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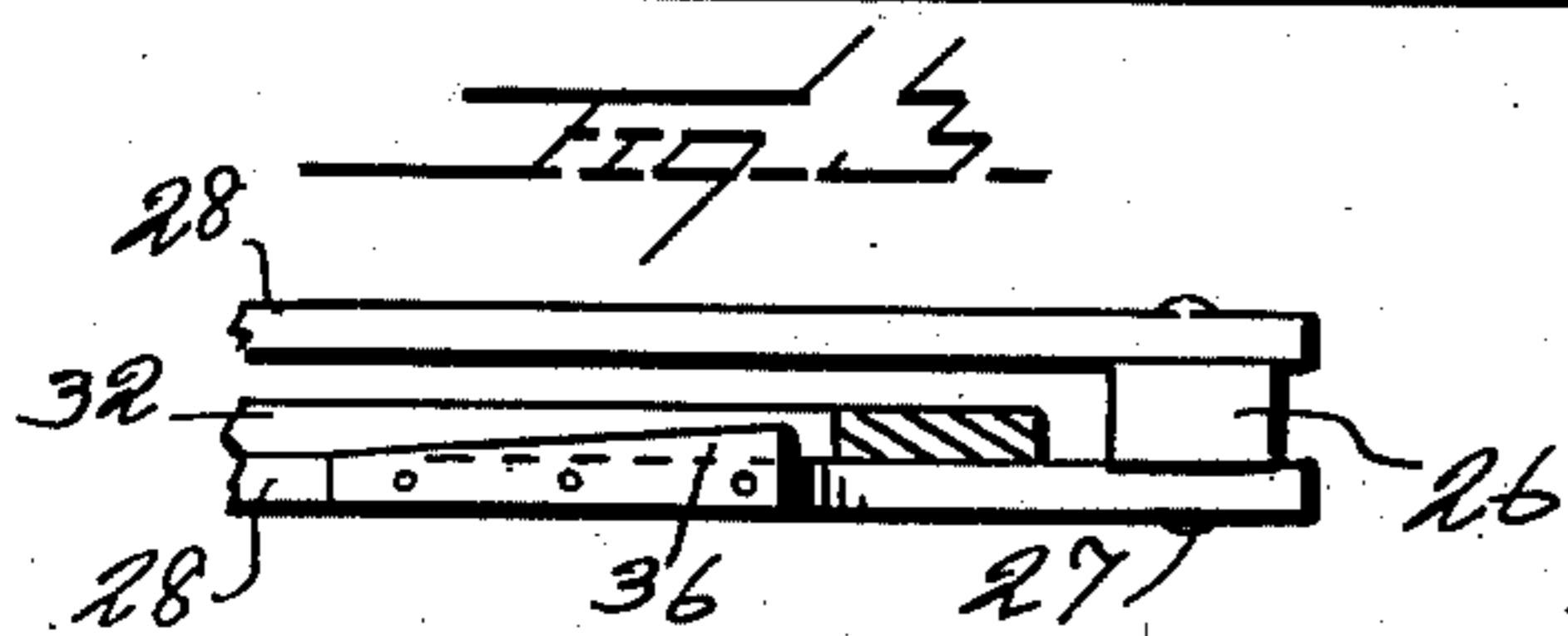
