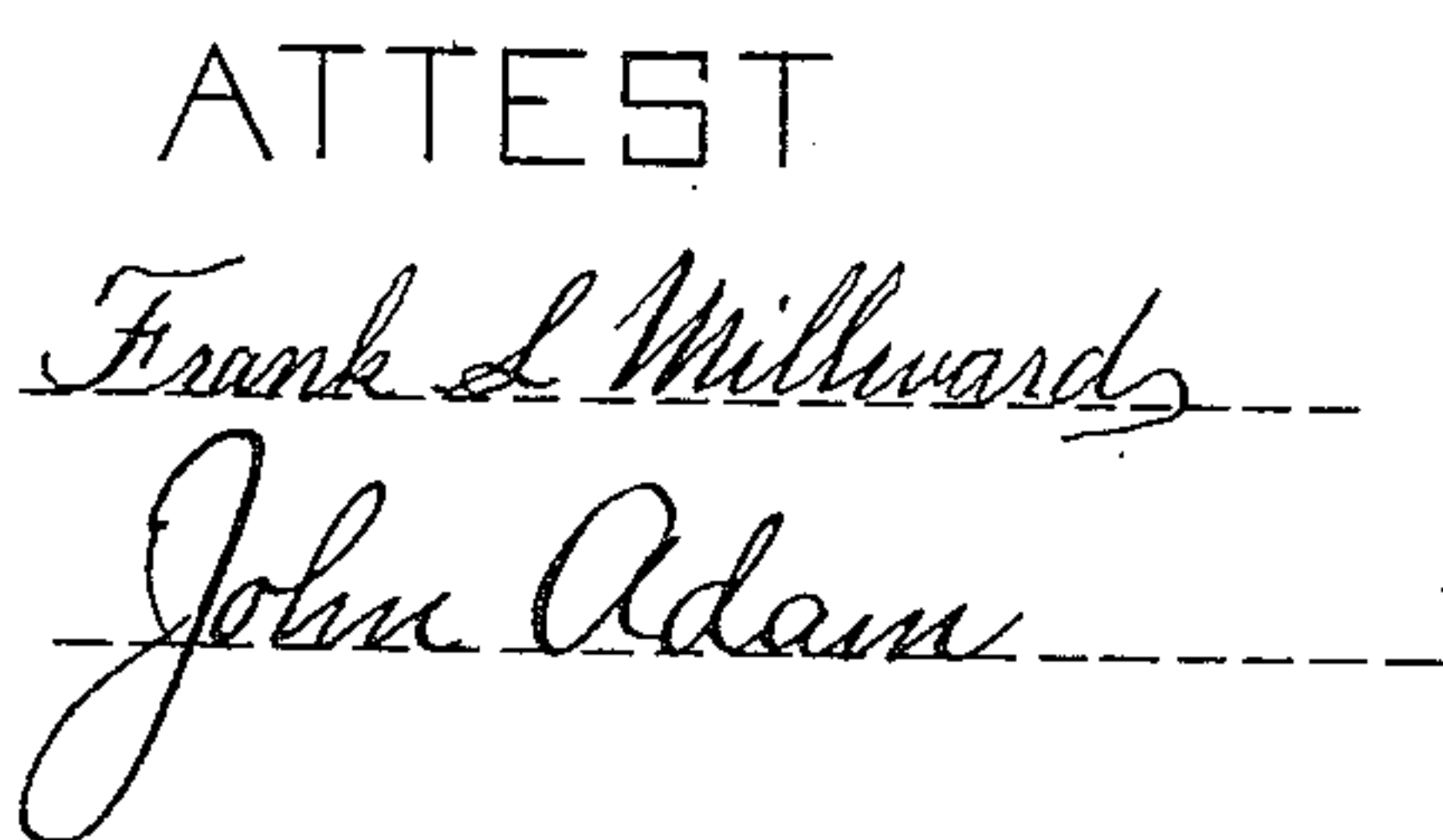


G. C. KEENE.
CORNICE BRAKE.

Patented May 10, 1887.



INVENTOR
George C. Keene,
by John E. Jones,
his attorney.

UNITED STATES PATENT OFFICE.

GEORGE C. KEENE, OF CINCINNATI, OHIO.

CORNICE-BRAKE.

SPECIFICATION forming part of Letters Patent No. 362,749, dated May 10, 1887.

Application filed February 12, 1887. Serial No. 227,323. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. KEENE, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Cornice-Brakes, of which the following is a specification.

My invention relates to certain improvements in machines for bending and shaping sheet metal, or, more particularly speaking, to improvements in the cornice-brake patented by me July 1, 1884, No. 301,128. It has for one of its objects to provide upon the outer end of one of the axial journals of the bending-apron or brake proper a segmental gear, keyed thereto and meshing with a driving-pinion, which is mounted vertically above and provided with radial arms forming operating-handles, whereby the movements of said apron may be facilitated for heavy work. Another of its objects is to provide upon the outer end of the opposite axial journal of the bending-brake a quadrant or semicircular plate, adjustably and detachably secured thereto, and having a curved slot therein concentric to said journal, and adapted to receive the square shank of a bolt, forming an adjustable dog or stop whose head abuts the fastening screw-bolts of the stationary beam, whereby the bending-brake may be operated continuously at a certain angle and its range of movement readily limited and changed when required.

