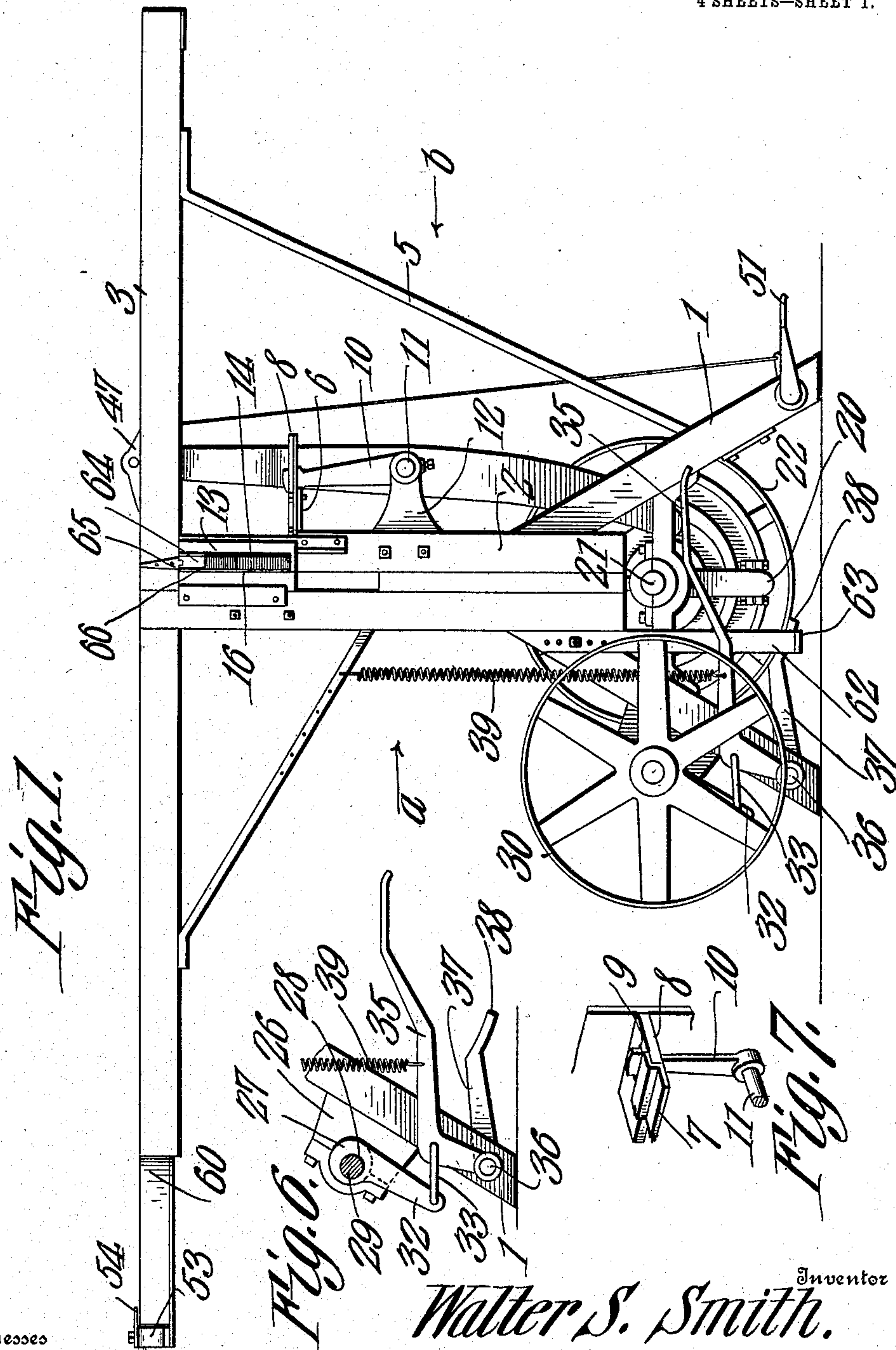


W. S. SMITH.
MACHINE FOR BENDING BASKET HANDLES.
APPLICATION FILED JAN. 2, 1908.

900,890.

Patented Oct. 13, 1908.

