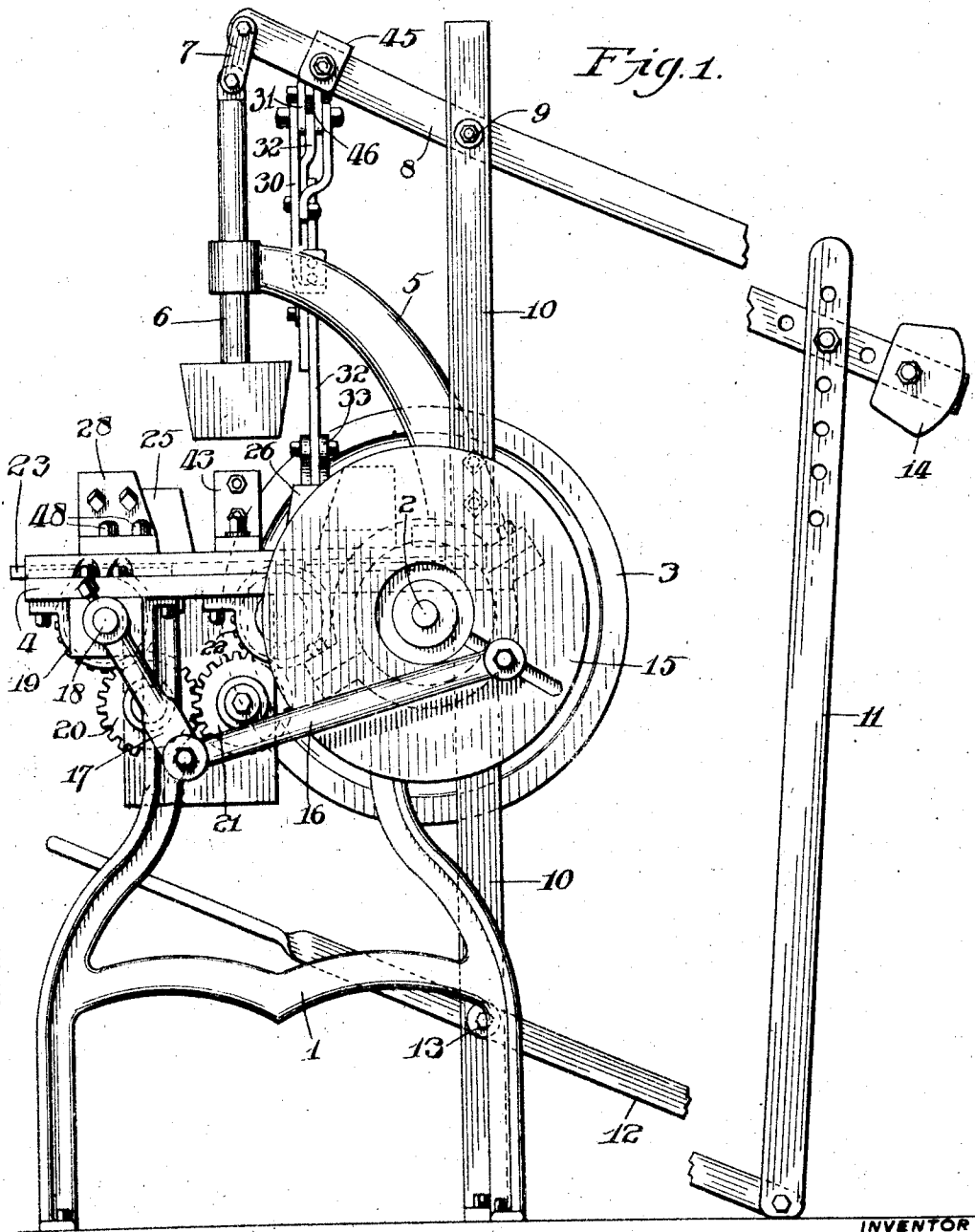


E. J. WITTEBOLLE.
MACHINE FOR FOLDING THE CORNERS OF METAL PANS.
APPLICATION FILED DEC. 16, 1911.

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Patented Mar. 19, 1912.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.



