

(No Model.)

6 Sheets—Sheet 1

J. L. JONES.
MACHINE FOR MAKING PLUG TOBACCO.

No. 468,661.

Patented Feb. 9, 1892.

Fig. 1.

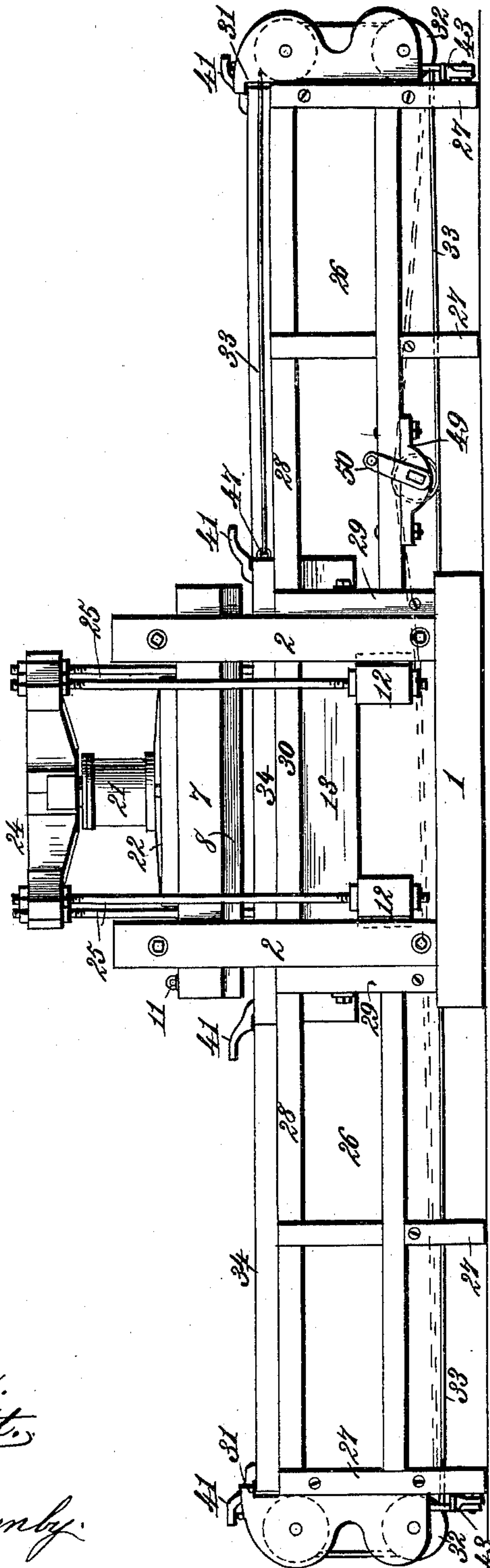
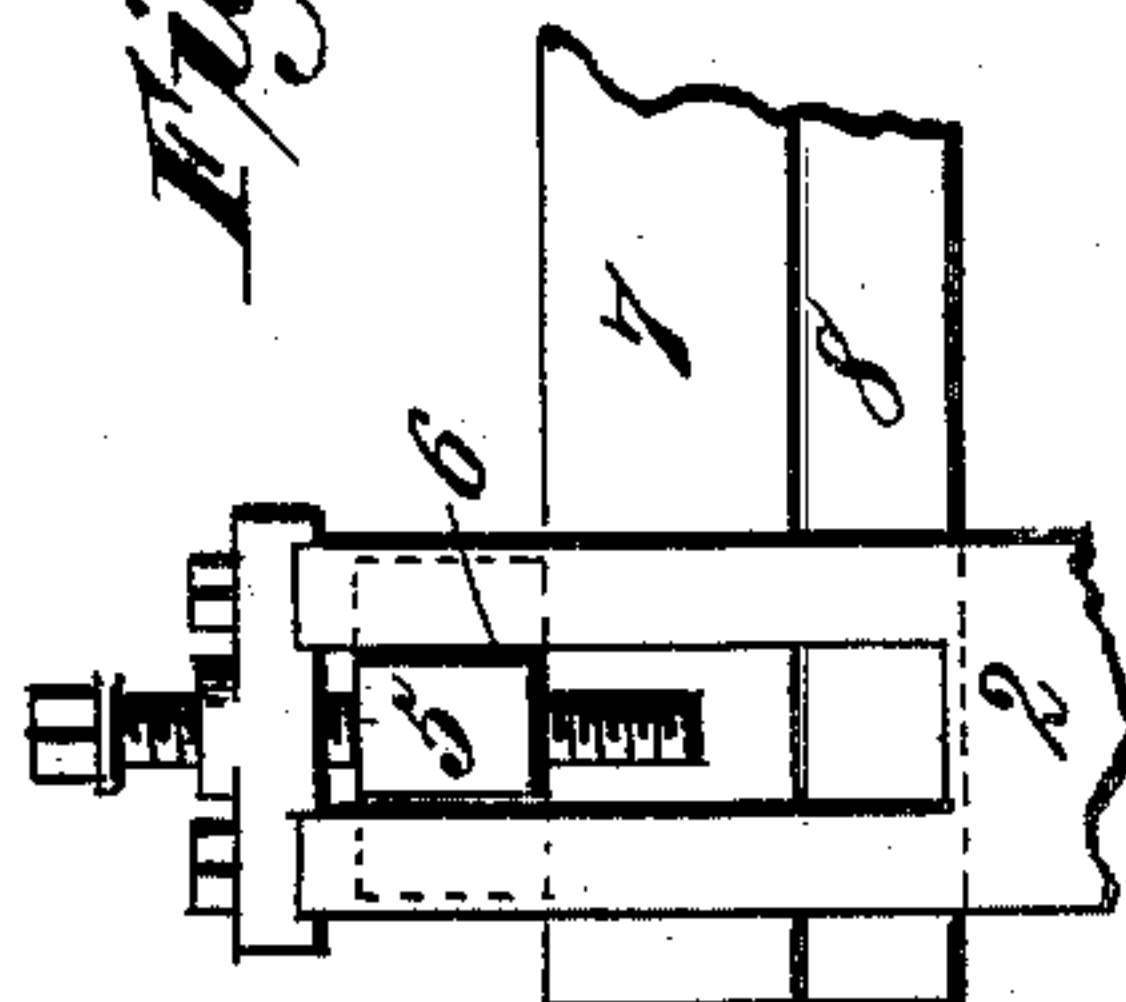


Fig. 2.



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(No Model.)

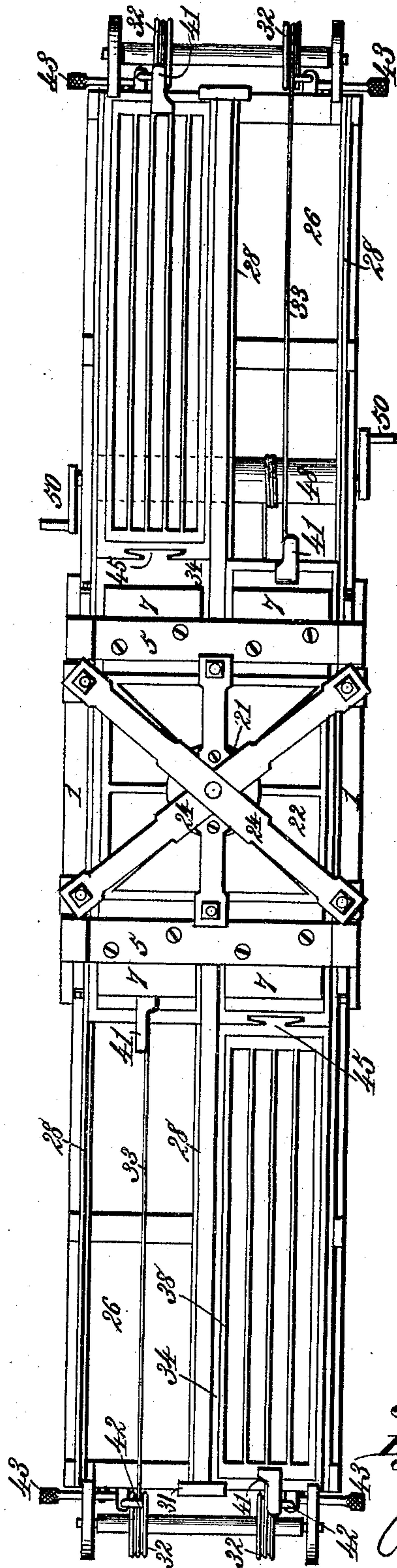
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Fig. 2.



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6 Sheets—Sheet 3.