4 SHEETS—SHEET 1.



Witnesses

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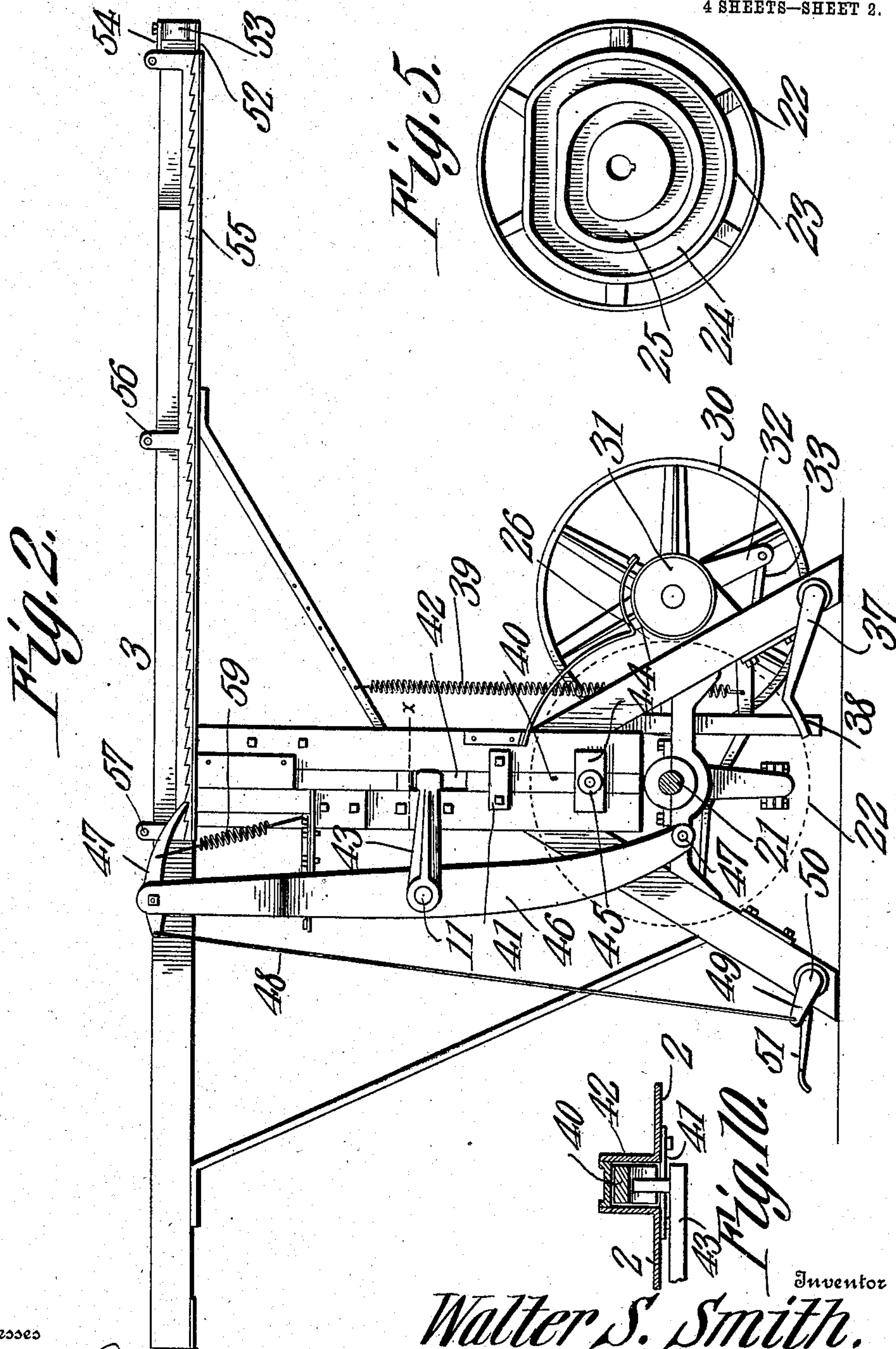
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Witnesses