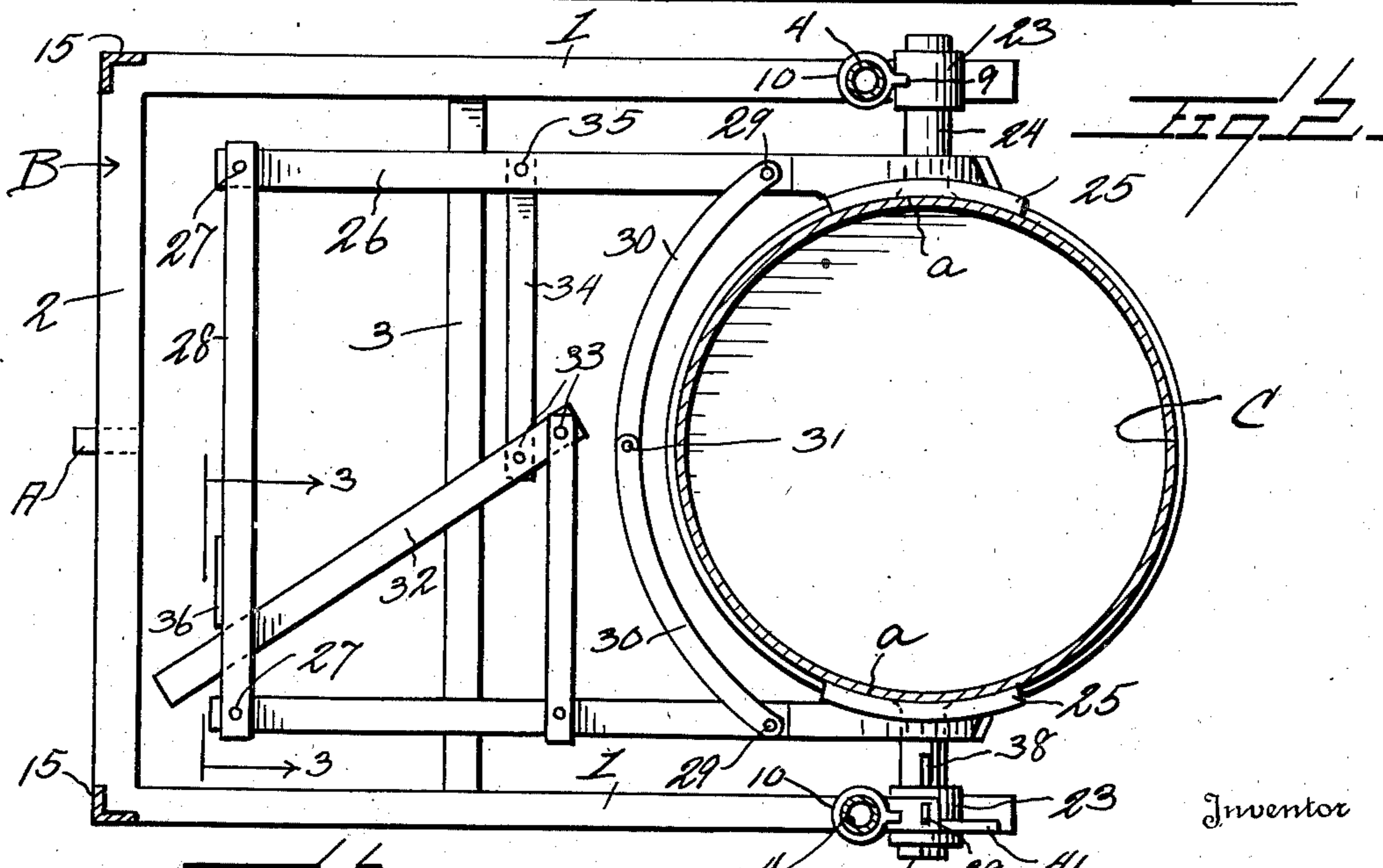
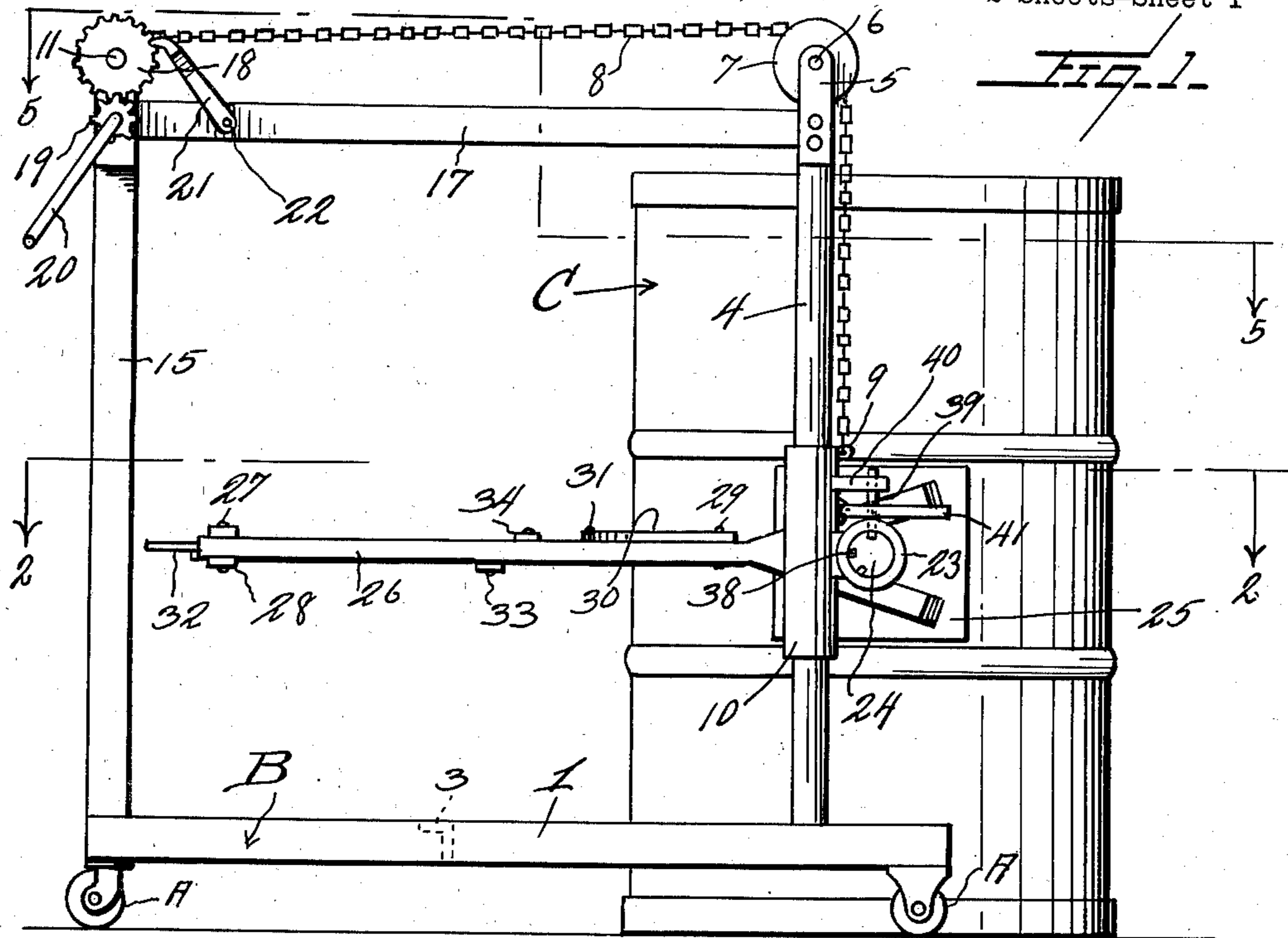
H. R. VAN RIPER

