May 15, 1928.

1,670,216

D. SAVADOW

CUTTING AND FLANGING DEVICE

Filed Aug. 1, 1927

2 Sheets-Sheet 1

Fig. 1.

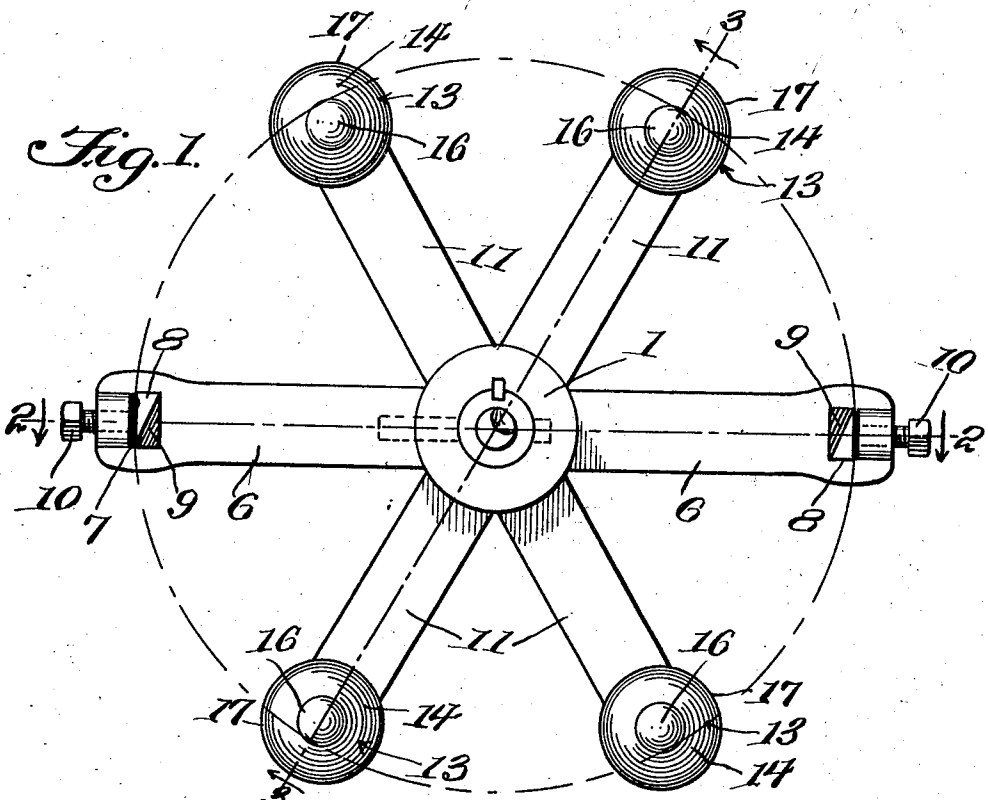
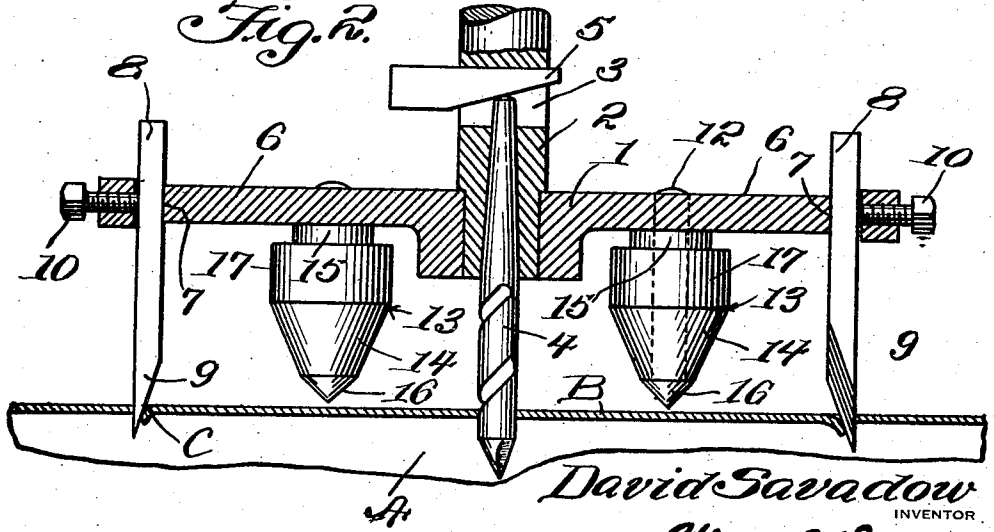


Fig. 2.



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Fig. 3.

