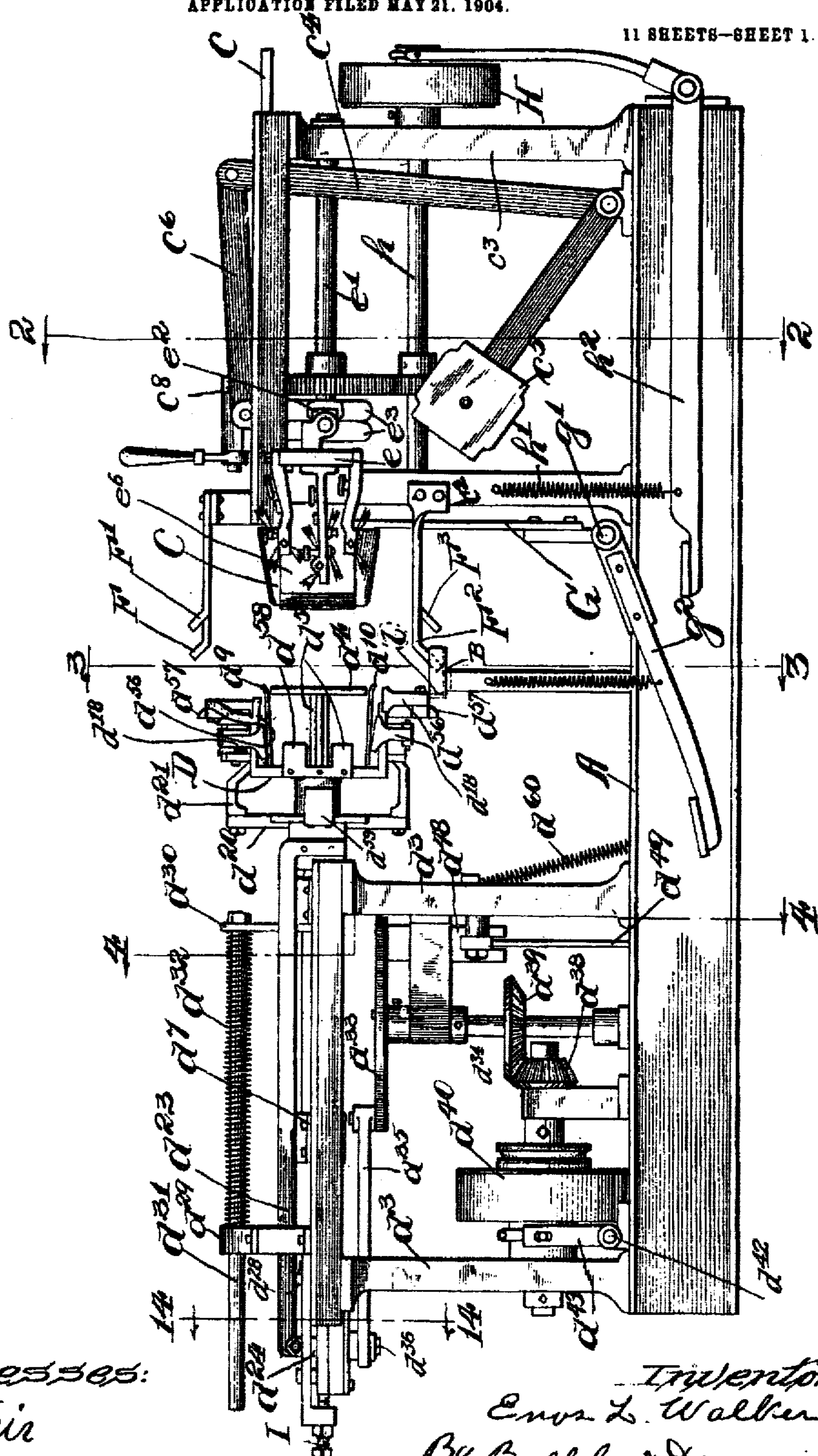


E. L. WALKER.
MACHINE FOR MAKING BASKETS.
APPLICATION FILED MAY 21, 1904.

11 SHEETS-SHEET 1.

Fig. 1.



Witnesses:
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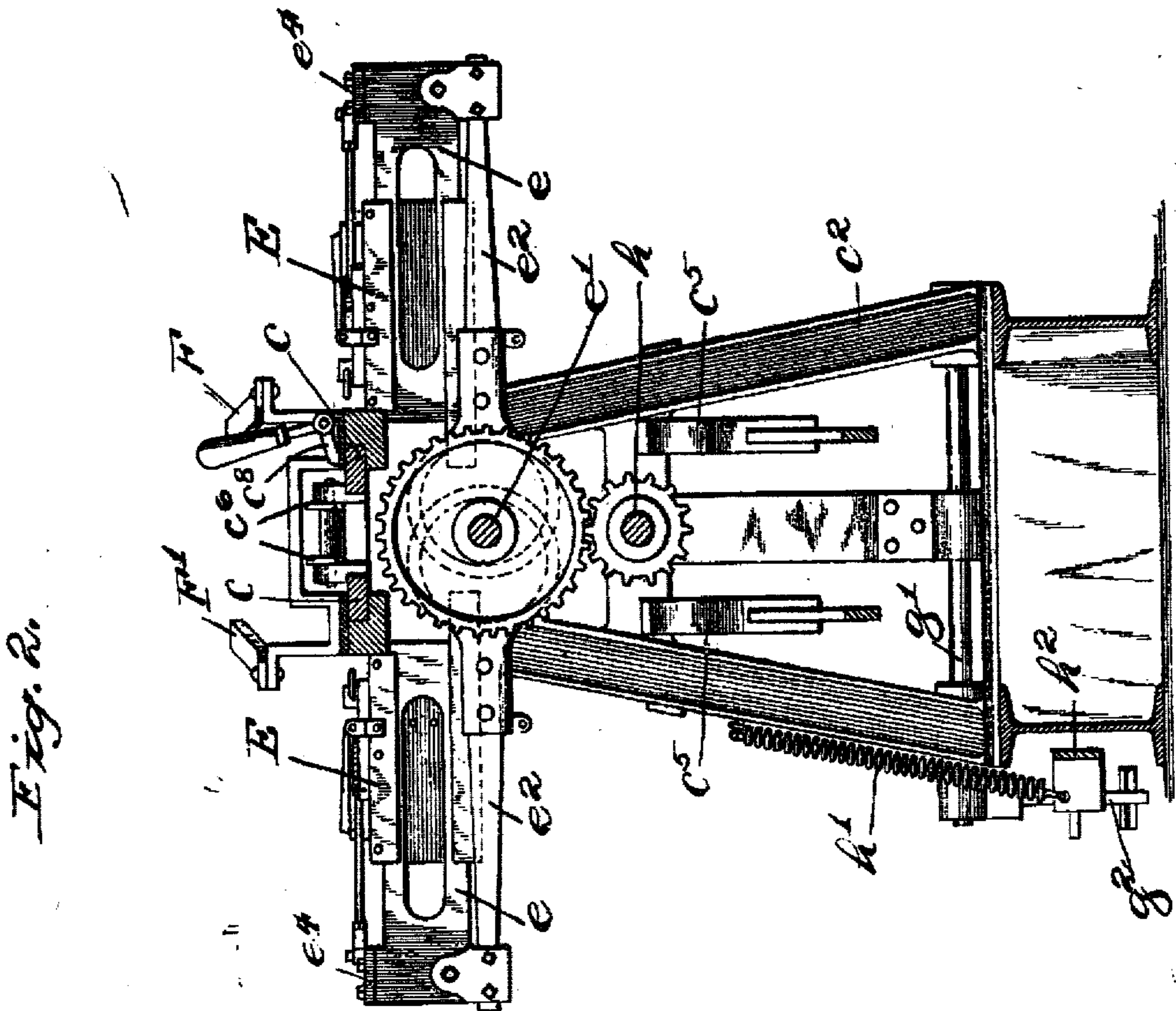
No. 825,566.

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E. L. WALKER.
MACHINE FOR MAKING BASKETS.

APPLICATION FILED MAY 21, 1904.

11 SHEETS—SHEET 2



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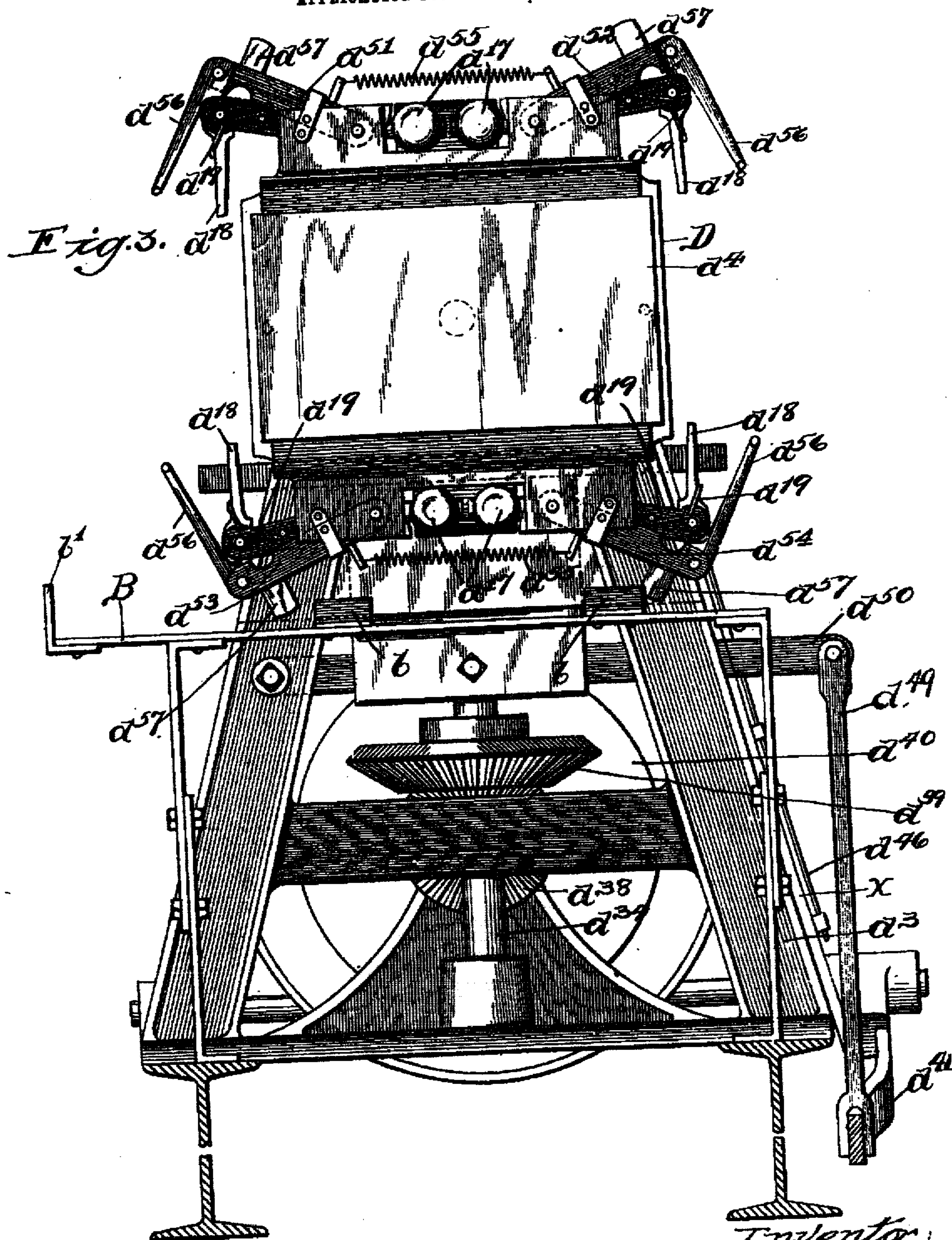
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MACHINE FOR MAKING BASKETS.

