

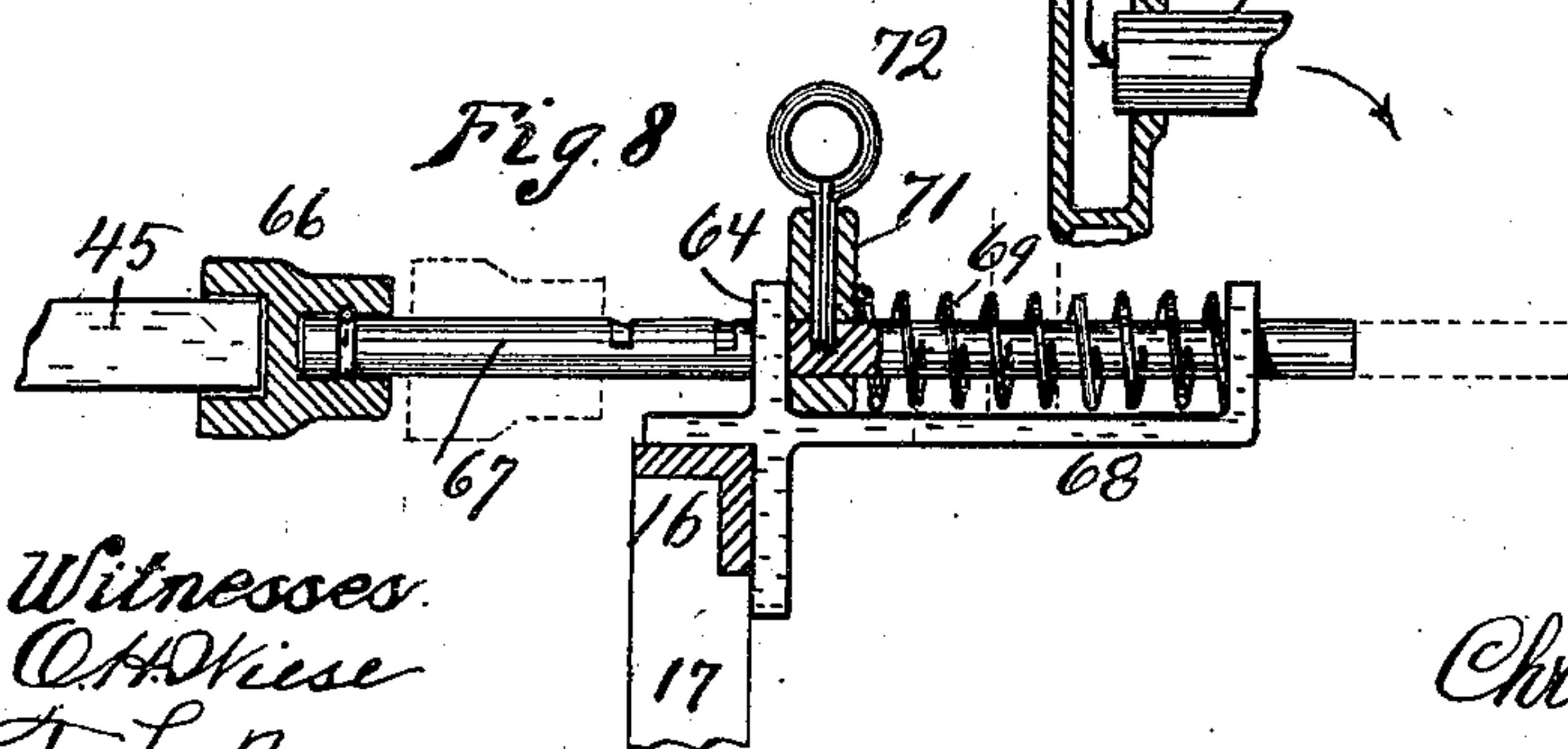