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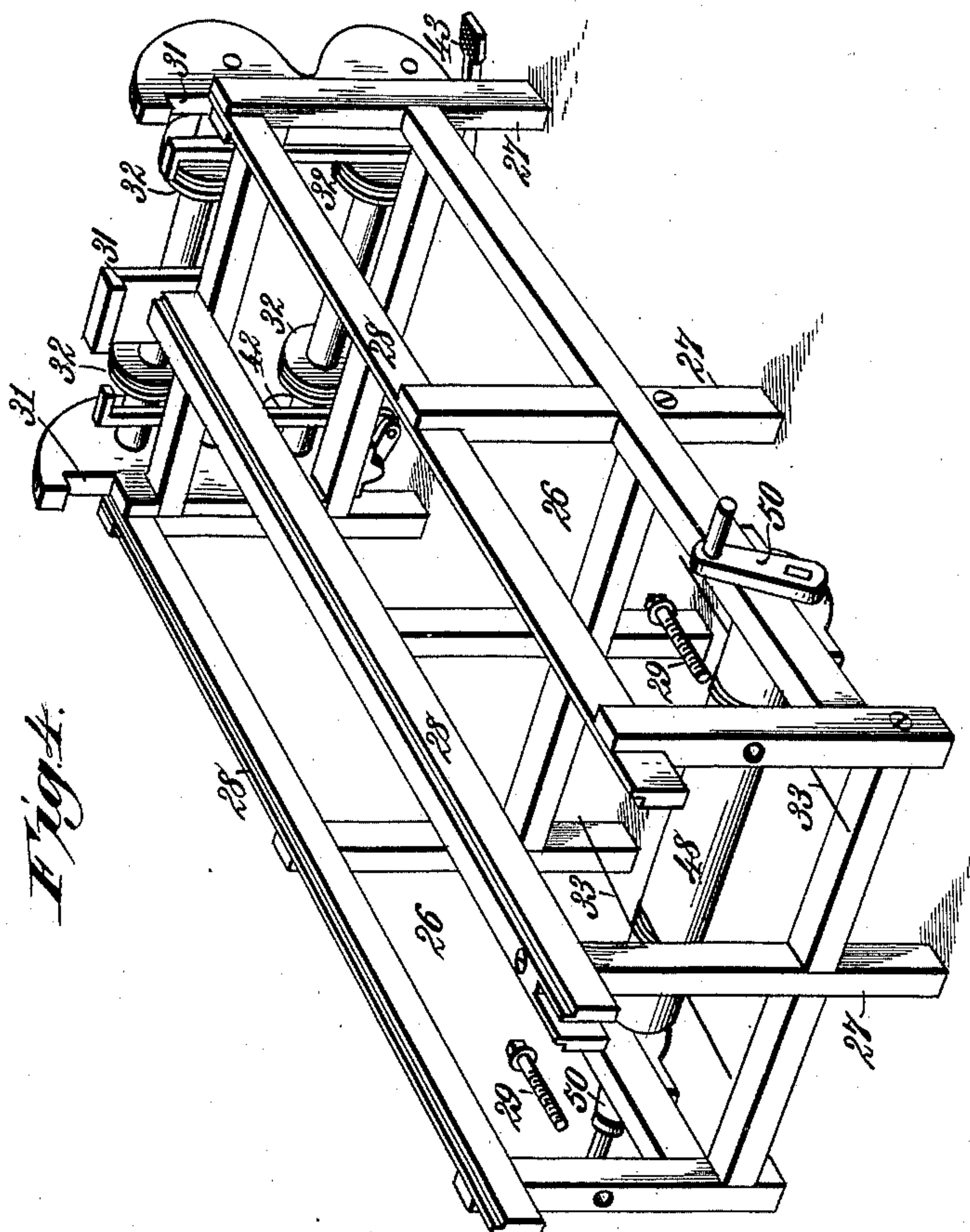


Fig. 4.

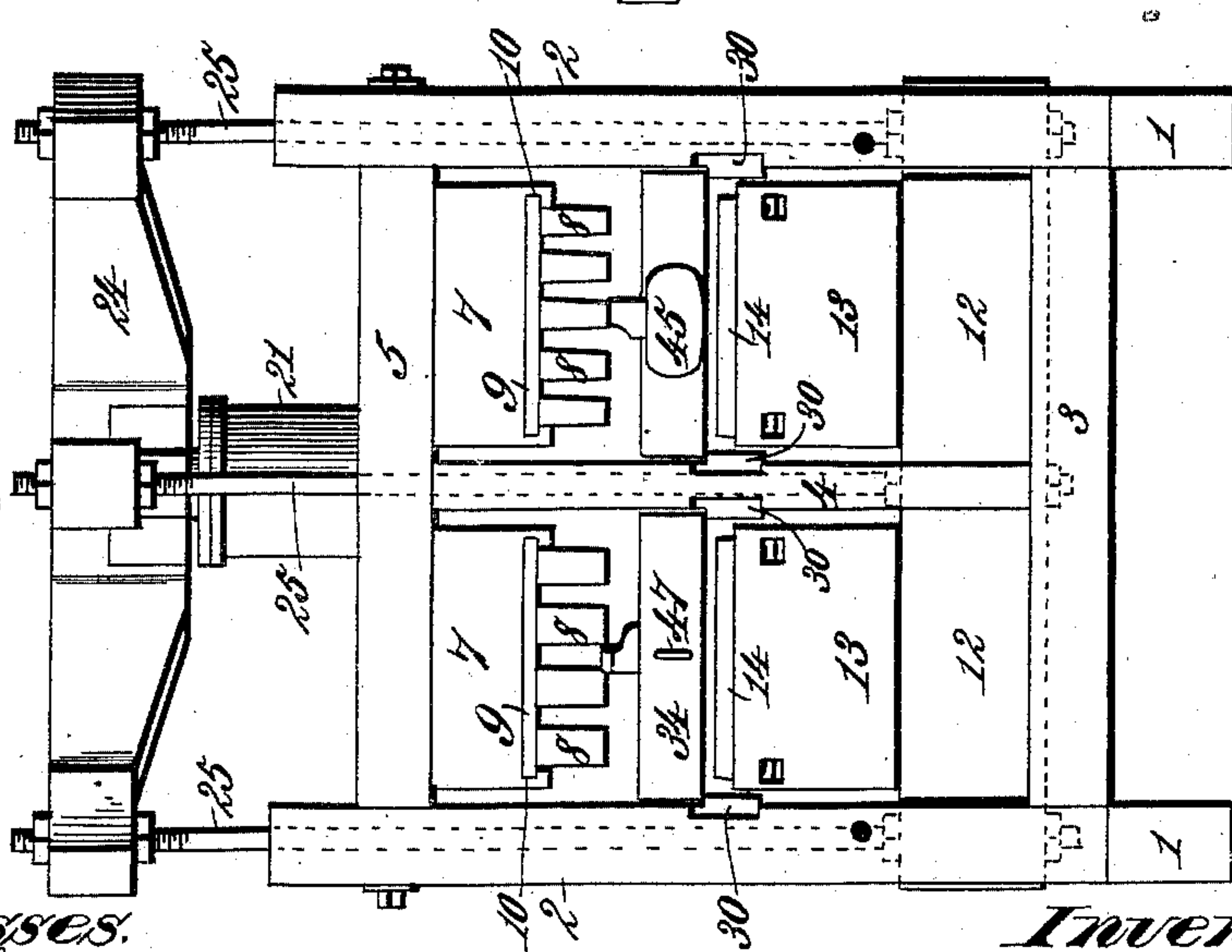


Fig. 3.

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Fig. 5.

