

No. 864,098.

PATENTED AUG. 20, 1907.

F. J. KUERZI.  
BAG BOTTOMING MACHINE.  
APPLICATION FILED JULY 6, 1906.

4 SHEETS—SHEET 1.

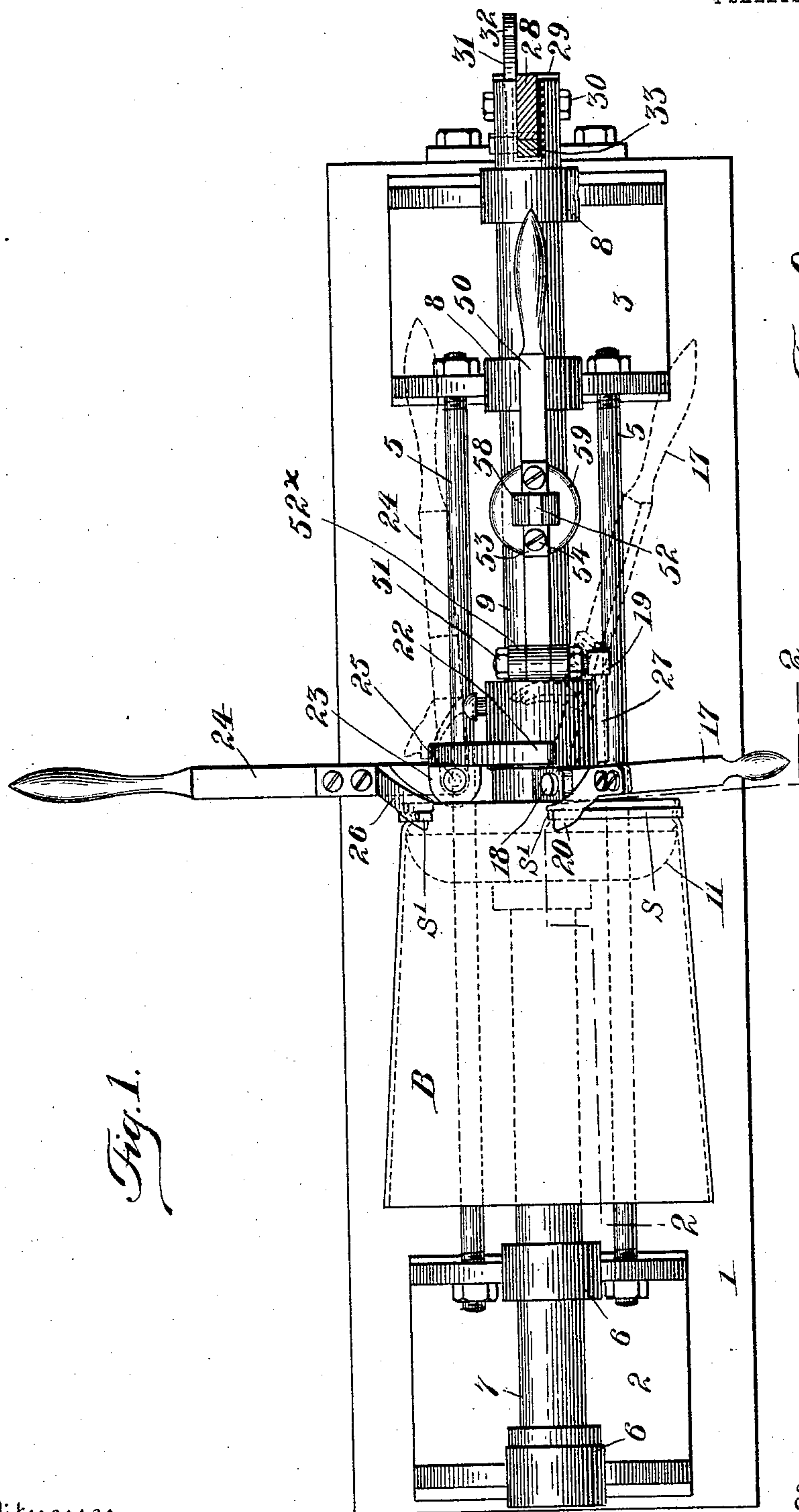


Fig. 1.

Fig. 9.

Fig. 8.