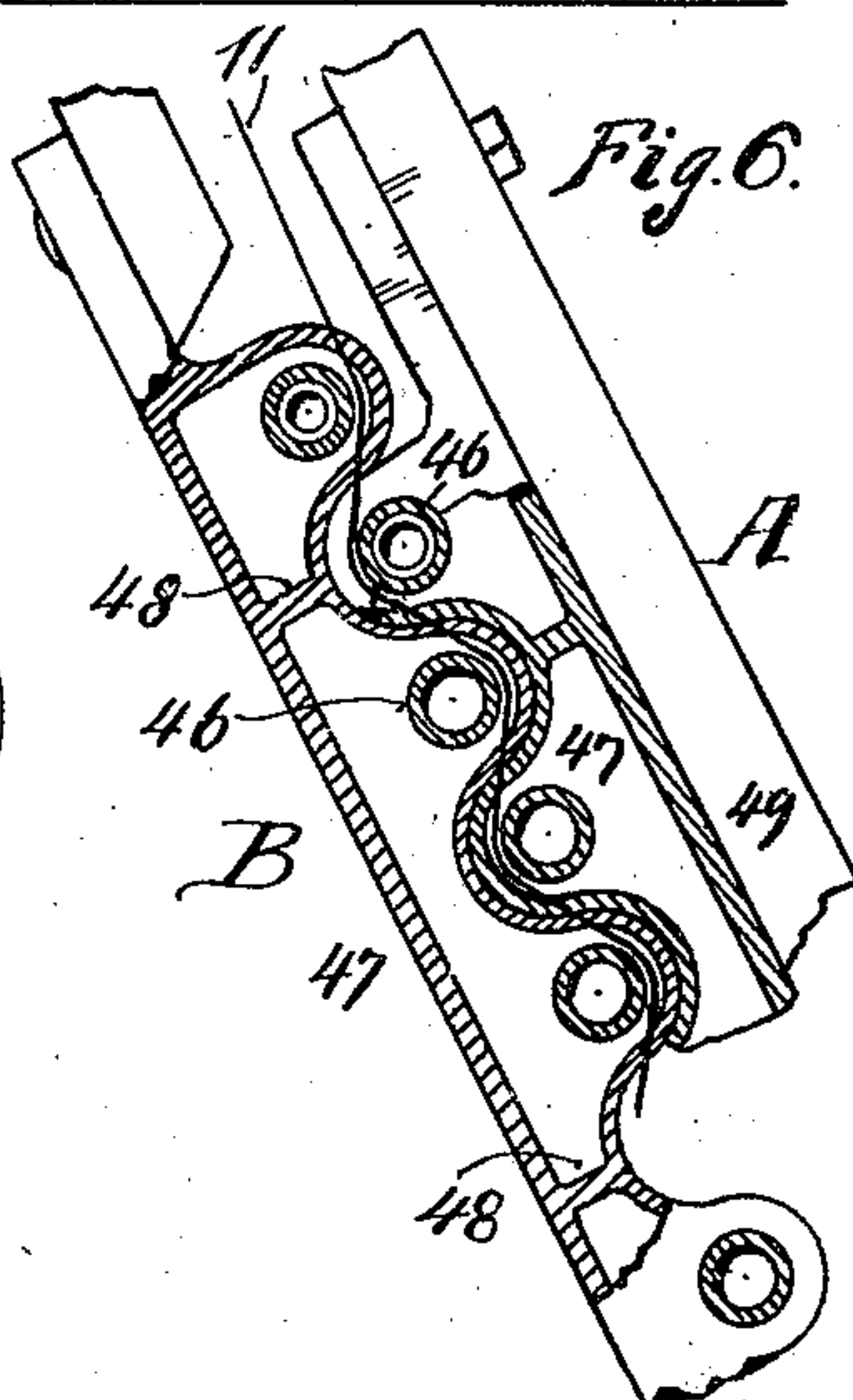
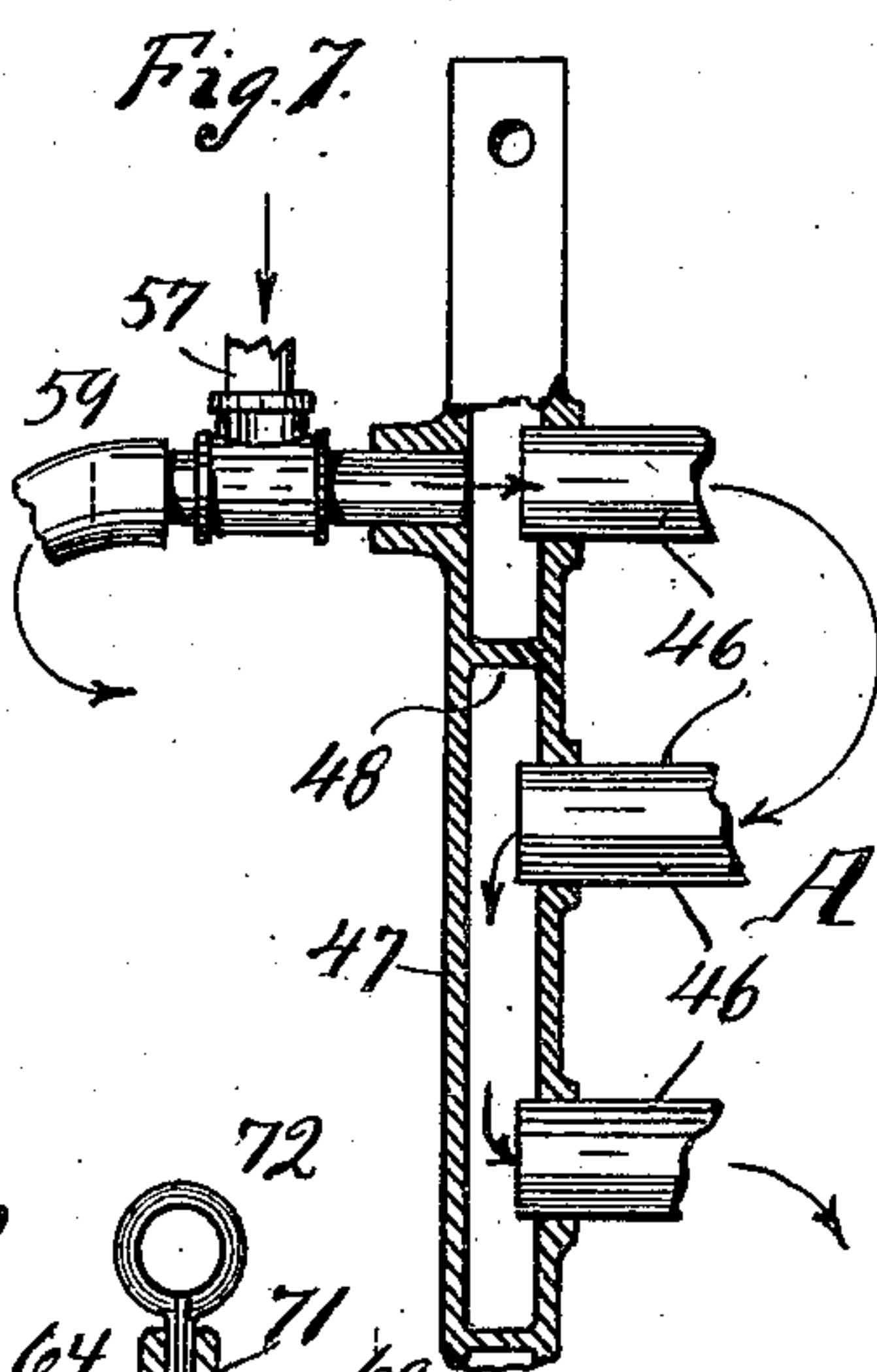