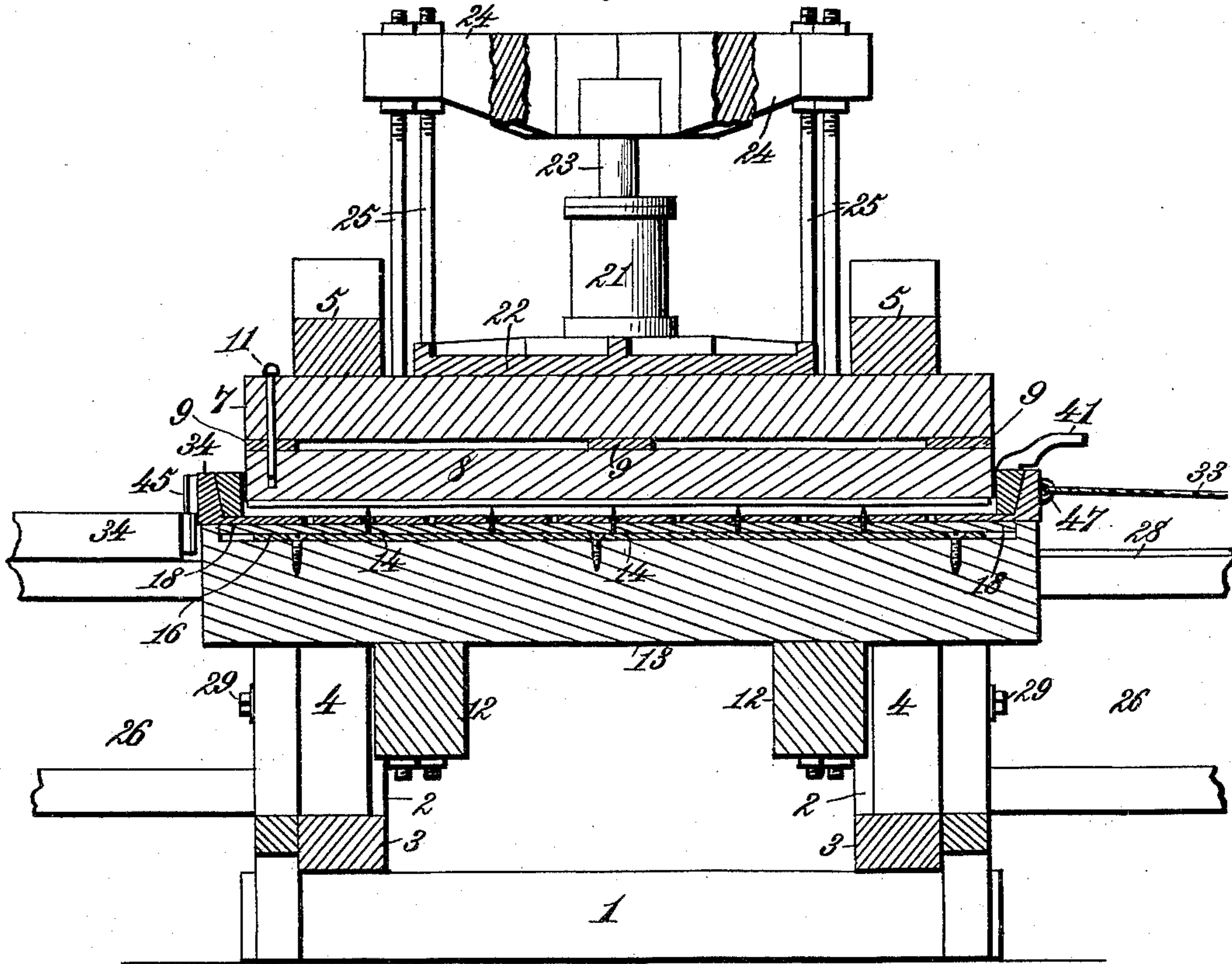
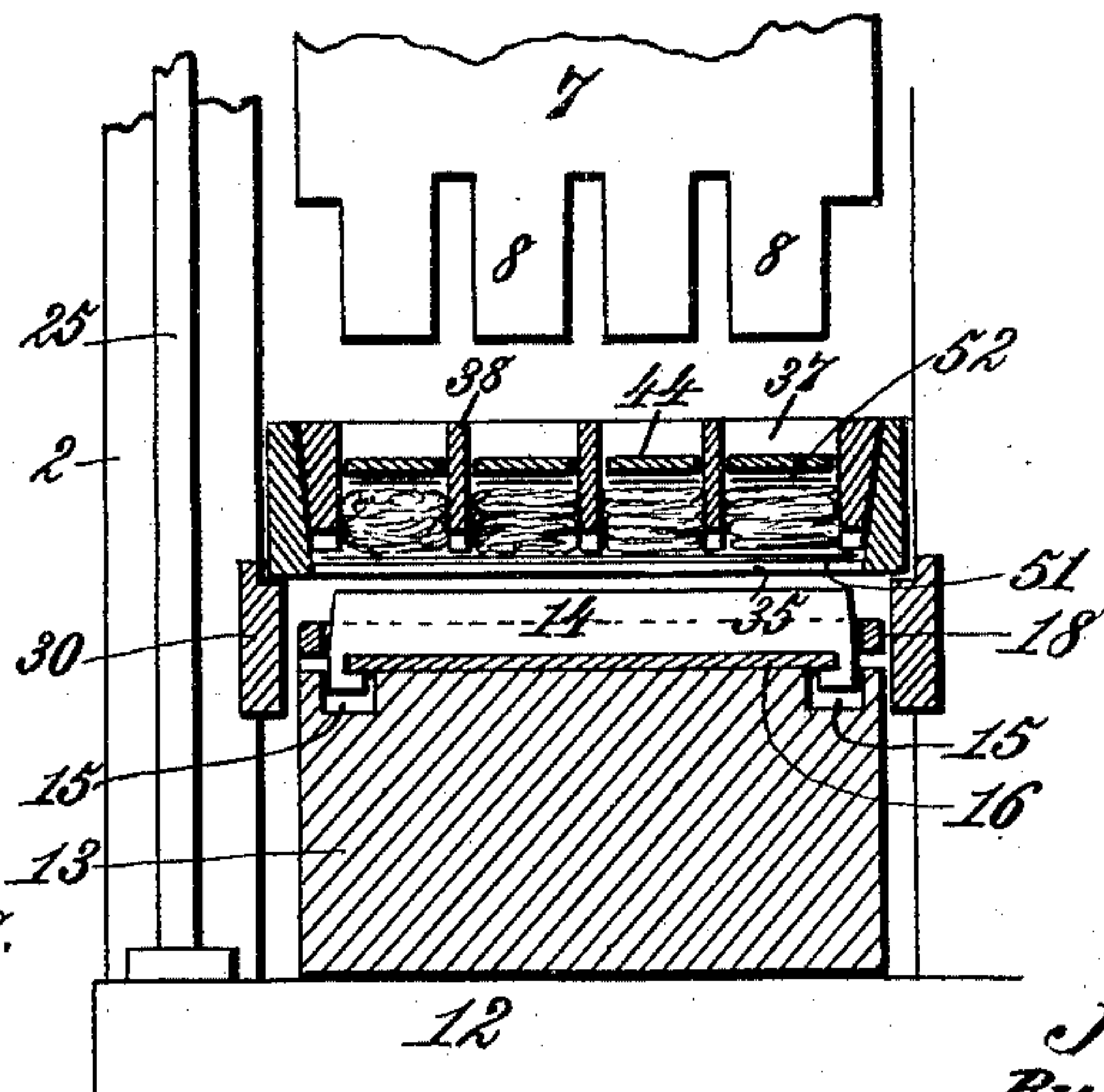


Fig. 6.



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Fig. 7.



Fig. 8.

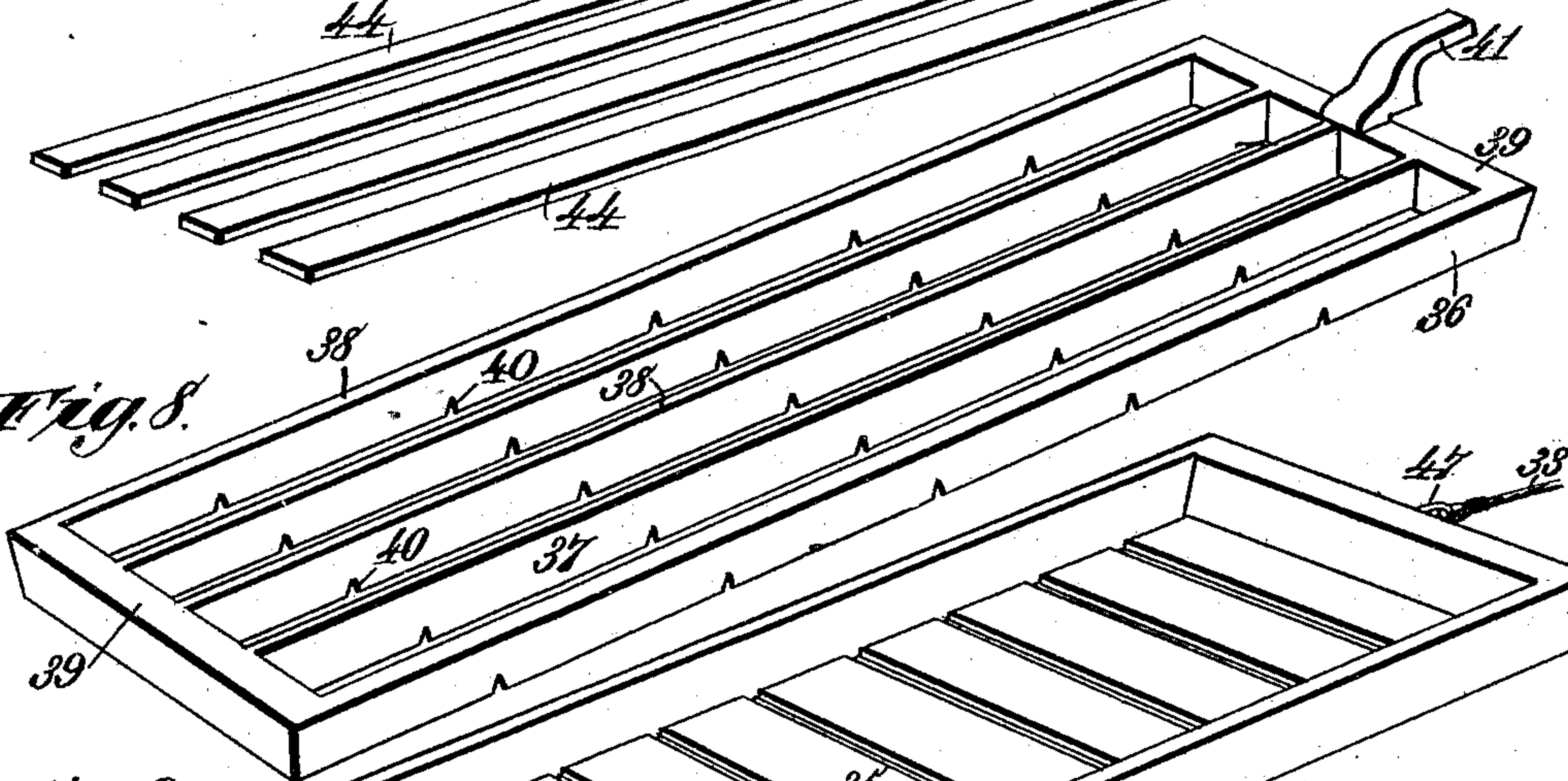


Fig. 9.

