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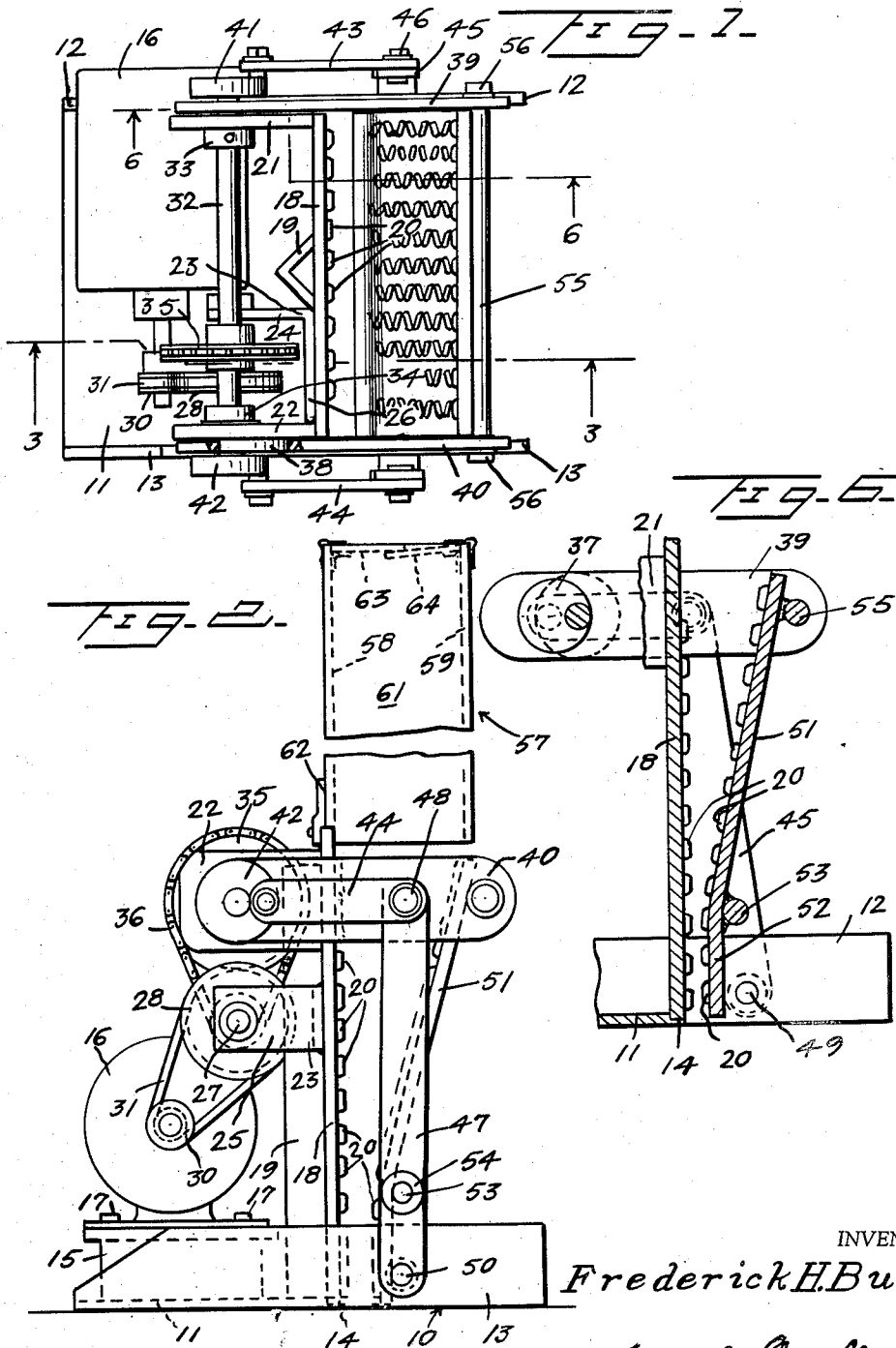
F. H. BUNKE