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334

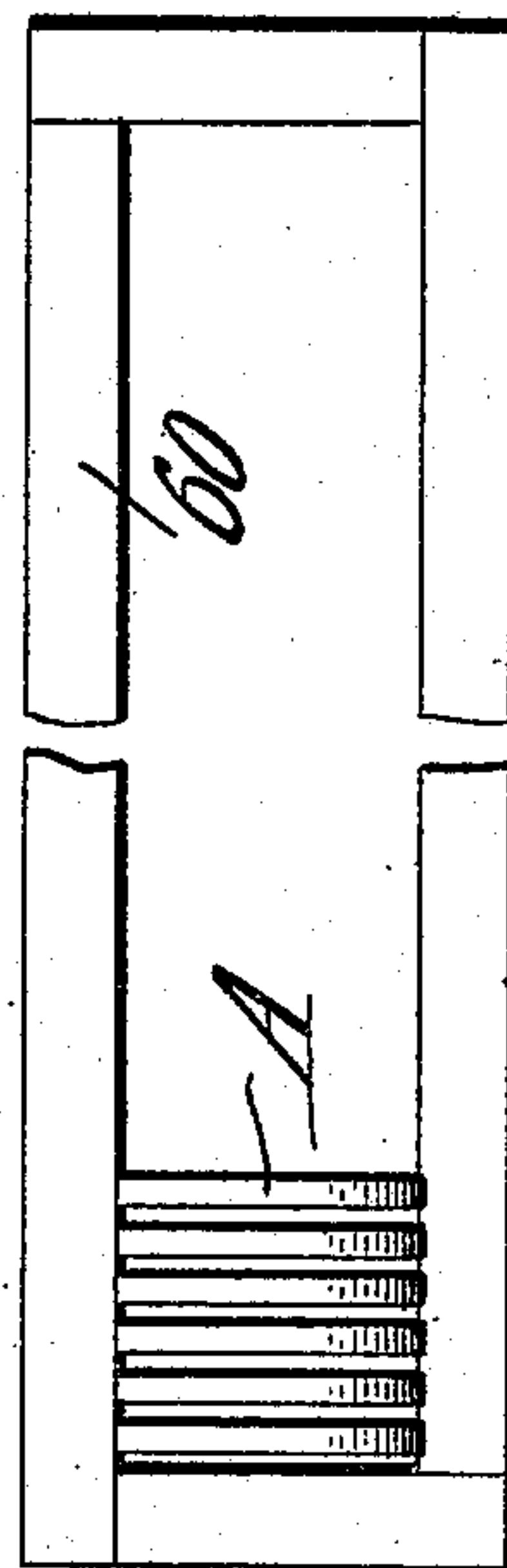
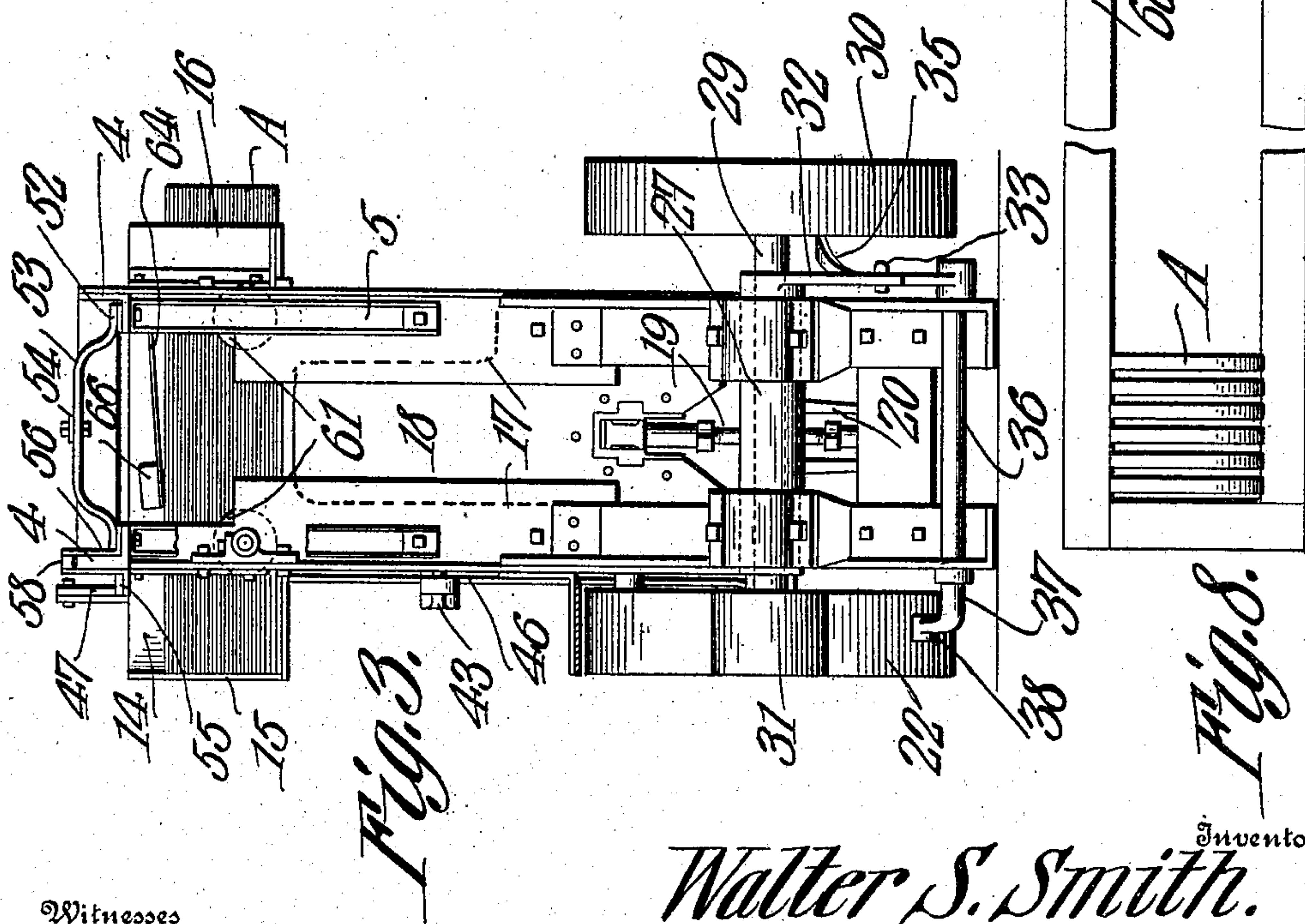