WITNESSES

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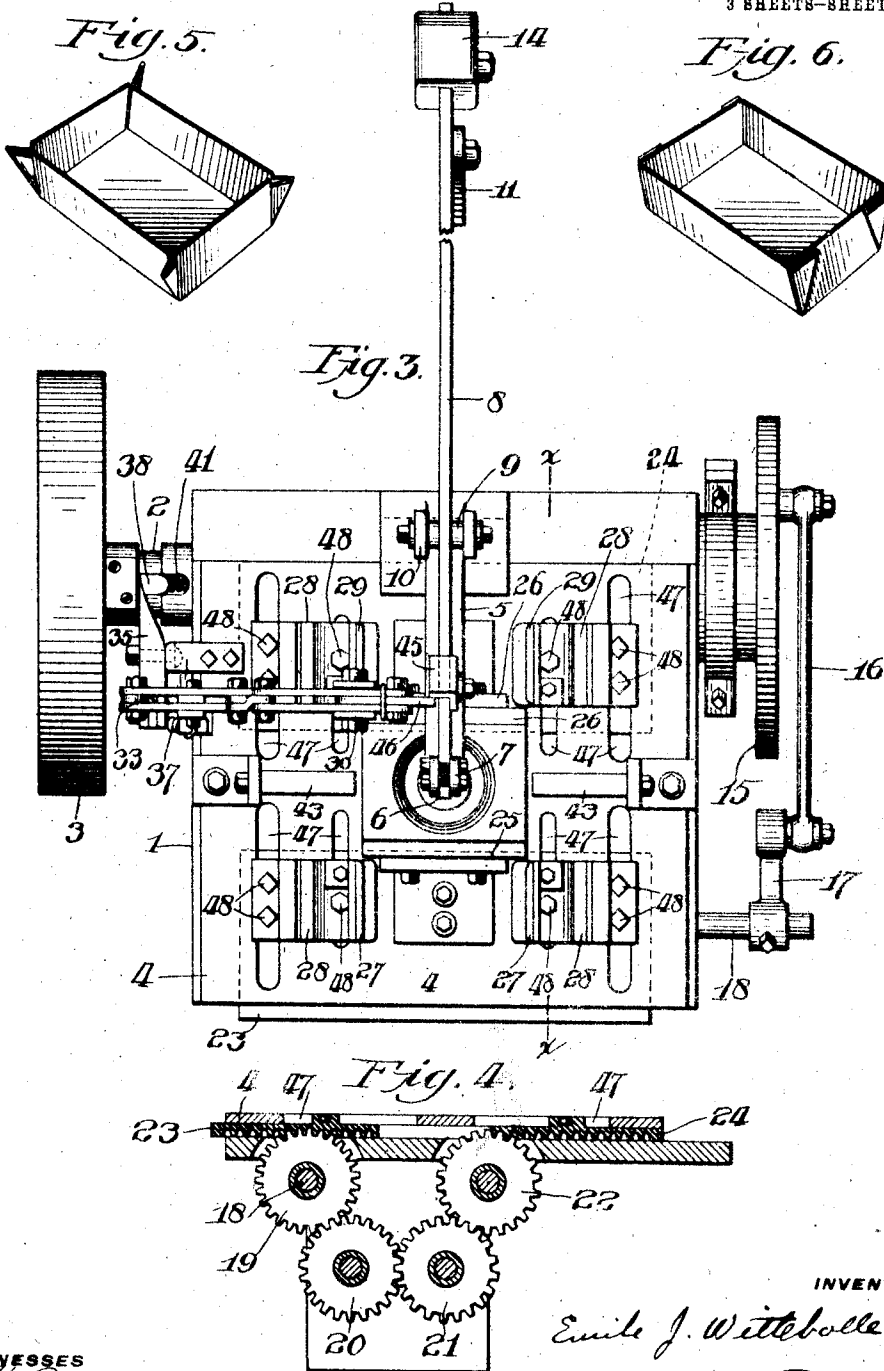
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UNITED STATES PATENT OFFICE.

EMILE J. WITTEBOLLE, OF CAMDEN, NEW JERSEY, ASSIGNOR TO C. B. PORTER & CO.,
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MACHINE FOR FOLDING THE CORNERS OF METAL PANS.