APPLICATION FILED MAY 21, 1904.

11 SHEETS—SHEET 3.



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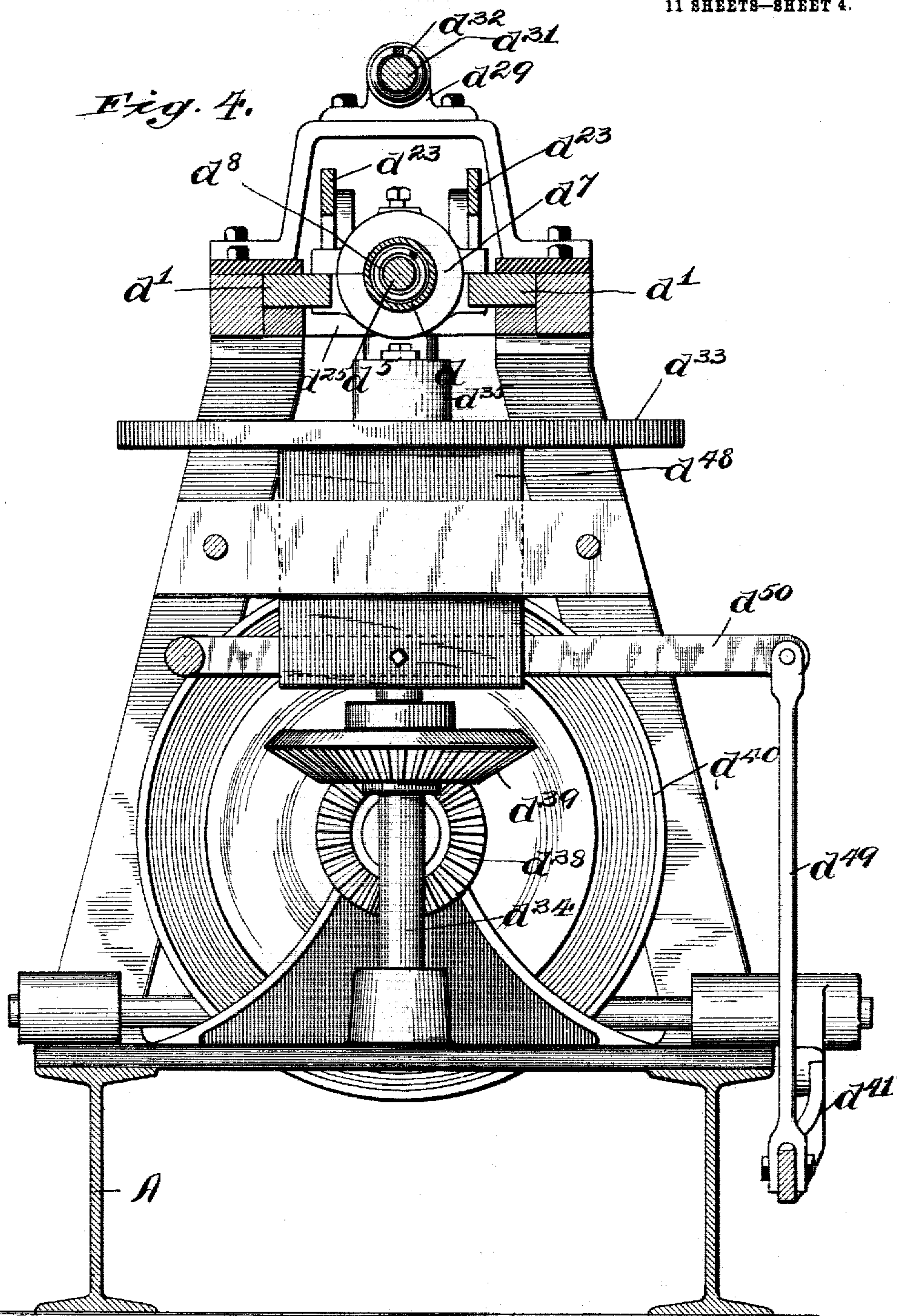
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11 SHEETS—SHEET 4.



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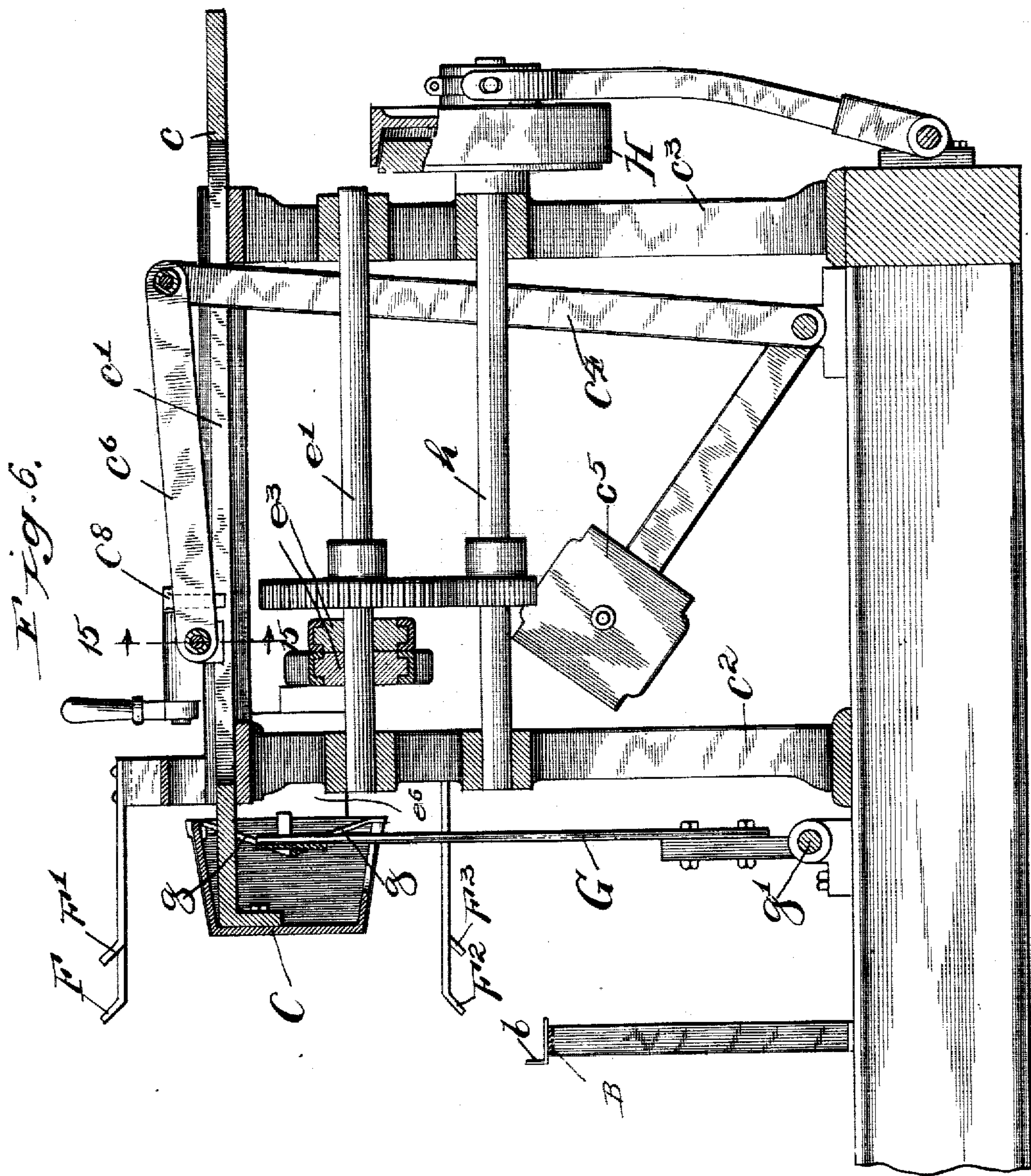
No. 825,566.

PATENTED JULY 10, 1906.

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MACHINE FOR MAKING BASKETS.

APPLICATION FILED MAY 21, 1904.

11 SHEETS—SHEET 6.



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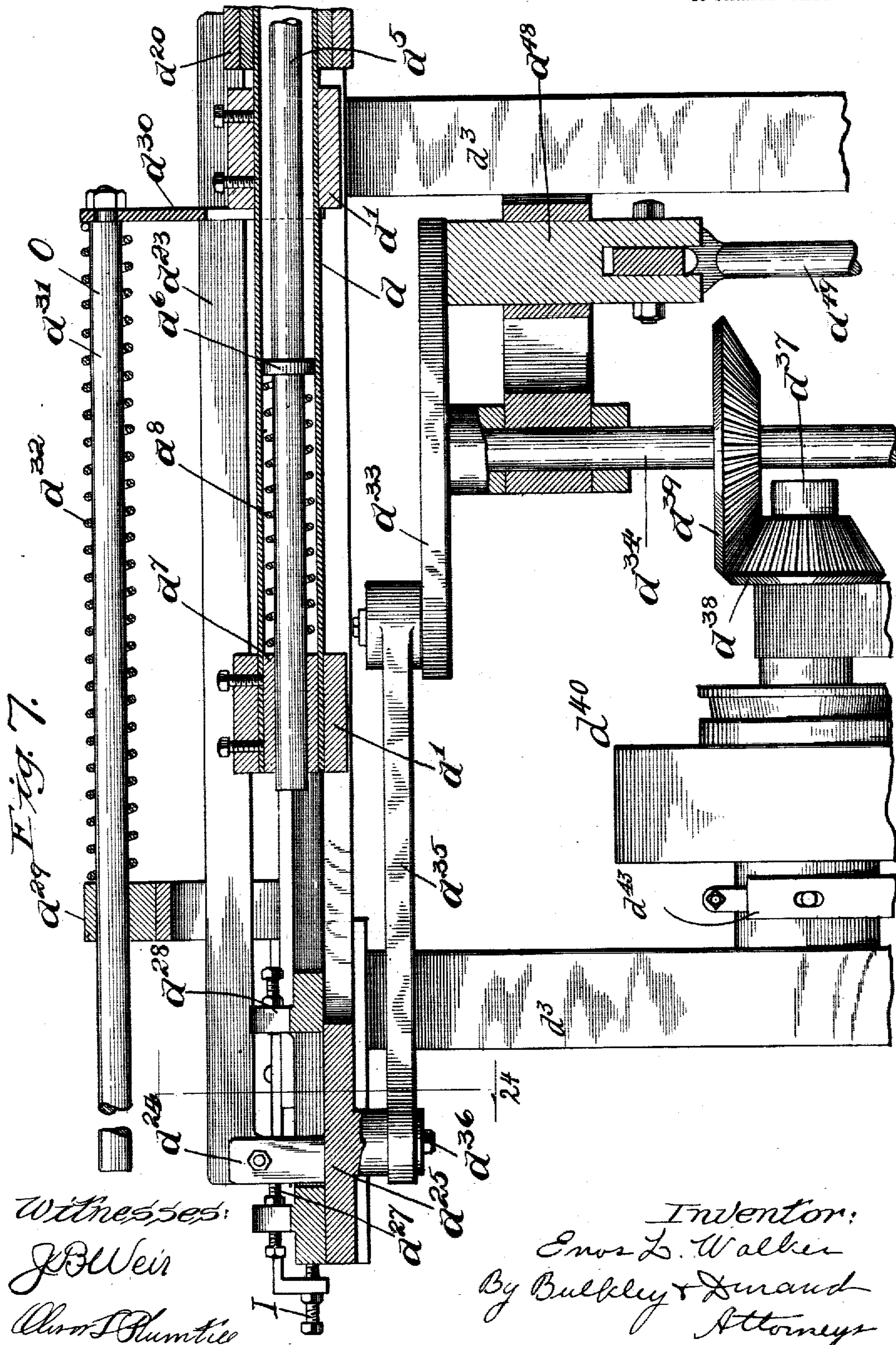
No. 825,566.