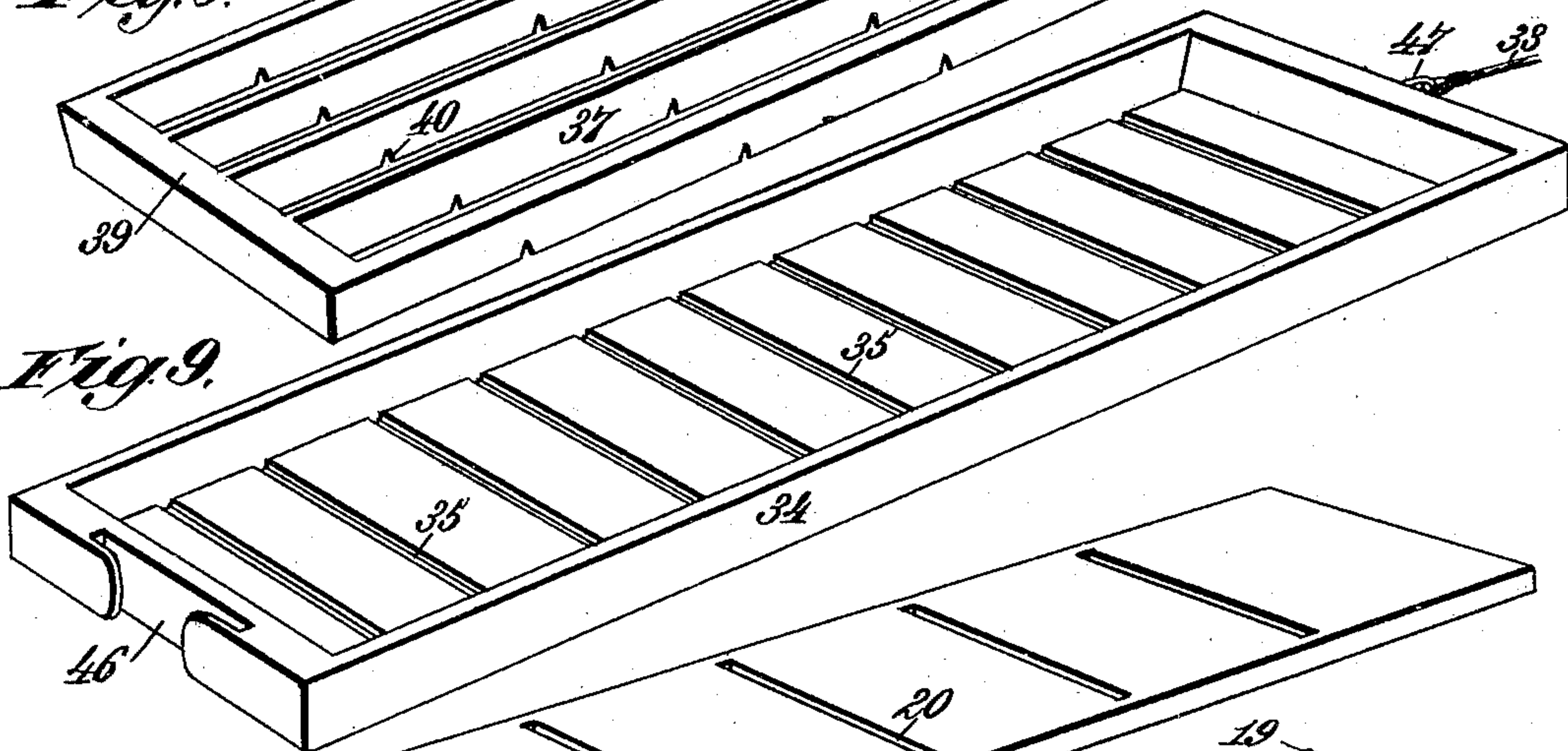


Fig. 10.

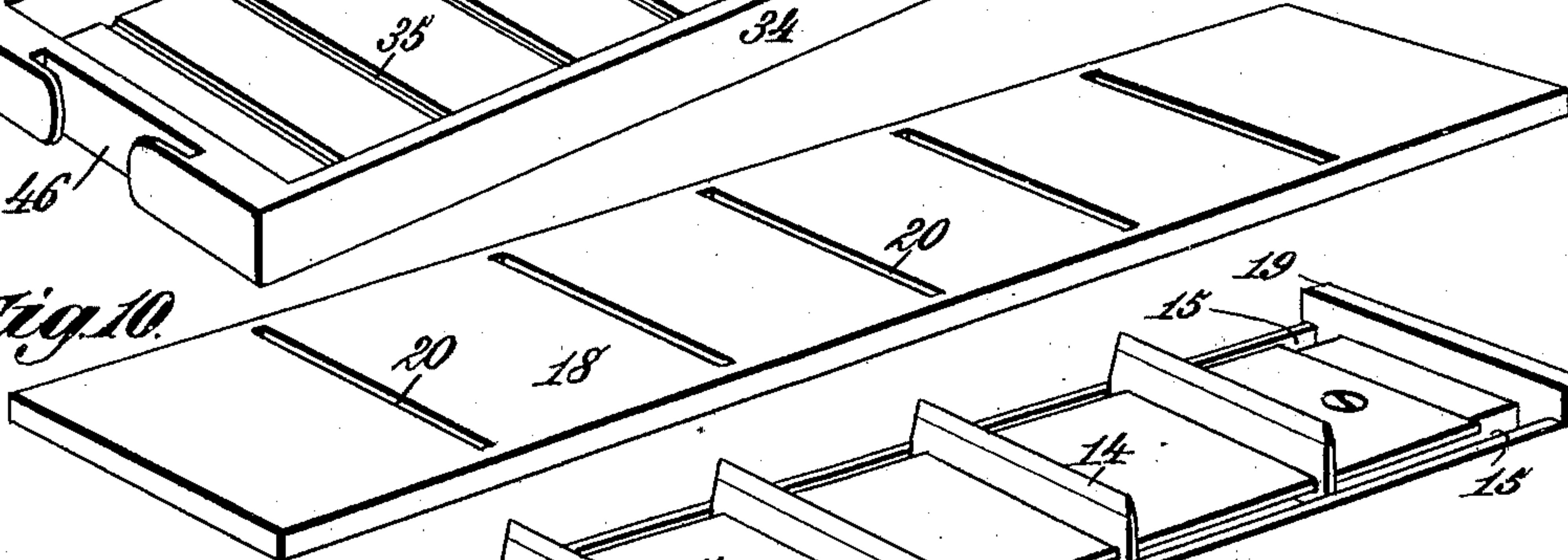


Fig. 11.