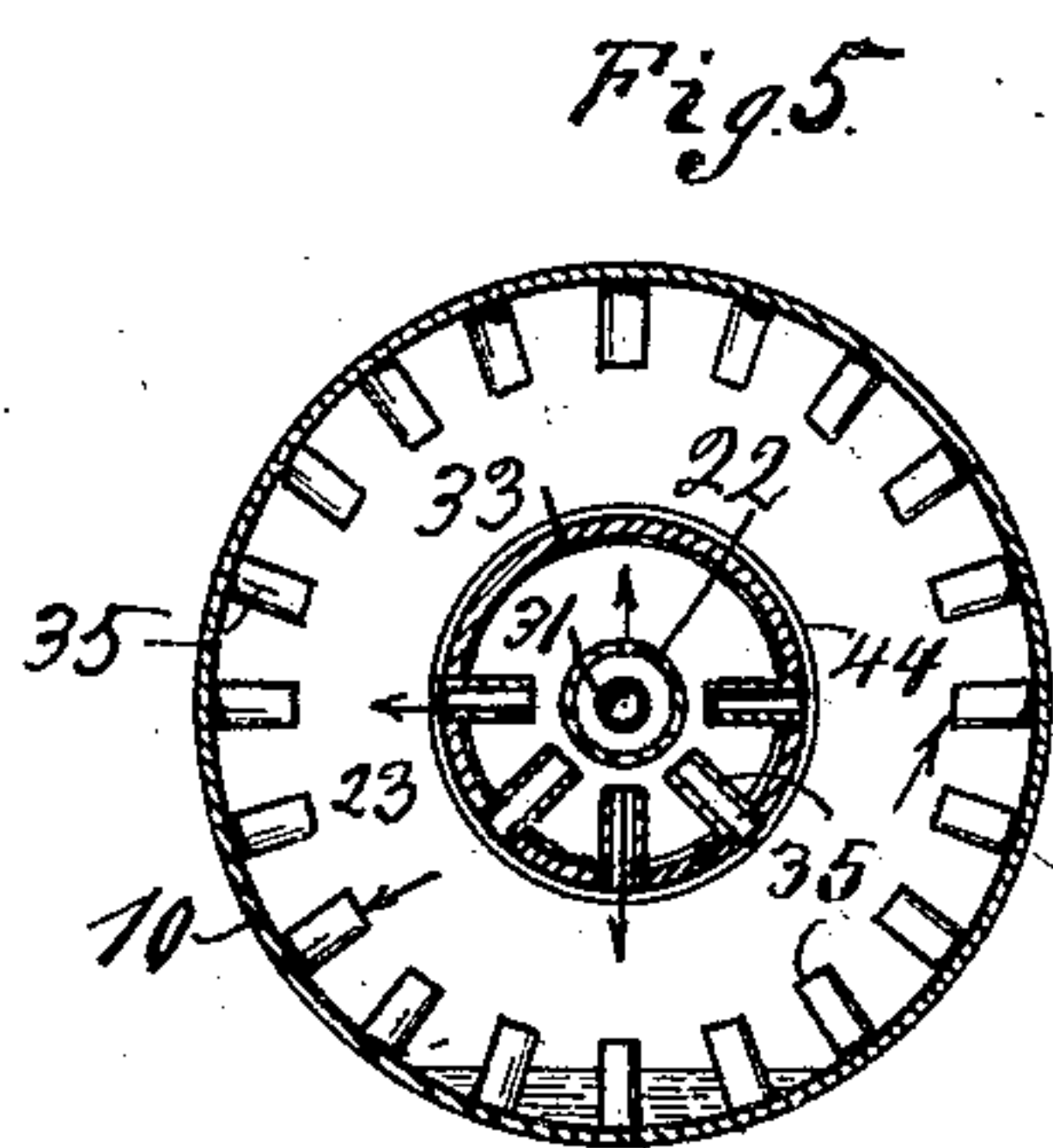