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E. L. WALKER.
MACHINE FOR MAKING BASKETS.

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11 SHEETS—SHEET 7.



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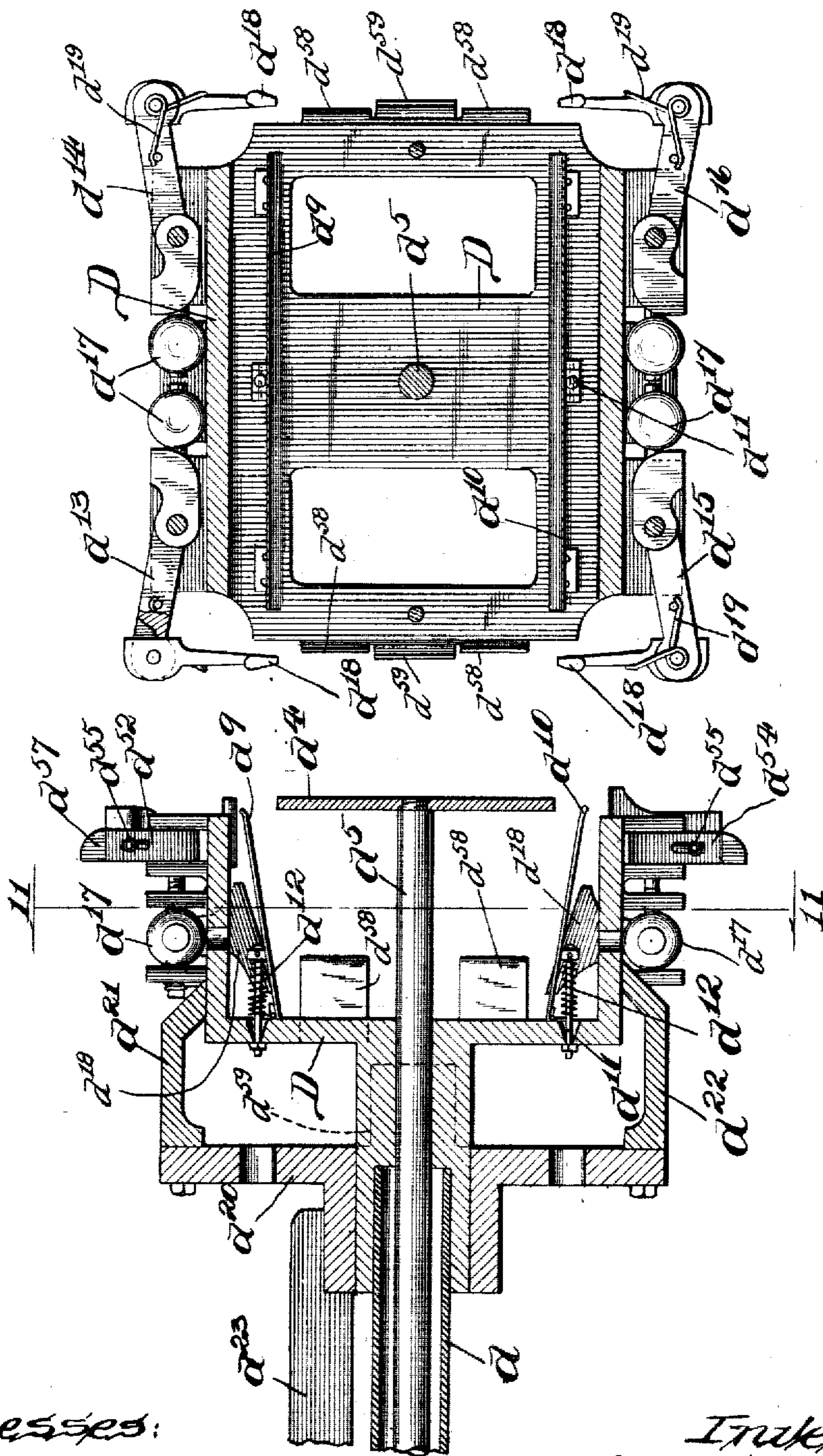
PATENTED JULY 10, 1906.

E. L. WALKER.
MACHINE FOR MAKING BASKETS.

APPLICATION FILED MAY 21, 1904.

11 SHEETS—SHEET 8.

Fig. 8.



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PATENTED JULY 10, 1906.

E. L. WALKER.
MACHINE FOR MAKING BASKETS.

APPLICATION FILED MAY 21, 1904.

11 SHEETS—SHEET 9.

Fig. 11.

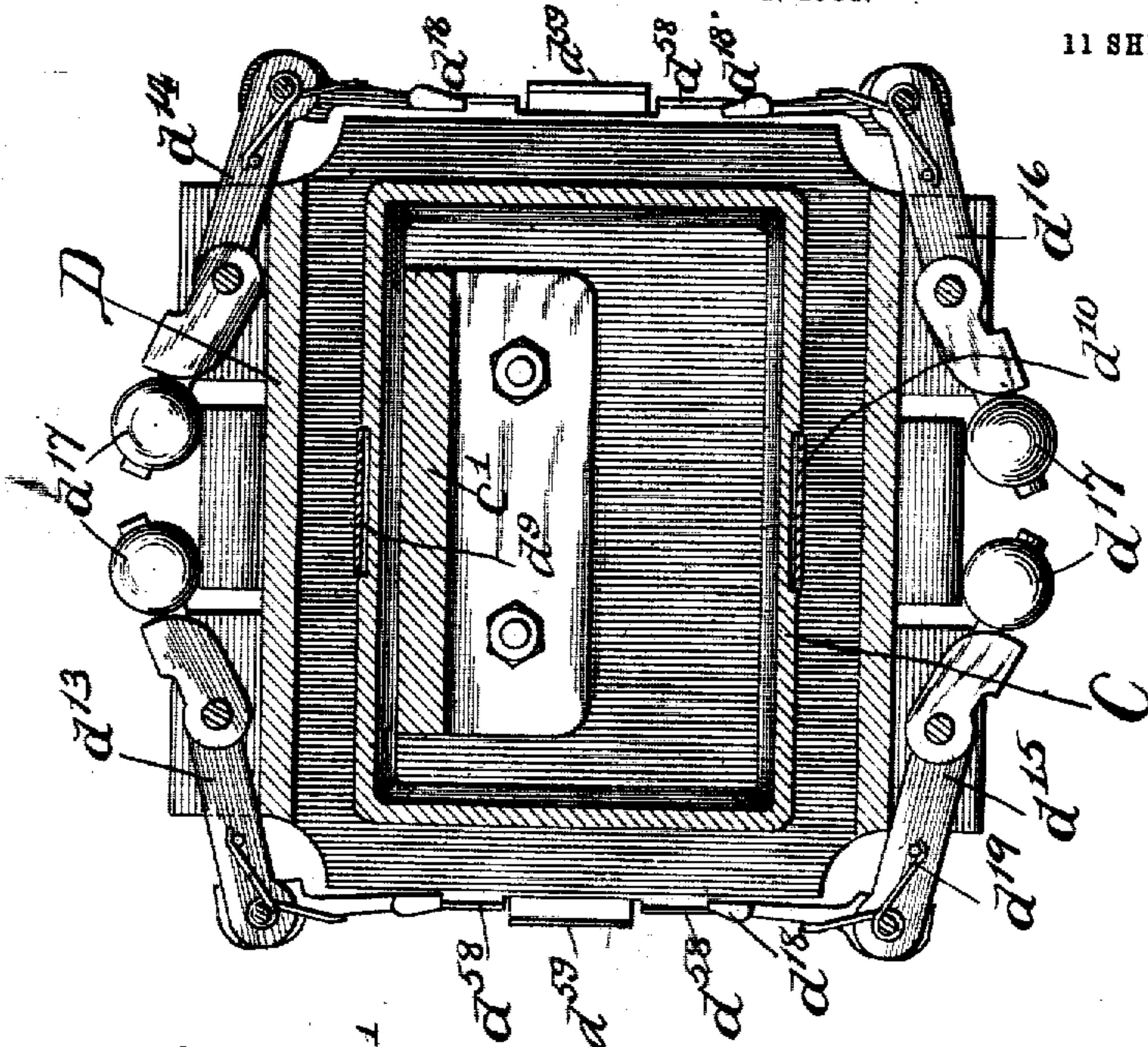
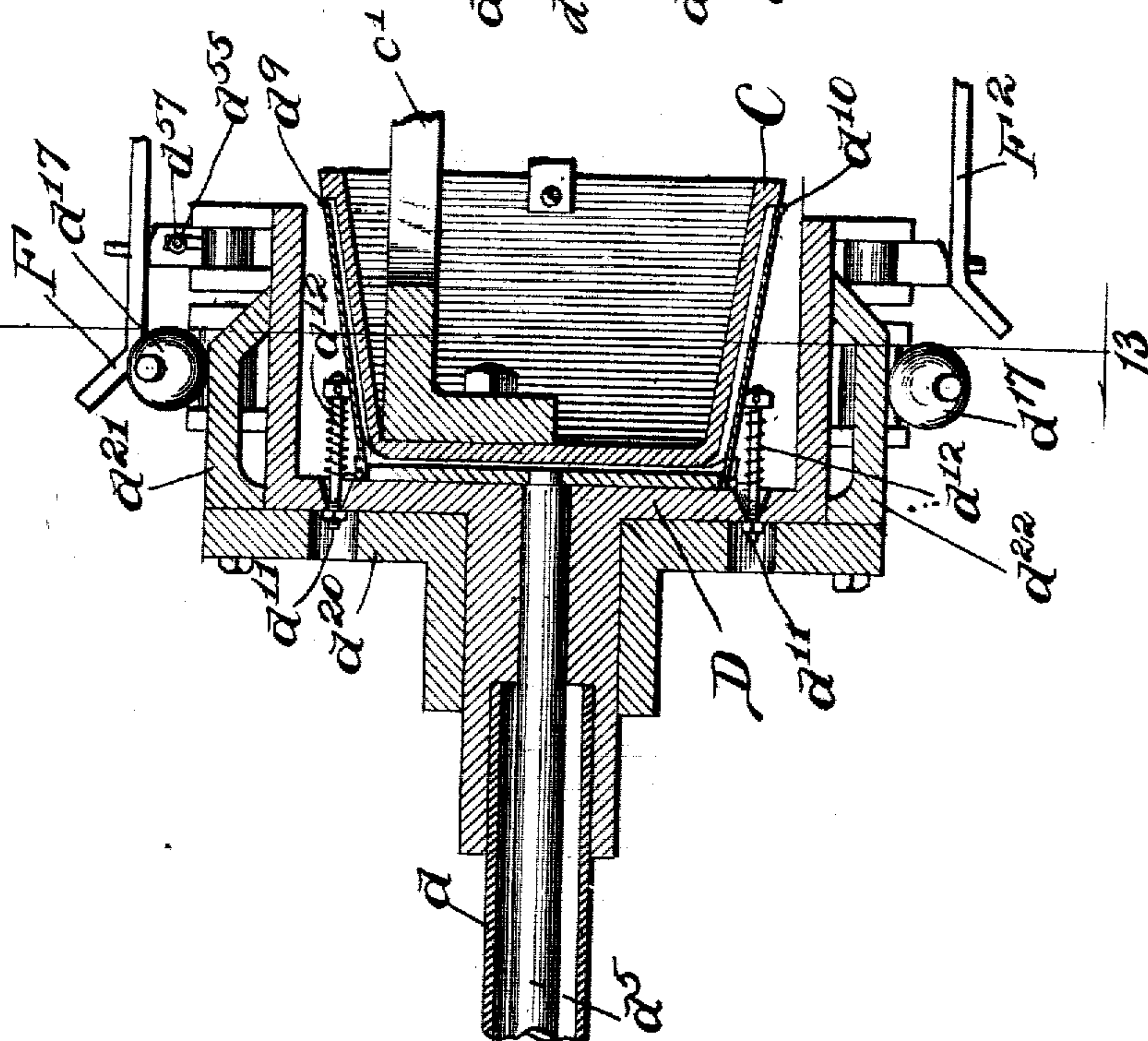


Fig. 10.