1,020,939.

Specification of Letters Patent.

Patented Mar. 19, 1912.

Application filed December 18, 1911. Serial No. 666,243.

To all whom it may concern:

Be it known that I, EMILE J. WITTEBOLLE, a citizen of the United States, and a resident of the city and county of Camden, State of New Jersey, have invented certain new and useful Improvements in Machines for Folding the Corners of Metal Pans, of which the following is a specification.

My invention relates to improvements in machines for the manufacture of sheet metal pans, and the object of my invention is to furnish a machine for folding the corners of solid corner sheet metal pans after they have been shaped by dies from a flat sheet of metal in the usual well known manner.

In the accompanying drawings forming part of this specification, and in which similar letters of reference indicate similar parts throughout the several views; Figure 1, is an end elevation of my machine for folding the corners of solid corner sheet metal pans; Fig. 2, a front elevation of Fig. 1; Fig. 3, a plan of Fig. 1; Fig. 4, a section of Fig. 3 on line X—X; Fig. 5, a perspective view of the pan before the corners are folded; Fig. 6, a perspective view of the pan after the corners are folded. Fig. 7, a longitudinal central section through the clutch mechanism connecting the driving wheel and the main shaft of the machine; Fig. 8, a section of Fig. 7, on line Y—Y; Fig. 9, a detail showing the arrangement of the means for tripping the pulley or fly wheel clutch; Fig. 10, a side elevation of a bell-crank for the operating clutch.

1 is the frame of the machine, 2 the main shaft, 3 the driving wheel on the main shaft, 4 the table of the machine which carries a bracket 5 through which passes a plunger 6 the lower end of which corresponds in shape with the interior of the pan the corners of which are to be folded. The upper end of the plunger 6 is connected by a link 7 with an arm 8 which is pivoted at 9 to a support 10.

11 is a link connecting the inner end of arm 8 with the inner end of a treadle 12 which is pivoted to the support 10 at 13.

14 is a counterweight upon the inner end of arm 8 the purpose of which is to lift the plunger 6 when the foot of the operator releases the treadle 12.

Upon the end of the main shaft 2 oppo-

site to that carrying the driving pulley or fly wheel 3 is a wheel or crank 15 to which is adjustably connected one end of a connecting rod 16 the other end of which is connected to a rack arm 17 which is fast to a shaft 18 which carries a gear wheel 19. The gear 19 gears into a gear 20 and this gear 20 gears with a gear 21 which in turn gears with a gear 22. The gear 19 gears with a rack 23 and the gear 22 with a rack 24 shown best in Fig. 4. As the shaft 2 is revolved the connecting rod 16 will cause the arm 17 to rock and this will rock the shaft 18 and the gear 19 which will cause the rack 23 to reciprocate. The rack 24 will be simultaneously reciprocated through the pinion 22 and the gears 21—20 which connect it with the gear 19.

There are upon the shaft 18 two gears 19 each forming part of a similar train of gears one upon one side the other upon the other side of the machine for operating the folding means. Both of these mechanisms are precisely alike and therefore but one of them is particularly described. They both operate the racks 23—24 simultaneously toward and away from one another.

The pan with the unfolded corners, as shown in Fig. 5, is placed upon the table 4 directly under the plunger 6 the sides of the pan engaging the stationary stops 25—26 which are bolted to the table 4 and the faces of which are so shaped as to closely engage the sides, the central parts of the ends of the pan engaging the narrow stationary stops 43 also bolted to the table. The pan having been placed between the stops 25—26, 43 the plunger 6 is lowered and completely fills its interior. The blades 27—29 for folding the corners of the pan are carried upon movable carriers 28 which are bolted to the racks 23—24 and as these racks are moved toward one another, by the gearing before described, the blades 27—29, sweep past the ends of the pan and engage and fold the projecting corners closely against the ends as shown in Fig. 6. The four corners of the pan are by this machine folded simultaneously and the folding blades are operatively actuated upon each complete revolution of the main shaft 2.

The racks 23 24 are carried beneath the table 4 which is furnished with slots 47 to per-

mit the bolts 48 which fasten the carriers 28 to the racks to travel with the latter.