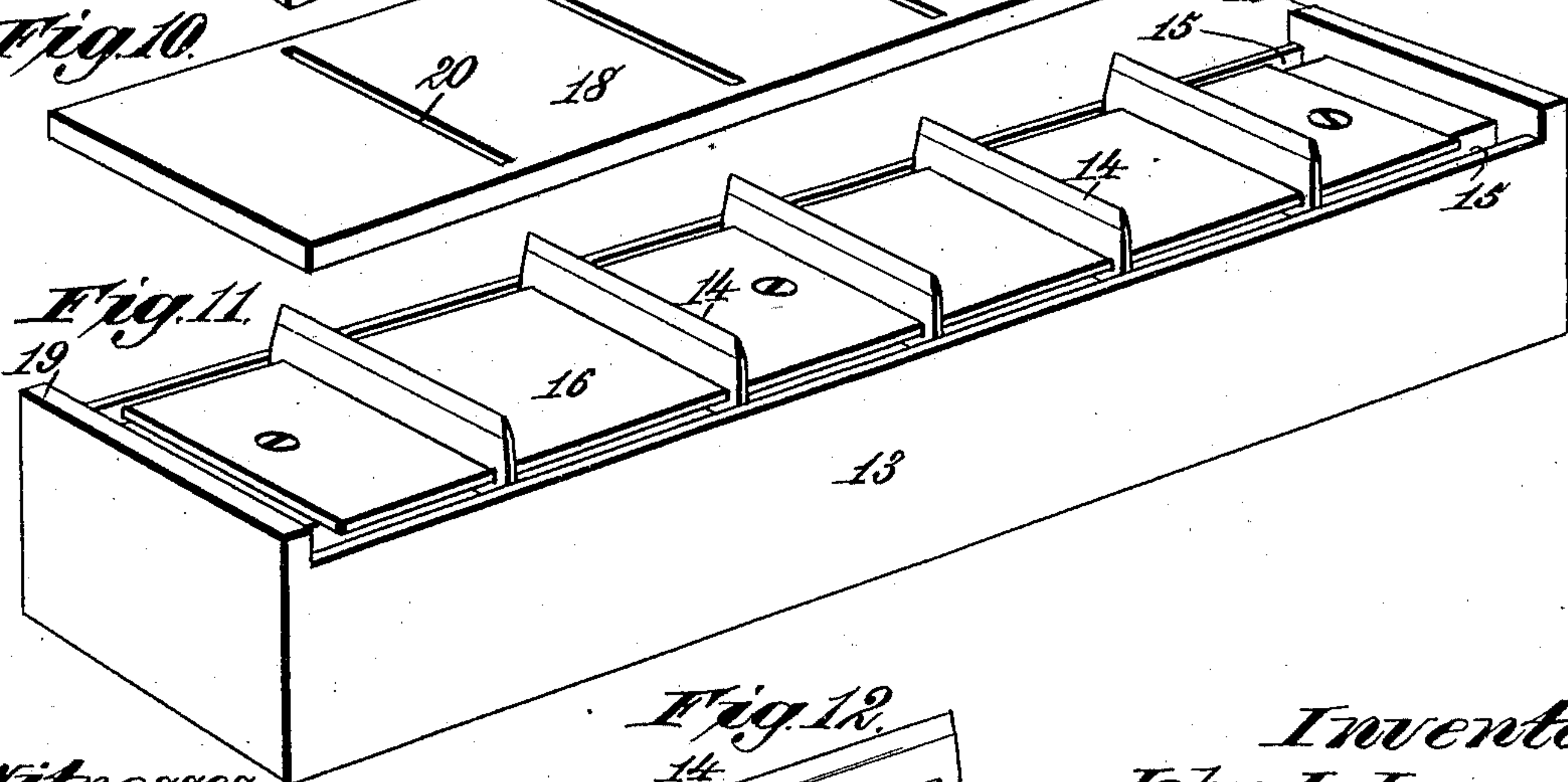
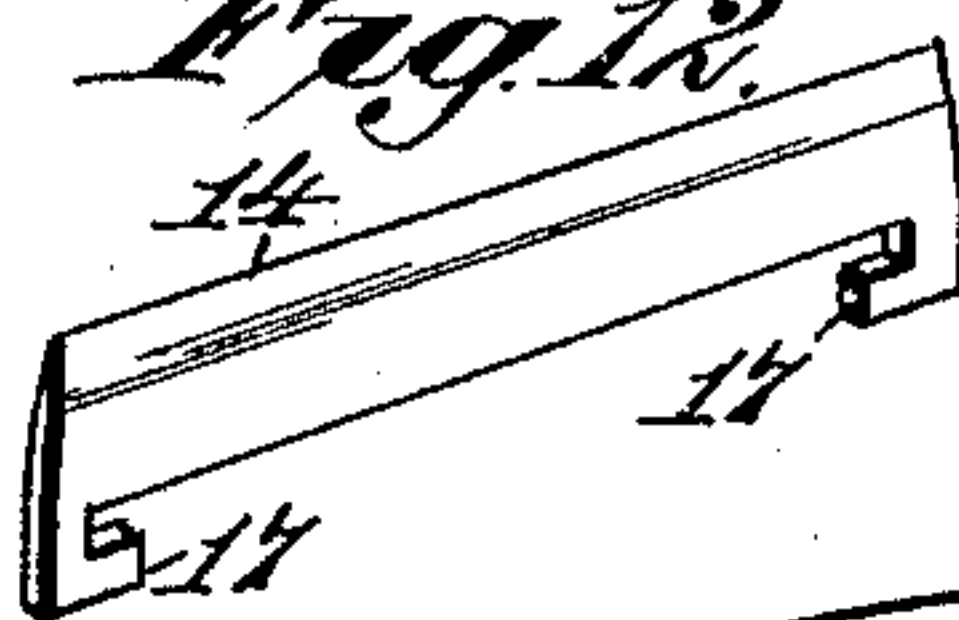


Fig. 12.



Witnesses.

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(No Model.)

6 Sheets—Sheet 6.

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Fig. 14.

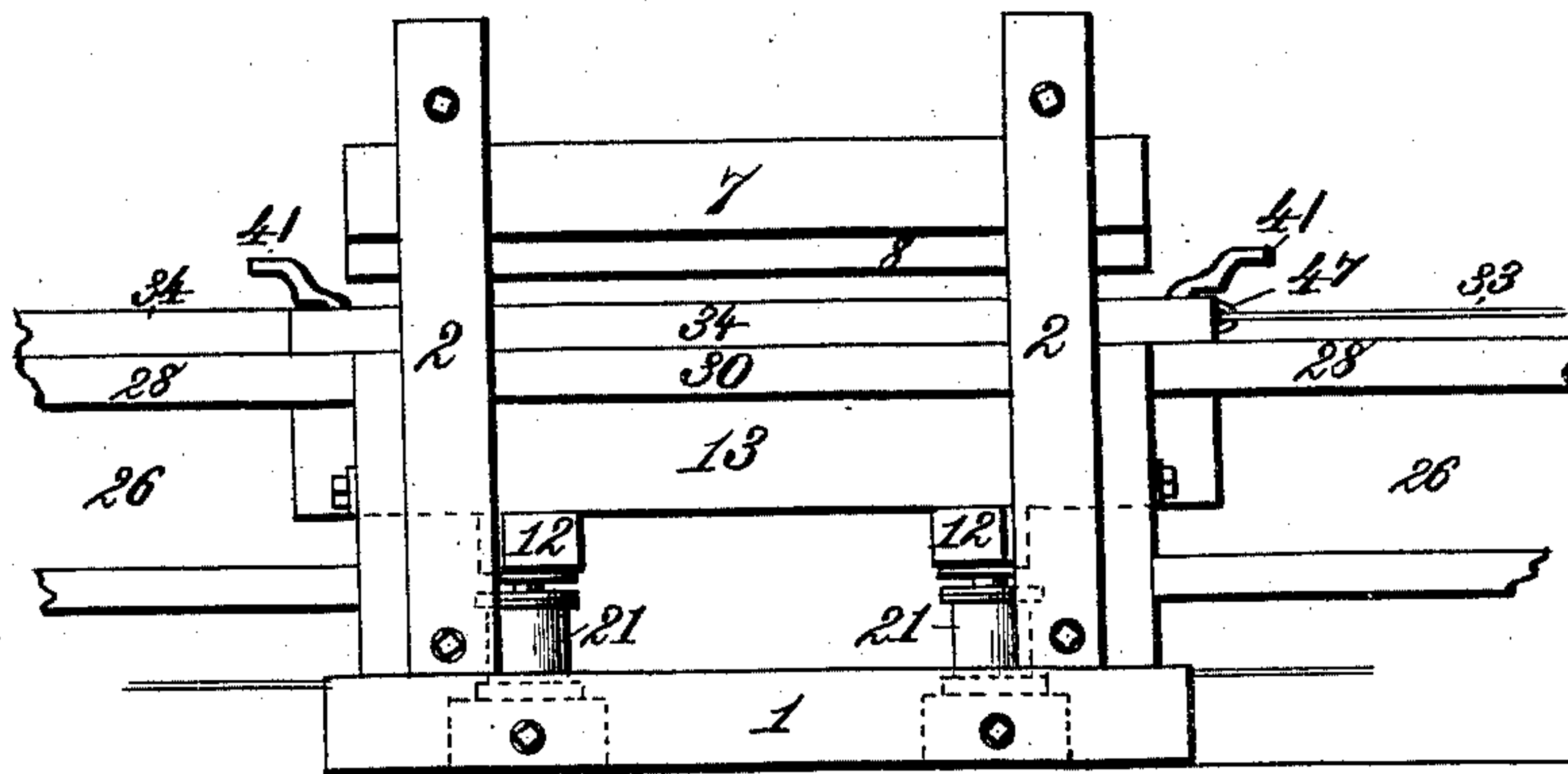
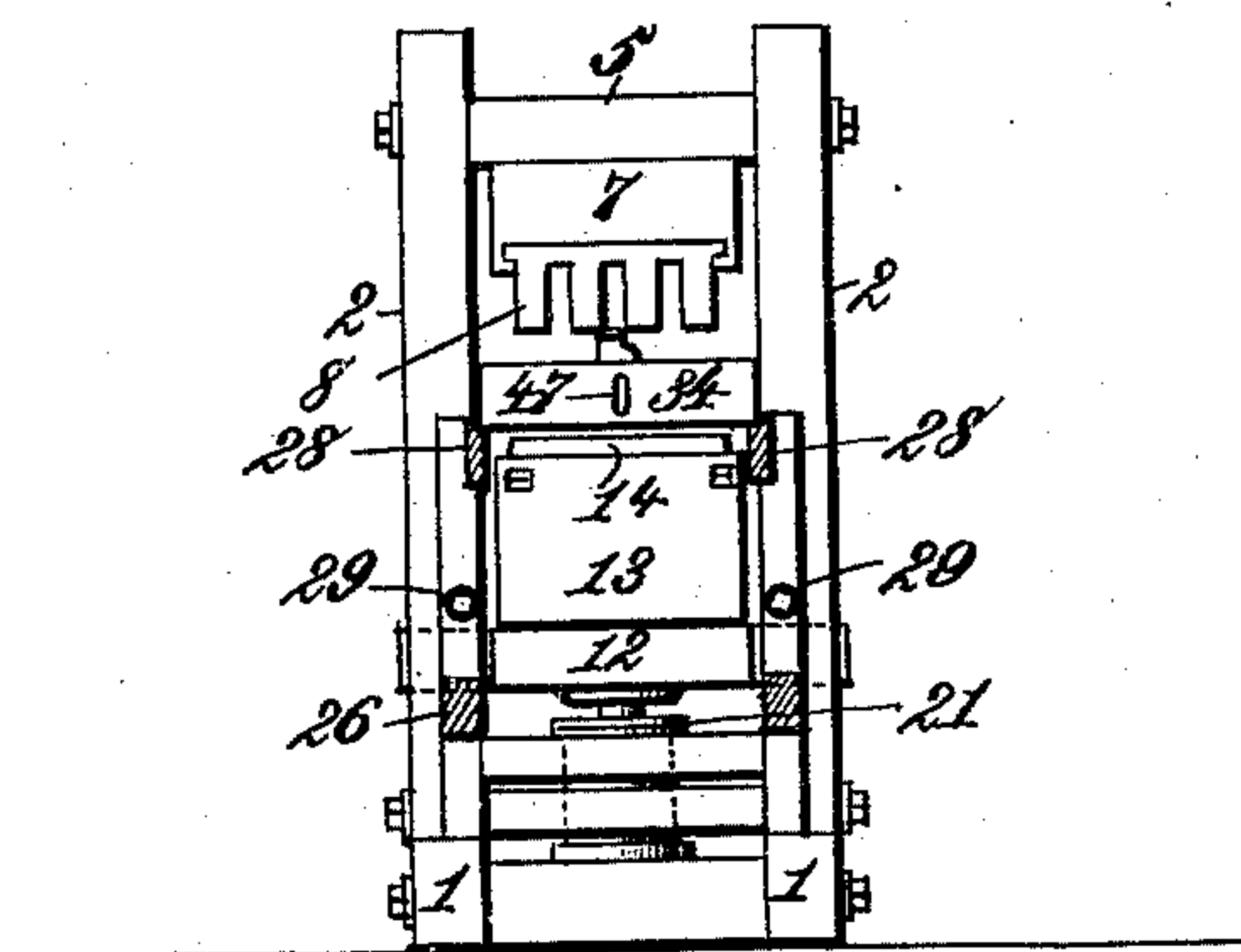