Witnesses  
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By his Attorneys Beach & Chapman

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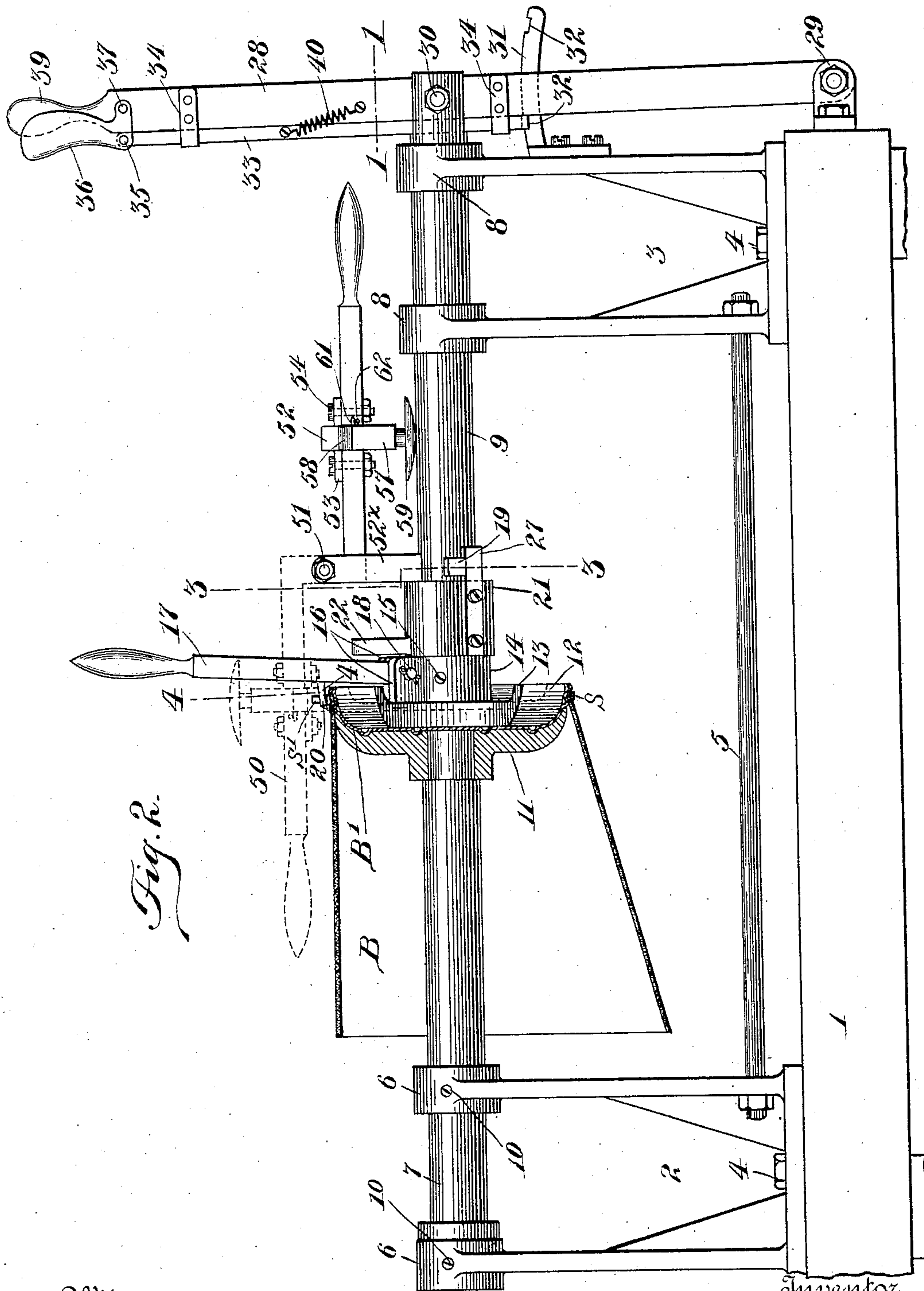


Fig. 2.