2,267,355

BARREL HANDLING APPARATUS

Filed Dec. 23, 1940

2 Sheets-Sheet 1



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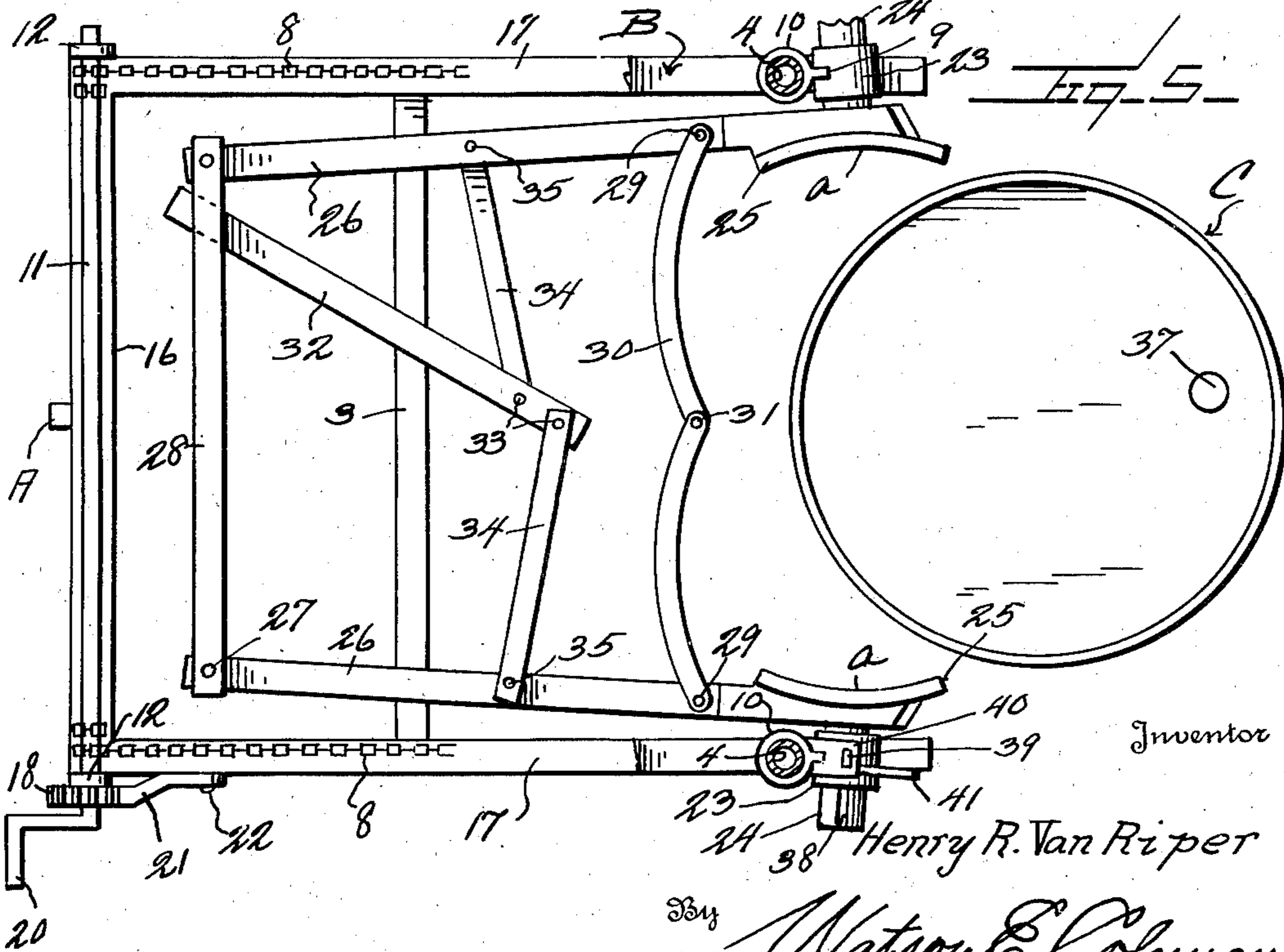
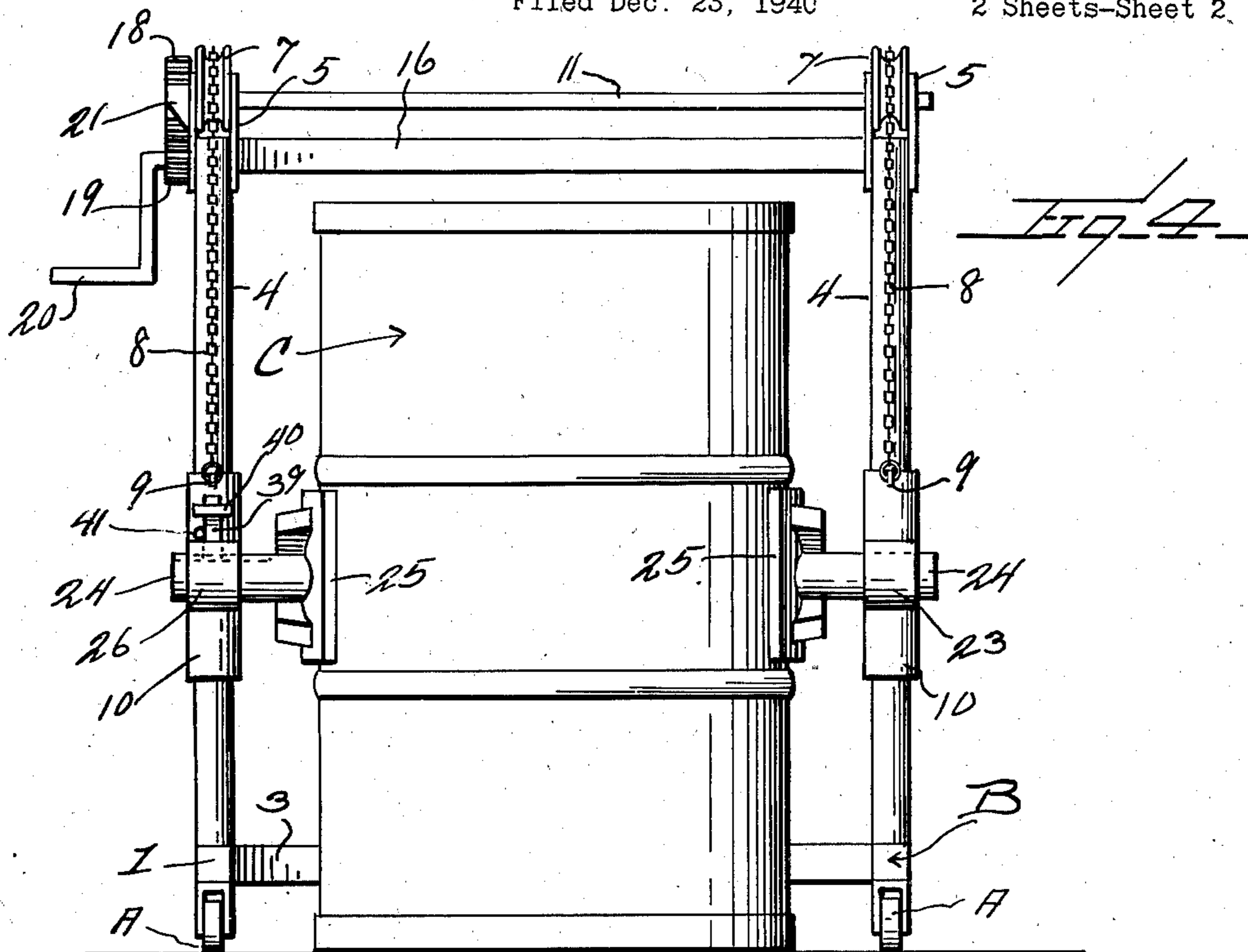
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BARREL HANDLING APPARATUS