Fig. 15.



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UNITED STATES PATENT OFFICE.

JOHN L. JONES, OF WINSTON, NORTH CAROLINA.

MACHINE FOR MAKING PLUG-TOBACCO.

SPECIFICATION forming part of Letters Patent No. 468,661, dated February 9, 1892.

Application filed April 23, 1891. Serial No. 390,150. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. JONES, a citizen of the United States, residing at Winston, in the county of Forsyth and State of North Carolina, have invented new and useful Improvements in Machines for Making Plug-Tobacco, of which the following is a specification.

The object of this invention is to provide a simple, convenient, and inexpensive machine for the rapid and economical manufacture of varied assortments of plug-tobacco or tobacco lumps, bars, or pocket-pieces.

My invention relates to a machine in which the charges of tobacco are placed in the oblong compartments of a removable shaping-frame inclosed in a horizontally and vertically movable mold or mold-trough having a transversely-slotted bottom for the passage of a series of suitably-shaped knives or cutters carried by a vertically-movable lower platen that is adapted to elevate said knives and the mold and its contents into position to bring the compartments of the shaping-frame into engagement with a stationary series of oblong and parallel depending dies or plungers, whereby the tobacco is cut, shaped, and pressed at one operation into plugs, bars, or pieces of the required length, breadth, and thickness.

The invention consists in the novel construction, combination, and relative arrangement of parts in a plug-tobacco-making machine, as hereinafter more particularly described, and then defined in the claims at the end of this specification.

In the annexed drawings, illustrating the invention, Figure 1 is a side elevation of my improved machine for making plug-tobacco. Fig. 2 is a plan of the same. Fig. 3 is an end elevation of the press portion of the machine, the adjacent table-frame being removed. Fig. 4 is a perspective of one of the table-frames detached. Fig. 5 is a vertical longitudinal section of the press portion of the machine, with a mold and its accompaniments in the position they occupy during the pressing and cutting of the tobacco. Fig. 6 is a vertical transverse sectional detail. Fig. 7 is a view of a set of followers or sinker-bars for insertion into the compartments of a shaping-frame. Fig. 8 is a view of the shaping-frame. Fig. 9 is a view of a transversely-slotted mold.

Fig. 10 is a view of a transversely-slotted locking bar or plate for the knives or cutters. Fig. 11 is a view of the lower platen and its attached adjustable knives. Fig. 12 is a view of a knife or cutter. Fig. 13 is a view of a modification hereinafter mentioned. Fig. 14 is a partial side elevation of a single-acting machine embodying, also, a modification in the arrangement of the power devices. Fig. 15 is a transverse section of the same.

Referring to the drawings, the numeral 1 designates the sills, and 2 the standards or corner-posts, of a press-frame of any suitable construction. Secured between the lower ends of the corner-posts 2 are transverse beams 3, which may, in a double press, support the central vertical struts or standards 4, that serve to brace the press-frame. Between the upper ends of the corner-posts 2 are located transverse beams 5, that may rest on the central standards 4, as shown. The ends of the upper transverse beams 5 may be secured to the corner-posts 2, as shown in Fig. 3, or they may be made vertically adjustable in slots 6 at the upper ends of said corner-posts, as shown in Fig. 13. To the upper transverse beams 5 are secured the upper platen-blocks 7, two of which are arranged side by side in a double press, while in a single press, as hereinafter explained, only one of these platen-blocks would be required. When the upper cross-beams 5 and the platen-blocks 7 are arranged to be stationary, as shown in Figs. 1 and 3, the lower side of each platen-block will be provided with a detachable set of parallel oblong dies or plungers 8, preferably constructed of wood and extended longitudinally or lengthwise of the platen-block, which may be made of metal. These parallel, oblong, or horizontally-elongated dies or plungers 8, when made detachable, are connected on their upper sides by cross-pieces 9, Figs. 3 and 5, the ends of which extend somewhat beyond the vertical sides of the outer dies or plungers and are adapted to be engaged in parallel guideways 10, formed in or attached to the lower lateral edges of the platen-block. By this construction the parallel and connected detachable dies or plungers 8 can be readily engaged with or disengaged from the platen-block 7 by simply slipping said dies or plungers lengthwise, so as to cause their connect-

ing and supporting cross-pieces 9 to move along and in the guideways 10, and when the dies are in position they may be secured by a removable pin or key 11, Figs. 1 and 5, passed vertically through one end of the platen-block 7 and into the end of one of the connected detachable dies.

Whenever it is desired to vary the thickness of the tobacco plugs or lumps to be formed by pressure, the detachable dies or plungers 8 can be removed and replaced with others of greater or less height, and if it is desired to vary the width of the plugs a greater or less number of parallel dies or plungers having the desired width can be employed, according to the number and width of the compartments in the shaping-frames of the molds, to be hereinafter described.

By means of interchangeable dies and shaping-frames a great variety of work can be accomplished with one machine, and in a machine having a double press two kinds of work can be carried on at the same time, as the opposite platen-blocks may each be readily provided with any desired number of dies or plungers. For instance, one platen-block 7 may carry a set of five or more dies or plungers 8 for making narrow plugs, and the other platen-block may carry four or a less number of dies for making wider plugs. If the upper transverse beams 5 and attached platen-blocks 7 are made vertically adjustable, as shown in Fig. 13, the dies or plungers 8 need not be detachable or interchangeable except for varying the width of the plugs, as the thickness of the plugs can be regulated by varying the vertical adjustment of said beams and platen-blocks. In most cases, however, it is preferable to make the dies or plungers detachable and interchangeable, as the capacity of the machine and the variety of work to be accomplished can be thereby greatly increased.

The lower portions of the corner-posts 2 of the press-frame serve as guides for the transverse supporting-beams 12 of the lower platen or platens 13, which are adapted to carry the molds and inclosed shaping-frames hereinafter described upward into engagement with the dies or plungers 8, attached to the upper platen or platens. The lower platens 13 are secured to their transverse supporting and guiding beams 12 in any suitable manner, and, if desired, the ends of these beams may be rabbeted at the corners adjacent to the posts 2, as shown in Fig. 5, so as to receive the corners of said posts and be the better guided thereby in the vertical movement of the lower platen or platens.

Each lower platen 13 is preferably of a length somewhat greater than that of the upper platens, and carries a series of transverse vertically-projecting knives or straight-edged cutters 14, Figs. 3, 5, 6, and 12, to enter slots in a mold placed on said platen and sever the tobacco into suitable lengths while under pressure. The knives 14 may be at-

tached to the lower platens 13 in such a manner as to be adjustable thereon, according to the length of plug required. As shown, for instance, in Figs. 5, 6, and 11, the upper face of each platen-block 13 may be provided near its opposite sides with parallel longitudinal grooves 15, that are partly lapped or covered by the lateral edges of a plate 16, that is secured horizontally to the top of the platen-block and extends nearly the entire length without quite reaching either end. The lower edges of the knives 14 are provided at each end with a notched or hooked lug 17, Fig. 12, adapted to enter the grooves 15 and engage the edges of the plate 16, which thus secures the knives from vertical displacement, but permits them to be adjusted along the platen-block 13, as may be required, according to the length of plugs to be made. The spaces at the ends of the grooves 15 beyond the ends of the plate 16 permit the ready insertion and removal of the knives. After the knives 14 have been adjusted in proper position they are held from lateral displacement by means of a transversely-slotted locking-plate 18, Fig. 10, that extends lengthwise over and in contact with the upper face of the platen 13, where it is confined by a transverse ledge or shoulder 19 at each end of the platen-block. Each transverse slot 20 in the locking-plate 18 has a length and width sufficient to enable the plate to be slipped readily over and around the knives in placing or detaching said plate, and yet cause the slots to embrace the knives so closely as to prevent any wobbling or vibration in operation. The number and position of the slots in the plate 18 correspond with the number and arrangement of the knives 14, and if a change in the arrangement of the knives is required the plate 18 will be interchanged with another having the requisite arrangement of slots.