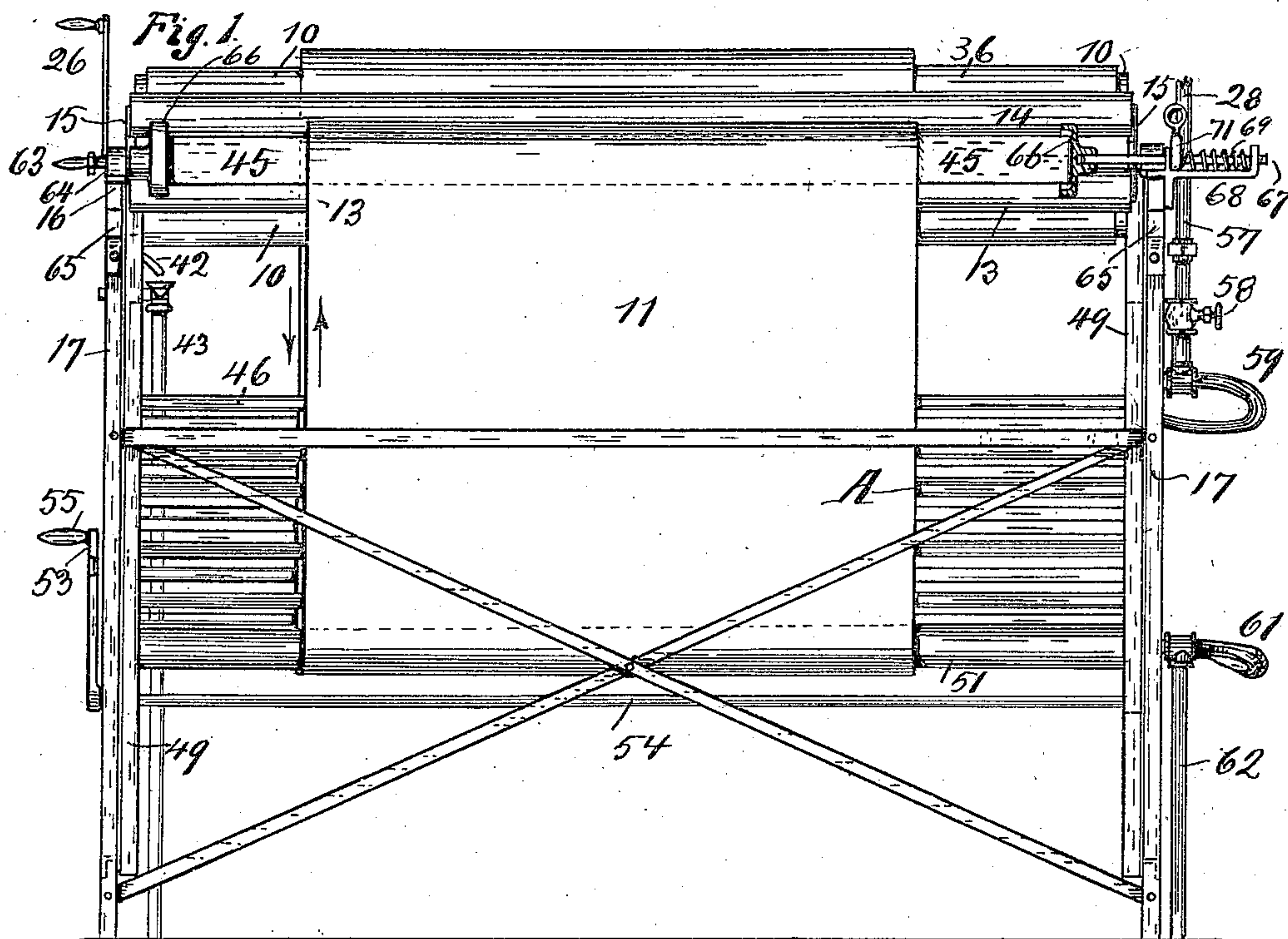
No. 877,086.