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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

2,267,355

## BARREL HANDLING APPARATUS

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Application December 23, 1940, Serial No. 371,440

7 Claims. (Cl. 248—132)

This invention relates to a barrel handling apparatus, and it is an object of the invention to provide an apparatus of this kind having means whereby a barrel may be readily lifted and supported in a manner to enable the raised barrel to be tilted for discharging the contents of the barrel.

It is also an object of the invention to provide an apparatus of this kind which is portable and which can be conveniently employed in transporting a barrel from one place to another.

The invention has for a further object to provide an apparatus of this kind including clamping elements to hold a barrel therebetween together with means actuated by impact with the barrel to initially move said clamping elements into position to effect desired engagement with the barrel.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved barrel handling apparatus whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:

Figure 1 is a view in side elevation of a barrel handling apparatus constructed in accordance with an embodiment of my invention, a barrel to be lifted being also shown in elevation;

Figure 2 is a sectional view taken substantially on the line 2—2 of Figure 1;

Figure 3 is a fragmentary detailed sectional view taken substantially on the line 3—3 of Figure 2;

Figure 4 is a view in front elevation of the device as illustrated in Figure 1;

Figure 5 is a sectional view taken substantially on the line 5—5 of Figure 1.

As disclosed in the accompanying drawings, B denotes a U-shaped base frame comprising the suitably spaced substantially parallel side arms 1 and the intermediate member 2 interposed between and rigidly connecting the rear end portions of the arms 1.

