. In a machine for handling molds for cigar bunches, the combination with means for holding a two-part mold for containing a plurality of bunches, of a pair of projections at one end of the mold, a pair of projections at the other end of the mold, the corresponding projections of each pair engaging on opposite sides of the longitudinal center of the mold, and actuating means for said projections, the projections on one side of the said center being arranged to come into operation before the projections on the other side of said center, substantially as described.

6. In a machine for handling molds for cigar bunches, the combination with supports for one part of a two-part mold, of means for actuating the supports to engage this part, devices for engaging the other part of the mold, on each side of its longitudinal center, and means for effecting a relative movement between the supports and said engaging devices, the engaging devices on one side of the longitudinal center of the mold being arranged to come into operation before the engaging devices on the other side of the longitudinal center, whereby the parts of the mold are separated on one side prior to their separation on the other side, substantially as described.

7. In a machine for handling molds for cigar bunches, the combination with a pair of slides having supporting projections which engage the lower side of one part of a two-part mold, of two pairs of separating projections arranged to engage the other part of said mold on each side of its longitudinal center, the operating-faces of the separating projections on one side of the longitudinal center being arranged nearer to the surface of the part of the mold which they engage than the faces of the projections on the other side of the center, and means for effecting a relative movement between the supporting and separating projections, substantially as described.

8. In a machine for handling molds for cigar bunches, the combination with supports



having projections which engage the lower face of one part of a two-part mold, of an abutment for supporting the other part, two pairs of projections arranged to engage this part of the mold, projection of said pairs being arranged to engage on opposite sides of the longitudinal center of the mold and the projections on one side of said center having their operating-faces farther from the abutment than the faces of the other projections, and means for effecting a relative movement between the supporting projections and the abutment and its cooperating projections, substantially as described.

9. In a machine for handling molds for cigar bunches, the combination with a pair of supports arranged to engage the lower face of the upper part of a two-part mold, of an abutment for supporting the lower part of said mold, two pairs of projections arranged to engage said lower part of the mold on opposite sides of the longitudinal center, the projections on one side of the longitudinal center having their operating-faces farther from the abutment than the operating-faces of the projections on the other side of the longitudinal center, means for moving the abutment and its cooperating projections away from and toward the projections which hold the other part of the mold to open and close the mold, and bunch-removing means, substantially as described.

10. In a machine for handling molds for cigar bunches, the combination with a pair of supports arranged to engage the lower face of the upper part of a two-part mold, of an abutment for supporting the lower part of said mold, two pairs of projections arranged to engage said lower part of the mold on opposite sides of the longitudinal center, the projections on one side of the longitudinal center having their operating-faces farther from the abutment than the operating-faces of the projections on the other side of the longitudinal center, means for moving the abutment and its cooperating projections away from and toward the projections which hold the other part of the mold to open and close the mold, bunch-removing means, and means for discharging the mold, substantially as described.

11. In a machine for handling molds for cigar bunches, the combination with a pair of slides having projections to engage one of the parts of a two-part mold, of operating means for the slides, an abutment having two pairs of projections arranged to engage the other part of a two-part mold on each side of its longitudinal center, the projections on one side of the longitudinal center having their operating-faces farther from the abutment than the operating-faces of the projections on the other side of the center, means for moving the abutment and its projections away from and toward the part of the mold held by

the projections on the slides to open and close the mold, substantially as described.

12. In a machine for handling molds for cigar bunches, the combination with a pair of slides having projections to engage one of the parts of a two-part mold, of operating means for the slides, an abutment having two pairs of projections arranged to engage the other part of said mold on each side of its longitudinal center, the projections on one side of the longitudinal center having their operating-faces farther from the abutment than the operating-faces of the projections on the other side of the center, means for moving the abutment and its projections away from and toward the part of the mold held by the projections on the slides to open and close the mold, and bunch-removing means, substantially as described.

13. In a machine for handling molds for cigar bunches, the combination with means for sustaining a stack of two-part molds in position, of means for separating and removing from the stack the lowest mold, and holding devices operating on the lower part of the mold above the lowest mold.

14. In a machine for handling molds for cigar bunches, the combination with means for sustaining a stack of two-part molds in position, means for opening and closing the molds successively, bunch-removing means, and means for removing the lowest mold from the stack, and holding devices operating on the lower part of the mold above the lowest mold.

15. In a machine for handling cigar-molds, the combination with means for supporting a stack of two-part molds in position, of a set of lower engaging devices operating to engage the lower part of the lowest mold, a set of upper engaging devices engaging the upper part of the lowest mold, means for separating these sets of devices to open the lowest mold, bunch-removing means, means for causing the upper engaging devices to engage the mold above the lowest mold, mold-removing means, and holding devices acting on the lower part of the mold above the lowest mold.

16. In a machine for handling cigar-molds, the combination with means for supporting a stack of two-part molds in position, of a set of lower engaging devices operating to engage the lower part of the lowest mold, a set of upper engaging devices engaging the upper part of the lowest mold, means for separating these sets of devices to open the lowest mold, bunch-removing means, means for causing the upper engaging devices to engage the mold above the lowest mold, mold-removing means, and frictional holding devices carried by the upper engaging devices acting on the lower part of the mold above the lowest mold.

