Jan. 2, 1923.

1,440,864

R. L. DRAKE.
HANDLE ASSEMBLING MACHINE.
FILED JAN. 3, 1920.

3 SHEETS-SHEET 1

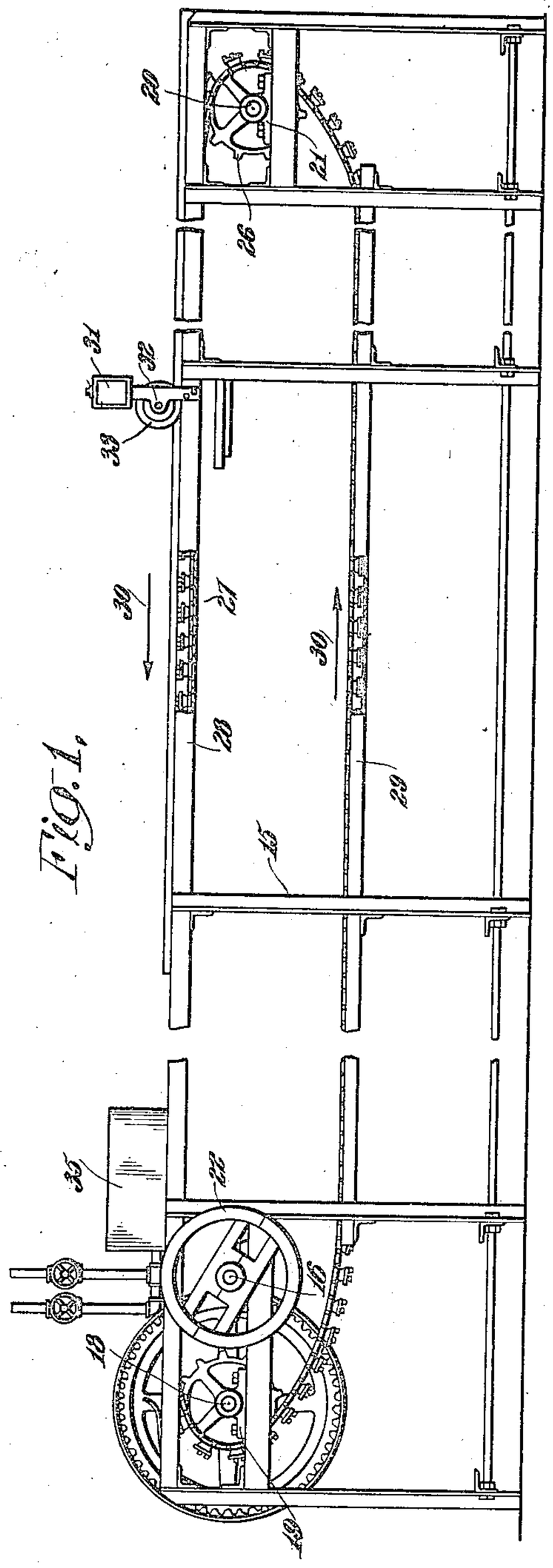

FIG. 1.

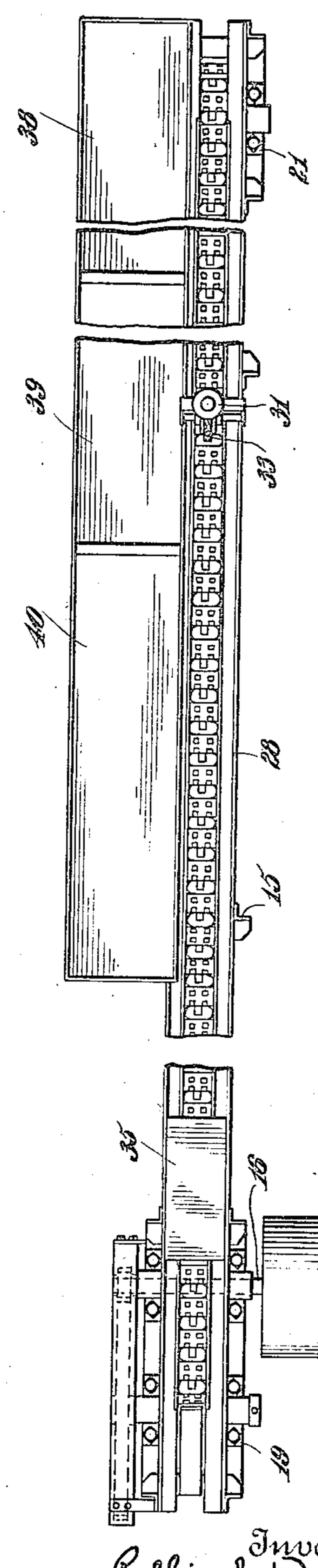

FIG. 2.