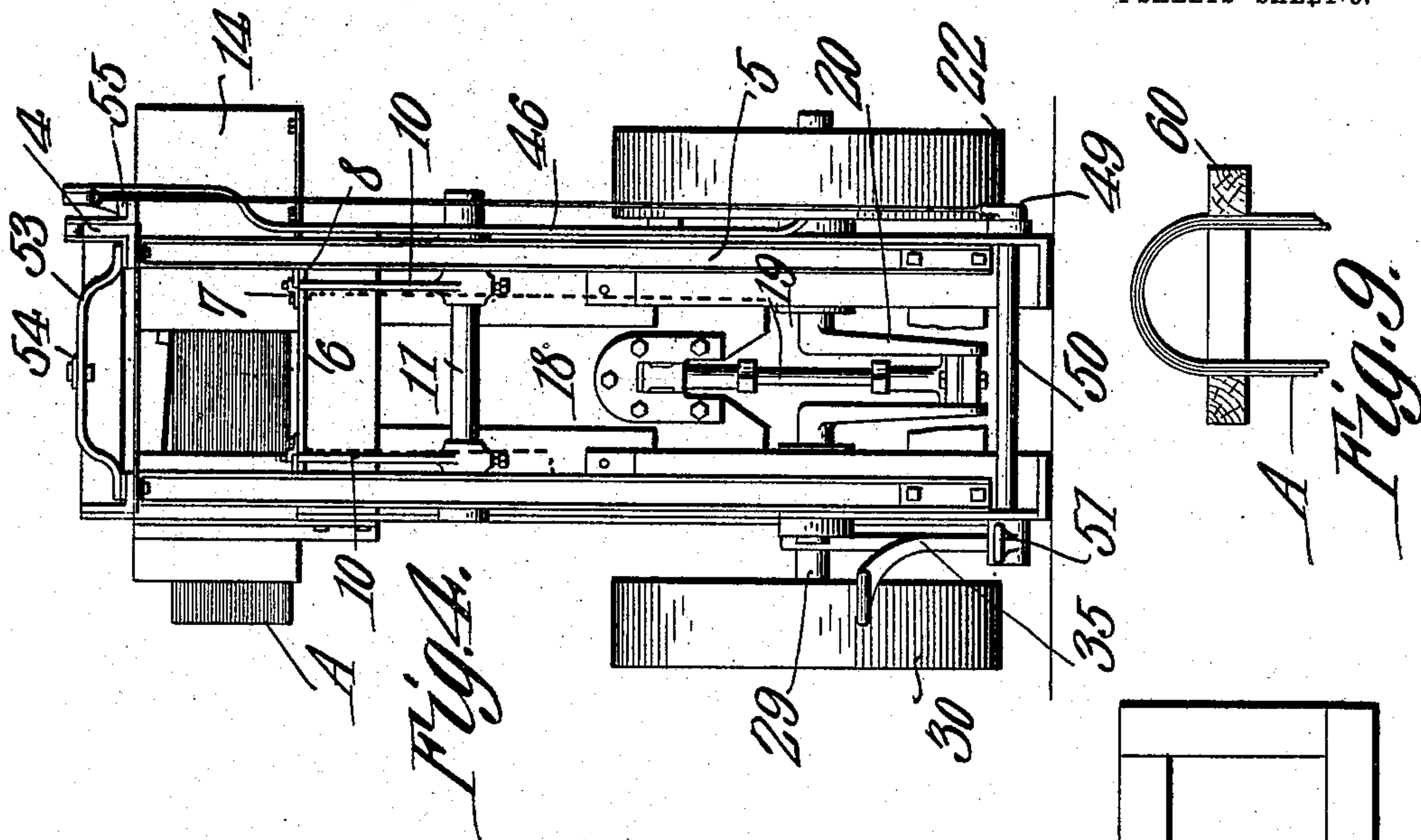
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4 SHEETS—SHEET 3.