17. In a machine for handling cigar-molds, the combination with means for supporting a stack of two-part molds in position, of a set of lower engaging devices operating to engage



the lower part of the lowest mold, a set of upper engaging devices engaging the upper part of the lowest mold, means for separating these sets of devices to open the lowest mold, bunch-removing means, means for causing the upper engaging devices to engage the mold above the lowest mold, mold-removing means, and holding-springs carried by the upper engaging devices acting on the lower part of the mold above the lowest mold.

18. In a machine for handling molds for cigar bunches, the combination with a pair of slides, said slides being provided with projections for engaging the upper part of a two-part mold, of an abutment provided with projections for engaging the lower part of said mold, supplementary holding-springs carried by the slides and arranged to engage the lower part of the mold, means for actuating the slides, means for actuating the abutment and its projections to open and close the mold, bunch-removing means, and means for discharging the mold, substantially as described.

19. The combination with a mold, of bunch-impaling means, and means for effecting a relative movement between the mold and the impaling means to break that end of the bunch into which the impaling means is inserted out of the mold before the other end, substantially as described.

20. The combination with a mold, of bunch-impaling means, and means for operating said impaling means to break that end of the bunch into which the impaling means is inserted out of the mold before the other end, substantially as described.

21. In a machine for handling molds for cigar bunches, the combination with mold-supporting means, of a plurality of bunch-impaling devices, means whereby the impaling devices are caused to impale the bunches, and means for effecting a relative movement between the impaling devices and the mold to break that end of the bunch into which the impaling devices are inserted out of the mold before the other end, substantially as described.

22. In a machine for handling molds for cigar bunches, the combination with mold-supporting means, of a plurality of bunch-impaling devices, means whereby the impaling devices are caused to impale the bunches, means for effecting a relative movement between the impaling devices and the mold to break that end of the bunch into which the impaling devices are inserted out of the mold before the other end, and means whereby the delivery of the bunches is effected, substantially as described.

23. In a machine for handling molds for cigar bunches, the combination with mold-supporting means, of a plurality of bunch-impaling pins, means for supporting the pins, carrying means for the pins and their sup-

porting means, means for causing the pins to impale the bunches, and means for giving the pins and their supporting means a movement with respect to their carrying means to break that end of the bunch into which the impaling-pins are inserted out of the mold before the other end, substantially as described.

24. In a machine for handling molds for cigar bunches, the combination with a mold-support, of a plurality of bunch-impaling means, a bar in which said pins are mounted, carrying means for the bar, means whereby the pins are caused to impale the bunches, and means for giving the bar and pins a movement independent of their carrying means to break that end of the bunch into which the pins are inserted out of the mold before the other end, substantially as described.

25. In a machine for handling molds for cigar bunches, the combination with a mold-support, of a plurality of impaling-pins, a bar in which the pins are mounted, carrier-arms for the bar, means whereby the pins are caused to impale the bunches, means for giving the bar and pins a movement independent of the carrier-arms to break that end of the bunch into which the pins are inserted out of the mold before the other end, and means for operating the arms to deliver the bunches, substantially as described.

26. In a machine for handling molds for cigar bunches, the combination with supporting, opening and closing means for a mold, of a plurality of impaling-pins, a bar in which said pins are mounted, carrying means for the bar, means whereby the pins are caused to impale the bunches, and means for giving the bar and pins a movement independent of their carrying means to break that end of the bunch into which the pins are inserted out of the mold before the other end, substantially as described.

27. In a machine for handling molds for cigar bunches, the combination with supporting, opening and closing means for a mold, of a plurality of impaling-pins, a bar in which the pins are mounted, carrier-arms for the bar, means whereby the pins are caused to impale the bunches, means for giving the bar and pins a movement independent of the carrier-arms to break that end of the bunch into which the pins are inserted out of the mold before the other end, and means for operating the arms to deliver the bunches, substantially as described.

28. In a machine for handling molds for cigar bunches, the combination with means for supporting, opening and closing a mold, of a plurality of impaling-pins, a bar on which the pins are carried, a support for the bar, said support being constructed to provide a guide in which the bar moves, means for causing the bunches in the mold to be impaled by the pins, an actuator for causing



the bar to move in its guide, and means for operating the bar-support to bring the bunches into delivery position, substantially as described.

5 29. In a machine for handling molds for cigar bunches, the combination with means for supporting, opening and closing a mold, of a plurality of impaling-pins, a bar in which  
10 said pins are mounted, a support for the bar, said support being constructed to provide a guide in which the bar may move, an actuator for moving the bar in the guide in one direction, springs for returning the bar, and  
15 means for operating the support to bring the bunches into delivery position, substantially as described.

30. In a machine for handling molds for cigar bunches, the combination with means

for supporting, opening and closing a mold, of a plurality of bunch-impaling pins, a bar 20 on which the pins are mounted, a support comprising a pair of slotted arms, an actuator for moving the bar in the slots, springs for returning the bar, a carriage on which the arms are mounted, means whereby the pins 25 are caused to impale the bunches, and means for operating the arms to bring the bunches into delivery position, substantially as described.

In testimony whereof I have hereunto set 30 my hand in the presence of two subscribing witnesses.

WILLIAM S. LUCKETT.

Witnesses:

E. W. STUART,

W. H. GLASSFORD.