Other features of my invention will be fully set forth in the following description of the accompanying drawings, in which—

Figure 1 is a perspective view of a cornice-brake embodying my improvements; Fig. 2, a front elevation of the bending-apron detached from its journal-bearings, showing the segmental gear and slotted plate mounted, respectively, upon its opposite axial ends; Fig. 3, a rear elevation of one end of the machine, showing the segmental gear, pinion, and handled hub for operating the brake in connection with heavy iron; Fig. 4, an elevation of the outer face of the slotted quadrant-plate and the weighted lever for counterbalancing the bending-apron; Fig. 5, a vertical cross-section on the line *x x*, Fig. 4; Fig. 6, a detail perspective view of the upper corner of the machine, adjacent to which the slotted quadrant-plate is mounted, showing the fastening

screw-bolts, which serve as stops or abutments for the dog on said plate; and Fig. 7, a transverse section of the stationary beam, the sheet-clamping beam, and the bending-apron, taken on line *y y* of Fig. 1.

A A' represent the supporting-legs of the machine; B, the connecting tie-beam, forming part of the sheet clamping apparatus; and C, the bending apron or brake proper, journaled at its opposite ends in boxes C' at the ends of the movable clamping-beam B'.

c c' represent the short axial shafts or journals of the apron—one at either end thereof—the one, *c*, having a segmental gear, D, keyed thereto, and the other, *c'*, having a quadrant or semicircular plate, E, adjustably and detachably secured thereto by means of a screw, *e*.

F represents a pinion mounted upon a stud or short shaft, *f*, which projects laterally from the upright angular lug G, secured upon the frame leg A, as shown in Fig. 1, or made a part thereof, as shown in Fig. 3, either of the latter forms of lug being optional.

Pinion F meshes with the segmental gear D, mounted below it, and is rigidly connected with a hub, H, which is mounted on said stud *f* outside the pinion, and provided with handles or arms I, whereby the bending-apron is operated.

J and J' represent a weight and rod, respectively, on the outer end of journal *c'*, the lower end of which rod is adjustably and detachably secured in the hub *j* of the quadrant E for their customary use—viz., that of counterbalancing the weight of the bending-apron. *e'* is a curved slot in quadrant E, concentric to its supporting-journal.

E' is a bolt with its shank lying within slot *e'*, its head being on the inside and the fastening-nut on the outside of said quadrant. The shank of bolt E' may be made either round or angular; but I prefer the latter form, as it is best adapted to facilitate the setting of the nut in place on the bolt after any adjustment thereof. The head *e''* of bolt E' serves as a detent or dog, which abuts either one of the projecting heads of screws K, or a separate stop on the main frame, (according to the radius of the slot *e'*,) in the operation of the machine, to hold or catch the bending-apron at any definite angle in the operation thereof, and thereby obviate the necessity of making a full

stroke of said apron from a vertical to a horizontal position in making each bend in a continuous number of bends in the iron on one hand, and preventing the apron moving
5 too far or beyond the required angle on the other hand.

The position of the detent or dog E' in the slot e' determines the action of the bending-brake, whether it be for limiting said brake
10 to bend the iron at a certain angle or catching the brake on its downward or retreating movement.

The quadrant is adjustably secured on the shaft c' by screw e, so that it can be readily
15 attached or detached, as occasion may require.

In the operation of my machine the sheet is placed between the stationary or tie beam B and the movable beam B', and tightly clamped
20 in the desired position by means of the foot-treadle mechanism composed of the vertical bars b b, shaft b', and treadle-levers b² b², and released by the handled lifting-rods b³, as fully shown in Fig. 1, and described and claimed in
25 my said former Letters Patent.

I claim—

1. In a cornice-brake, the combination, with the journal c' of the bending-apron, of a quad-

rant or plate, E, suitably mounted thereon, and provided with a curved slot, e', receiving
30 an adjustable stop or bolt, E', which engages the head of either of the screws K or other suitable obstruction on the main frame, whereby the sheet of metal to be bent may be oper-
35 ated upon by said bending-apron continuously at any given angle, or the range of movement of said apron limited and readily altered, substantially as and for the purpose herein set forth.

2. In a cornice-brake, the combination, with
40 the bending-apron C, of a gear-wheel, D, mounted upon its journal c, pinion F, and handled hub H I at one end thereof, and slotted quadrant E e', mounted upon its journal c',
45 and the adjustable detent or stop E' at its opposite end, constructed, arranged, and adapted to operate in connection with the bolt-heads K or other suitable abutment on the main frame of the machine, substantially as herein
50 set forth.

In testimony of which invention I hereunto set my hand.

GEORGE C. KEENE.

Witnesses:

JOHN E. JONES,
JOHN ADAM.