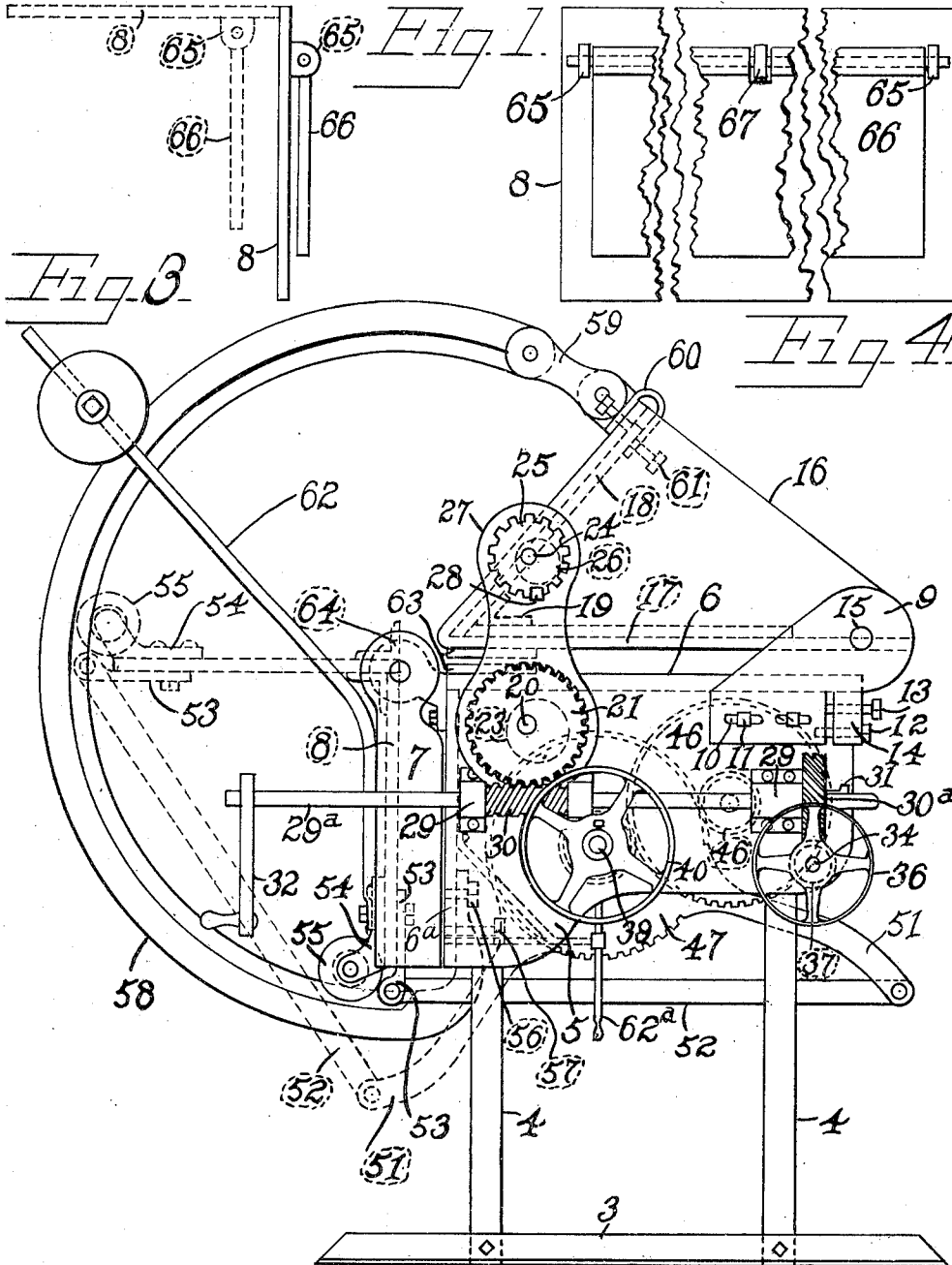


H. C. DREISVOGT.
CORNICE BRAKE MACHINE.
APPLICATION FILED SEPT. 30, 1910.

Patented July 8, 1913.

1,067,167.