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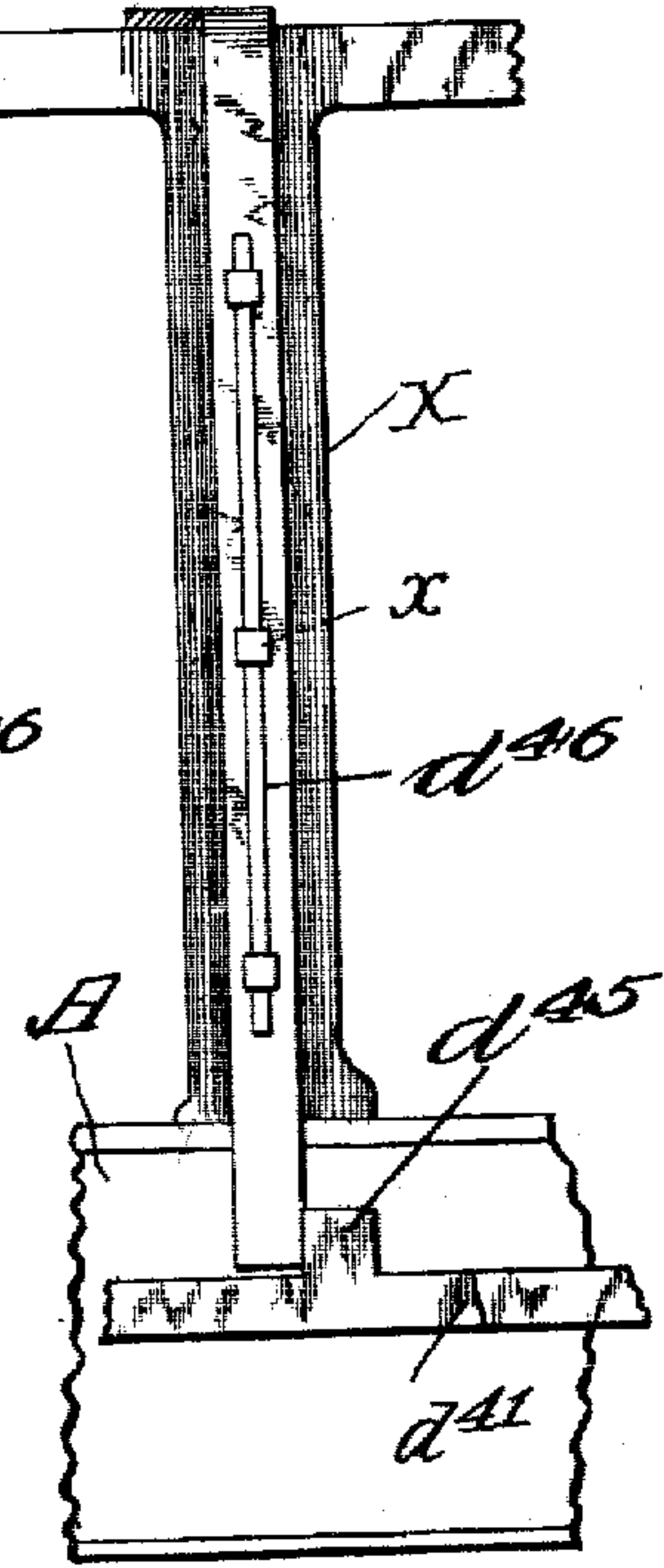
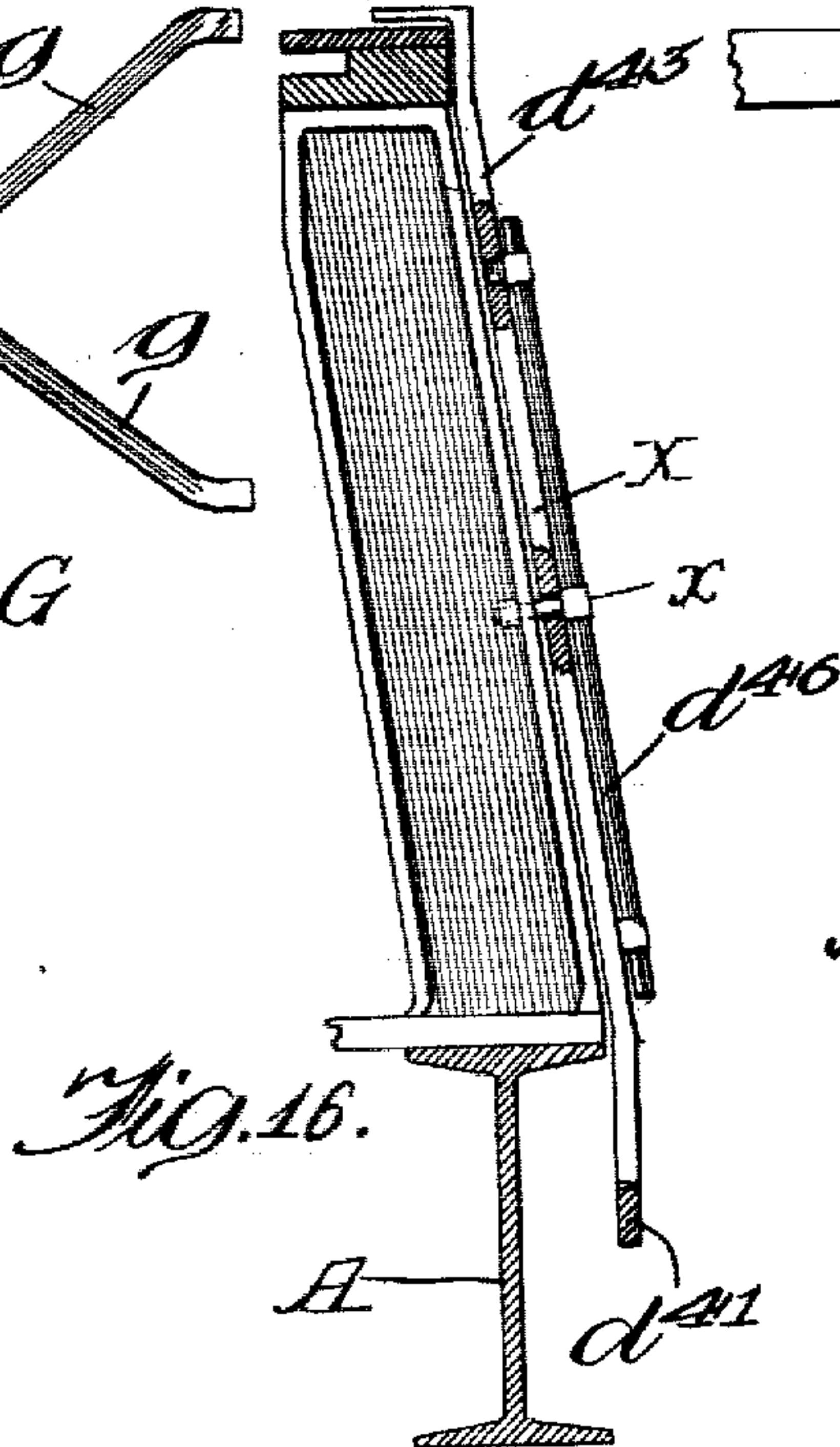
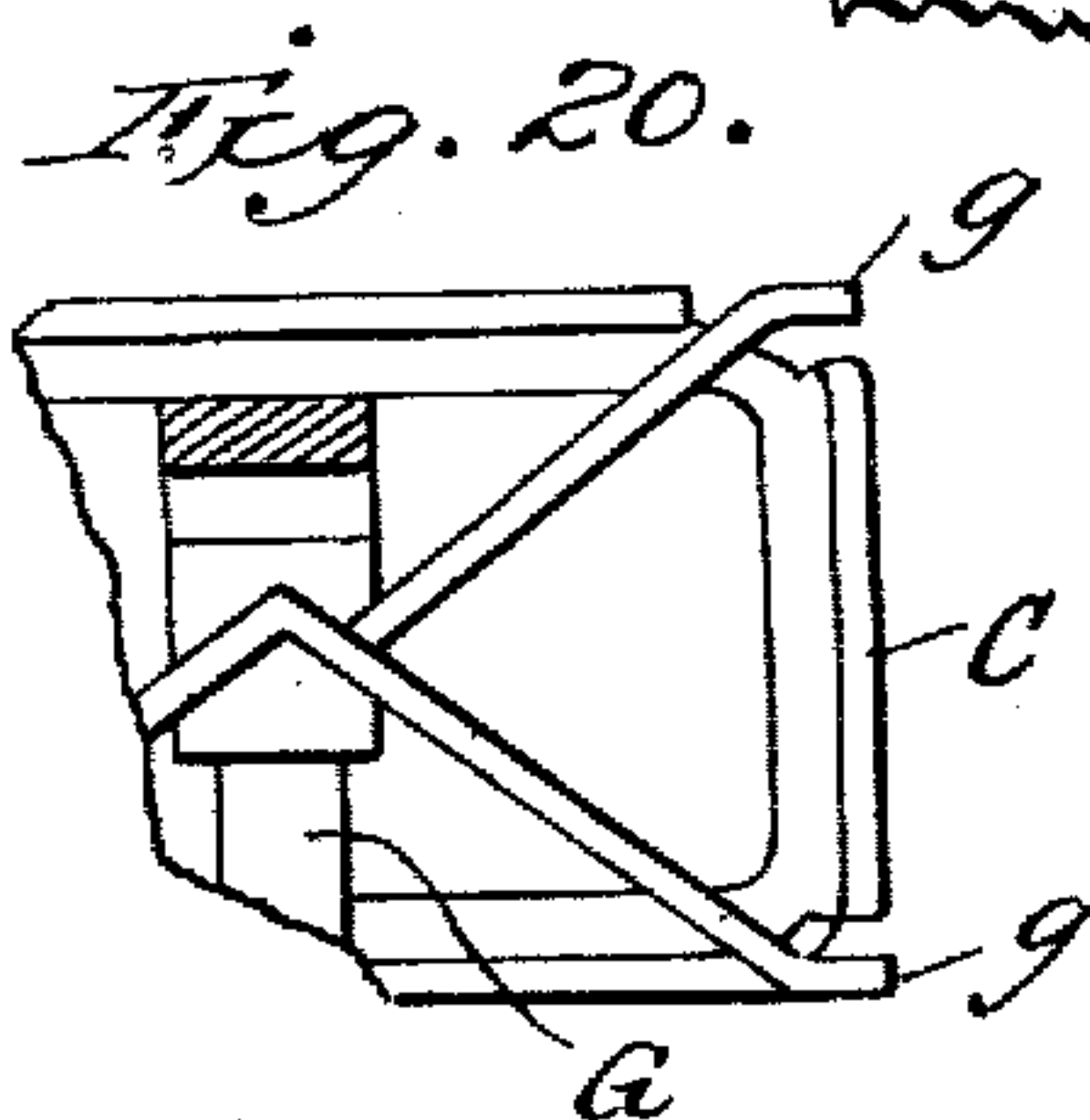