The lower vertically-movable platen or platens 13 may be operated by any suitable power applied by means of a screw or any convenient arrangement of levers or crankshafts or gearing in any well-known manner.

As represented in Figs. 1, 3, and 5, the press is shown as arranged for the application of hydraulic power, which is now generally employed in large tobacco factories. In a press of this construction the cylinder 21 may be supported by a bed-plate 22, secured to the top of the upper platen block or blocks 7, and the upper end of the ram 23 may carry horizontally-diverging arms 24, each of which is connected by vertical tie-rods 25 with the transverse vertically-movable beams 12, that support and carry the lower platen or platens. To each end of the press-frame is detachably secured a horizontal table-frame 26, Fig. 4, comprising suitable legs or standards 27, that support the horizontal parallel guideways or tracks 28 on which the tobacco-molds and their contents rest when not in the press. The table-frames 26 may be detachably secured to the press-frame by any convenient means, as

byscrew-bolts 29, Fig. 4, connecting the corner-posts of the press-frame with the adjacent legs or standards of the table-frame, as shown in Fig. 1. By making the table-frames and press-frame detachable they can be conveniently separated for packing, storage, and transportation, and these objects may be further facilitated by constructing the several parts of the entire machine in separable or detachable parts that can be readily packed. When the table-frames 26 are in position and secured to the press-frame, the tracks or guideways 28 will be on a level with similar horizontal and parallel guideways or tracks 30, supported in the press-frame, where they are secured to the corner-posts 2 and central standards 4 and are arranged to project above the cutting-edges of the knives 14, carried by the lower platens 13, when said platens are at the lower limit of their vertical movement. In order to afford access to the knives 14 without moving the platens 13 upward, the outer tracks or guideways 30 of the press-frame may be made detachable; but this is not essential.

In a double machine, or one provided with four molds, two of which are arranged to be in the press while the other two are exposed, one on each table in position to receive tobacco, there will be three tracks 28 on each table-frame and three tracks 30 in the press-frame; but in a machine arranged for working only two molds, one of which will be in the press while the other is on a table, there will be only two tracks on each table and two in the press-frame. At the outer end of each table-track 28 is a stop 31 to limit the outward movement of the traveling molds hereinafter described, and at the outward end of each table-frame are supported upper and lower guide-pulleys 32 for the ropes 33, that may be employed to propel said molds.

The molds or mold-troughs 34, Fig. 9, in which the tobacco is shaped, cut, and pressed, are oblong in form and preferably made of metal. In the bottom of each mold 34 is a series of transverse slots 35, arranged at suitable intervals with reference to the various positions in which the knives 14 may be placed or adjusted for cutting the tobacco into plugs of the required length. The width and length of these slots 35 is sufficient to permit the passage of the knives 14 into the mold when said knives are raised by the upward movement of the platen to which they are attached. The inner surfaces of the side and end walls of the mold 34 are beveled or flared outward, as shown, to correspond with a similar beveled or flared contour of the outer surfaces of the end and side walls of an oblong removable shaping-frame 36, Fig. 8, that is fitted in the mold and serves to divide it into a series of parallel longitudinal compartments 37, corresponding with the number of oblong dies or plungers 8, with which the particular mold and shaping-frame are designed to act in making plugs, lumps, or bars of the required width. This shaping-frame 36 is preferably made of

wood, and consists of parallel longitudinal strips or bars 38, arranged on edge and connected by cross-pieces 39 at their ends. On their lower edges the strips or bars 38 are provided with notches 40, that correspond with the position of the transverse slots 35 in the bottom of the mold 34, and serve to permit the entrance of the knives 14 a sufficient distance to sever the tobacco into the required lengths while it is being pressed. By beveling or flaring the adjacent surfaces of the mold 34 and shaping-frame 36, as described, the said frame can be readily inserted into and removed from the mold without binding, and as the frame 36 is constructed of wood, comparatively light, it is capable of being easily manipulated.

On one end of each shaping-frame 36 is a projection or lug 41, that serves as a handle for disengaging the frame from the mold in which it is placed. If desired, there may be arranged at the ends of the table-frames 26 vertical strip-rods 42, actuated by foot-levers 43, adapted to throw said rods upward beneath and in forcible contact with the lugs or handles 41, and so disengage the shaping-frames 36 from the molds 34 when the molds are in engagement with the overhanging stops 31 on the table-frames.

In each compartment 37 of the shaping-frame 36 is to be placed an oblong sinker-bar or follower 44, Fig. 7, above the tobacco spread out in said compartments while the shaping-frame is in the mold. These followers 44, as well as the shaping-frames 36 and dies or plungers 8, are preferably made of dense close-grained wood, to which the tobacco is not liable to adhere.

The molds 34 are adapted to be moved lengthwise and horizontally on the tracks or guideways 28 and 30, and are coupled together in pairs in such a manner that while the horizontal movement of one will actuate the other in the same direction the one in the press may be moved vertically with the lower platen without disturbing the mold that is exposed on the adjacent table-frame, which last-named mold will thus remain in position to receive a charge or charges of tobacco while the contents of its fellow are being pressed. This coupling of the molds 34 in pairs in such a manner that the mold in the press can be moved vertically without disturbing the mold on the table may be effected by providing one end of a mold in each pair with a dovetailed or rabbeted lug 45, adapted to enter and have a vertically-sliding movement in a correspondingly-dovetailed recess 46, formed in the adjacent end wall of the other mold of the pair.

Although the upward movement of the mold in the press may be sufficient to wholly disengage the locking or coupling lug 45 of the one mold from the recess 46 of the other mold, they will readily become re-engaged on the descent of the elevated mold; but, if desired, the height or depth of the interlocking lug

and recess may be so arranged as to prevent their entire disengagement in the machine.

The outer end of each mold-trough 34 may be provided with an eye 47 for attachment of one end of a cord or rope 33, that has its other end secured to a similar eye on the outer end of the other mold of the pair. The cord or rope 33 is arranged to run in the grooved peripheries of the guide-pulleys 32, and is partially wound on a rotary drum or roller 48, journaled in bearings 49 in the lower part of one of the table-frames 26, and provided at its opposite ends with crank-handles 50, by which it may be operated to move the rope 33, and thereby propel the molds 34 along their supporting tracks or guideways.

In a machine provided with two sets of molds and pressing devices, as shown in Figs. 2 and 3, and in which the traveling molds and their contents are propelled horizontally in the manner described, there will be two ropes 33, one for each side of the machine, and these ropes will be reversely wound on the drum or roller 48 in such a manner that when said drum is rotated in either direction one set of molds will be moved to the right while the other is moved to the left. It will be seen that the ropes 33 and rotary drum 48 afford a simple and convenient means for propelling the traveling molds.

In its capacity for turning off a large variety and quantity of work in a short time this machine possesses advantages that will be obvious to those skilled in the manufacture of plug-tobacco.

A double machine, or one provided with four traveling molds, as shown in Figs. 1 and 2, is conveniently operated by four attendants, two on each side. The molds 34 being arranged as represented in Fig. 2, in which two molds are shown in the press while the other two are exposed on the table-frames at the opposite ends of the machine, the attendants working from the opposite ends of the last-named molds will supply the compartments 37 of the shaping-frame 36 with previously weighed quantities of properly "cased" tobacco leaves or "filler," disposing the same evenly and in ribbon form within said compartments. The sinker-bars or followers 44 may now be laid in the compartments 37 on the tobacco placed therein, and the propelling mechanism of the molds may then be actuated to move out onto the tables the molds that are in the press-frame and permit their places to be occupied by the molds just charged. On applying power to the press the lower platens 13 will be moved upward, thereby carrying the knives 14 through the slots 35 of the molds 34 and lifting said molds from the tracks 30 and into engagement with the depending stationary dies or plungers 8, thereby pressing the tobacco, and at the same time cutting it into plugs, lumps, or bars of the required length, breadth, and thickness. In this operation the walls of the metal molds 34 serve to securely brace and support the

36, and thus enable the tobacco to be pressed and uniformly shaped with straight and even edges that add greatly to its appearance. The knives or cutters may be so arranged as to cut the tobacco into plugs or pieces of any length, and by making the knives either straight or curved in a well-known manner the ends of the plugs can be made correspondingly straight or curved, as desired, according to its variety or the mode in which it is to be packed. While the tobacco contained in the molds that are in the press is being thus pressed and cut the molds exposed on the tables 26 will be emptied and recharged. The emptying of a mold is quickly effected by pressing down the accompanying foot-lever 43, so as to throw the attached trip-rod 42 upward into contact with the under side of the lug or handle 41 of the shaping-frame 36, thus jarring it loose from the mold 34, which is meanwhile in engagement with one of the stops 31 at the end of the table-frame. The shaping-frame is then lifted out of the mold, leaving the pressed and cut tobacco therein, the followers or sinker-bars 44 being slightly tapped on their upper sides, if necessary, in order to disengage the tobacco from the bars of the shaping-frame. The tobacco plugs, lumps, or bars can now be removed from the mold and laid away for subsequent capping or wrapping in any desired manner.