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3 SHEETS-SHEET 2

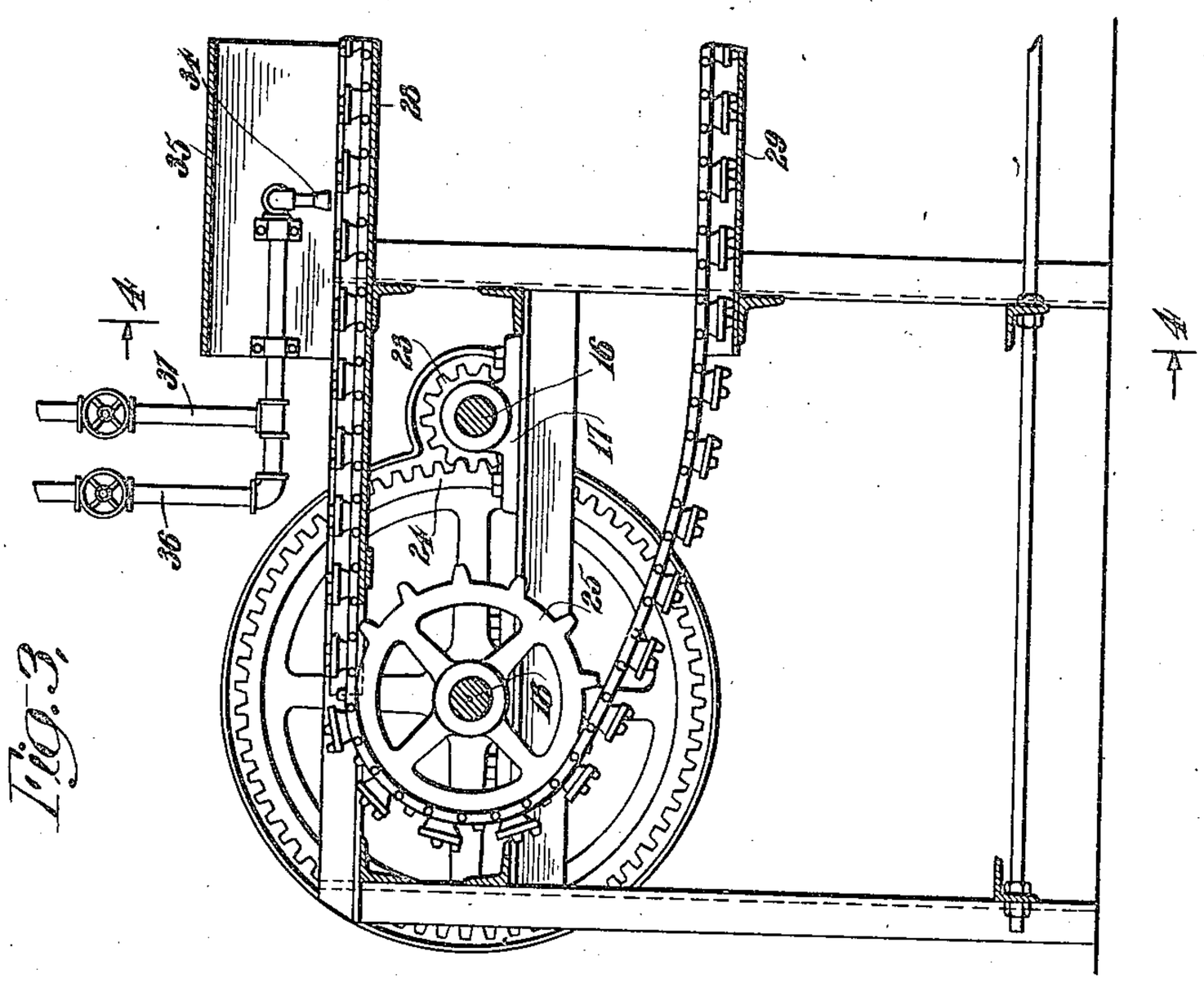

Fig. 3.