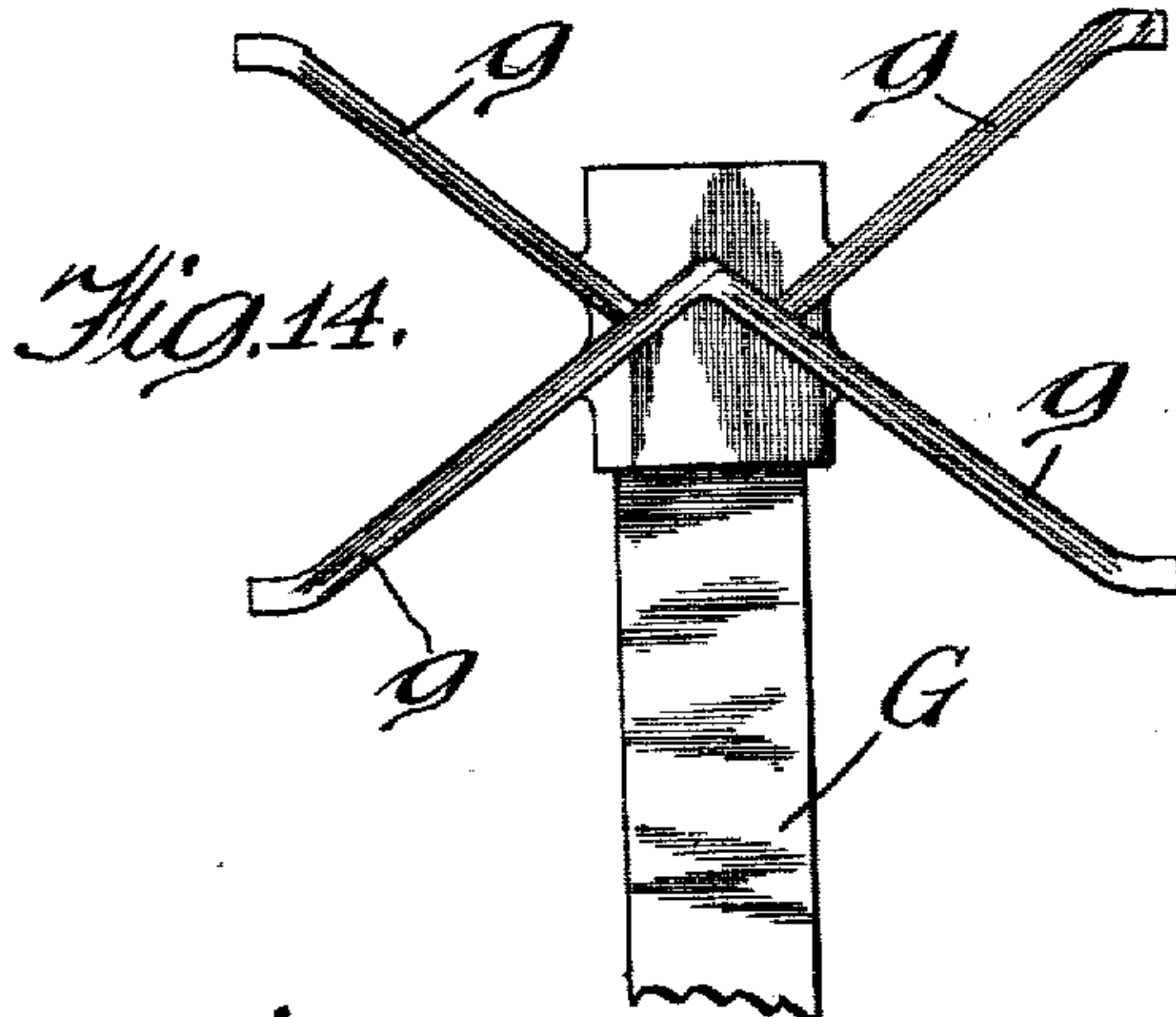
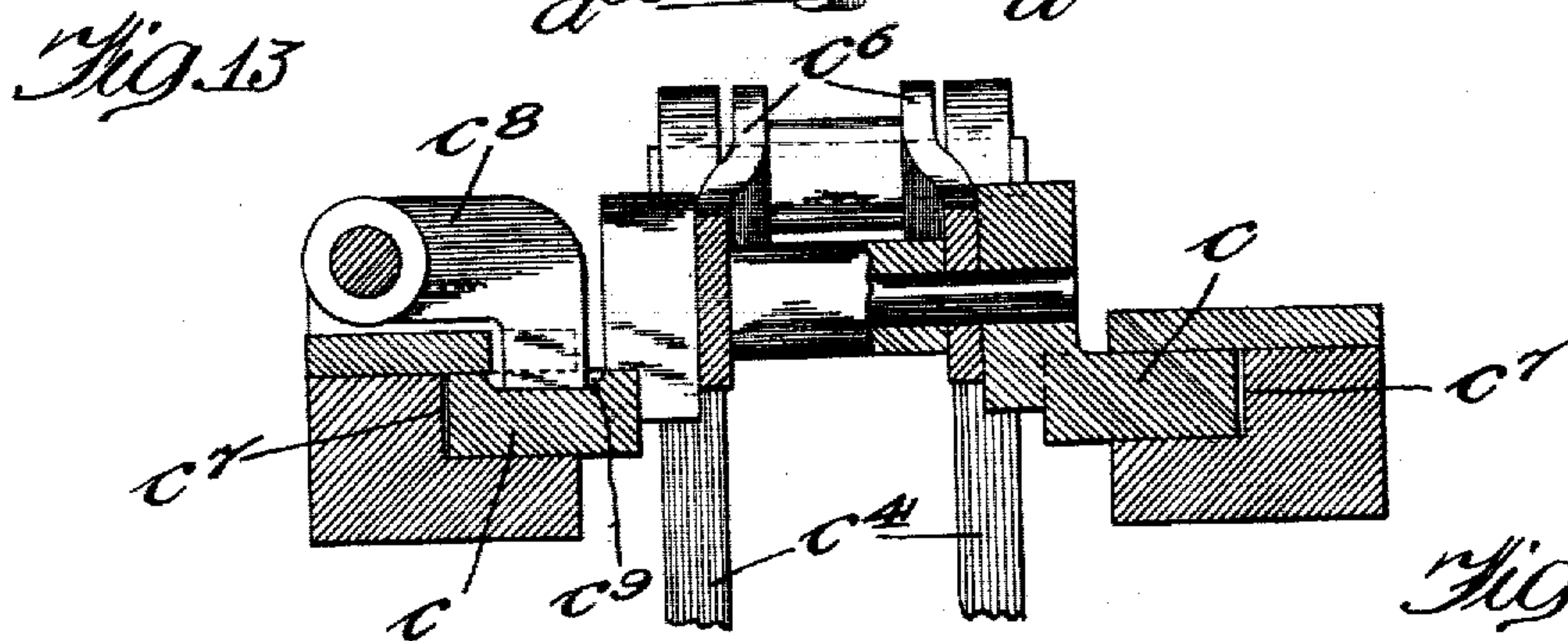
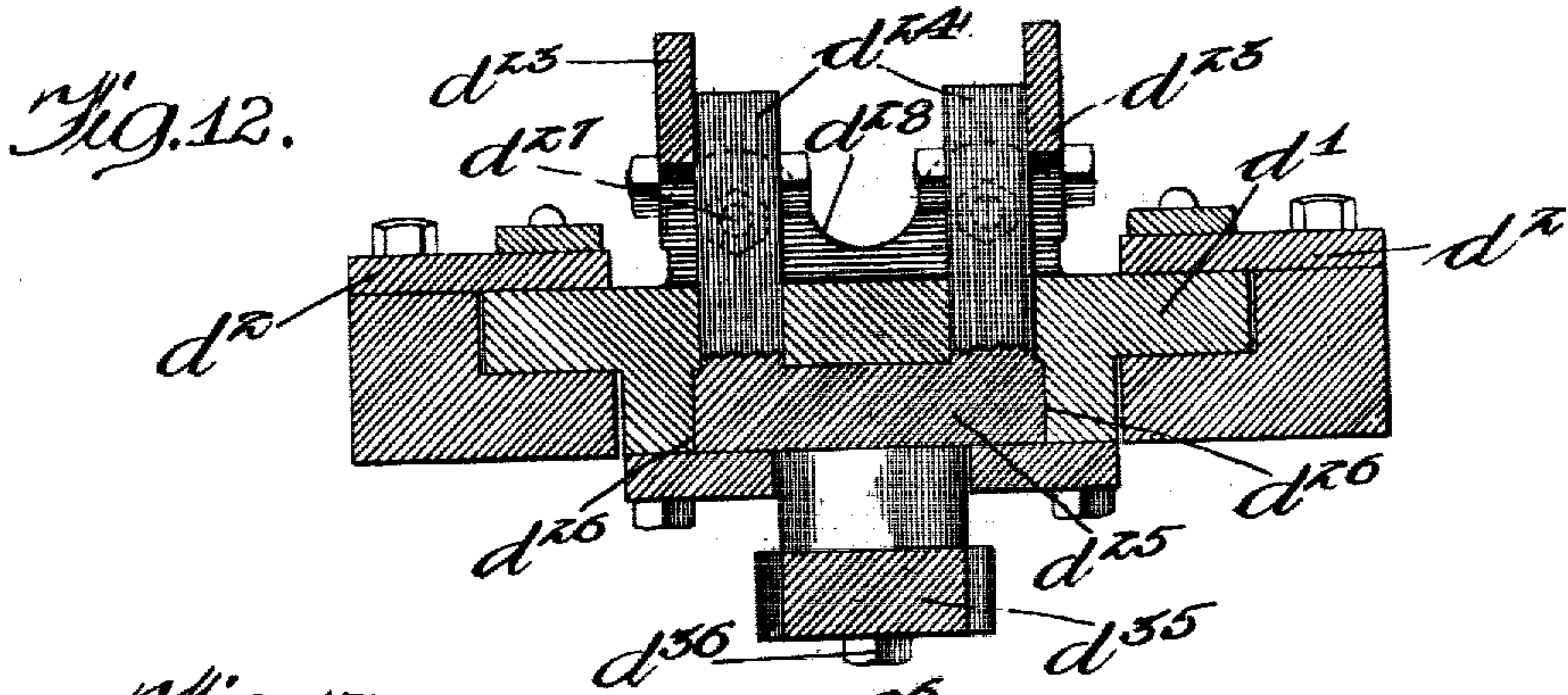
No. 825,566.