Witnesses
E. J. Stewart
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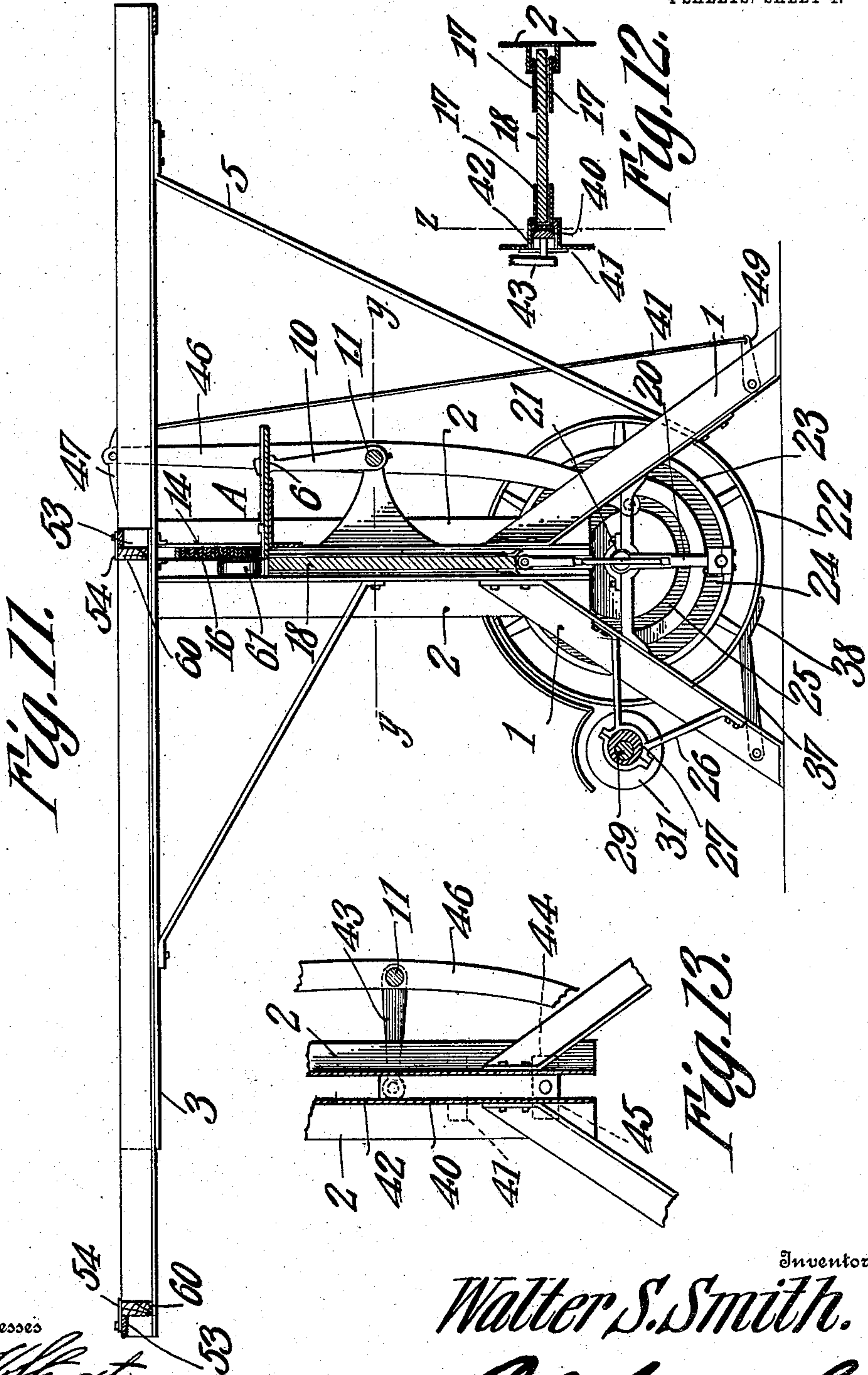
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UNITED STATES PATENT OFFICE.