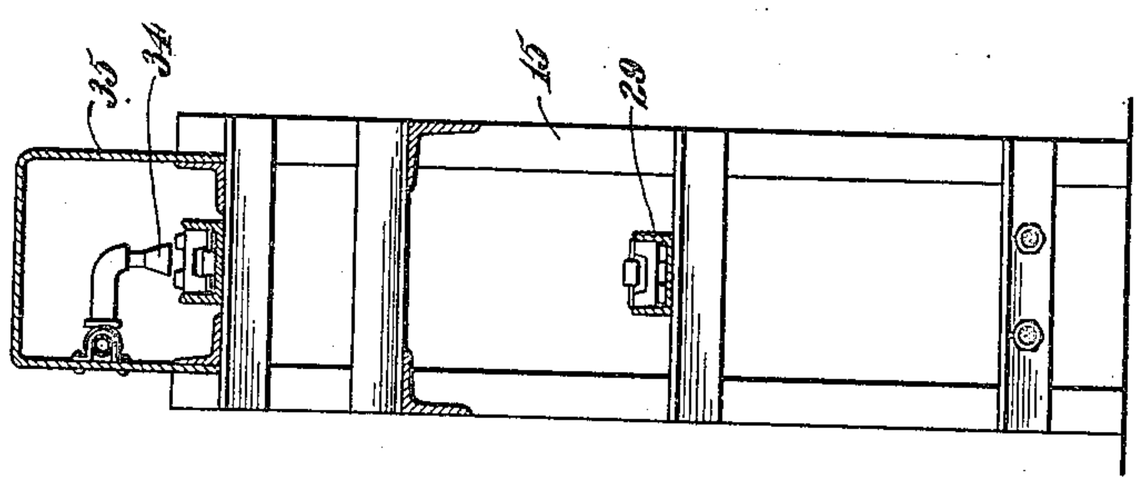

Fig. 4.

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3 SHEETS-SHEET 3

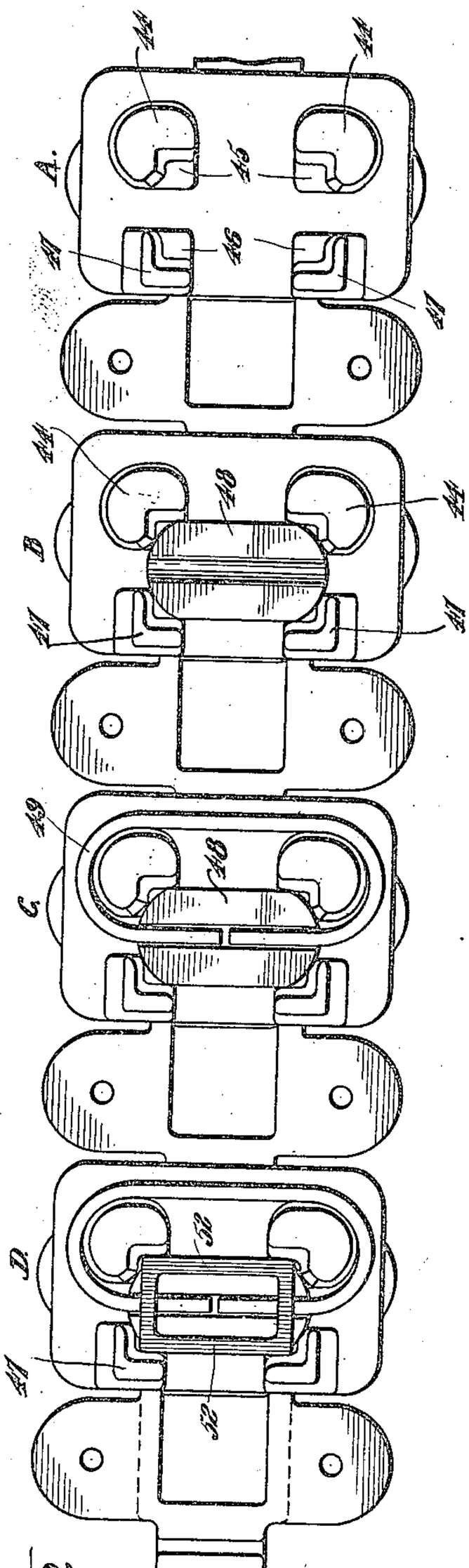

Fig. 5.