The arms 1 at a desired point intermediate their ends have rigidly secured thereto an interposed bracing or reinforcing member 3.

Suitably engaged with the opposite end portions of the side arms 1 of the base frame B are the casters A or other desired surface engaging members whereby the apparatus in its entirety is readily portable.

The forward or free end portions of the side

arms 1 of the base frame B have securely anchored thereto the upstanding vertical guide posts 4 herein disclosed as of a hollow type and circular in cross section. These posts 4 are of desired height and are provided at their upper ends with the upstanding bracket arms 5 which provide mountings for a shaft 6 extending in a direction transversely of the frame B. Each of the posts 4 is provided with a pair of bracket arms 5 and mounted on the shaft 6 and positioned between the bracket arms 5 of each pair is a pulley 7 over which passes a flexible member 8 herein disclosed as a chain. Each of these flexible members or chains 8 extends downwardly from its pulley 7 in advance of the adjacent post 4 and is suitably connected to a lug 9 extending out from the upper end of a sleeve 10 slidably mounted on said post 4. Each of the chains 8 also extends rearwardly from its pulley 7 and is operatively engaged with a winding shaft 11 rotatably supported by the upstanding bracket arms 12 carried by the rear vertical columns 15 rigidly secured to the rear corner portions of the base frame B. These columns 15 are substantially the same height as the posts 4, and the upper portions of the columns 15 have interposed therebetween and suitably secured thereto the transversely disposed bracing or reinforcing members 16 while the upper end portions of the posts 4 and column 15 at each side of the frame B are connected by the interposed brace or reinforcing members 17.

The winding shaft 11 may be rotated in any manner preferred but, in the present embodiment of my invention, one end portion of said shaft 11 has fixed thereto a gear 18 meshing with a pinion 19 rotatably supported by the upper portion of the adjacent column 15. Associated with this pinion 19 is a hand crank 20 whereby the pinion 19 may be rotated as desired to wind the members or chains 8 upon the shaft 11 to cause the sleeve 10 to move upwardly of the posts 4. Retrograde rotation of the shaft 11 is prevented by a gravity pawl 21 or the like pivotally connected, as at 22, with a side member 17 and coacting with the teeth of the gear wheel 18. When it is desired to have the flexible members or chains 8 unwind from the shaft 11 it is only necessary that the pawl 21 be disengaged from the gear wheel 18.

Carried by and preferably integrally formed with the central portions of the sleeves 10 and positioned in advance thereof are the horizontally disposed tubular bearing members 23 open at both ends. Each of these bearings members 23 slidably and rotatably receives an elongated trunnion or stub shaft 24 rigidly connected to and extending outwardly from the central portion of a clamping plate 25. The working or contacting face *a* of each of these plates 25 is

so formed or designed as to have close contact with the side wall of a barrel or kindred container C. In the accompanying drawings, this barrel or container C is illustrated as of a type generally used in connection with lubricating oil and the like although I do not wish to be understood as limiting myself in this respect.

The clamping plates or members 25 are provided with the rearwardly disposed elongated levers 26 rigidly connected thereto and the rear end portions of these levers are pivotally connected, as at 27, between the spaced rigid members or bars 28 at the extremities thereof. The levers 26 in close proximity to the plates or members 25 have pivotally connected thereto, as at 29, the outer end portions of the inwardly disposed arcuate levers 30. These levers are substantially duplicate and have their inner end portions pivotally connected, as at 31. These arcuate levers 30 are of such length as to separate the clamping plates or members 25 a distance sufficient to allow said clamping plates or members 25 to be readily engaged at opposite sides of the barrel or container. This separation of the clamping plates or members 25 is effected by swinging the levers 30 forwardly until the pivotal connection 31 is substantially in alignment with the pivotal connections 29. As the apparatus is moved toward the barrel or container C to position the clamping plates or members 25 at opposite sides of such barrel or container C, the inner pivotally connected extremities of the levers 30 will contact or impact the barrel or container C and be caused to swing rearwardly as the apparatus continues to advance. This action will result in the clamping plates or members 25 being brought into initial clamping position with respect to the barrel or container C. After this operation the plates or members 25 are brought into tight clamping contact with the barrel or container C by proper pull being imposed upon the elongated operating arm 32. The inner end portion of this arm 32 has pivotally connected thereto, as at 33, the oppositely directed levers 34, the outer end portions of which are pivotally connected, as at 35, to the levers 26.