WALTER SCOTT SMITH, OF PADUCAH, KENTUCKY.

MACHINE FOR BENDING BASKET-HANDLES.

No. 900,890.

Specification of Letters Patent.

Patented Oct. 13, 1908.

Application filed January 2, 1908. Serial No. 408,962.

To all whom it may concern:

Be it known that I, WALTER S. SMITH, a citizen of the United States, residing at Paducah, in the county of McCracken and State of Kentucky, have invented a new and useful Machine for Bending Basket-Handles, of which the following is a specification.

This invention relates to machines for bending basket handles such as used in connection with grape, and other fruit baskets, market baskets, bushel baskets, and in fact wherever broad splints or similar strips are to be used as handles.

The object of the invention is to provide a machine designed to automatically supply blanks to bending mechanism which operates to bend said blanks into proper shape and direct them into a holder carried by the machine.

Another object is to provide simple mechanism for successively operating the shaping mechanism and holder so that said holder will be fed longitudinally within the machine with a step by step movement, the movement occurring immediately subsequent to the projection of each handle blank thereinto.

Another object is to provide novel means for feeding the blanks into the shaping mechanism.

A still further object is to provide means under the control of a single operator whereby the shaping and feeding mechanism can be promptly started or stopped, the controlling means being so located that one person can supply blanks to the machine and also control its operation.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a front elevation of the machine. Fig. 2 is a rear elevation thereof with the cam wheel removed. Fig. 3 is an elevation of the machine taken in the direction of arrow *a* in Fig. 1. Fig. 4 is an elevation of the machine taken in the direction of arrow *b* in Fig. 1. Fig. 5 is an inner elevation of the cam wheel. Fig. 6 is a detail view of the means utilized for shifting the drive shaft. Fig. 7 is a detail view of one of the feed slides and a part of its

driving mechanism. Fig. 8 is a plan view of the holding rack, a portion thereof being broken away, and handles being shown in position therein. Fig. 9 is a transverse section through said rack. Fig. 10 is a section on line *x—x*, Fig. 2, said section being taken only through the rear portion of the machine. Fig. 11 is a central vertical longitudinal section through the machine. Fig. 12 is a section on line *y—y*, Fig. 11. Fig. 13 is a section on line *z—z*, Fig. 12.

Referring to the figures by characters of reference, 1—1 designate the legs of the supporting frame which in the present instance is made up of angular parallel side plates 2—2 connected in any preferred manner and supporting a bed 3 made up of parallel longitudinally extending angle irons 4 suitably reinforced as by means of diagonal braces 5 which may, if desired, be arranged as shown in Fig. 1. Located between the side plates 2 and below the bed 3 is a table 6 on which are secured parallel guides 7 lapping feed slides 8 in the form of bars each of which has a longitudinal slot 9 for the reception of a rock arm 10. These rock arms are secured to a shaft 11 extending transversely of the frame and mounted in brackets 12 outstanding therefrom. One of the side plates 2 at each side of the machine is cut away longitudinally as indicated at 13 and secured within these cut away portions are vertical plates 14 one of which has an end flange 15 constituting an abutment for a stack of handle blanks *A* designed to be placed upon the table 6 and to extend transversely of the frame and through the cut away portions 13, said stack resting against the plates 14 and the end flange 15 as clearly indicated in Fig. 3. At the front of the machine a plate 16 is placed parallel with the plates 14 and is spaced therefrom a sufficient distance to permit the blanks to be readily inserted between the plates by the operator. Ways 17 are arranged vertically upon the inner faces of the frame and mounted between them is a conveying and shaping plunger 18 movable in a path extending across the inner edge of the table 6. The upper end of the plunger is rounded and of the shape to which the blanks are to be bent and this plunger is designed to move upwardly into a holding frame movably mounted upon the machine and which will be hereinafter more fully described. The plunger has a pitman 19 con-

connected at its lower portion and to a crank 20 extending from a shaft 21. This shaft carries a pulley 22 located at the front of the machine and provided upon its inner face with a cam wheel 23 provided with eccentrically arranged grooves 24 and 25 for the purpose hereinafter set forth.

Brackets 26 extend from the legs at one side of the machine and journaled within these brackets is a sleeve 27 having an eccentric bore 28 in which is journaled a shaft 29. A drive pulley 30 is located at one end of this shaft while connected to the other end thereof is a friction pulley 31 designed to shift into frictional engagement with pulley 22. An arm 32 extends from the sleeve 27 and is connected by means of a link 33 with the elbow portion 34 of a rectangular lever 35. This lever is rigidly secured to a rock shaft 36 journaled in the legs at one side of the frame, said shaft constituting the fulcrum of the lever. An arm 37 is carried by one end of the rock shaft 36 and is provided with a brake shoe 38 which is held normally in contact with the periphery of pulley 22 by means of a spring 39 connected to lever 35 and to the frame, said spring exerting a constant upward pull upon the lever 35.

Slidably mounted in the rear side of the frame of the machine and between the spaced plates 2 is a vertically movable cross head 40 held against displacement by means of guide plates 41 which extend across the opening between the plates 2. This cross head has a recess 42 designed to be loosely engaged by the intumed end of an oscillating arm 43 which is secured to and extends from the shaft 11 heretofore referred to. Another guide plate 44 is fastened to the lower portion of the cross head and travels upon the rear face of the frame and secured to this plate is a roller 45 which projects into the groove 24 in cam wheel 23.