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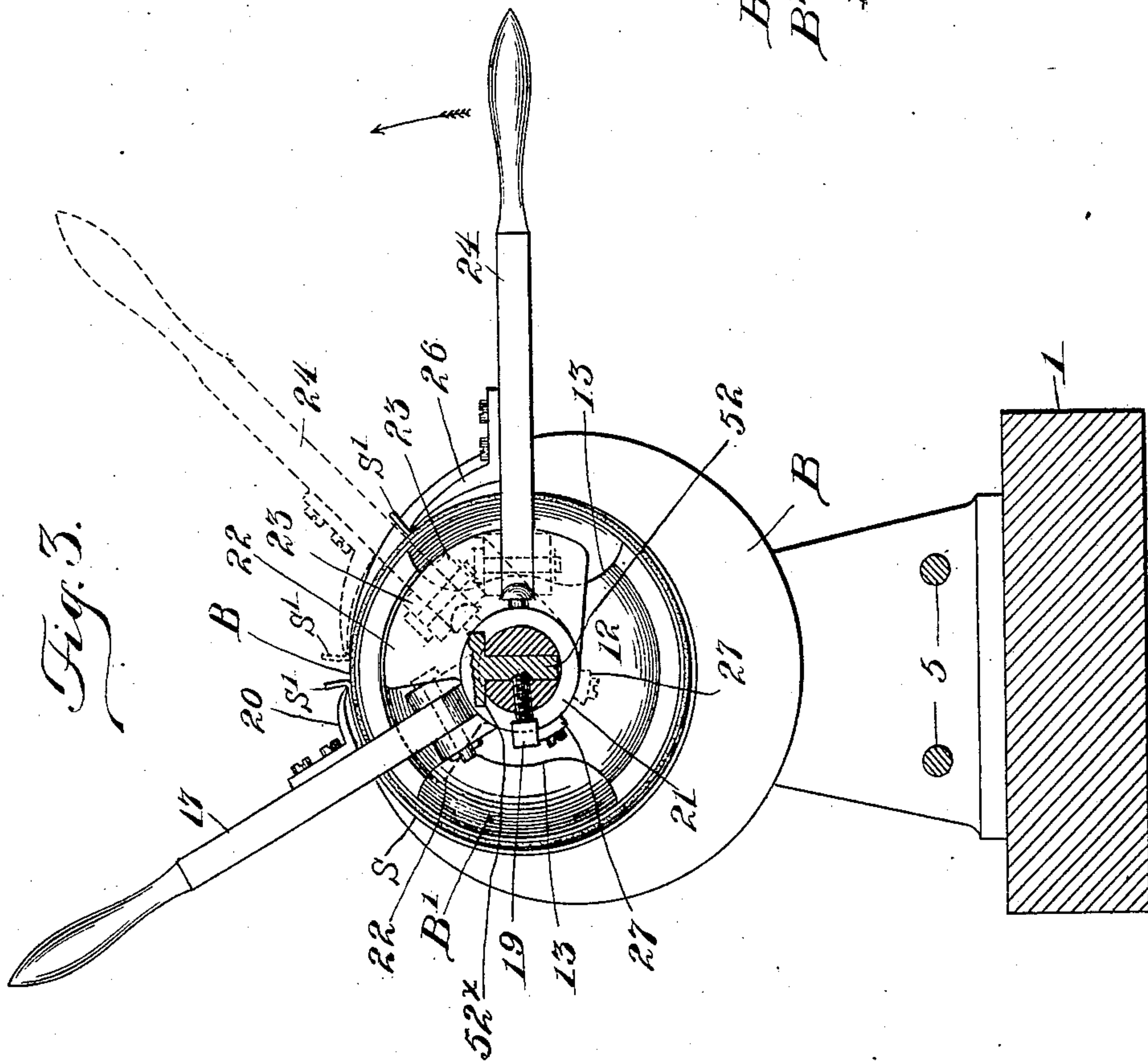
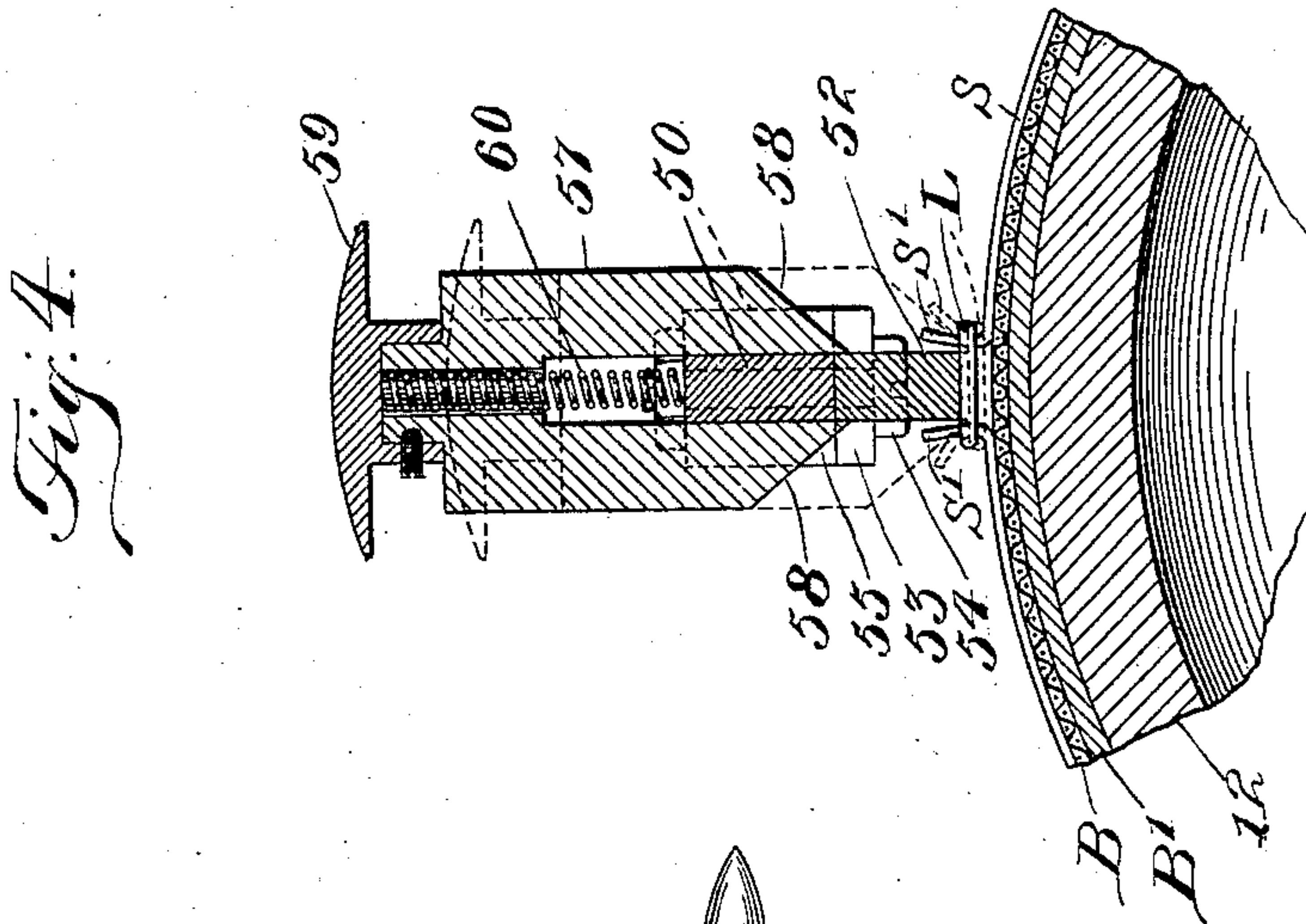
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4 SHEETS—SHEET 3.