The pivotal connections 33 are spaced a desired distance lengthwise of the bar 32 so that upon swinging the bar 32 in one direction the levers 26 will be swung inwardly resulting in the desired effective engagement of the plates or members 25 with the barrel or container C.

One of the bars 28 carries a stop 36 which partially intersects the space between the bars 28 and with which the bar 32 engages when swung in a direction to bring the plates or members 25 in proper contact with the barrel or container C. This contact of the bar 32 with the stop 36 effectually holds the plates or members 25 in desired clamping engagement with the barrel or container C until the bar 32 is released from its holding position.

After the clamping plates or members 25 have been properly engaged with the barrel or container C, the shaft 11 is rotated in a direction to wind the flexible members or chains 8 therearound whereupon the sleeves 10 will be moved upwardly of their posts 4 and, of course, the barrel or container C correspondingly raised or lifted. With the barrel or container C in a raised or lifted position it can be readily transported from one place to another as desired, or such barrel or container can be readily and conveniently tilted to empty the same of its contents as

through the conventional opening 37 (Figure 5). This tilting of the barrel or container C is not hindered or obstructed by the levers 26 or any of the parts associated therewith as the same are positioned entirely between the side arms 1 of the base frame B and the top members 17. The levers 26, however, with the plates or members 25 firmly clamped to the barrel or container C may be conveniently used by the operator to tilt the barrel or container C as desired.

It is believed to be obvious that the tilting of the barrel or container C is permitted by the rotatable engagement of the trunnions or stub shafts 24 through the bearing members 23.

When the barrel or container C is being lifted, it is of advantage to hold such barrel or container C against tilting or swinging movement. One of the trunnions or stub shafts 24 is provided in its periphery at spaced points therearound with the longitudinally disposed grooves or keyways 38 in which is selectively engaged the lower end portion of an elongated locking plate 39. This plate 39 is slidably disposed through an outstanding bracket 40 carried by the adjacent sleeve 10 and coacting with this plate 39 is an operating lever 41 whereby the plate may be conveniently released from the groove or keyway in which it may be engaged.

As is illustrated in Figure 1 of the drawings, these grooves or keyways 38 are so positioned as to provide means whereby the barrel or container C will be effectively held against tilting or rocking movement while being raised and to hold said barrel or container C in various tilted positions to facilitate the emptying of the barrel or container.

It is also to be pointed out that the sleeves 10 having rocking or turning movement upon the posts 4. This is important as by such rocking or turning movement the desired spreading of the clamping plates or members 12 is facilitated.

From the foregoing description it is thought to be obvious that a barrel handling apparatus constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:

1. A barrel handling apparatus comprising a structure including upstanding posts, sleeves freely engaged with said posts, means for raising the sleeves on the posts, tubular bearing members carried by the sleeves, clamping members, trunnions carried by the clamping members freely extending within the bearing members, said trunnions having both endwise and rotary movement with respect to the bearing members, means for forcing the clamping members inwardly to engage a barrel or the like therebetween, and means coacting with the clamping members and operating upon contact with the barrel or the like between the clamping members for initially moving the clamping members into working position with respect to the barrel.

2. A barrel handling apparatus comprising a structure including two upstanding posts to be positioned at opposite sides of a barrel or other

container, horizontally disposed tubular bearing members, means for mounting said bearing members upon the posts for movement lengthwise thereof and for turning movement therearound, means for raising said bearing members, clamping members positioned inwardly of the bearing members, trunnions carried by said clamping members and freely extending within the bearing members, and means for moving the clamping members one toward the other for effective holding engagement with the barrel or the like.

3. A barrel handling apparatus comprising a structure including two upstanding posts to be positioned at opposite sides of a barrel or other container, horizontally disposed tubular bearing members, means for mounting said bearing members upon the posts for movement lengthwise thereof and for turning movement therearound, means for raising said bearing members, clamping members positioned inwardly of the bearing members, trunnions carried by said clamping members and freely extending within the bearing members, means for moving the clamping members one toward the other for effective holding engagement with the barrel or the like, and means for holding the trunnions against rotary movement.