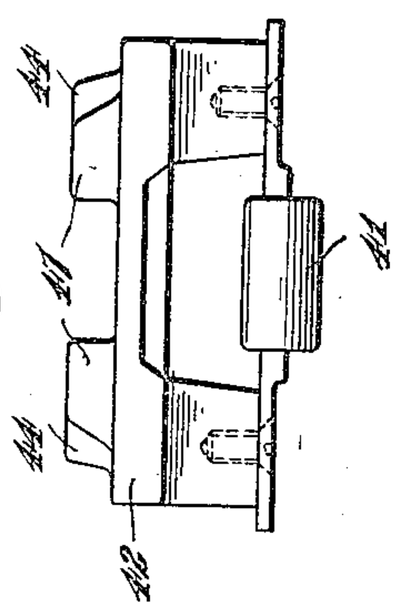

Fig. 8.

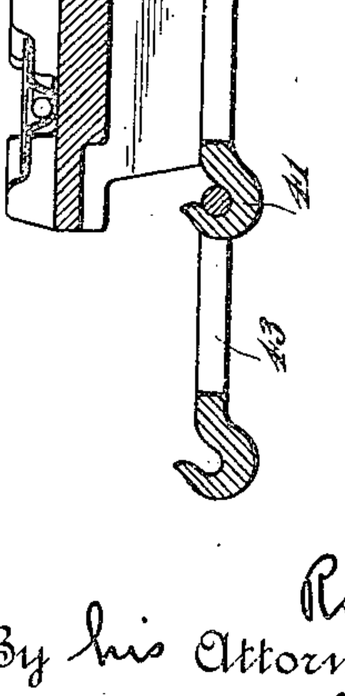

Fig. 7.

Fig. 6.

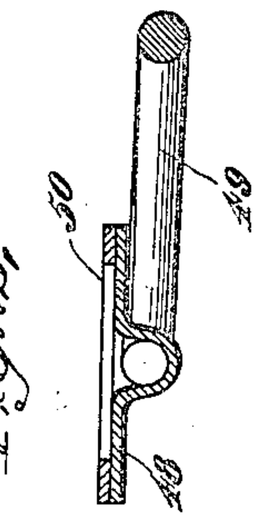

Fig. 12.

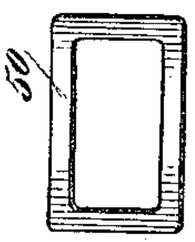

Fig. 11.

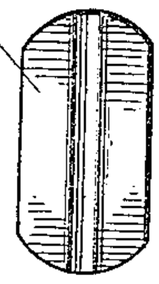

Fig. 10.

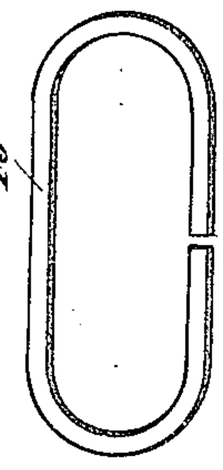

Fig. 9.

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Patented Jan. 2, 1923. 1,440,864

UNITED STATES PATENT OFFICE.

ROLLIN L. DRAKE, OF PORT ARTHUR, TEXAS, ASSIGNOR TO THE TEXAS COMPANY, OF NEW YORK, N. Y., A CORPORATION OF TEXAS.

HANDLE-ASSEMBLING MACHINE.

Application filed January 3, 1920. Serial No. 349,202.

To all whom it may concern:

Be it known that I, ROLLIN L. DRAKE, a citizen of the United States of America, and a resident of Port Arthur, in the county of Jefferson and State of Texas, have invented certain new and useful Improvements in Handle-Assembling Machines, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to the manufacture of sheet metal cans or containers and it has special reference to machines for assembling and attaching solder to the handle parts of sheet metal cans or containers which may, for example, be suitable for dispensing oils and other liquids.