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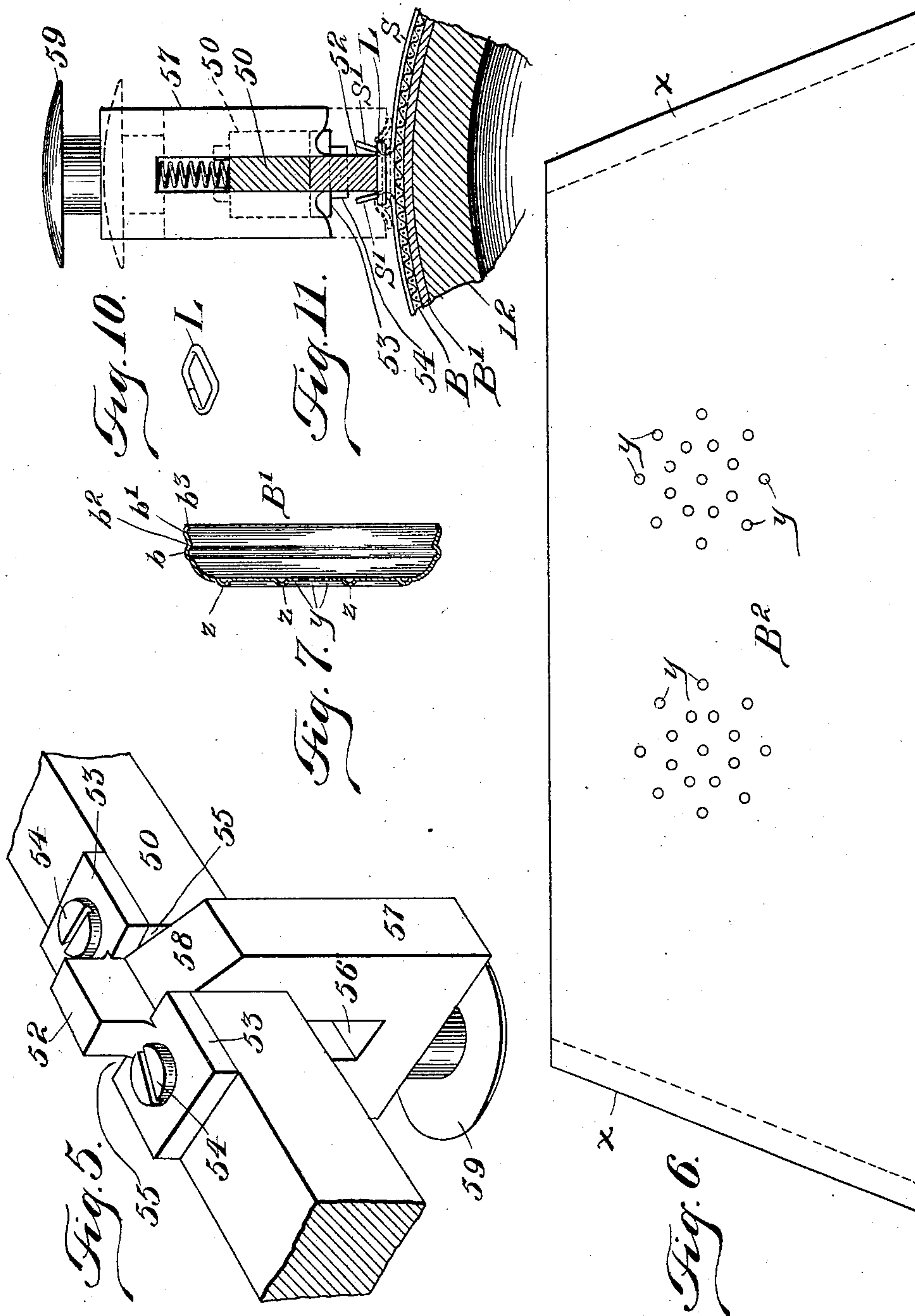