2 SHEETS—SHEET 1.



Witnesses
Thomas J. Morgan Jr.
Thomas S. Morgan

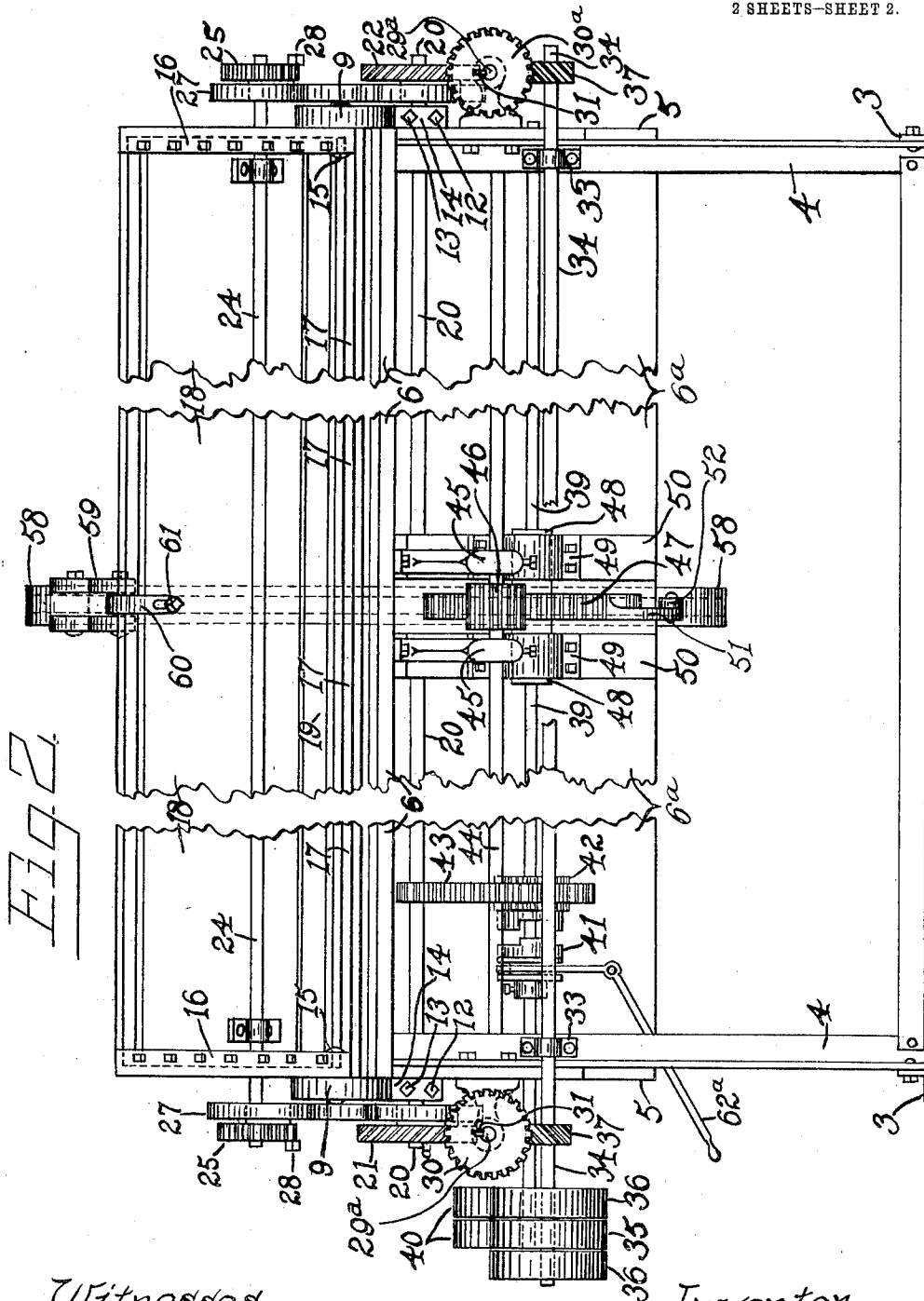
Inventor
Herman C. Dreisvagt
By Morgan & Rubinstein.
Att'ys.

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 Herman C. Dreisvagt
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 Attys.

UNITED STATES PATENT OFFICE.

HERMAN C. DREISVOGT, OF SANTA CLARA COUNTY, CALIFORNIA.

CORNICE-BRAKE MACHINE.

1,067,167.

Specification of Letters Patent.

Patented July 8, 1913.

Application filed September 30, 1910. Serial No. 584,701.

To all whom it may concern:

Be it known that I, HERMAN C. DREISVOGT, a citizen of the United States, residing in Santa Clara county and State of California, have invented a new and useful Improvement in Cornice-Brake Machines, of which the following is a specification.

My invention relates to that class of machines which are used for bending sheet metal.

The object of my invention is to provide a combined hand and power brake, whereby a far greater range of metal in regard to length and thickness can be more cheaply bent than is possible with the brake machines heretofore constructed.