2,920,554

CAN CRUSHER

Filed Feb. 20, 1958

2 Sheets-Sheet 1



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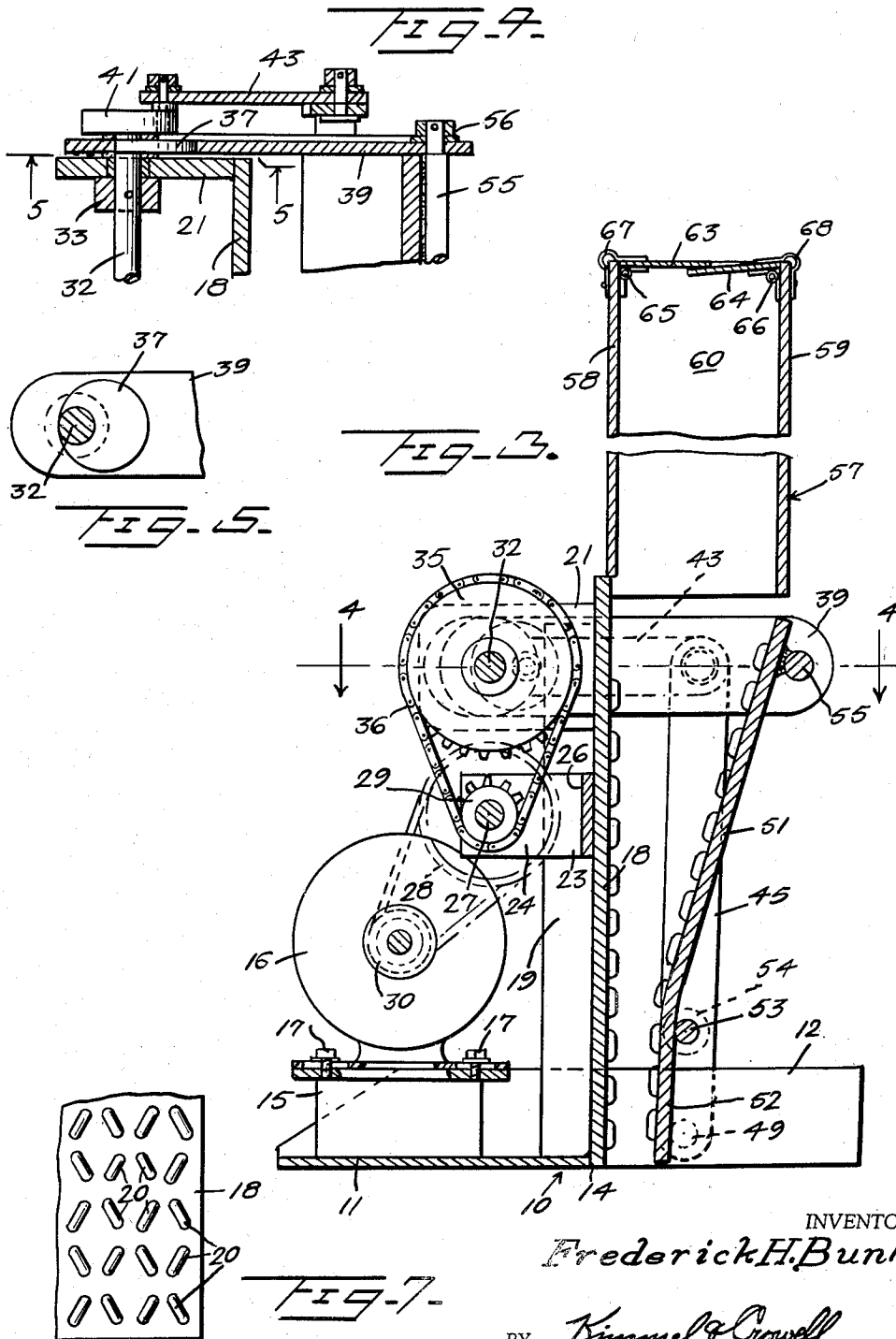
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## CAN CRUSHER

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3 Claims. (Cl. 100—179)

The present invention relates to can crushers and particularly to hopper fed power operated can crushers of the type for progressively crushing cans introduced therein.

The primary object of the invention is to provide a power driven can crusher having means for progressively crushing a can and simultaneously feeding the can toward a discharge outlet.

Another object of the invention is to provide a can crusher of the type described above having a hopper detachably associated therewith for feeding cans by gravity automatically into the crushing position between the crushing jaws.