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4 SHEETS—SHEET 4.



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# UNITED STATES PATENT OFFICE.

FRANCIS JOSEPH KUERZI, OF NEW YORK, N. Y., ASSIGNOR TO SANITARY FEED BAG COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## BAG-BOTTOMING MACHINE.

No. 864,098.

Specification of Letters Patent.

Patented Aug. 20, 1907.

Application filed July 6, 1906. Serial No. 324,996.

To all whom it may concern:

Be it known that I, FRANCIS JOSEPH KUERZI, a citizen of the United States, residing at Bronxville, New York city, New York, have invented a new and useful Improvement in Bag-Bottoming Machines, of which the following is a specification.

My invention relates to a bag-bottoming machine.

The objects of this invention are to make a strong and durable bag, having a rigid bottom secured to the tube-like body of the bag, and also to produce a machine in which the tube-like body is rapidly and durably bottomed, and in which the bag-body is distended for assemblage with the bag-bottom and after assemblage turned inside out prior to the removal of the assembled bag-body and bag-bottom from the machine.

The objects of the invention are carried out by use of the mechanism illustrated in the accompanying drawings wherein

Figure 1 is a top plan view of the machine partially in section at line 1—1 of Fig. 2. This view shows the bag-body, bag-bottom and binder in assembling position in the machine. Fig. 2 is a side elevation of the machine shown in Fig. 1 but partially in section at line 2—2 of Fig. 1 through the bag-body, bag-bottom and one of the bag-body clamping members. Fig. 3 is a transverse elevation of the machine, partly in section at line 3—3 of Fig. 2, looking to the left. Fig. 4 is a sectional elevation taken from line 4—4 of Fig. 2, and shows a mechanism which comprises a loop-presser and a binder-bender mounted thereon; the loop-presser engaging the upper side of a link that connects the ends of the binder and the bender being in position to bend the out-turned ends of the binder into hooking connection with the link. This view also shows in section the bag-body and bag-bottom. Fig. 5 is a perspective view of the loop-presser and bender mounted thereon. Fig. 6 is a plan of a blank of duck or other flexible material from which the tube-like bag-body is made. Fig. 7 is a diametric sectional elevation of a suitable form of sheet-metal or other rigid bag-bottom. Fig. 8 is a side elevation of the binder showing its ends out-turned. Fig. 9 is a transverse sectional view of the binder at line 9—9 of Fig. 8. Fig. 10 is a perspective view of the connecting link, and Fig. 11 shows partially in section and partially in elevation a modified form of the binder-bender.