PATENTED JULY 10, 1906.

E. L. WALKER.
MACHINE FOR MAKING BASKETS.

APPLICATION FILED MAY 21, 1904.

11 SHEETS—SHEET 10.



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PATENTED JULY 10, 1906.

E. L. WALKER.
MACHINE FOR MAKING BASKETS.
APPLICATION FILED MAY 21, 1904.

11 SHEETS—SHEET 11.

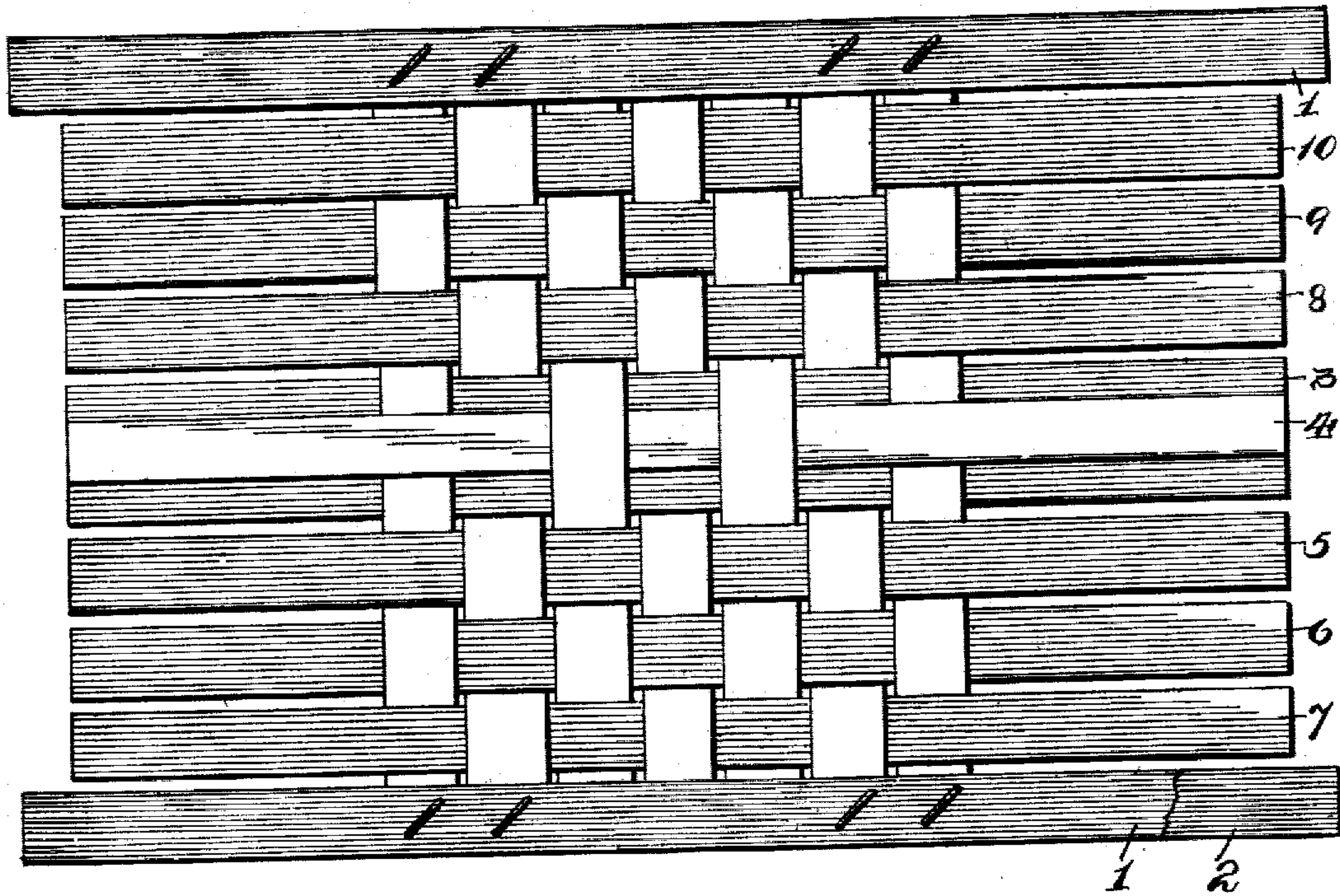


Fig. 17.

Fig. 19.

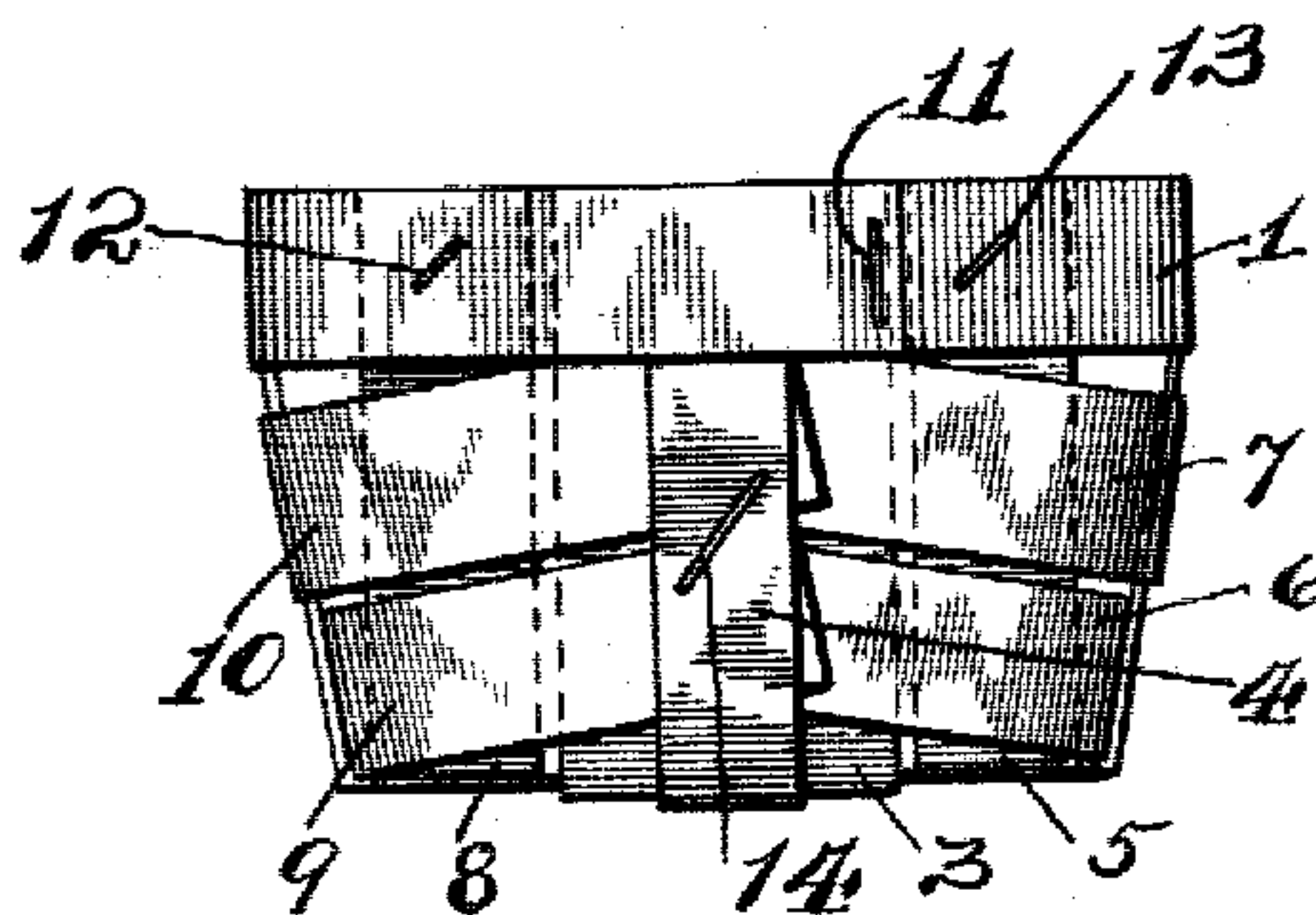
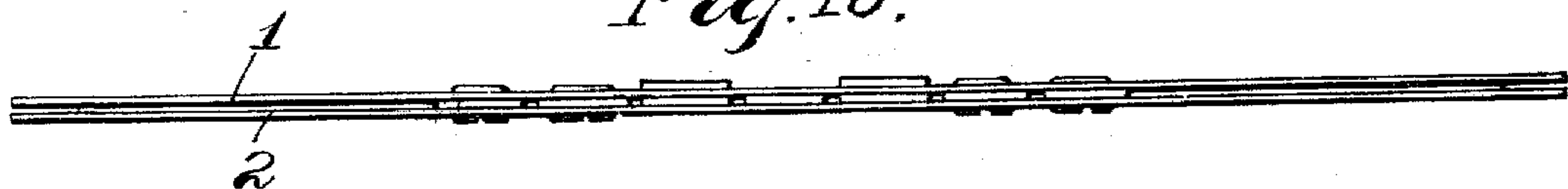


Fig. 18.



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UNITED STATES PATENT OFFICE.

ENOS L. WALKER, OF ST. LOUIS, MISSOURI.

MACHINE FOR MAKING BASKETS.

No. 825,566.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed May 21, 1904. Serial No 209,137.

To all whom it may concern:

Be it known that I, ENOS L. WALKER, a citizen of the United States of America, and a resident of St. Louis, Missouri, have invented a certain new and useful Improvement in Machines for Making Baskets, of which the following is a specification.

My invention contemplates a machine for making baskets of that particular style or type known ordinarily as "market-baskets," although it will of course be readily understood that the various novel features of my improved machine may be employed in connection with machinery for making baskets, boxes, or receptacles of various kinds, and for this reason and as far as the various features which may be found useful in other connections are concerned I do not limit myself to the employment of my invention in connection with the manufacture of the so-called "market-baskets;" but at the same time, as will hereinafter more fully appear, it will be seen that certain features of my invention are peculiarly and particularly adapted for use in the manufacture of this particular style of basket.

Generally stated, therefore, the object of my invention is to provide an improved machine for use in making baskets or other like receptacles.

More specifically considered, however, the object of my invention is to provide an improved construction and arrangement, whereby the mat, composed of interwoven splints and usually made by hand, may be inserted in place in the machine, the basket-forming means then being operated in such manner as to properly fold the sides of the basket and also properly fold and interlock the end portions of the splints in such manner as to form the end walls of the basket, and the stapling mechanism or other suitable mechanism for driving suitable fastening devices then brought into action in any suitable manner for the purpose of fastening together the lapping portions of the splints and other portions of the basket thus formed from the mat.

It is also an object of course to provide certain details and features of improvement tending to increase the general efficiency and serviceability of a machine for making baskets of this particular style or type or for increasing the general efficiency of any other machine to which any features of my invention may be found applicable.

To the foregoing and other useful ends my

invention consists in matters hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a machine embodying the principles of my invention. Fig. 2 is a vertical cross-section on line 2 2 in Fig. 1. Fig. 3 is an enlarged vertical section on line 3 3 in Fig. 1. Fig. 4 is an enlarged vertical section on line 4 4 in Fig. 1. Fig. 5 is a plan view of the complete machine. Fig. 6 is an enlarged vertical or longitudinal section of the right-hand portion of the machine shown in Fig. 1. Fig. 7 is an enlarged vertical or longitudinal section of the left-hand portion of the machine shown in Fig. 1. Fig. 8 is an enlarged longitudinal section of the mold and adjacent parts, the same being shown in their normal positions. Fig. 9 is a vertical cross-section on line 11 in Fig. 8. Fig. 10 is a view similar to Fig. 8, but showing the change in the condition of various parts which is brought about by the introduction of the form into the mold. Fig. 11 is a vertical cross-section on line 13 13 in Fig. 10. Fig. 12 is an enlarged cross-section on line 14 14 in Fig. 1. Fig. 13 is an enlarged cross-section on line 15 15 in Fig. 6. Fig. 14 is an enlarged detail view of a stripper or device for removing the finished basket from the form. Fig. 15 is an enlarged side elevation of a locking device, which comprises a portion of the basket-forming means. Fig. 16 is a side elevation of the device shown in Fig. 15, certain parts being shown in section. Fig. 17 is a plan of the mat from which the basket is made. Fig. 18 is an edge view of the mat shown in Fig. 17. Fig. 19 is an end view of the completed basket. Fig. 20 is a detail rear elevation of the basket-form.

