E. McMAHON.

CORNICE MAKING MACHINE.

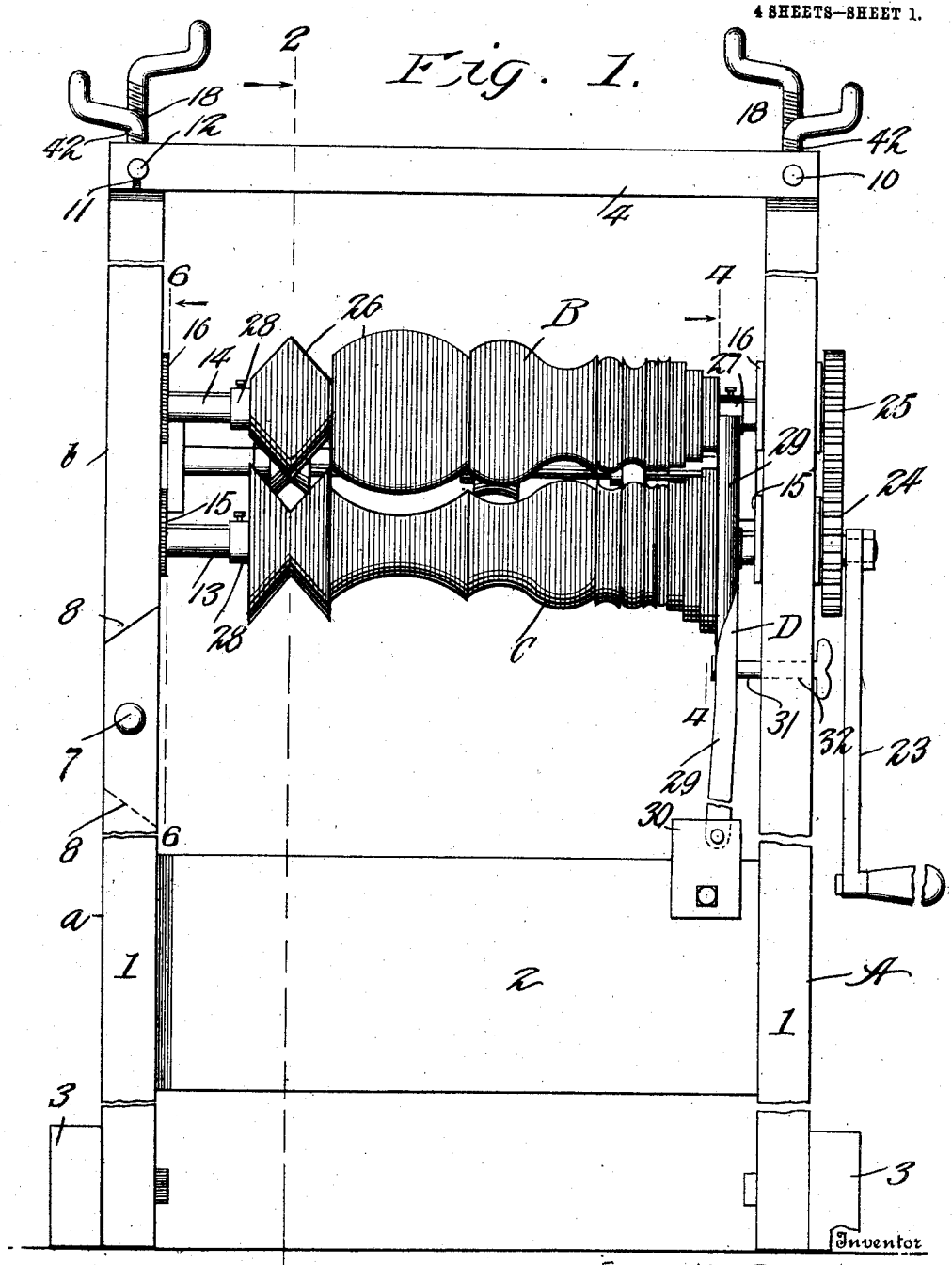
APPLICATION FILED JAN. 14, 1908.

901,364.