A further object of the invention is to provide a can crushing apparatus of the type described above in which one of the crushing jaws is stationary and the other crushing jaw is carried on a pair of vertically spaced moveable supports.

Other objects and advantages will become apparent in the following specification when considered in the light of the attached drawings in which:

Figure 1 is a top plan view of the invention with the hopper removed;

Figure 2 is a fragmentary side elevation of the invention shown partly broken away for convenience of illustration;

Figure 3 is an enlarged fragmentary vertical cross-section taken along the line 3—3 of Figure 1, looking in the direction of the arrows, with the feed hopper in position;

Figure 4 is an enlarged fragmentary horizontal cross-section taken along the line 4—4 of Figure 3, looking in the direction of the arrows;

Figure 5 is an enlarged fragmentary vertical cross-section taken along the line 5—5 of Figure 4, looking in the direction of the arrows;

Figure 6 is an enlarged fragmentary vertical cross-section taken along the line 6—6 of Figure 1, looking in the direction of the arrows; and

Figure 7 is a fragmentary front elevation of one of the crushing jaws.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, the reference numeral 10 indicates generally a can crushing apparatus constructed in accordance with the invention.

The can crushing apparatus 10 includes a generally rectangular base plate 11 having a pair of upstanding side rails 12, 13 integrally secured to opposite sides thereof. The base plate 11 terminates at 14 intermediate the opposite ends of the side rails 12, 13. A motor base 15 is secured to the base plate 11 adjacent one end thereof and has an electric motor 16 adjustably secured thereto by means of bolts 17.

An upstanding flat jaw plate 18 extends between the side rails 12, 13 and is secured thereto. The jaw plate 18 has its lower edge secured at 14 to the base plate 11. An angle iron brace 19 is positioned intermediate the

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opposite side edges of the jaw plate 18 and extends vertically along the jaw plate 18 on the side thereof adjacent the motor 16. The jaw plate 18 on the side thereof opposite the angle iron brace 19 is provided with a plurality of jaw teeth 20, as can be best seen in Figures 2, 6 and 7.

A pair of spaced parallel horizontal bars 21, 22 are fixedly secured to the opposite side edges of the upper end of the jaw plate 18 in overlying relation with respect to the base plate 11.

A generally U-shaped bracket 23 is arranged in horizontal relation and secured to the jaw plate 18 at the side thereof overlying the side rail 13, as best seen in Figures 1, 2 and 3. The U-shaped bracket 23 has a pair of spaced parallel horizontally extending arms 24, 25 respectively and a bite portion 26 extending therebetween.

A jack shaft 27 is journaled in the arms 24, 25 and has a belt pulley 28 and sprocket 29 fixed thereto for rotation therewith. A belt pulley 30 is mounted on the motor 16 and a V-belt 31 is trained over the pulleys 28 and 30 so that the shaft 27 is driven on rotation of the motor 16.

A drive shaft 32 is journaled in the bar 21, 22 and is secured therein by means of collars 33, 34 engaging respectively the adjacent faces of the bars 21, 22. A relatively large sprocket 35 is mounted on the shaft 32 and a sprocket drive chain 36 is trained over the sprocket 35 and the sprocket 29 so that the shaft 32 is driven on rotation of the shaft 27.

An eccentric 37 is fixed to the shaft 32 adjacent the bar 21 and spaced outwardly therefrom and a second eccentric 38 is fixed to the shaft 32 adjacent the bar 22 and spaced outwardly therefrom. A pair of spaced parallel links 39, 40 extend horizontally and have one end thereof mounted respectively on the eccentrics 37, 38 as can be best seen in Figures 1 and 6.

A crank 41 is secured to the shaft 32 adjacent the eccentric 37 and a second crank 42 is secured to the opposite ends thereof. A horizontal link 43 is pivotally connected at one end to the crank 41 and a second horizontal link 44 is pivotally connected at one end to the crank 42. A lever 45 has its upper end pivotally connected at 46 to the end of the horizontal link 43 opposite the crank 41. A lever 47 has its upper end pivotally connected at 48 to the end of the horizontal link 44 opposite the crank 42. The lower end of the lever 45 is pivotally connected at 49 to the rail 12 and the lower end of the lever 47 is pivotally connected at 50 to the rail 13.