Before describing my improved machine I will first describe the form and construction of the basket commonly known as a "market-basket," which is illustrated in Figs. 17 to 19, inclusive. The mat shown in Fig. 17 is formed by crossing and interweaving the splints in any suitable manner, but practically so as to leave the end portions of the longitudinal or longer splints to be lapped in the manner hereinafter described. Each side edge of the mat is preferably composed of a couple of superimposed rim strips or splints 1 and 2, adapted to hold the end portions of the cross-strips or transversely-arranged splints between them, as shown more clearly in Fig. 18. The longitudinally-arranged splints, which are parallel with the marginal or outer splints 1 and 2, preferably comprise

an inner middle splint 3, a somewhat narrower and centrally-arranged outer binder-splint 4, together with the intermediate splints 5, 6, 7, 8, 9, and 10. The method of folding and manipulating the mat thus constructed, so as to convert the same into a basket, is as follows: The sides of the basket are first bent over, so as to bring the hoops or marginal portions 1 and 2 into position to form the top edges of the basket. After this the splints 3 5 8 are then bent upwardly at the ends of the basket. The splints 1 and 2 are secured to the end portions of the splints 5 and 8 by staples 12 and 13, and the lapping portions of the splints 6 7 9 10 are secured to the inner and outer splints 3 and 4 by staples 14, one at each end of the basket. It is obvious, therefore, that a machine in order to be of use in constructing a basket of the foregoing character must be capable of performing the various folding, lapping, and stapling operations automatically and in their proper sequence, and to such end my improved machine is preferably constructed as follows:

The bed or body A can be of any suitable construction—as, for example, it may be composed of parallel I-beams suitably connected by cross-beams, castings, or the like, and adapted to support the various bearings and operative parts in suitably-elevated positions. Substantially midway of the bed or body thus provided and suitably supported thereon a rest B is provided and arranged to extend horizontally across the machine, said rest being preferably provided with cleats *b*, whereby the aforesaid mat may be supported in a vertical or edgewise position between the forming instrumentalities, the lower edge of the mat when thus positioned being prevented from slipping off by the said cleats and the proper positioning of the mat in the machine being further assured by the stop *b'*, provided at one end of the rest. The said instrumentalities for forming the basket—that is to say, for converting the mat into the proper or desired shape—comprise a form C and a mold D, the two being positioned to act on opposite sides of the mat. The said form is preferably and substantially of basket form in outline and is mounted on the forward end of a longitudinally-sliding bar or support *c*, which latter is provided longitudinally with a slot *c'*. The said bar or sliding support for the form is supported in guides or bearings mounted on the upright castings or supporting members *c²* and *c³*, whereby the said form may be caused to move toward and away from the mold. Means for thus reciprocating or moving the form may be of any suitable known or approved character, but, as illustrated, comprise the bell-crank-shafted lever *c⁴*, having its shorter arm provided with a weight *c⁵* and having its upper end connected by a link *c⁶* with the said sliding or recip-

rocating bar *c*, it being observed that the said lever extends upwardly through the slot *c'*. The said bar or sliding member *c* may be of any suitable form or character—as, for example, it may be in the nature of a slide having its marginal portions held and arranged to work in the parallel and longitudinally-extending guideways *c⁷*, as shown in Fig. 15, and in this connection it will be seen that, if such is desirable, two levers *c¹* may be employed, together with two of the links *c⁶*. Normally a hand-operated catch *c⁸* engages a recess *c⁹* in the slide *c* to hold the latter in its normal position against the action of the weight. With this arrangement the form immediately moves forward as soon as the slide is released by the disengaging of the catch *c⁸* from the recess *c⁹* in the slide. The said mold D is, it will be understood, substantially concave in character, thus adapting it to receive the form and adapting it to cooperate with the latter in converting the flat mat into the form desired for the basket. The said mold is preferably carried at the end of a reciprocating tube *d*, the latter being carried by and given its sliding or reciprocating movement through the medium of a slide *d¹*. This slide is in turn mounted in suitable guideways *d²*, and said guideways are supported upon the standards or exposed castings *d³*. Said mold is preferably provided with a relatively adjustable or yielding clamping-plate *d⁴*, which is mounted on a centrally-arranged rod or stem *d⁵*, extending back into the tube *d*, as shown in Fig. 9. In order to permit the necessary relative movement between the said clamping-plate and its mold, said rod is provided with a shoulder *d⁶*, and between this shoulder and the stationary end wall *d⁷* of the tube a spring *d⁸* is interposed, so as to yieldingly oppose the movement of the clamping-plate back into the hollow of the mold. Said mold is provided with upper and lower hinged folding plates *d⁹* and *d¹⁰*, the same being yieldingly connected with the body of the mold through the medium of the bolt *d¹¹* and the spring *d¹²*, applied substantially as shown in Fig. 8. With this arrangement the said folding plates are adapted to spread slightly and yield outwardly under the pressure of the mat—that is to say, when the latter is forced into the mold by the form. Also, as illustrated, the said mold is provided with folders *d¹³*, *d¹⁴*, and *d¹⁵* *d¹⁶*, pivotally mounted upon the said mold and provided at their inner ends with balls *d¹⁷*, as shown more clearly in Fig. 9. Springs applied at the pivotal points of said folders can be employed for yieldingly maintaining the same in their normal positions. Said folders are preferably provided with pivoted fingers *d¹⁸*. Springs *d¹⁹* are employed for yieldingly holding said fingers in their normal positions relatively to the body portions of the holders. It will be observed that the fingers of these folders reach down-

wardly and upwardly at the opposite sides of the mold. Means for operating said folders consists, preferably, of a cross-head d^{20} , adapted to slide on the hub portion of the mold and provided above and below with cams d^{21} and d^{22} . These cams are, it will be seen, of different lengths, the cam d^{22} being somewhat longer than the cam d^{21} , thereby adapting the lower cam to act on the lower pair of folders before the upper pair of folders are actuated. Obviously the beveled ends of the cams are adapted to engage the balls d^{17} and to thereby force the latter away from the mold. It will be seen that the said balls when thus forced outwardly away from the mold cause the fingers of the upper and lower folders to move toward each other. The said cross-head d^{20} is connected by a couple of parallel bars d^{23} with a couple of posts d^{24} , the latter being mounted in an upright position upon another slide d^{25} . It will be observed that this slide d^{25} is mounted to slide in the guideway d^{26} , formed in the other slide d' .

The movement of the two slides relatively to each other is limited by stops d^{27} and d^{28} , which are rigidly secured to the slide d' and which are adapted to act on opposite sides of the posts or standards d^{24} . A bracket-bearing d^{29} is mounted upon the rigid upper table portion or stationary structure constituting the guideway d^2 , while a bracket d^{30} is carried by the slide d' . A rod d^{31} is secured to the bracket d^{30} and arranged to slide in the opening provided in the bracket-bearing d^{29} . Also, as illustrated, a spring d^{32} is interposed between the shoulders provided by the brackets d^{29} and d^{30} . In this way the mold is presented to the forward thrust of the form, as will hereinafter more fully appear.

The means for bodily reciprocating the mold structure consist of a rotary crank-plate d^{33} , mounted upon the upper end of the shaft d^{34} and connected by pitmen d^{35} with a pivot-bolt d^{36} , secured to the slide d^{25} . A horizontally-disposed shaft d^{37} is provided with a bevel-gear d^{38} , adapted to engage a similar bevel d^{39} on the vertically-disposed shaft d^{34} . The friction-clutch d^{40} , mounted on the horizontally-disposed shaft d^{37} , is controlled by a foot-lever d^{41} through the medium of a shaft d^{42} , provided with arms d^{43} , adapted to engage the loose member of the clutch. Normally the said clutch is open, but may be locked in a closed position by means of a pivoted bar X, which is mounted upon the pivot x on the frame of the machine. The upper end of this bar is adapted to normally engage a projection d^{44} , carried by the slide d' , while its lower end is adapted to engage a projection d^{45} on the said foot-lever. A spring d^{46} , normally under tension and secured at its middle portion to the said pivot x , is adapted to tilt the said locking-bar X as soon as the slide d' moves forward. The pivot x is, it will be readily understood, rigidly secured to the

frame of the machine, and in this way the said spring tilts the bar X upon the said pivot as soon as the bar is released—that is, the rod-like spring d^{46} has its end portions adapted to slide in portions carried by the locking-bar—and is thus adapted to tilt the bar to one side as soon as the latter is released. Thus the said clutch d^{40} may be closed, and as soon as the mold structure moves forward sufficiently to allow the projection d^{45} to bear upon the lower end of the locking-bar X, thereby locking the foot-lever in its depressed position, the operator's foot may be removed from the said lever, and the forming instrument is thus allowed to operate without the necessity of any manual exertion in keeping the lever depressed. Another projection d^{47} is secured to the slide d' and so disposed thereon that it engages the upper end of the locking-bar X at the proper time to disengage the foot-lever and allow the clutch to open. In this way the movement of the mold structure is automatically interrupted as soon as the basket has been brought into position to be acted upon by the stapling mechanism. In a similar way the locking-lever X is then again tripped by the projection d^{44} , when the mold moves back, and in this way the movement of the mold structure is again automatically interrupted and the same brought to a condition of rest in its normal position. It will be observed that the stops d^{27} and d^{28} , together with the posts d^{24} , constitute a medium of lost-motion connection between the two slides, and consequently between the mold and the cross-head d^{20} . Consequently the cross-head has an initial movement in both directions independently of and without moving the mold proper. In order that the mold structure may always be stopped at the proper time, a brake-shoe d^{48} is suitably mounted and connected through the medium of a rod d^{49} and a lever d^{50} with the said foot-lever, as more clearly shown in Fig. 4. In this way and each time the foot-lever d^{41} is automatically released the said brake-shoe engages the under side of the crank-plates d^{33} , thus breaking the momentum of the crank-plate and stopping the movement of the mold structure. It will be seen that the said mold is also provided with upper and lower folders d^{51} d^{52} d^{53} d^{54} . These folders, like the others, are pivotally mounted on the top and bottom of the mold. In this case, however, the folders are held in their normal positions by springs d^{55} , which latter connect the folder d^{51} with the folder d^{52} and in a similar way connect the two lower folders. These folders, which are arranged farther toward the mouth of the mold than the previously-described folders, are provided with fingers d^{56} and with projections d^{57} . The relative positions of the different folders are clearly shown in Fig. 3. Referring to Figs. 1, 10, and 11, it

will be seen that the sides of the mold are provided with notched or bifurcated rigid folders d^{58} and that the cross-head d^{20} is provided at opposite sides with rigid folders d^{59} , the latter being substantially the width of the notches or openings in the folders d^{58} . A spring d^{60} holds the foot-lever d^{41} in its normal position, so as to keep the clutch d^{40} normally open.

As previously stated, any suitable known or approved mechanism may be employed for driving fastening devices into the basket, so as to hold the ends of the splints together. For example, means for forming and driving wire staples may be employed, such means being constructed in any suitable or desired manner. In Figs. 1, 2, 5, 7, and 8 suitable devices are shown for forming and driving the staples, and the said devices are mounted and operated in an improved and highly efficient manner. Referring to Fig. 2, it will be seen that the portion of the body-frame that supports the mold structure is provided with laterally-projecting guides E , adapted to carry the slides e . These slides are connected with the shaft e' through the medium of pitmen e^2 and the eccentric cams and straps e^3 , the said cams being arranged oppositely upon the shaft. With this arrangement a rotation of said shaft causes the two slides e to reciprocate toward and away from each other. Referring to Fig. 5, it will be seen that the slides e are provided at their outer ends with the heads e^4 and that these heads carry suitable formers and drivers. The guides E are provided with arms constituting the stationary heads e^5 , in which the said staple formers and drivers slide. Preferably these heads e^5 are provided with guards e^6 , adapted to slide over the lapping end portion of the basket, and thus hold the same in position during the operation of stapling the basket. It will be understood that the said staple formers and drivers and also the loop-bars, devices for feeding the wire, &c., may be of any suitable or well-known character. For this reason no detailed description of these devices is necessary. In fact, the said stapling mechanism may be of any of the various constructions known in the art. As far as my invention is concerned it is important only that said stapling devices be arranged to operate on the ends of the basket, so as to drive the staples previously referred to in connection with the construction of the basket; but the arrangement of mechanism for simultaneously driving fastening devices of any character whatever, at the opposite ends of the basket and operated from the same shaft, constitutes a feature of my invention. It will be understood that if stapling mechanism is employed, the staple-formers and drivers must be so disposed as to drive and locate the staples in the manner shown in Fig. 21.

With further reference to the folders mounted at the mouth of the mold it will be seen that these particular folders are operated by the stationary arms F F' F^2 F^3 . These arms, which have their end portions bent to serve as cams, are secured rigidly to the frame or body structure. (Shown at the right in Fig. 1.) Also, as will be observed, these arms are of different lengths, whereby the folders d^{52} and d^{53} are first operated and then the folders d^{51} and d^{54} are last operated, the cam ends of these arms being adapted to engage the cams d^{57} .