PATENTED JAN. 21, 1908.

C. KECK.  
CLOTH REFINISHING DEVICE.

APPLICATION FILED JUNE 4, 1906.

2 SHEETS—SHEET 1.



Witnesses.  
O. H. Kiese  
T. LeBeau.

Inventor.  
Christian Keck  
by C. Spengel atty.

No. 877,086.

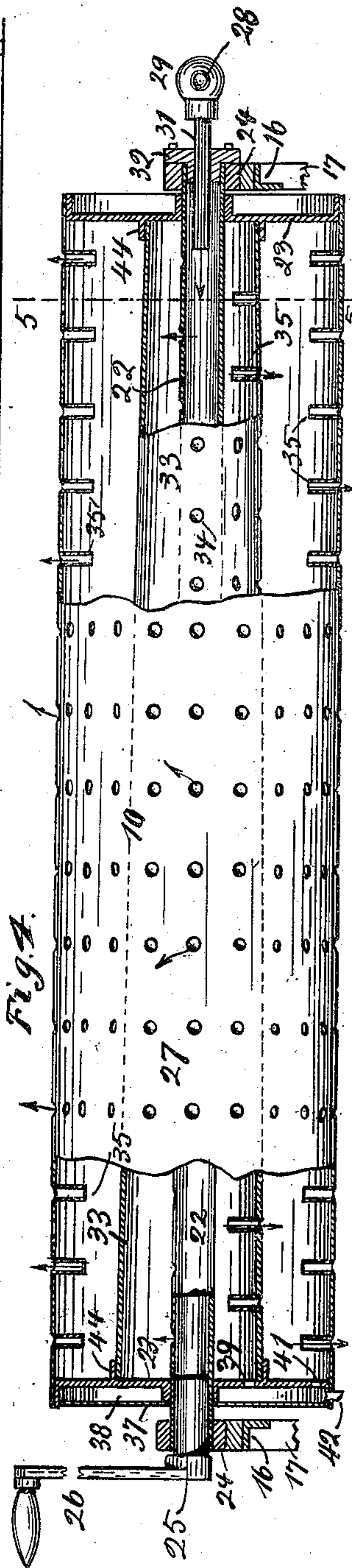
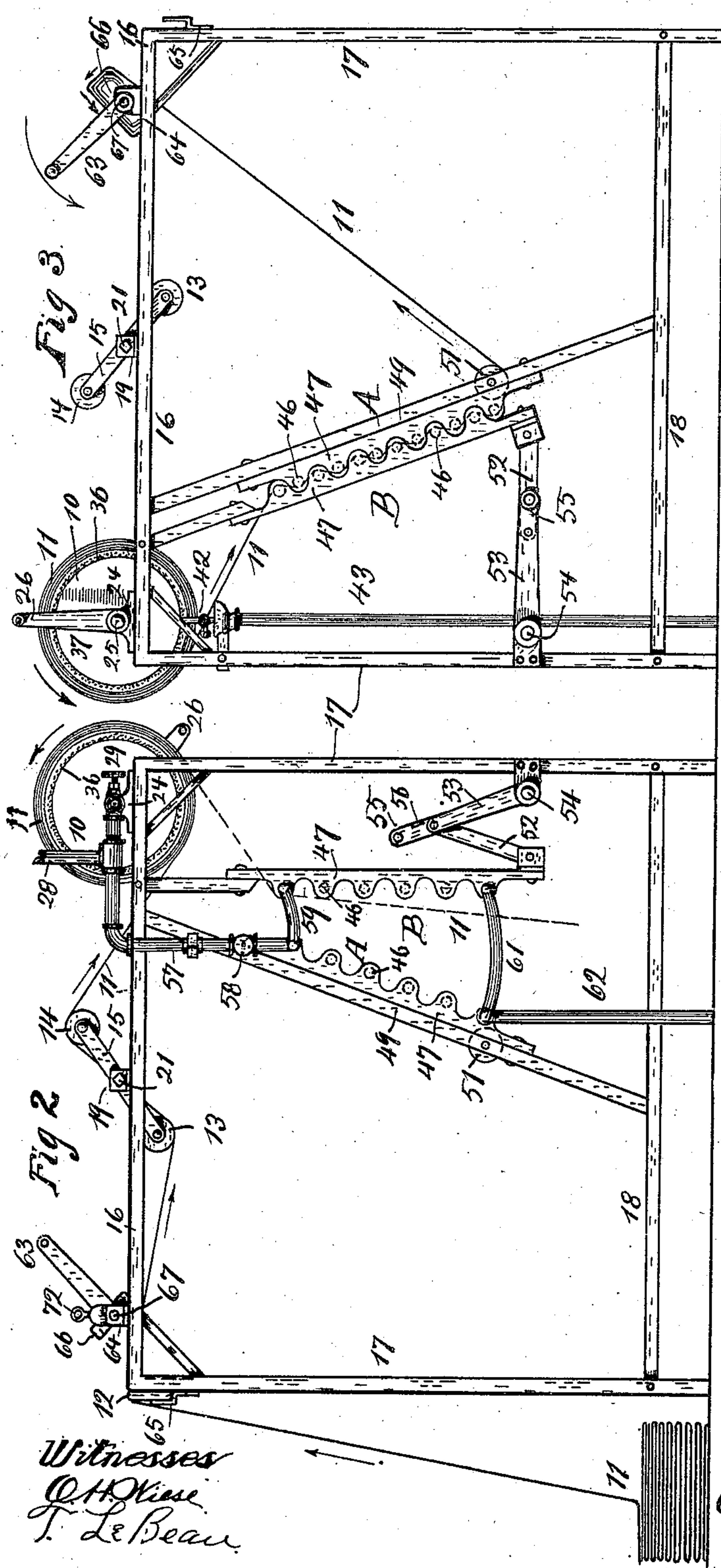
PATENTED JAN. 21, 1908.