Pivotally mounted on shaft 11 is a walking beam 46 having a roller 47 at its lower end which projects into the groove 25 in cam wheel 23. This walking beam extends upward to one side of the bed and has a pawl 47 pivotally connected to its upper end, said pawl having a wire or other flexible device 48 fastened to one end thereof and extending downward to an arm 49 located at one end of a rock shaft 50. This shaft is journaled within the plates at one side of the frame and has a foot lever 51 extending from it at the front end of the machine where it can be conveniently reached by the operator.

As heretofore stated the bed 3 is formed of parallel angle irons 4 and slidably mounted upon the angle irons is a carriage made up of longitudinal bottom strips 52 connected at their ends by bowed cross strips 53 each of which carries a button 54. A ratchet bar 55 is arranged along the rear face of the bed 3 and is connected to the carriage 52 by means

of parallel arms 56 disposed adjacent opposite faces of one of the angle irons 4 and provided with suitable connecting means such as pins 57 on which are mounted anti-friction rollers 58 designed to travel upon the upper edge of the angle iron 4. The pawl 47 is held normally in engagement with the ratchet bar by means of a spring 59 which is fastened to the rear face of the frame.

A holder 60 is designed to be placed upon the carriage 52 and to fit between the cross pieces 53 and this holder is in the form of a rectangular frame preferably of wood as shown in Fig. 8 and the opening therein is sufficiently wide to permit the upper end of the plunger 18 to force one or more blanks thereinto so as to assume the position indicated in Fig. 9. Anti-friction rollers 61 are mounted upon the inner faces of the walls of the frame at opposite sides of the path of the plunger 18 and slightly above the table on which the blanks are mounted.

An adjustable hanger 62 is connected to one of the legs 1 as indicated in Fig. 1 and has an arm 63 extending laterally from the lower portion thereof and under the brake shoe 38 for the purpose of limiting the downward movement of said shoe and the corresponding movement of lever 35.

It will be noted that the two foot levers 35 and 51 are located at the front of the machine and it will therefore be apparent that the operator standing at this point for the purpose of supplying blanks between the plates 14 and 16, see Fig. 1, can readily operate both of the levers. When the blanks are seated upon the table 6 the lower ones of the stack, preferably three of them are disposed in the paths of the feed slides 8. The holding frame 60 is placed upon the carriage 52 and between the cross strips 53 and is secured by means of buttons 54. The operator then depresses lever 51 so as to raise the pawl 47 whereupon carriage 52 can be shifted longitudinally upon the bed 3 until the end tooth of the ratchet bar 55 is brought into position below the pawl 47. Lever 51 can then be released and spring 59 will pull the pawl downward into engagement with the ratchet bar. Pulley 30 rotates continuously the same being driven by a belt or in any other suitable manner.

To shape the handles the operator pushes downward with his foot upon lever 35. This causes link 33 to pull forward on arm 32 and at the same time brake shoe 38 will be removed from frictional engagement with pulley 22. The swinging movement of arm 32 causes the sleeve 27 to partly rotate and to shift the shaft 29 so as to bring pulley 31 into contact with the pulley 22. Motion will therefore be transmitted from pulley 30 through shaft 29 and pulley 31 to pulley 22. The cam wheel 23 rotates with pulley 22 and the grooves 24 and 25 are so disposed that

immediately prior to the up-stroke of plunger 18 which is caused by the rotation of crank 20, the roller 45 is pushed downward so as to cause the cross head 40 to operate arm 43 and cause the rock arms 10 to push the feed slides 8 inwardly and force those of the blanks in the paths thereof beyond the table 6 and onto the rising end of plunger 18. This plunger continues its upward movement and forces the blanks into the holding frame 60 causing them to bow as indicated in Fig. 9 and pushing them upward into the frame a sufficient distance to cause them to remain fixed therein by reason of their frictional engagement with the frame. Upon the downward stroke of the plunger and as soon as it has been removed from engagement with the bowed blanks the walking beam 46 is actuated by the cam wheel 23 so as to actuate the pawl 47 to shift the carriage longitudinally for the length of one tooth. Said pawl will then work back into engagement with the next tooth and the operation hereinbefore described will be repeated. As soon as the operator releases the lever 35 its spring 39 will return it to normal position and throw the brake shoe 38 against pulley 22 to promptly stop it. This reverse movement of the lever will also of course remove the pulley 31 from engagement with said pulley 22. After the holding frame has been filled with bent blanks as a result of the repetition of the operation herein described, said frame can be removed from the carriage 52, by turning the buttons 54. Another frame can be substituted therefor and the carriage returned to its initial position so that the operations can be repeated.

It is of course to be understood that the feed slides can be so constructed as to direct any desired number of blanks onto the plunger although it is preferred to shift three blanks at a time.