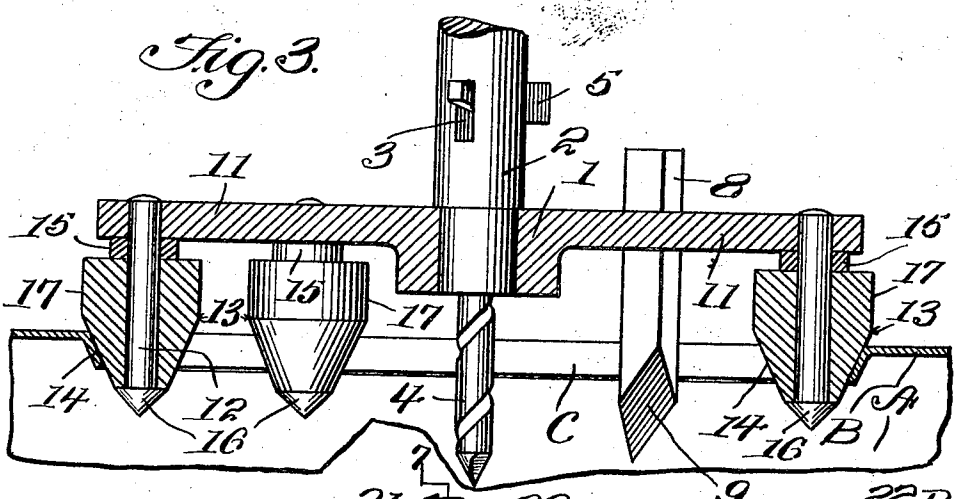


Fig. 4.

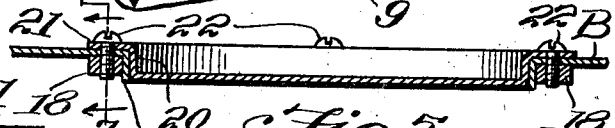


Fig. 5.

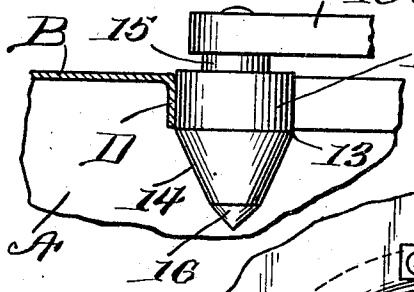


Fig. 7.

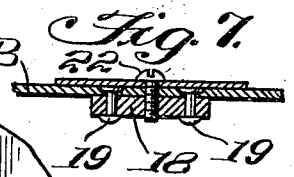
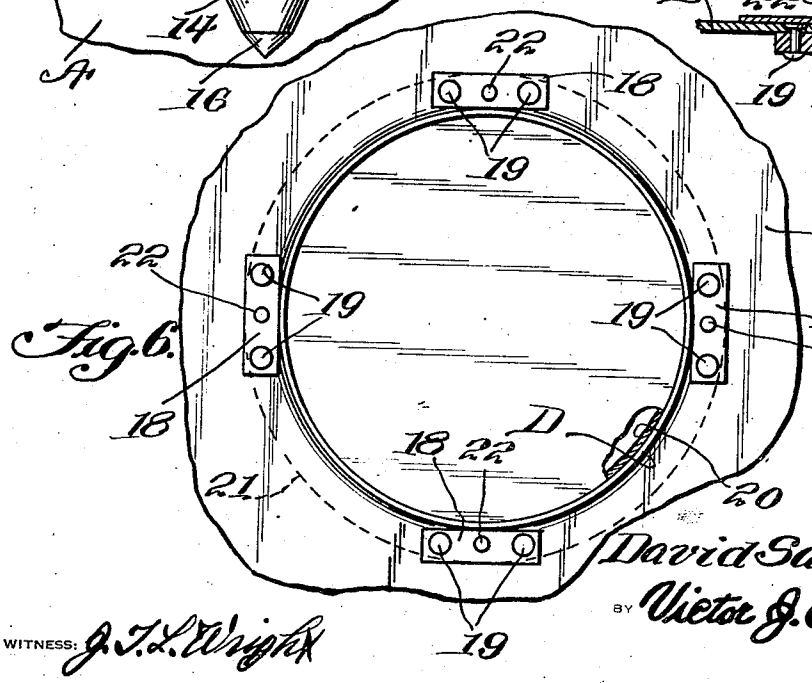


Fig. 6.



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UNITED STATES PATENT OFFICE.

DAVID SAVADOW, OF BALTIMORE, MARYLAND.

CUTTING AND FLANGING DEVICE.

Application filed August 1, 1927. Serial No. 209,976.

This invention relates to cutters, and its general object is to provide a device for cutting an annular opening in metallic drums and the like and rolling the edge of the opening, so as to provide an opening capable of introducing and removing semi-solid materials into and from the drum and to receive a closure which is detachably associated about the opening for closing the same in a manner whereby a tight joint is provided yet the closure can be removed in an easy and expeditious manner when access to the drum is desired.

A further object of the invention is to provide a means for conditioning oil drums and the like whereby grease can be introduced and housed therein, and dispensed therefrom.

Another object of the invention is to provide a cutter including an edge roller, that is simple in construction and inexpensive to manufacture.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a bottom plan view of the device for cutting and rolling the edge of openings in metallic drums and the like.

Figure 2 is a sectional view taken approximately on line 2—2 of Figure 1 and showing the device in operation.

Figure 3 is a sectional view taken on line 3—3 of Figure 1.

Figure 4 is a detail sectional view illustrating the action of one of the rollers on the edge of the opening formed by the cutters.

Figure 5 is a fragmentary transverse sectional view taken through the head of a drum showing a closure fixed to the head and closing the opening formed by my device.