C. KECK.

# CLOTH REFINISHING DEVICE.

APPLICATION FILED JUNE 4, 1906.

2 SHEETS—SHEET 2.





# UNITED STATES PATENT OFFICE.

CHRISTIAN KECK, OF CRESCENT SPRINGS, KENTUCKY.

## CLOTH-REFINISHING DEVICE.

No. 877,086.

Specification of Letters Patent.

Patented Jan. 21, 1908.

Application filed June 4, 1906. Serial No. 319,996.

*To all whom it may concern:*

Be it known that I, CHRISTIAN KECK, a citizen of the United States, and residing at Crescent Springs, Kenton county, State of Kentucky, have invented certain new and useful Improvements in a Cloth-Refinishing Device; and I do declare the following to be a clear, full, and exact description of the invention, attention being called to the accompanying two sheets of drawings, with the reference characters marked thereon, which form also a part of this specification.

This invention relates to a device for re-finishing cloth after the same has been acted upon for the purpose of shrinking it by a so-called sponging machine. During such shrinking operation the cloth usually loses its original finish which is now to be restored by my device mentioned. Various means and devices are used at present for this purpose.

I accomplish the desired object by the application of heat by means of certain devices whereby the cloth is not only refinished but also at once rendered dry so that it becomes available for immediate use. Since this refinishing operation follows the shrinking operation, it is desirable that a sponging machine and my refinishing device be placed in such relative position that these operations may follow one another without unnecessary handling of the cloth. The most advantageous arrangement is therefore the placing of both devices on one frame so that in leaving the sponging-machine the cloth may pass at once through my refinishing device before rolled up again for further use.

In the following specification and particularly pointed out in the claims at the end thereof is found a full description of my invention, together with its operation, parts and construction, which latter is also illustrated in the accompanying drawing in which:—

Figure 1, shows in front-view my device combined with a sponging-machine the former being in operative position now as also shown in Fig. 3. Fig. 2, is a side-view of these devices, it being substantially the right side of the machine as viewed in Fig. 1, the cloth-sponging part being shown as in use and the refinishing part is adjusted to receive the cloth thereafter. Fig. 3, shows the opposite side of the outfit, the cloth-

refinishing device being now in operative position as shown in Fig. 1. Fig. 4, is an enlarged view of the steam drum used for shrinking the cloth, parts being broken away and shown in section. Fig. 5, is a cross-section of this drum taken on line 5—5 of Fig. 4. Fig. 6, is an enlarged, sectional detail-view of parts of the refinishing device, it being substantially a cross-section. Fig. 7, shows one of these parts viewed at right-angles and also in section. Fig. 8, is a sectional detail-view of one of the auxiliary devices used while the cloth is manipulated, it being substantially the means for supporting the mandrel upon which the cloth is wound after refinished.