4. A barrel handling apparatus comprising a structure including two upstanding posts to be positioned at opposite sides of a barrel or other container, horizontally disposed tubular bearing members, means for mounting said bearing members upon the posts for movement lengthwise thereof and for turning movement therearound, means for raising said bearing members, clamping members positioned inwardly of the bearing members, trunnions carried by said clamping members and freely extending within the bearing members, means for moving the clamping members one toward the other for effective holding engagement with the barrel or the like, means for holding the trunnions against rotary movement, levers extending rearwardly from the clamping members to provide means for moving the clamping members toward or from the interposed barrel or the like, and means for simultaneously moving said levers to make the clamping members effective or ineffective.

5. A barrel handling apparatus comprising a structure including two upstanding posts to be positioned at opposite sides of a barrel or other container, horizontally disposed tubular bearing members, means for mounting said bearing members upon the posts for movement lengthwise thereof and for turning movement therearound, means for raising said bearing members, clamping members positioned inwardly of the bearing members, trunnions carried by said clamping members and freely extending within the bearing members, means for moving the clamping members one toward the other for effective holding engagement with the barrel or the like, means for holding the trunnions against rotary movement, levers extending rearwardly from the clamping members to provide means for moving the clamping members toward or from the interposed barrel or the like, means for simultaneously moving said levers to make the clamping members effective or ineffective, inwardly disposed arms pivotally connected to the levers and to each other, said arms being so positioned with respect to the clamping members to contact the barrel or the like interposed between the clamping members as the apparatus is moved toward

the barrel to initially shift the clamping members into working position.

6. A barrel handling apparatus comprising a structure including two upstanding posts to be positioned at opposite sides of a barrel or other container, horizontally disposed tubular bearing members, means for mounting said bearing members upon the posts for movement lengthwise thereof and for turning movement therearound, means for raising said bearing members, clamping members positioned inwardly of the bearing members, trunnions carried by said clamping members and freely extending within the bearing members, means for moving the clamping members one toward the other for effective holding engagement with the barrel or the like, means for holding the trunnions against rotary movement, levers extending rearwardly from the clamping members to provide means for moving the clamping members toward or from the interposed barrel or the like, means for simultaneously moving said levers to make the clamping members effective or ineffective, a swinging bar positioned between the levers, oppositely disposed levers pivotally connected to said swinging bar and to the levers of the clamping members, the pivotal connections between the last named levers and the swinging bar being at points spaced lengthwise of the swinging bar to provide means whereby the levers of the clamping members are swung in unison one with respect to the other upon movement of the swinging bar, and a bar interposed between and pivotally connected to the outer portions of the levers of the clamping members.

7. A barrel handling apparatus comprising a structure including two upstanding posts to be positioned at opposite sides of a barrel or other container, horizontally disposed tubular bearing members, means for mounting said bearing members upon the posts for movement lengthwise thereof and for turning movement therearound, means for raising said bearing members, clamping members positioned inwardly of the bearing members, trunnions carried by said clamping members and freely extending within the bearing members, means for moving the clamping members one toward the other for effective holding engagement with the barrel or the like, means for holding the trunnions against rotary movement, levers extending rearwardly from the clamping members to provide means for moving the clamping members toward or from the interposed barrel or the like, means for simultaneously moving said levers to make the clamping members effective or ineffective, a swinging bar positioned between the levers, oppositely disposed levers pivotally connected to said swinging bar and to the levers of the clamping members, the pivotal connections between the last named levers and the swinging bar being at points spaced lengthwise of the swinging bar to provide means whereby the levers of the clamping members are swung in unison one with respect to the other upon movement of the swinging bar, a bar interposed between and pivotally connected to the outer portions of the levers of the clamping members, and means carried by the bar connecting the levers of the clamping members for co-action with the swinging bar to hold the clamping members in clamping engagement with the barrel interposed therebetween.

HENRY R. VAN RIPER.