The manner in which I accomplish my object is set forth in detail in the following specification and illustrated in the accompanying drawings in which—

Figure 1 is a vertical end elevation. Fig. 2 is a rear elevation. Figs. 3 and 4 are details of the apron.

In the drawings 3 indicates the feet of the frame and 4 the legs. Fixed to the legs at each end is an end plate 5. Fixed on these end plates is a horizontal table plate 6.

Fixed to the front vertical parts of the end plates 5 is a plate 6^a forming with the parts 3, 4, 5 and 6 the main frame of the machine. Fixed on the top portion of this plate 6^a, are hinge brackets indicated by the dotted circle and bolt head in Fig. 1; pivoted in these brackets are hinge pieces 7. Fixed to these hinge pieces is an apron 8 indicated by the dotted lines in Fig. 1. Adjustably secured to the rear part of each of the end plates 5 is a hinge bracket 9. These brackets have elongated apertures 10 which permit a horizontal adjustment on the bolts 11. The adjustment of these parts is determined and fixed by the screws 12 and 13 which extend through lugs 14 forming part of the end plates 5. The screws 12 enter threaded holes in the brackets 9 and are thereby adapted to draw the hinge brackets toward the lugs 14, while the screws 13 have a threaded connection through the lugs and their ends butt against the brackets and press them in the opposite direction to the draw of the screws 12 thereby locking those parts in the desired position. Pivoted to the brackets 9 by the pivot pins 15 are top end plates 16. Secured in these end plates is a top plate 17 and a front plate 18. The angle joint of these two plates are joined

by an angle bar 19. Extending through the ends 5 beneath the table 6 is a shaft 20. On this shaft gears 21 and 22 are secured. These gears have eccentric journals on the inner sides indicated by the dotted circle 23 shown in Fig. 1. Extending through the end plates 16 and rotatable in suitable bearings thereon is a shaft 24 parallel with the shaft 20. Fixed on each end of this shaft 24 is a ratchet wheel 25 in vertical line with the gears 21. On the inside of these ratchet wheels and forming a part thereof are projecting journals indicated by the dotted circle 26, Fig. 1. Supported on the eccentric journals 23 and 26 at each end of the machine are two connecting links 27. These links are moved vertically by the rotary motion of the shaft 20, gears 21, and eccentric journals 23, whereby the parts 16, 17 and 18 forming the pivoted head of the machine are moved vertically, and the jaws hereafter described are opened and closed. The rotary movement of the ratchets 25 and eccentric journals 26 in the links 27, adjusts the vertical relation of the head and body of the machine, and determines the width of the space between the jaws. Insertible in each link 27 is a pin 28, the head of which is adapted to fit between the teeth of the ratchet wheel 25, these pins are removable to permit the adjustment of the links 27 before described, and their insertion locks the ratchet wheels in the position desired. Supported on each of the end plates 5 in the bearings 29 is a transverse horizontal shaft 29^a. Fixed on each of these shafts is a worm gear 30 adapted to mesh with the gears 21 and 22. On one end of each of these shafts 29^a is a gear 30^a. These gears are attached to the shafts 29^a by a removable key 31. On the opposite end of the shafts are handles 32. Supported in the bearings 33 is a shaft 34 on which there is a fixed pulley 35 and two loose pulleys 36. Fixed on this shaft in mesh with the gears 30 are gears 37. Extending through the end plates and supported therein and by the cylindrical bearings 48 hereinafter described is a shaft 39. On this shaft are tight and loose pulleys 40, a clutch 41 and a gear 42. This gear is in mesh with a gear 43 fixed on the shaft 44. This shaft 44 is supported in the end plates 5 and in the brackets 45 secured to the underside of the table plate 6. In the center of this shaft is a gear 46 which meshes with a gear 47 journaled on the cy-

lindrical bearing 48 which is firmly clamped in the boxes 49 of the bearing brackets 50. Forming part of the gear 47 is a radial arm 51. Pivoted to the end of this arm is a connecting rod 52. This rod is pivotally connected with the hinged apron 8 by the hinge piece 53. On the opposite side of this plate a wheel bracket 54 is secured in which a grooved wheel 55 is free to rotate. Adjustably secured at one end to the inside of the vertical front plate 6^a by the screws 56 and 57 is a circular track 58. This track is pivotally connected at the other end to a link 59. This link is pivoted to a link piece 60 which is secured to the front top plate 18 by the screw 61. Secured to each of the hinge pieces 7 is a hand lever 62 by which the member 8 can be operated when disconnected from the connecting rod 52. Another lever 62^a pivotally supported by plate 6^a is adapted to operate the clutch member 41 as shown in Fig. 2.