In the drawing 10, indicates the drum around which the cloth 11, is wound for the purpose of being shrunk. This winding act is shown in Fig. 2, the cloth passing up over a guide-bar 12, and around two rollers 13, and 14, onto drum 10. The object of these rollers is to provide sufficient tension to maintain the cloth smooth and to prevent wrinkles. This tension may be adjusted, increased or lessened, by arranging the position of these rollers with reference to the line of direction in which the cloth travels and so as to force this latter to pass either in a more direct or a more angular direction. For the purpose of such adjustment these rollers are carried between two arms 15, one supported on each side of the general frame of which 16, are the upper horizontal members and 17, the upright members, connected near their lower ends by additional horizontal members or rails 18. This support of arms 15, is in bearings 19, in which they are held in their adjusted positions by set screws 21.

Lengthwise through the center of the drum passes a tube 22, the ends of which project through the opposite heads 23, and form beyond them, the journals of the drum by which the same is supported in boxes 24, which rest on the upper frame parts 16. At one end a plug 25, is inserted whereby tube 22, is closed thereat and upon the projecting end of this plug a crank 26, is mounted whereby the drum is rotated to wind upon it the cloth to be shrunk. This cloth as shown in Fig. 2, passes up over bar 12, under roller 13, and over roller 14, onto drum 10. After the entire roll of cloth is wound up, steam is admitted into the drum which issues through a number of openings 27 therein and permeates the roll of cloth. Before that, this latter is



usually wrapped with a suitable covering to retard the radiation of steam as much as possible so as to intensify its action. The steam is supplied from a steam-pipe 28, controlled by a valve 29, and enters tube 22, through a nipple 31. This end of the pipe is closed by a flanged plug 32, attached to the adjacent box 24, the nipple passing through this plug. Pipe 22, has perforations through which the steam passes first into an inner drum 33, from which, through perforations 34, it passes into the outer drum. The object of this intervenient drum is to render the discharge of steam indirect to prevent water from being carried out with it and into the cloth. To guard still further against any passage of water, inwardly projecting nipples 35, are provided on the inside of the drums which trap the openings in them, note Fig. 5. There is usually and in addition to these precautions a layer of felt 36, wrapped around the drum, so that the cloth does not come in direct contact with the surface of the drum. At one end there is an additional head 37, forming with the adjacent head 23, a chamber 38, into which water caused by condensation of steam drains from the drums through openings 39, and 41, and from which chamber it is wasted through a spout 42. When the drum is at rest, this spout is above the enlarged end of a waste-pipe 43, which carries the discharge away. To hasten the emission of such water, the inner drum is made tapering and its outlet-opening 39, is in the larger end so that the water flows quickly towards this end. This inner drum is held in place by concentric flanges 44, projecting inwardly from heads 23, one being of smaller diameter than the other. After the cloth wound upon drum 10, has been subjected for a sufficient time to the action of steam in this manner, the steam is turned off and the cloth unrolled from the drum which concludes the so-called sponging-operation for the purpose of shrinking the cloth. All the handling incident to this manipulation as well as the action of steam and moisture cause the cloth to lose its finish which has to be restored before it can be used. For such purpose I provide my refinishing-device and in order to avoid unnecessary handling of the cloth, I arrange the same in close proximity to the drum and have it preferably supported by the same frame-work, so that the cloth before being wound upon the receiving-mandrel 45, may be subjected to this refinishing action. This action consists substantially of applying heat simultaneously to both sides of the cloth, friction being added to the contact between the cloth and the means whereby such heat is applied, so that existing roughness is removed from the surface of the cloth and its nap laid flat.

For applying the heat I use two sets A,

and B, of pipes, the pipes 46, in each set being set with their opposite open ends into headers 47, which form with these pipes rigidly connected frame-structures through which the heating medium (steam) circulates, the headers at each end serving in each case to conduct alternately the steam from one side to the other side through one pipe and back again through the adjacent pipe. To prevent short-circuiting, partitions 48, are provided in these headers, so that the steam which passes out of one pipe is prevented from passing beyond the next adjacent pipe through which it crosses over to the other header, where in a similar manner it is conducted into the next pipe through which it returns again (See Figs. 6, and 7.) One of these sets, set A, is supported in a stationary position, it being connected to a brace 49, attached between members 16, and 18, of the frame. The other set is hung to the general frame in a manner capable to be swung towards and from the other set, the headers being formed as shown, to permit a close approach, so that the pipes of one set may pass into the space between two adjacent pipes of the other set, see Figs. 3, and 6. The cloth from drum 10, is drawn off and passed in between the separated sets as shown in dotted lines in Fig. 2, after which the swinging set is closed against the other set, with the cloth between the two, as shown in Figs. 3, and 6. The end of the cloth is now drawn out around a guide roller 51, and passed up to mandrel 45, before mentioned, upon which it is wound, being drawn at the same time through between the heated pipes with which it is in close frictional contact. For closing set B, against the other set, I provide on each side two links 52, and 53, links 53, being preferably mounted upon a rod 54, extending across the machine, so that these links swing together. On one side one of these links is extended to form a lever handle 55, for this manipulation. A lug 56, on link 53, by coming in contact with the other link 52, locks the links in a straight line as shown in Fig. 3, and prevents them from going beyond the proper position. The steam for these pipe-sets is supplied by a pipe 57, controlled by a valve 58, which pipe may be a branch from steam-pipe 28, first mentioned, and by means of a flexible tube 59, in communication with this pipe 57, and connected to the upper ends of the two opposite headers at one side, steam is caused to enter and pass through both pipe-sets simultaneously. After passing back and forth through the pipes of these sets, the exit takes place below where again a flexible tube 61, is provided, connected to both headers and receiving the discharge from both sets. The final discharge passes off through a waste-pipe 62, in communication with this tube 61. The cloth shrunk on