One object of my invention is to provide a machine of the aforesaid character that shall be simple and durable in construction and effective and continuous in operation.

A further object is to provide a machine which requires only the services of unskilled attendants.

A well known type of handle for sheet metal cans or containers consists of a wire loop flattened to provide a pair of parallel sides, and hinge connected to the can by a clip of sheet metal which is soldered to the surface of the can and has a flute or corrugation formed in it to embrace the handle.

It has been my aim to provide a machine for performing the preliminary operation, of attaching the handle to the clip and providing the clip with solder so that the handle and clip may readily be attached to the can of which it is to form a part. The method of assembling and attaching the handle to the can with its clip constitutes an invention which is independent of the particular machine shown and described in this case and the aforesaid method constitutes the subject matter of my copending application Serial No. 349,203 filed of even date herewith.

Other objects and advantages of my invention will be set forth hereinafter and I will now describe the same with reference to the drawings and point out the novel features thereof in the appended claims.

Referring to the drawings:

Figure 1 is a side elevation with certain of the parts broken away of a machine arranged and constructed in accordance with my invention and constituting an embodiment thereof.

A plan view of the same machine is shown in Figure 2.

Figure 3 is a partially sectional view which corresponds in general to the left-hand end of Figure 1, but is drawn to a larger scale and shows certain parts of the machine more in detail.

Figure 4 is a sectional elevation taken on the line 4—4 of Figure 3.

Figure 5 is an enlarged detail view of the continuous chain or belt which forms a part of the machine of the previous figures but is drawn to a relatively large scale. The successive steps in assembling the handle clip are illustrated by the several links in the section of the chain shown in this figure.

Figure 6 is a longitudinal sectional elevation showing one of the links of the chain of Figure 5, together with a portion of the adjacent links.

Figure 7 is an elevation of a single link of the chain.

Figure 8 is an elevation of the same link taken at right angles to Figure 7.

Figure 9 shows a handle loop before it is assembled but ready for use.

Figure 10 shows one of the clips ready to be used for holding the handle in place.

Figure 11 shows a solder blank which, according to my invention, is soldered at predetermined points to the clip after the handle is assembled therein.

The resulting combination or unit composed of handle clip and solder blank is shown in section in Figure 12.

The machine illustrated comprises a frame 15, a driving shaft 16, mounted in bearing blocks 17 thereon, a shaft 18 similarly mounted in bearing blocks 19, and a shaft 20 near the opposite end of the machine mounted in bearing blocks 21.

Affixed to the shaft 16 is a drive pulley 22 with a pinion 23 which meshes with a gear wheel 24 on the shaft 18. A chain sprocket 25 is also affixed to the shaft 18 and cooperates with a sprocket wheel 26, mounted on a shaft 20 at the opposite end of the machine, in supporting an endless chain or belt 27. The upper or tight section of the belt or chain is further supported

by a track or channel 28 on the frame 15 and the lower loose portion of the chain slides on a carrier or track 29 which is also mounted on the frame. The chain moves when the shaft 16 is suitably driven in the direction of the arrows 30, the upper portion moving to the left and the lower part to the right in Figure 1.

A solder flux reservoir 31 is mounted on a suitable bracket or support 32 and is arranged to discharge onto a brush or wiper wheel 33 which engages the endless chain or belt and the handle parts mounted thereon as hereinafter explained.

A gas burner 34 is mounted within a housing 35 near the discharge end of the machine and is supplied with gas and air through pipes 36 and 37. Shelves or shallow pans 38, 39, 40 are mounted on the frame adjacent to the belt as clearly shown in Figure 2.

The endless chain is composed of a plurality of links which are detachably connected by open hinge joints 41. Alternate links are provided with supporting blocks 42, the others having holes or openings 43 to cooperate with the teeth of the sprocket wheels.