In the drawings illustrating the best form of my invention now known to me, 1 is a table and 2 and 3 are upright frames oppositely mounted at a suitable distance apart on the upper side of the table and held thereon in any suitable manner, as by bolts 4. Frames 2 and 3 are preferably connected by brace rods 5. The distance at which the frames 2 and 3 are mounted apart is dependent on the length of the bag-body that

is to be bottomed. The upper end of frame 2 is provided with heads 6 in which a horizontal post 7 is rigidly mounted. The upper end of frame 3 is provided with bearings 8 in which a horizontal post 9 is mounted, this post being movable endwise in said bearings 8 but not being rotatable thereon. Posts 7 and 9 extend inwardly towards, and are in alinement with, one another. Post 7 is held in the heads 6 conveniently by transverse bolts 10, or otherwise. The inner end of post 7 is provided with a bag-bottom clamp-member 11 that is inwardly dished or made concave on its inner surface. Clamp-member 11 is usually made annular, peripherally considered, and its outer periphery serves to distend the bottom end-portion of the bag-body B when the latter is drawn over the clamp-member for assemblage with the bag-bottom B' and binder S. Post 9 is provided at its inner end with the other bag-bottom clamp-member 12 which is preferably cut away on its opposite sides 13, 13 so that the operator in adjusting the bag-bottom and the bottom end margin of the bag-body may not be in danger of having his fingers nipped between the bag-bottom clamping-members 11 and 12 when the member 12 is moved towards the member 11 to clamp the bag-bottom firmly in position.

Clamp-member 12 is conveniently provided on its outer face with an integral sleeve 14 that surrounds post 9. Clamp-member 12 and integral sleeve 14 are made fast on the inner end of post 9 in any suitable manner, as by a transverse pin 15. Sleeve 14 is provided with a pair of parallel ears 16 between which the lower end of a hand-lever 17 is pivoted on the transverse pin 18 that passes through the ears and the inner end of lever 17 which is movable from an approximately horizontal position, as shown in dotted lines in Fig. 1, to a position approximately at right-angles to the lengthwise axis of post 9, as indicated by full lines in Figs. 1, 2 and 3. In its approximately horizontal position, lever 17 rests on a suitable support,—in the present construction on the adjacent sleeve 21. Lever 17 is provided with a lateral projection 20 which, when the hand-lever 17 is thrown into its working position, not only holds one end portion of the binder S down on bag-body B, the bottom end margin of which is then assembled with bag-bottom B', as seen best in Fig. 2, but also engages one of the corners formed by one of the outward bends of the ends S' of the binder. Post 9 is provided, adjacent to stationary sleeve 14, with a locking-sleeve 21, which is formed with a segment-like projection 22 that extends away from the sleeve in a direction at right-angles to the longitudinal axis of post 9 (see Figs. 1, 2 and 3). Projection 22 is provided on its inner side with parallel ears 23 between which the lower end of a hand-lever 24 is fulcrumed on a pivot 25 that passes through the ears



and inner end of hand-lever 24 which is provided with a projection 26 that corresponds to projection 20 on hand-lever 17, in that it holds the other end-portion of the binder S down on the bag-body and also engages the other corner formed by the other outward bend of the other binder end S'. Hand-lever 24 is movable from an approximately horizontal position, as shown by dotted lines in Fig. 1, to a position at right-angles to the longitudinal axis of post 9. When the hand-levers 17 and 24 are in inoperative positions shown by dotted lines in Fig. 1, they are, as stated, in approximately horizontal position and their outer or handle ends extend in the general direction of the outer end of post 9. One reason for this position of the hand-levers 17 and 24 is that they are then out of the way of the bag-body B when it is turned inside out after it has been assembled with the bag-bottom.

When hand-lever 24 is in its position of rest, indicated by dotted lines in Fig. 1, and by full lines in Fig. 3, a projection 27 fast on sleeve 21 engages the under side of the head 19 which is a suitable projection to contact with projection 27 and hold sleeve 21 in a position to keep hand-lever 24 in an approximately horizontal position. Another reason for having hand-levers 17 and 24 in approximately horizontal position, when they are not in use, is to enable the operator to readily reach the levers when he desires to use them, and this he could not conveniently do if the outer ends of the levers dropped too far downwardly, when moved into position of rest or non-use. Post 9 is moved endwise to clamp and unclamp bag-bottom B' by means of a hand-lever 28, which is pivoted at 29 to the base of the machine. The hand lever between its ends is pinned at 30 to the outer end of post 9.