Secured to the plates 6 and 17 are clamping jaws 63, and to the hinged apron 8, an angle bar 64 is secured. Pivotally secured to the lugs 65 on the inside of the apron 8 is a swinging plate 66 shown in end elevation in Fig. 3 and in longitudinal elevation in Fig. 4. In Figs. 3 and 4 the solid lines show the apron and swinging plate in a pendant position and parallel with each other. In this position the operative parts of the machine are at rest. In Fig. 3 the dotted lines indicate the apron in a horizontal and the swinging plate in a vertical position. The rotatable engagement of the wheel 55 with the track 58 is adapted to prevent any radial movement of the apron 8 under the pressure resulting from bending heavy metal, and the swinging plate 66 is adapted to prevent any sagging in the center of the plate 8 under the same pressure.

When my device is connected together as described and provided with power through belt transmission to the driving pulleys 36 and 40 its operation is as follows: The several parts being in the positions shown by the solid lines and the jaws 63 open for insertion of the plates of metal to be bent, the shafts 29^a are rotated either by the handles 32 or by shifting one of the driving belts onto the pulleys 35. The rotation of these shafts by either of these means rotates the gears 21 and 22. The eccentric bearings thereon operating upon the links 27 draw down the upper jaw support pivoted on the pins 15 until the required pressure has been attained upon the metal between the jaws. The power is then shut off and movement of the shaft 20 stopped. The adjustment of the jaws to the thickness of the metal is made by the removal of the pins 28 and rotation of the ratchet wheels 25 on the shaft 24 whereby the eccentric bearing 26 lengthens or shortens the distance between the

centers of the shafts 20 and 24 connected by the links 27. The sheet metal being thus secured between the jaws, the clutch lever 62^a is raised and the clutch 41 thereby engaged with the gear 42 on the shaft 39. The driving belt on the pulleys 40 is then shifted from the loose to the tight pulley whereby the gear 43 and the shaft 44 rotates the gears 46 and 47. The arm 51 of the gear 47 through the connecting rod 52 forces the apron 8 to the height desired. In this movement the radial displacement of the apron 8 and sagging of its center is prevented by the track 58 and plate 66 as already described. When the highest desired point is reached in the upward bending movement, the downward movement of the lever 62 releases the clutch, and allows the parts 7—8—52 and members connected therewith to return by gravity to their normal position of rest. A reverse movement of the shafts 29^a releases the metal by raising the upper jaw supporting part of the machinery. The adjustment and removal of the track can be effected by the adjustment of the screws 56, 57 and 61 and disconnection of the link 59. By the removal of the keys 31, from the gear wheels 30, the machine can be operated by hand, the crank 32 being turned to close the jaws 63 and the lever 62 being used to operate the apron 8.

What I claim as new and desire to secure by Letters Patent is:—

1. In a machine of the kind described, having a supporting body, a movable portion pivotally supported thereon, and an apron hinged to said supporting body, the combination with said supporting body and movable portion, of an arcuate metal track adjustably secured to said body and said portion, and a wheel rotatably secured on said apron adapted to run on the inside of said track when said apron is raised as and for the purposes described.

2. In a machine of the kind described, having a hinged apron, the combination with an arcuate track adjustably secured to the main parts of said machine, of means attached to said apron adapted to constitute a movable bearing between said apron and track, as and for the purposes described.

3. In a machine of the kind described, the combination with an arcuate track secured to the main parts thereof, and an apron hinged to said main parts having a swinging plate, the free end of said apron being movably engaged with the inside of said track, of means adapted to raise said apron, as and for the purposes described.

4. In a machine of the kind described, the combination with the main frame, an arcuate track secured thereto, an apron having a movable bearing engagement with the inside of said track, of means adapted to operate said apron, consisting of a connecting rod

pivotally secured to a hinge piece bolted to said apron, a gear having a radial arm pivotally secured to said connecting rod, and means for operating said gear, rod and
5 apron as described.

5. In a machine of the kind described, the combination consisting of a supporting and movable body, a clamping mechanism by which the relative positions of said body
10 parts are adjusted, means adapted to operate said clamping mechanism, a circular track

adjustably secured to said body parts, an apron hinged to said supporting body, and having a swinging plate, bearing means secured on said apron in movable engagement 15 with the inside of said track, and means supported on said body adapted to operate said apron as and for the purposes described.

HERMAN C. DREISVOGT.

Witnesses:

THOMAS J. MORGAN,
JULIUS RUBINSTEIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