Each of the blocks 42 has a pair of lugs 44 which are adapted to receive a handle loop 49 and which are provided with notches 45 to cooperate with notches 46 of another pair of lugs 47 in providing a support or holder for a handle clip 48 as shown in Figure 10. The arrangement of parts is such that one of the clips 48 may first be mounted in the supporting block as shown at B in Figure 5, the handle loop 49 being then placed in position as shown at C. Finally a solder blank 50 which is of rectangular shape as shown in Figure 11, is mounted on the clip and extends across one side of the handle loop as shown at D in Figure 5.

In operating the machine the pulley 22 is driven so as to produce a continuous movement of the belt as indicated by the arrows 30. An attendant stands by each of the pans 38, 39, 40 which are filled respectively with the clips 10, the handle loops 9 and the solder blanks 11. The direction of motion of the belt is such that the supporting blocks 42 come first opposite the pan 38 and subsequently opposite the pans 39—40. The attendant opposite pan 38 places a clip in the supporting block as shown at B. When the supporting block comes opposite the pan 39 the attendant there stationed places the handle loop 49 in position as shown at C. Finally, when the block comes opposite the pan 40 the attendant there stationed places a solder blank in position as shown at D. The sides of the lugs 44 and 47 are inclined so that it is easy to place the parts in the desired position as shown in Figure 6. This process is continuous and the assembled handle and clip are brought into engagement with the flux wheel 33, which is rotated by its engagement therewith, before the solder blank is placed in position.

Finally, the assembled parts pass into the housing 35 and the gas flame from the burner 34 is so directed as to soften the solder blank at two opposite points designated 52 in Figure 5. This seals the solder blank to the clip and holds the parts together and the handle in position. The assembled handles then drop off of the belt as the motion continues, a bin being preferably located underneath in position to receive them. The handles are then ready to be soldered to any desired sheet metal can or receptacle and this may be accomplished in any suitable manner. I prefer to employ a machine for rapidly and effectively accomplishing this purpose, but this forms no part of my present invention and is described in my copending application Serial No. 349,201, filed of even date herewith.

What I claim is:

1. A handle assembling machine comprising a travelling member having four spaced lugs together forming a socket for a grooved clip to be introduced in inverted position between said lugs, and two of said lugs being shaped to constitute together a guide post over which a handle loop may be mounted with one member extending through the groove of the clip, said lugs being also formed to constitute together a socket for a solder blank to be introduced over the clip across the handle member.

2. A handle assembling machine comprising a travelling member having a plurality of supports arranged thereon, each of said supports having four lugs, notched to form a holding socket for supporting the corners of a grooved clip to be introduced in inverted position between said lugs, and two of said lugs being proportioned and externally formed to constitute a post over which a handle loop is mounted with one member lying in the groove of the clip.

3. A handle assembling machine comprising a travelling member having a plurality of supports arranged thereon, each of said supports having four lugs, notched to form a holding socket for supporting the corners of a grooved clip to be introduced in inverted position between said lugs, and two of said lugs being proportioned and externally formed to constitute a post over which a handle loop is mounted with one member lying in the groove of the clip, said lugs being also formed to receive a solder blank on top of the clip over the handle member, and being spaced transversely of the direction of movement of the travelling member to expose the intermediate portion of the solder blank; and a burner arranged to heat only the intermediate portion of the blank.

4. A handle assembling machine comprising an endless chain, means for continuously

operating the chain, a plurality of blocks mounted on links of the chain, each block having spaced lugs forming a central opening adapted to receive a handle clip in inverted position, a handle encircling one pair of said lugs and cooperating with the clip and a solder blank extending in contact with the clip on opposite sides of the handle, and means for applying heat to soften the solder blank at points on opposite sides of the handle to secure the blank to the clip without destroying the blank.

5. A handle assembling machine comprising an endless chain, means for continuously operating the chain, a plurality of blocks mounted on links of the chain, each block having spaced lugs forming a central opening adapted to receive a handle clip in inverted position, a handle encircling a pair of lugs and cooperating with the clip and a solder blank extending in contact with the clip on opposite sides of the handle, a housing enclosing the chain near the discharge end, a burner in the housing arranged to apply heat temporarily and locally at points in the sides of the solder blank where it engages the clip, whereby the solder blank and the clip are secured together and the handle held in relation thereto.

In witness whereof, I have hereunto signed my name this 17th day of December, 1919.

ROLLIN L. DRAKE.