drum 10, is unwound from the same, drawn through the refinishing-device and wound upon mandrel 45, before mentioned, which latter is rotated for such purpose all as shown in Fig. 3. To permit such rotation of the mandrel, a crank-handle 63, is provided at one end and boxes 64, at both ends, which boxes are supported on the upper frame-members 16. When a roll of cloth has thus been transferred from drum 10, onto mandrel 45, this latter with the cloth may be removed to clear the machine for the next operation. Bar 12, rests removably in brackets 65, and may be taken out at this time so as not to be in the way. To permit such detachment of the mandrel, the same is supported at its ends in sockets 66, each of which has a shank 67, which shanks are supported in the boxes 64, mentioned. The shank of one of these sockets is extended and supported in a bracket 68, in a manner to be movable lengthwise as shown in Fig. 8, which permits the mandrel, when said socket is pushed outwardly as shown in dotted lines, to clear the socket at the other end, after which it may be readily taken out. A spring 69, acting against a collar 71, serves to hold the socket in normal position against the end of the mandrel. This collar is adjustably mounted on the particular shank and a key 72, is provided to secure it in its adjusted position. This permits adjustment of the action of the spring, as well as of the position of sockets 66, with reference to the length of the mandrel. This mandrel and the means for rolling up the cloth after unwound from the shrinking drum, may of course be used in either event, that is to say whether the cloth passes from the drum direct, or from the refinishing-attachment.

Having described my invention, I claim as new:

1. In a device for refinishing cloth, the combination of two sets of parallel pipes, open at opposite ends, and headers, one at each end of each set to which the pipes are rigidly connected and in a manner to permit heat to circulate through them, the sets being supported in a manner so that cloth may be drawn through between them while in frictional contact with the pipes.

2. In a device for refinishing cloth, the combination of two sets of connected pipes arranged so that steam may circulate through

them and a frame on which they are supported in a manner to permit cloth to be drawn through between the sets, one of them being adjustable with reference to the other one.

3. In a device for refinishing cloth, the combination of two sets of pipes connected and arranged in each set to permit circulation of steam, a frame on which one set is supported in a fixed position, the other set being supported movable to and from the first set, to permit cloth to be passed in between them, and means to hold the adjustable set in proper operative position with reference to the other set, while the cloth is drawn through.

4. In an apparatus for treating cloth, the combination of a cloth-shrinking drum and positively arranged sets of pipes each supported on a frame and each set arranged for circulation of steam so as to permit heating and a mandrel which receives the cloth after the same has been acted upon by the devices mentioned, the same being supported and arranged for rotation so that the cloth may be wound upon it after having been passed through between the heated pipe-sets and unwound from the shrinking drum.

5. In an apparatus for treating cloth, the combination of a shrinking-drum, a frame upon which the same is supported, means for applying heat to it, a mandrel to receive the cloth from the drum, sockets at each end of the mandrel between which this latter is carried, shanks projecting outwardly from each socket, bearings in which these shanks are mounted in a manner to permit rotation of the sockets together and with the mandrel between them, one of these shanks being so mounted as to be also movable in a longitudinal direction to permit adjustment of the socket thereon with reference to the adjacent end of the mandrel for the purpose of engaging or releasing this latter, a collar adjustably mounted on this particular shank and a spring which by acting against this collar holds this shank with the socket thereon in engagement with the mandrel.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

CHRISTIAN KECK.

Witnesses:

C. SPENGEL,  
T. LE BEAU.

It is hereby certified that in Letters Patent No. 877,086, granted January 21, 1908, upon the application of Christian Keck, of Crescent Springs, Kentucky, for an improvement in "Cloth-Refinishing Devices," an error appears in the printed specification requiring correction, as follows: In line 73, page 3, the word "positely" should read *oppositely*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 4th day of February, A. D., 1908.

[SEAL.]

C. C. BILLINGS,  
*Acting Commissioner of Patents.*