The anti-friction rollers 61 constitute means against which the blanks bear while being pushed upward by the plunger. As these blanks are folded and pushed into the holding frame they travel upon the rollers and friction is thus reduced to the minimum.

In order that a stack of blanks may be promptly moved downward onto the table 6 as soon as the shuttles have been removed from under the stack a strap 64 is hingedly connected to the front wall of the bed 3 as indicated at 65 and bears at its free end upon the stack, said free end carrying a weight 66 as indicated in Fig. 3.

What is claimed is:

1. The combination with a holder; of a plunger shiftable into the holder, anti-friction devices at opposite sides of the path of the plunger, and means for shifting blanks under said devices and into the path of the plunger.

2. In a bending machine the combination

with a slidable holder and a reciprocating conveying and shaping plunger movable into the holder; of reciprocating means for directing blanks into the path of the plunger.

3. The combination with a removable holder and means for imparting intermittent longitudinal movement thereto; of a shaping and conveying plunger movable into the holder between the movements of said holder, and means fixed relative to and co-operating with the plunger for bending blanks upon the plunger.

4. The combination with a removable holding frame, and means for intermittently moving the same longitudinally; of a plunger movable into the holder while stationary, and means fixed relative to and co-operating with the plunger for bending blanks upon the plunger prior to the movement of the plunger into the holder.

5. A holder, shaping means movable thereinto, a feed slide, means for reciprocating the slide to direct blanks into the path of the shaping means, and means fixed relative to and co-operating with the shaping means for bending blanks thereon.

6. The combination with a holder, and means for imparting an intermittent longitudinal movement thereto; of a combined conveying and shaping plunger, means for reciprocating the same, said plunger being movable into the holder while the holder is stationary, slidable means for directing blanks into the path of the plunger while moving toward the holder.

7. The combination with a holder, and means for imparting an intermittent longitudinal movement thereto; of a plunger, means for directing the plunger upwardly into the holder, means for feeding blanks into the path of the plunger, and means fixed relatively to and co-operating with the plunger for bending the blanks during the upward stroke of the plunger.

8. The combination with a carriage and means for imparting an intermittent longitudinal movement thereto; of a holder detachably mounted upon the carriage, a plunger movable upwardly into the holder between the movements of the carriage, means for directing blanks between the plunger and holder, and means fixed relatively to and co-operating with the plunger for bending the blanks prior to their movement into the holder.

9. The combination with a carriage, and means for imparting an intermittent longitudinal movement thereto; of a holder detachably secured upon and movable with the carriage, a plunger movable upwardly into the holder between the movements of the carriage, a stack holder, means for directing blanks from the stack holder and into the path of the plunger, and means fixed relatively to and co-operating with the plunger

during the upward movement of said plunger for bending the blanks prior to their movement into the movable holder.

10. The combination with a bed and a holder thereon; of a stack holder, slidable means for removing blanks from the stack, a reciprocating member, a rocking element for transmitting motion from said member to the blank removing means, and a reciprocating plunger, said plunger being disposed upon each upward movement to direct a blank into the holder on the bed.

11. The combination with a table and a stack holder; of weighted blank holding means movably mounted above the stack holder, reciprocating means for removing blanks from the stack and projecting them beyond the table, a plunger mounted to travel perpendicularly to the table for engagement with blanks projected therefrom.

12. The combination with a table, a stack holder thereon, and weighted means for bearing upon a stack holder; of a reciprocating feed slide mounted upon the table for removing blanks from the stack and projecting them beyond the table, a longitudinally movable holder supported above the table, means for imparting an intermittent movement thereto, and a plunger for lifting the projected blanks into the movable holder.

13. The combination with a table, a stack holder thereon, and weighted means for bear-

ing upon a stack holder; of a reciprocating feed slide mounted upon the table for removing blanks from the stack and projecting them beyond the table, a longitudinally movable holder supported above the table, means for imparting an intermittent movement thereto, a plunger for lifting the projected blanks into the movable holder, and means fixed relative to and cooperating with the plunger for bending the blanks during the movement of the plunger toward the movable holder.

14. The combination with a table, a bed thereabove, an intermittently movable carriage mounted upon the bed and a holder removably mounted upon the carriage; of a plunger mounted to reciprocate toward and from said holder past the table, reciprocating means for removing blanks from the table and directing them into the path of the plunger, means for reciprocating the plunger, a cross head mounted to reciprocate adjacent the table, revoluble means for actuating the cross head, and means operated by said cross head for simultaneously actuating the carriage and the blank removing means.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WALTER SCOTT SMITH.

Witnesses:

N. V. CLAWSON;
ISABELLE FAIRCHILD.