Frame 3 is provided with a projection 31 which is provided with notches 32, 32 which receive a locking slide-bar 33 that is mounted on the inner edge of lever 28 and held thereon by guides 34, 34. The upper end of slide-bar 33 is pivoted at 35 to a hand-piece 36 which in turn is pivoted at 37 to hand-lever 28 so that the handle 39 thereof and the hand-piece 36 can be simultaneously grasped to move post 9 in one direction or the other and to manipulate slide locking-bar 33 so that its lower end will slip into one or the other of the notches 32 in projection 31. A spring 40 is useful in connecting slide locking-bar 33 with lever 28 for automatically moving the slide-bar into interlocking position with one of the recesses 32. When slide locking-bar engages with the outer recess 32 in projection 31, post 9 and clamp-member 12 are locked in their position away from clamping-member 11. The connection of hand-lever 28 and post 9 is such as to prevent rotation of post 9; and when the inner end of slide locking-bar 33 engages the inner recess 32 on projection 31, as shown in Fig. 2, the movable clamp-member 12 is in position to clamp bag-bottom B' securely on the stationary clamp-member 11. When the clamp-members are at a distance apart the operator draws the mouth of the bag-body B over the periphery of stationary clamp-member 11 until the bottom end margin of the bag-body is distended at a slight distance from the lower edge of the bag-body. The rigid bag-bottom B' is then placed in stationary clamp-member 11 with its outer margin in contact with the inner wall of the bag-body which is then supported not only by the periphery

of clamp-member 11 but also by the outer periphery of the bag-bottom. The operator then moves clamp-member 12 into clamping position and bends the binder S which is preferably rectangular in cross-section partially into place on the outer periphery of the bag-body. He then swings hand-lever 17 from its position of rest into its working position so that the projection 20 engages and holds down on the bag-body one of the out-turned ends S' of the binder or binding-strip S. He then swings hand-lever 24 from its position of rest into position to engage the other out-turned end S' of the binder S (see Fig. 3). Ordinarily the operator will stand on the side of the machine towards which hand-lever 17 projects, as shown in Fig. 3, and the operator draws the hand-lever 24 towards lever 17 in the direction shown by the arrow in Fig. 3, and from the horizontal position indicated by full lines therein to the final position indicated by dotted lines therein. The binder is then strained tightly into place on the outer periphery of the bag-body. Bag-bottom B' is provided between its bottom wall and brim with an outwardly projecting shoulder  $b$ , and is provided near its brim with an outwardly projecting shoulder  $b'$  so that there is formed between these two annularly projecting shoulders  $b$  and  $b'$ , an annular recess  $b^2$  on the outer side of the bag-bottom, the inner edge of which is inclined inwardly, as indicated by  $b^3$ . When binder S is strained into and tightened in its position, its out-turned ends S' are at a distance apart, and the bag-body engaged by the binder is forced into the groove or channel  $b^2$ .

The binder S is preferably rectangular in cross-section, it having been found that if the binder be made of round wire, the bag-bottom is apt to be forced out of the bag-body in consequence of the frequent pushing by the animal feeding in the bag, against the inner side of the bag-bottom. This difficulty is overcome by making the binder rectangular in cross-section.

The edge of the bag-bottom is in-turned at  $b^3$  to prevent the flexible bag-body from being cut or frayed at this point, as is the case when the edge of the bag-bottom is not turned inwardly. It has been found in practice that an animal feeding will very frequently swing the bag sidewise against a wagon-wheel or other object and so cause an out-turned or straight edge of the bag-bottom to fray or ultimately wear through the side of the bag-body.