A moveable jaw 51 of generally rectangular form has an angularly offset lower extension 52 and is secured to a transverse shaft 53 adjacent the offset extension 52. The shaft 53 has its opposite ends journaled respectively in the levers 45, 47 and is locked thereto by collars 54. A shaft 55 is fixed to the upper end of the moveable jaw 51 in parallel relation to the shaft 53. The opposite ends of the shaft 55 are journaled in the ends of the links 39, 40 opposite the eccentric 37, 38 respectively. Collars 56 secure the shaft 55 to the links 39, 40. The moveable jaw 51 has a plurality of jaw teeth 20 formed on the face thereof adjacent the jaw 18.

A generally rectangular hopper 57 is provided with a pair of spaced apart parallel side walls 58, 59 integrally joined by opposite end walls 60, 61. A clip 62 secured to the side wall 58 mounts the hopper 57 to the upper end of the jaw plate 18, as shown in Figure 2. A pair of overlapping cover panels 63, 64 are hingedly secured at 65, 66 respectively to the upper ends of the side walls 58, 59. Resilient springs 67, 68 are connected to the cover panel 63, 64 to normally bias the cover panel 63, 64 into closed position, as illustrated in Figures 2 and 3.

In the use and operation of the invention tin cans are forced into the hopper 57 through the cover panel 63, 64

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and are gravity-fed downwardly between the stationary jaw plate 18 and the moveable jaw 51. The motor 16 is operated and through the jack shaft 27 drives the shaft 32, eccentrics 37, 38 and cranks 41, 42. The cranks 41, 42 through horizontal links 43, 44 oscillate the levers 45, 47 on their journals 49, 50 and through the shaft 53 journalled therein oscillates the lower end of the moveable jaw 51 toward the jaw plate 18. The eccentrics 37, 38 move the links 39, 40 horizontally and oscillate the upper end of the moveable jaw 51 by means of the shaft 55 toward the jaw plate 18.

The oscillating movement of the moveable jaw 51 provides a combined compressing, chewing action on the cans fed therebetween so that on each stroke of the moveable jaw 51 the can is progressively crushed until it finally moves from between the jaws 18, 51 in flattened condition.

Having thus described the preferred embodiment of the invention, it should be understood that numerous structural modifications and adaptations may be resorted to without departing from the scope of the appended claims.

What is claimed is:

1. A can crusher comprising a generally horizontal base plate, a pair of upstanding elongated side rails secured to opposite sides of said base plate, an upright generally flat stationary jaw having its lower end engaging said base plate between said side rails and rigidly secured to said base plate and said side rails intermediate the opposite ends of said base plate, a motor secured to said base plate, a pair of spaced apart parallel bars rigidly secured to the upper end portions of said jaw and extending longitudinally therefrom in a plane overlying said motor, a horizontal shaft journalled in said bars parallel to said jaw, an eccentric secured to said shaft adjacent the opposite ends thereof, a crank secured to each end of said shaft, drive means connecting said shaft to said motor, a pair of upstanding levers having their lower ends pivotally secured to said side rails adjacent to but

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spaced from the lower end of said jaw, a horizontal link pivotally connected at one end to each of the upper ends of said levers, said links having their opposite ends journalled on said cranks, a second pair of horizontal links having one end journalled on said eccentrics, an upright generally flat jaw positioned between said levers, means pivotally securing said second named jaw to said levers at a point thereon adjacent to but spaced above the pivotal connection of said levers with said side rails, and means pivotally connecting the upper end of said second named jaw to said second pair of links whereby on rotation of said shaft the lower end portion of said second named jaw is moved slightly towards said stationary jaw while the upper end portion of said second named jaw is moved a considerably greater distance toward said stationary jaw.

2. A device as claimed in claim 1 wherein a generally rectangular hopper is fixedly secured to said stationary jaw in overlying relation with respect to the space between said jaws.

3. A device as claimed in claim 1 wherein said second named jaw is provided with an offset lower end portion and the means mounting said second named jaw adjacent the lower end thereof is fixed to said second named jaw adjacent the upper end of said offset lower end portion.

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