In the manufacture of plug-tobacco the expense can be largely decreased and a fine salable article furnished by dispensing with the ordinary wrapper of tobacco and supplying its place with a wrapper of thin paper or muslin or linen or other fibrous or textile material, colored and prepared in imitation of the natural leaf, which imitation wrapper can be readily removed or stripped off when a chew is taken from the plug. These wrappers have usually been attached after the plugs were formed, which is an expensive and troublesome operation. This machine furnishes a convenient and economical means for attaching such imitation wrapper at the same time that the tobacco is pressed and cut into lengths. When using the machine in this manner, the wrapper 51, Fig. 6, of paper or other fibrous or textile material, is laid in the mold 34 before the shaping-frame 36 is put into place, and, if desired, this piece of paper or other suitable material may be of sufficient size to be extended partly up the sides and ends of the mold. After the tobacco has been introduced into the compartments 37 of the shaping-frame, as already described, other wrappers 52, of paper or fibrous or textile material, may be placed in position on the tobacco before the sinker-bars or followers 44 are inserted. The molds being now moved horizontally into the press, the tobacco will be pressed and cut in the manner hereinbefore explained, and after the plugs, bars, or lumps have been removed from the machine their edges can, if desired, be provided

with a similar wrapper of paper or imitation leaf, though this is not necessary. In charging the oblong compartments 37 of the shaping-frames 36, inclosed in the molds, it is preferable to utilize the nips or waste ends cut off from previous charges, as by placing their straight-cut ends in the ends of the shaping-compartments considerable economy will be effected in the manufacture of neat-appearing plugs, lumps, or bars.

It is obvious that instead of constructing the machine for working four molds in two sets the machine may be made of less width and have only two molds, as shown in Figs. 14 and 15, one of which molds will be on the table in position for charging while the other mold and its contents are in the press.

The hydraulic-power devices may be located below the press instead of on top, and, as shown in Fig. 14, they may be duplicated, if desired.

By varying the width, height, and number of the detachable and interchangeable stationary dies or plungers and the number and width of the compartments in the interchangeable shaping-frames of the horizontally and vertically movable molds a large and varied assortment of finely-finished goods can be rapidly produced by means of my improved machine.

What I claim as my invention is—

1. In a machine for making plug-tobacco, the combination of a mold having a transversely-slotted bottom, a lower platen provided with knives adapted to enter the slots in the bottom of said mold, an upper platen provided with depending dies or plungers, and a removable shaping-frame adapted to fit into said mold and provided with compartments to receive the tobacco to be formed into plugs or bars, substantially as described.

2. In a machine for making plug-tobacco, the combination, with a mold having a transversely-slotted bottom and a platen provided with knives adapted to enter the slots in said mold, of a removable shaping-frame adapted to fit into the mold and provided with oblong compartments to receive the tobacco, said compartments of the shaping-frame being formed by parallel strips or bars having their lower edges notched to correspond with the transverse slots of the mold, substantially as described.

3. In a machine for making plug-tobacco, the combination, with a mold having a transversely-slotted bottom and a removable shaping-frame adapted to fit into said mold and provided with parallel oblong compartments to receive the tobacco, of a series of removable sinker-bars or followers adapted to fit into said compartments, a series of dies or plungers adapted to be engaged in the said compartments above the followers, and a series of knives or cutters adapted to enter the slots in the bottom of the mold, substantially as described.

4. In a machine for making plug-tobacco,

the combination of a horizontally-traveling mold having a transversely-slotted bottom, a lower vertically-movable platen provided on its upper face with a series of movable and adjustable knives adapted to enter the slots in the mold-bottom, and an upper platen provided with depending dies or plungers, substantially as described.

5. In a machine for making plug-tobacco, the combination of a mold having a transversely-slotted bottom, a lower vertically-movable platen provided with removable and adjustable knives adapted to enter the slots in the bottom of said mold, a removable shaping-frame fitted into said mold and having its lower edges notched to correspond with the slots in the mold-bottom, and an upper platen provided with depending dies or plungers to press the tobacco in said shaping-frame, substantially as described.

6. In a machine for making plug-tobacco, the combination, with a mold, a removable shaping-frame inclosed in said mold and provided with a series of parallel longitudinal compartments to receive tobacco, and a series of sinker-bars or followers inserted in said compartments, of a platen provided with a detachable series of parallel oblong dies or plungers corresponding with the compartments of the shaping-frame, substantially as described.

7. In a machine for making plug-tobacco, the combination of a mold provided with a transversely-slotted bottom and having the inner surfaces of its side and end walls beveled or flared, as shown, and a removable shaping-frame adapted to be inserted in said mold and having the outer surfaces of its ends and sides beveled or flared to correspond with the inner surfaces of the mold and facilitate the disengagement of said shaping-frame, substantially as described.

8. In a machine for making plug-tobacco, the combination of a press having an upper platen provided with a series of depending dies or plungers and a lower platen provided with a series of knives or cutters, horizontally-traveling molds provided with slotted bottoms and closely coupled together in pairs in such a manner as to be moved vertically independent of each other, tracks for supporting said molds in and out of the press, operating mechanism connected with the opposite ends or each pair of molds, and removable shaping-frames fitted in said molds, substantially as described.

9. In a machine for making plug-tobacco, the combination of a press having an upper platen provided with dies or plungers and a lower platen provided with knives or cutters, table-frames located at the opposite ends of the press, horizontally-traveling molds provided with slotted bottoms to receive the knives or cutters on the lower platen, said molds arranged in pairs closely coupled together and adapted to be moved alternately in reverse directions, whereby one mold of

each pair will be located in the press while the other molds are exposed on opposite table-frames, tracks located in the press and on the table-frames for supporting said molds, and operating mechanism connected with the opposite ends of each pair of molds, substantially as described.

10. In a machine for making plug-tobacco, the combination of a press having a lower vertically-movable platen provided with adjustable knives and an upper platen provided with a series of depending dies or plungers, table-frames detachably connected with the opposite ends of said press, tracks or guide-ways supported on said table-frames and in the press, horizontally-traveling molds provided with transversely-slotted bottoms and coupled in pairs in such a manner as to permit either mold in each pair to be moved vertically without disturbing the other, said molds being supported on the tracks of the table-frames and press and adapted to be moved horizontally in reverse directions, means for actuating said molds, removable shaping-frames fitted in the several molds, and means for operating the lower vertically-movable platen of the press, substantially as described.

11. In a machine for making plug-tobacco, the combination of the upper platen-blocks 7, provided with detachable depending dies or plungers 8, the lower vertically-movable platens 13, provided with detachable and adjustable knives or cutters 14, the slotted locking-plates 18, located on the lower platens to assist in confining the knives, the horizontally-traveling molds 34, provided with transverse slots 35, the removable shaping-frames 36, located in said molds, and the sinker-bars or followers 44, placed in the shaping-frames, substantially as described.

12. In a machine for making plug-tobacco, the combination of the press provided with platens 7 and 13, dies or plungers 8, depending from the upper platens 7, knives 14, attached to the lower platens 13, the table-frames 26 at each end of the press, the tracks or guideways 28 and 30, located on said table-frames and in the press, the horizontally-traveling molds 34, having slotted bottoms and provided with shaping-frames 36, the stops 31 at the outer ends of the table-frames, and

means for actuating the molds and press, substantially as described.

13. In a machine for making plug-tobacco, the combination of the table-frames 26, provided with tracks 28 and stops 31, a horizontally-traveling mold 34, the removable shaping-frame 36, located in said mold and having at one end a lug or handle 41, the trip-rod 42, and foot-lever 43, substantially as described.

14. In a machine for making plug-tobacco, the combination of the table-frames 26, provided with tracks 28 and stops 31, a press having tracks 30, the horizontally-traveling molds 34, coupled in pairs, the guide-pulleys 32 at the outer ends of the table-frames, the ropes 33, connected with the opposite ends of each pair of molds, and the rotary drum 48 for winding and unwinding said ropes, substantially as described.

15. In a machine for making plug-tobacco, the combination of the horizontally-traveling molds 34, provided with coupling devices 45 and 46, adapted to permit one mold to be moved vertically without disturbing the mold coupled therewith, the press and table-frames provided with tracks or guideways 28 and 30, the said table-frames being located at opposite ends of the press, and means for actuating the molds, substantially as described.

16. In a machine for making plug-tobacco, the combination, with a mold 34, having its bottom provided with transverse slots 35, of the removable shaping-frames 36, composed of the parallel longitudinal strips or bars 38, having their lower edges provided with notches 40, the cross-pieces 39, connecting the ends of said bars 38, and the lugs or handles 41, substantially as described.

17. In a machine for making plug-tobacco, the combination of the mold 34, the removable shaping-frames 36, provided with parallel longitudinal compartments 37, the sinker-bars or followers 44, and the dies or plungers 8, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

JOHN L. JONES. [L. S.]

Witnesses:

JAMES L. NORRIS,
JAMES A. RUTHERFORD.