Figure 6 is a bottom plan view of Figure 5.

Figure 7 is a sectional view taken on line 7—7 of Figure 5.

Referring to the drawings in detail it will be noted that my device is adapted to form an opening in the head of a metallic drum or the like, will roll the edge of the opening so as to form a flange adapted to receive a closure which is fixed to the opening in a manner whereby it can be removed and so that grease and other semi-solid materials can be introduced, housed and dispensed from metallic drums that are now generally commercially used for oil.

The opening cutter and roller is provided with a body 1 having an opening formed therein which is adapted to receive a drill shank 2 fixedly secured therein and said shank is provided with a tapered bore communicating at its upper end with a slot 3. The bore is adapted to receive a drill bit 4 in the manner as best shown in Figure 2 of the drawings and in order to remove said bit from its bore, a wedge block 5 may be passed into the slot 3 for engagement with the end of the bit as shown.

Radiating from the body 1 are a plurality of arms, two of which are indicated by the reference numeral 6 and are provided with transversely disposed slots 7 to receive the shanks 8 of cutting blades 9. The cutting blades are adjustably held in said slots 8 through the instrumentality of set screws 10. The remaining arms which are indicated by the reference numeral 11 are disposed in pairs and have depending therefrom adjacent their ends, headed pins 12 which receive rollers 13 having beveled lower ends 14 as shown. The rollers are mounted for rotation on the pins 12 and are spaced from the under surface of their arms 11 by disk washers 15. The heads of the pins 12 are indicated by the reference numeral 16 and are tapered to a greater degree than the bevel of the lower ends 14 of the rollers 13, but have their outer edges of their upper ends arranged flush with the outer edges of the lower ends of the rollers 13 as best shown in Figure 4 of the drawings.

When it is desired to form an opening in the head of a metallic drum as indicated by the letter A the device is centrally disposed with the head B of the drum and rotated which will result in the bit 4 penetrating the head B to an extent whereby the cutting blades 9 will cut through the head and provide an opening C. The rollers will then engage the edge of the opening and form a downturned flange D as

shown in Figure 4, it being obvious that the flanges formed by the beveled portion of the pins and rollers engaging the edge and gradually causing the edge to be turned inwardly until the flat portions 17 of the rollers engage the edge and position the same to provide the flange. The device is then removed from the opening which is of sufficient size to introduce grease or other semi-solid materials in the drum and reinforcing blocks 18 are fixed to the underside of the head B and arranged in contacting engagement with the inner side of the flange as shown in Figure 5. The reinforcing blocks are fixed to the heads through the medium of rivets 19. A closure is provided for the opening and said closure is of course disk shape in formation and is provided with a substantially right angle shape flange which includes portions 20 and 21. The portion 20 is disposed in fitting engagement with the flange D and the portion 21 is provided with openings to receive screws 22 which are threadedly secured in the blocks 18 as best shown in Figure 7 of the drawings.

From the above description and disclosure of the drawings, it will be obvious that I have provided a device for forming openings in oil drums whereby grease and other semi-solid materials may be introduced into the drums and readily dispensed therefrom, with a closure for the opening which is detachably associated with the head in a manner to form a leak proof connection.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:

1. A tool for forming flanged openings in metallic receptacles, comprising a body, a shank fixedly secured in said body and being provided with a bore, a drill bit detachably secured in said bore, arms radiating from said body, rollers having beveled portions mounted for rotation on some of said arms, knife blades adjustably mounted in the remaining arms, and set screws for retaining said knife blades in their adjusted positions.

2. A tool for forming flanged openings in metallic receptacles, comprising a body having an opening formed therein, a drill shank formed with a tapered bore communicating with a slot arranged therein and said drill shank being secured in said opening of the body, a drill bit detachably secured in said bore, arms radiating from said body, rollers and knife blades carried by said arms adjacent their outer ends thereof, and said rollers being mounted for rotation and provided with straight portions merging into bevel portions.

3. A tool of the character described comprising a body, arms radiating from said body, pins secured to some of said arms and extending at right angles therefrom, rollers mounted for rotation on said pins, the remaining arms being provided with slots, knife blades including shanks mounted for adjustment in said slots, means for retaining said knife blades in their adjusted positions, and a drill bit associated with said body and being detachably secured with respect thereto.

4. A tool of the character described comprising a body having an opening formed therein, a drill shank fixedly secured in said opening and being provided with a tapered bore, a drill bit detachably secured in said bore, arms arranged in pairs and radiating from said body, pins secured adjacent the ends of said arms, rollers mounted for rotation on said pins and being provided with a straight portion merging into a bevel portion, tapered heads formed on said pins, washers between said arms and rollers, oppositely disposed arms formed with said body between the pairs of arms first mentioned and being provided with a slot adjacent their ends, a knife blade mounted for adjustable movement in each slot, set screws for retaining said knife blades in their adjusted positions, and said knife blades being adapted to cut an opening in the head of a metallic receptacle in a manner to dispose the edge of the opening in the path of the rollers which are adapted to form an inwardly extending flange about said opening.

DAVID SAVADOW.