The means for stripping the completed basket from the form may be of any known or approved character; but as a matter of further improvement the said means consist of an arm G , provided at its upper end with fingers g , which play in slots at the corners of the form and are adapted to engage the edge of the completed basket, and thus force the latter from off the form. The lower end of the arm G is pivotally mounted at g' , preferably upon a suitably-supported shaft. This shaft may be provided with a foot-lever g^2 , held in its normal position by a spring g^3 . With this arrangement, foot-pressure applied to the lever g^2 will at the proper time effect a removal of the completed basket from the form. The means for controlling the operation of the stapling mechanism may also be of any known or suitable character. For example, said means may consist of a friction-clutch H , mounted upon a shaft h , which latter is gear-connected with the shaft e' . A spring h' , connecting the foot-lever h^2 with the body-frame, serves to keep the friction-clutch H normally open.

With the machine thus constructed the operation of converting the mat into a basket is briefly as follows: The mat is first placed on the support B and adjusted into position between the ends of the cam-arms F F' F^2 F^3 and the clamping-plate d^4 of the mold structure. The catch c^8 is then operated, so as to release the slide which carries the form C . Said slide being released, the weight c^5 forces the form forward against the mat and the latter against the said clamping-plate. Said clamping-plate being yieldingly mounted, the mat thus tightly clamped between the bottom of the form and the face of the clamping-plate is forced into the hollow of the mold. The introduction of the mat into the mold in this manner enables the folding-plates d^9 and d^{10} to fold the sides of the mat over upon the top and bottom of the form, and then the end portions of the splints 6 7 9 10 are engaged by the folders d^{13} d^{14} d^{15} d^{16} . The movement continuing, the cams on the cross-head d^{20} cause the said folders to lap the end portions of the splints 6 7 9 10 in the manner shown in Fig. 19. Also it will be observed at this juncture that before the splints 6 7 9 10 are folded the end portions of the

splints 3 5 8 are folded over in the manner shown in Fig. 19. The folding of these three center splints 3 5 8 being accomplished by the bifurcated folders d^{58} , and of course before the cams for operating the pivoted folders d^{18} can be moved, it is first necessary to close the clutch d^{40} , thereby causing the said cross-head to move positively forward to accomplish the actuation of the said pivoted folders. In other words, the release of the form and the actuation of the form by the weight e^5 is sufficient to force the mat into the mold and accomplish part of the folding operation; but the folding of the splints 6 7 9 10 is then accomplished, as stated, by pressing the foot-lever d^{41} , and thereby closing the clutch d^{40} , thus causing the cross-head to move toward the basket. As soon as the limit of relative movement between the cross-head and the mold is reached the two then move forward, together with the form, causing the cam-arms $F F' F^2 F^3$ to operate their respective folders $d^{51} d^{52} d^{53} d^{54}$ on the mold by engaging the cams d^{57} , and thus accomplish the remainder of the folding operation. The folders actuated by the said cam-arms cause the end portions of the marginal splints or hoop-like members 1 2 to lap upon each other. As shown in Fig. 19, it will be understood, however, that the end portions of the splint 4 are necessarily pressed down upon the ends of the basket by the folders d^{59} just prior to the actuation of the folders $d^{51} d^{52} d^{53} d^{54}$ by the said cam-arms. When the mold structure and form have reached the limit of movement toward the stapling mechanism, such movement is then automatically stopped in the manner previously described by the tripping of the foot-lever d^{41} . The mat thus converted into basket form and thus presented between the two groups of stapling mechanism is then suitably stapled together. The stapling mechanism, as previously explained, is started and stopped by the foot-lever h^2 . After the basket has been stapled, preferably in the manner shown in Fig. 19, the foot-lever d^{41} is then again depressed, so as to start the mold structure back to its normal position. The completed basket thus uncovered by the mold and left upon the form can be readily removed from the latter by pressing the foot-lever g^2 . If desired, an adjustable stop I can be provided for limiting the back movement or return stroke of the slide d' .

From the foregoing it will be seen that I provide an improved and highly efficient machine for making baskets, preferably of the type commonly known as "market-baskets," but, as previously stated, involving various features which may be found applicable to means for making different kinds of baskets or other like receptacles, although of course certain features—for example, folding devices—are peculiarly adapted for use in making baskets

of the character shown and described and are thoroughly effective and efficient in this respect.

What I claim as my invention is—

1. In a machine for making rectangular baskets having side walls and bottom of interlaced splints and end walls of overlapping splints, the combination of means for clamping the mat, means for folding the side walls, means for folding the ends of the longitudinal side wall splints, and means for folding the ends of part of the longitudinal bottom splints inside and the ends of another part outside of the ends of the side wall splints to complete the end walls.

2. In a machine for making rectangular baskets from mats composed of interlaced splints and a longitudinal binder, the combination of means for clamping the mat, means for folding the mat longitudinally to form the side walls, means for folding the extremities of the longitudinal strips of the bottom to form a portion of the end walls, means for folding and overlapping the extremities of the longitudinal strips of the side walls to complete the end walls, and means for folding the extremities of the binder-strip over the overlapped parts of the side splints.

3. In a machine for making rectangular baskets from mats composed of interlaced splints and a longitudinal binder-splint, the combination of means for clamping the mat, means for folding the mat longitudinally to form the side walls, means for folding up the extremities of the longitudinal strips of the bottom to form the inner thicknesses of the end walls, means for folding and overlapping the extremities of the longitudinal strips of the side walls to form the outer thicknesses of the end walls, means for then folding the extremities of the binder-strip over upon the overlapped parts of the side splints, and then folding over upon the extremities of the binder-strip the rim-strips.

4. A machine for making baskets, comprising a mold, a former, a clamp, means for moving the former into the mold with the clamp to partly fold the basket, means for folding the ends of the sides and bottom to complete the folding of the baskets, means for simultaneously moving the mold and the clamp and the former to the initial position of the former and returning the mold and the clamp to their initial positions, and means for folding the rim of the baskets during the movements toward the former's initial position.

5. A machine for making baskets comprising a mold, a former, a clamp, and a rest to support the article to be formed into a basket previous to being clamped between the clamp and former, means for moving the former into the mold with the clamp to partly fold the basket, means for folding the ends of the sides and bottom, means for simultane-

ously moving the mold, the clamp and the former to the initial position of the former and returning the clamp and the mold to their initial positions, and means for folding the rim of the basket during the movement toward the initial position of the former.

6. A machine for making baskets comprising a mold provided with resilient folding means, a clamp, a former, means for moving the former into the mold with the clamp to partly fold the basket, means for simultaneously moving the mold and the clamp and the former to the initial position of the former and returning the mold and the clamp to their initial positions and means for folding the rim of the basket during the movement toward the initial position of the former.

7. A machine for making baskets comprising a mold, provided with pivoted folding means thereon to partly fold the basket, a clamp, and a former, means for moving the former into the mold with the clamp, means for simultaneously moving the mold and the clamp and the former to the initial position of the former and returning the mold and the clamp to their initial positions and means for folding the rim of the basket during the movement toward the initial position of the former.

8. A machine for making baskets comprising a mold having resilient folding means and pivoted folding-fingers thereon, a clamp, a former, means for moving the former into the mold with the clamp, means for simultaneously moving the mold and the clamp, and the former to the initial position of the former and returning the mold and the clamp to their initial positions, and means for folding the rim during the movement toward the initial position of the former.

9. A machine for making baskets comprising a folding means consisting of a mold provided with pivoted fingers operated by a reciprocated draw-head having cam-surfaces thereon, and a clamp and a former, means for moving the former into the mold with the clamp, means for simultaneously moving the mold and the clamp and the former to the initial position of the former and returning the mold and the clamp to their initial positions, and means for folding the rim during the movement toward the initial position of the former.

10. A machine for making baskets comprising a mold having folding means thereon to partly fold the basket, means for moving the former into the mold with the clamp, a draw-head having cams and folding means thereon, said cams being adapted to operate the folding means upon the mold, means for simultaneously moving the mold and the clamp and the former to the initial position of the former and returning the mold and the clamp to their initial positions, and means

for folding the rim during the movement toward the initial position of the former.

11. A machine for making baskets comprising a mold having folding means thereon to partly fold the basket, means for moving the former into the mold with the clamp, a draw-head having cams of different lengths and folding means thereon, said cams being adapted to operate the folding means upon the mold, means for simultaneously moving the mold and the clamp and the former to the initial position of the former and returning the mold and the clamp to their initial positions, and means for completing the folding during the movement toward the initial position of the former.

12. A machine for making baskets comprising a mold with folding-fingers thereon, a clamp, a former, a draw-head provided with cams, means for moving the former into the mold with the clamp and then while the former and the clamp and the mold are together engage the cams upon the draw-head to operate the folding-fingers upon the mold, means for moving the mold and the clamp and the former to the initial position of the former and returning the mold and the clamp to their initial positions, means for folding the rim during the movement toward the initial position of the former.

13. A machine for making baskets comprising a mold with folding-fingers thereon, a clamp, a former, a draw-head, provided with cams, means for moving the former and the clamp into the mold and then while the clamp and the mold and the former are together engage the cams upon the draw-head to operate the folding-fingers upon the mold, means for simultaneously moving the mold and the clamp and the former to the initial position of the former and returning the mold and the clamp and the draw-head to their initial positions, means for folding the rim during the movement toward the initial position of the former.

14. A machine for making baskets comprising two main reciprocating members, namely, a mold and a former, means for bringing them together to fold the basket, means for shifting them while together to the initial position of one of the members and returning the other member to its initial position, and means for folding the rim during the movement after the folding of the basket.

15. A machine for making baskets comprising two main members, namely, a former and a mold, means for bringing them together to fold the basket, means for shifting them while together to the initial position of one of the members and returning the other member to its initial position, and means for folding the rim during the movement after the folding of the basket.

16. A machine for making baskets com-

prising two main members a mold and a former, means for bringing them together, means on the mold for folding two entire sides of a basket and the inside portions of the other sides when the two members are brought together, means for folding the outer portions of the last-mentioned sides, means for folding the binding-strip of the two sides, and means for folding the rim around the two sides and over the binder-strip.

17. A machine for making baskets comprising two main members, namely, a mold and a former, means for bringing the two members together, means upon the mold for folding two entire sides and the inner portions of the other sides while the two members are coming together, means for folding the outer portions of the last-mentioned sides and means for folding the binder of the said two sides while the two members are together, means for shifting the two members while together to the initial position of one of the members, and means for folding the rim around the last-mentioned two sides during the shifting movement.

18. A machine for making baskets comprising two main members a mold and a former, means for bringing them together, means upon the mold for folding two entire sides of a basket and the inside portions of the other sides when the two members are brought together, means for folding the outer portion of the last-mentioned sides, means for folding the binding-strip of the two sides, and means for folding the rim around the two sides and over the binder-strip.

19. A machine for making baskets comprising two main members, namely, a mold and a former, an automatic locking device to hold it in its initial position, means for bringing the two members together to fold the basket, means for shifting them while together to the initial position of one of the members and returning the other member to its initial position, and means for folding the rim while the two members are being shifted together.

20. A machine for making baskets comprising two main members, namely, a mold and a former, locking means operatively connected to the former to hold it in its initial position, locking means operatively connected to the mold for holding it in its initial position, means for bringing the two members together to fold the basket, means for shifting them while together to the initial position of one of the members and returning the other member to its initial position, and means for folding the rim while the two members are shifted together.

21. A machine for making baskets comprising two main members, namely, a mold and a former, means for bringing the two members together to fold the basket, means for shifting them while together to the initial position of one of the members and returning the other member to its initial position, means for folding the rim while the two members are shifted together, means for automatically locking one of the members in its initial position, means for automatically locking the other member in its initial and shifted positions, and means for automatically braking said member during its return to its initial position.

22. A machine for making baskets, comprising two folding members a mold and a former, means for bringing the two members together to fold the basket, means for shifting them while together to the initial position of one of the members and returning the other member to its initial position, means for automatically braking this latter member during its return to its initial position, and means for folding the rim of the basket while the two members are being shifted together, for the purpose set forth.

Signed by me at St. Louis, St. Louis city county, Missouri, this 7th day of May, 1904.

ENOS L. WALKER.

Witnesses:

FRED. W. LUYLUS,
G. H. BRUCKNER.