By changing the stops 25—26—43 and the plunger 6 and by adjusting the blades 27—29 pans of different dimensions may be operated upon.

The machine having folded the corners of a pan and the folding blades 27—29 having been returned to their first position, that is having been moved back from the pan their full stroke, the machine should automatically come to a stop to permit the removal of the pan that has been operated upon and the insertion of the next one and should only start again when coupled to the driving means by the action of the operator.

For this purpose the driving means are connected to the machine by a clutch which is automatically thrown out of gear upon the completion of each operative action and in gear only by the operator. Any suitable means may be employed for this purpose.

I have shown in the drawings the driving pulley 3 loose on the shaft 2 and a clutch for connecting and disconnecting this pulley to and from the shaft and mechanism for operating this clutch as follows: To an arm 30 carried by the bracket 5 is pivoted a lever 31 to the outer end of which is pivoted a link 32 preferably adjustable lengthwise.

The lower end of link 32 is pivoted to one end of a lever 33, pivoted to a fixed support at 34, the other end of which is pivoted to one end of a bell-crank lever 35 pivoted at 36 to a fixed support. A spring 37 normally keeps the outer end of bell crank 35, which is knife shaped as shown in Fig. 7, depressed so that it may engage the outer end of a slide 38 which is carried by a sleeve 39 fast to shaft 2. The slide 38 carries a pin 40, which, together with the slide, is forced outward by a spring 41 as shown in Fig. 7.

In the side of the pulley 3 facing the sleeve 39 is a bushing 42 of hard metal which is furnished with an annular groove 43 which carries several pins 44, Figs. 7 and 8. When the slide 38 is in the position shown in Fig. 7 the pin 40 which it carries will enter groove 43 and as the pulley 3 turns one of these pins 44 will engage pin 40 and will revolve shaft 2. The shaft 2 will turn until the slide 38 is brought into contact with the knife edge on the bell-crank 35 when this knife edge, being forced downward by the spring 37, will enter between the forward end of the slide 38 and the sleeve 39 forcing the slide backward, withdrawing pin 40 from groove 43 which brings the machine to a stop. The machine will remain at rest until the operator pushes down treadle 12 depressing outer end of arm 8 which is furnished with a finger 45, best shown in Fig. 9, which engages a trigger 46 on lever

31 depressing the inner and elevating the outer end of this lever, lifting the arm 32, elevating the inner and depressing the outer end of lever 33 and lifting the inner knife shaped end of bell crank 35 from the sleeve 39 and slide 38 permitting the spring 41 to force the slide 38 and pin 40 outward until the latter engages one of the pins 44 carried by the pulley 3 when the machine commences to move. Owing to the pivotal arrangement of the trigger 46 on the lever 31 this lever is only operated by a downward movement of the arm 8, on the upward stroke of the arm the trigger gives and permits the passage of the arm without any operative action.

Having thus described my invention I claim as new and desire to secure by Letters Patent:—

1. In a machine for folding the corners of metal pans, in combination, a table, stops carried by said table for engaging the outer sides of the pan, a movable plunger for engaging the inner part of the pan, blades for engaging and folding the corners of the pan, carriers carried by said table for carrying said blades, racks secured to said carriers, a train of gearing for reciprocating opposite blades toward and away from one another, and means for reciprocally actuating said gears.

2. In a machine for folding the corners of metal pans, in combination, a table, stops carried by said table for engaging the outer sides of the pan, a movable plunger for engaging the interior of the pan, two pairs of oppositely arranged blades for engaging and folding the corners of the pan, carriers carried by said table for carrying said blades, racks secured to the carriers carrying the oppositely arranged blades, gears for reciprocating said racks toward and away from one another, and means for rocking said gears.

3. In a machine of the character described, in combination, a main driving shaft, a loose pulley for driving said shaft, a clutch for connecting said shaft and pulley, oppositely arranged folding blades, means for carrying said blades, means actuated by the rotation of said main shaft for reciprocating said folding blades, a plunger, means actuated by the operator for lowering said plunger, means connected with said plunger operating means for operatively connecting said clutch, and means for automatically disconnecting said clutch when said shaft has performed a complete revolution.

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Witnesses:—

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