When hand-lever 24 is moved into its final position, indicated by dotted lines in Fig. 3, the segment-like projection 22 of sleeve 21 is carried past the outer side of hand-lever 17, as indicated by dotted lines in Fig. 3, and so locks hand-lever 17 in its upright or working position. Hand-lever 24 is, of course, kept in its upright or working position because of the fact that the segment-like projection 22 engages its outer surface above its pivot 25. The out-turned ends S' S' of the binder are brought, by the movement of projection 26, towards projection 20, and as near together as the length of the binder permits; and, as the hand-levers 17 and 24 are now in radially operating position as shown in Fig. 3, the operator's hands are free to place the connecting link L over the projecting ends S', S'. When the link L is thus applied, the operator swings hand-lever 50 from its horizontal position of rest, as indi-



cated by full lines in Fig. 2, into its working position as indicated by dotted lines in Fig. 2. Lever 50 is pivoted at 51 on a stud 52 $\times$  which is conveniently socketed in a recess in the post 9 and held therein 5 by the set-screw 19, above mentioned. Hand-lever 50 carries a link-presser 52 which, in the construction shown, is conveniently provided with ears 53, 53 that are bolted at 54 to the hand-lever. When lever 50 is swung into operating position, the link-presser 10 52 moves between the out-turned ends S', S', as indicated in Fig. 4, and is then in position to push the link L home. Opposite sides of hand-lever 50 (Fig. 5) are recessed at 55, 55 so that the lengthwise central slot 56 of the forked presser 57 is mounted 15 on lever 50 in such wise as to be slid over the presser 52 carried by the hand-lever. The inner ends of forked presser 57 are beveled or otherwise shaped at 58 in such wise as to engage the out-turned ends S', S' and bend them downwardly over the loop so 20 that the loop and the ends of the bender are permanently connected together. Bender 57 is conveniently provided with a head 59 between the under side of which and the upper side of hand-lever 50 a spring 60 is interposed. When bender 57 is forced 25 inwardly to bend the ends of the binder over the ends of link L, spring 60 is compressed and the spring serves to retract the bender. The outward movement of the bender is limited by contact of the lug 61 on the bender with a pin 62 on hand-lever 50, 30 as shown in Fig. 2.

Bag-body B is preferably made from a blank of duck or the like such as shown in Fig. 6, the opposite ends of the blank being stitched together, so that a tube-like bag-body is produced. One long 35 side of the blank, corresponding to the bottom end of the bag, is shorter than the opposite long side of the blank, corresponding to the mouth of the bag. Consequently, bag-body B has an enlarged open end into which an animal may thrust its head for feeding 40 in the lower part of the bag, the bottom of which is preferably perforated at any suitable places as at y, for ventilating the bag. The bag-body is also preferably provided with suitably disposed ventilating holes y. The under side of the bag-bottom 45 is preferably provided with annular projections z, z, to keep the perforated bottom surfaces of the bag-bottom out of direct contact with the ground.

In Fig. 11, showing a slight modification, wherein the configuration of the inner end of the presser 57 is such that its engagement with the out-turned ends 50 S', S' will completely turn and clench the out-turned ends on link L. When the bevel construction shown in the other figures is used, it is frequently desirable to manually hammer the out-turned ends into their final clenching position with reference to the link L. 55

Various changes may be made in the construction illustrated without departure from my invention.

The hand-lever 50 is so arranged that when it is in its position of rest or non-use, it will be out of the way of the bag-body when the latter is turned to 60 bring its wall over the outer side of the binder so as to conceal the same and thicken and strengthen the bag around its lower end corner.

What I claim is:—

1. In a bag-bottoming machine, the combination of a 65 bag-bottom clamp comprising separable members one of which is movable from and towards the other; means for actuating the movable clamp-member; and means for tightening a binder in a path encircling the periphery of the bag-bottom clamp. 70

2. In a bag-bottoming machine, the combination of a 70 bag-bottoming clamp comprising separable members one of which is movable from and towards the other; means for actuating the movable clamp-member; means for tightening a binder in a path encircling the periphery of the 75 bag-bottom clamp; and means for bending the ends of the binder into interlocking connection with a link which unites said ends.

3. In a bag-bottoming machine, the combination of a 80 bag-bottom clamp comprising separable members one of which is movable from and towards the other; means for actuating the movable clamping member; means for tightening a binder in a path encircling the bag-bottom clamp; means for bending the ends of the binder into interlocking 85 connection with a link which unites said ends; a binder-tightening mechanism comprising a pair of levers each provided with a binder-engaging projection and movable from a position of rest to a working position; and a hand-lever movable from a position of rest, which 90 position is such as to permit the bag-body to be turned inside out while in the machine, into its working position and carrying a link-presser and a bender.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this 13th day of June, 1906.

FRANCIS JOSEPH KUERZI.

Witnesses:

CHAS. MCC. CHAPMAN,  
EDWARD S. BEACH.