Patented Oct. 20, 1908.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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4 SHEETS—SHEET 2.

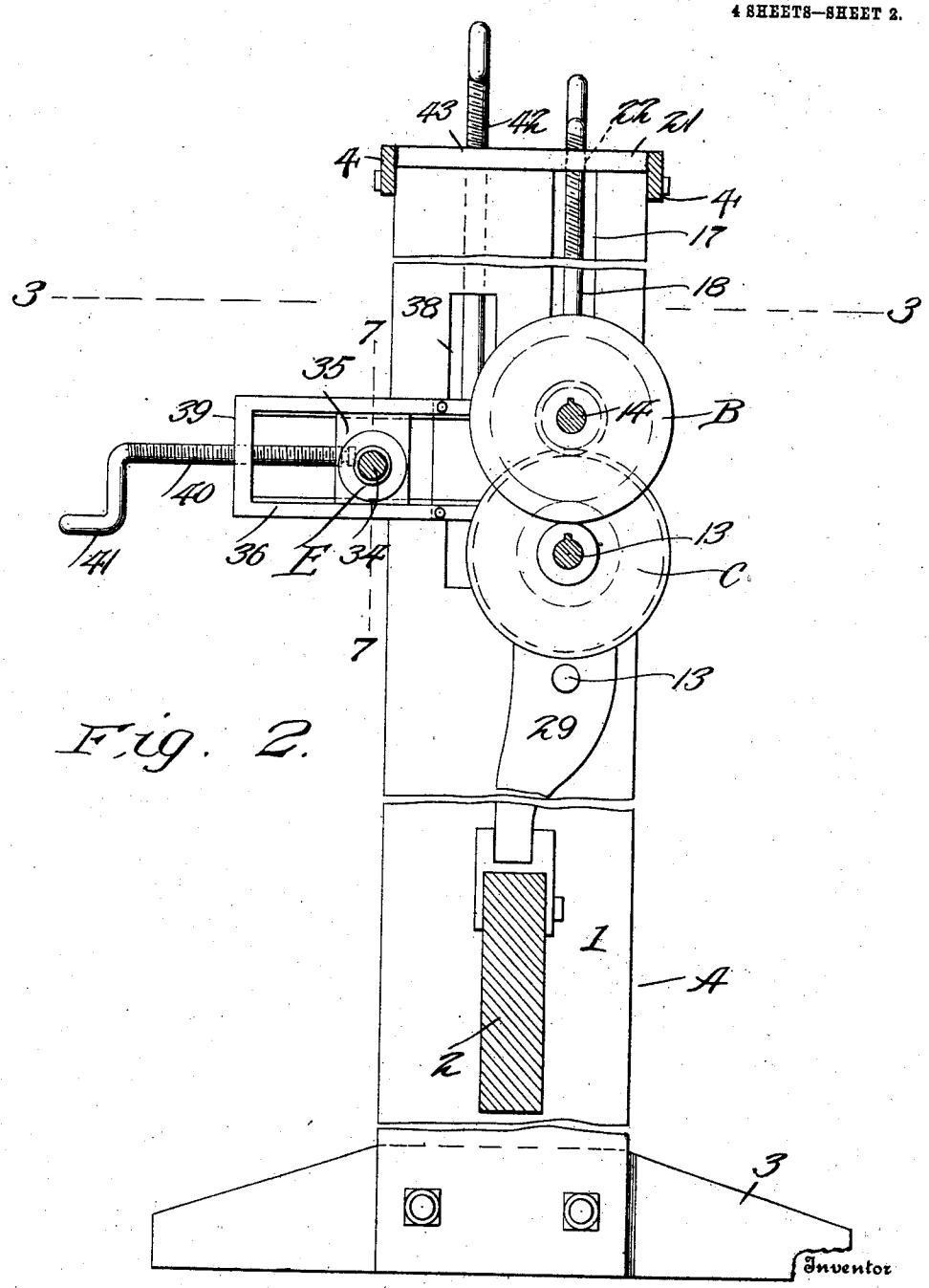


Fig. 2.

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4 SHEETS—SHEET 3.

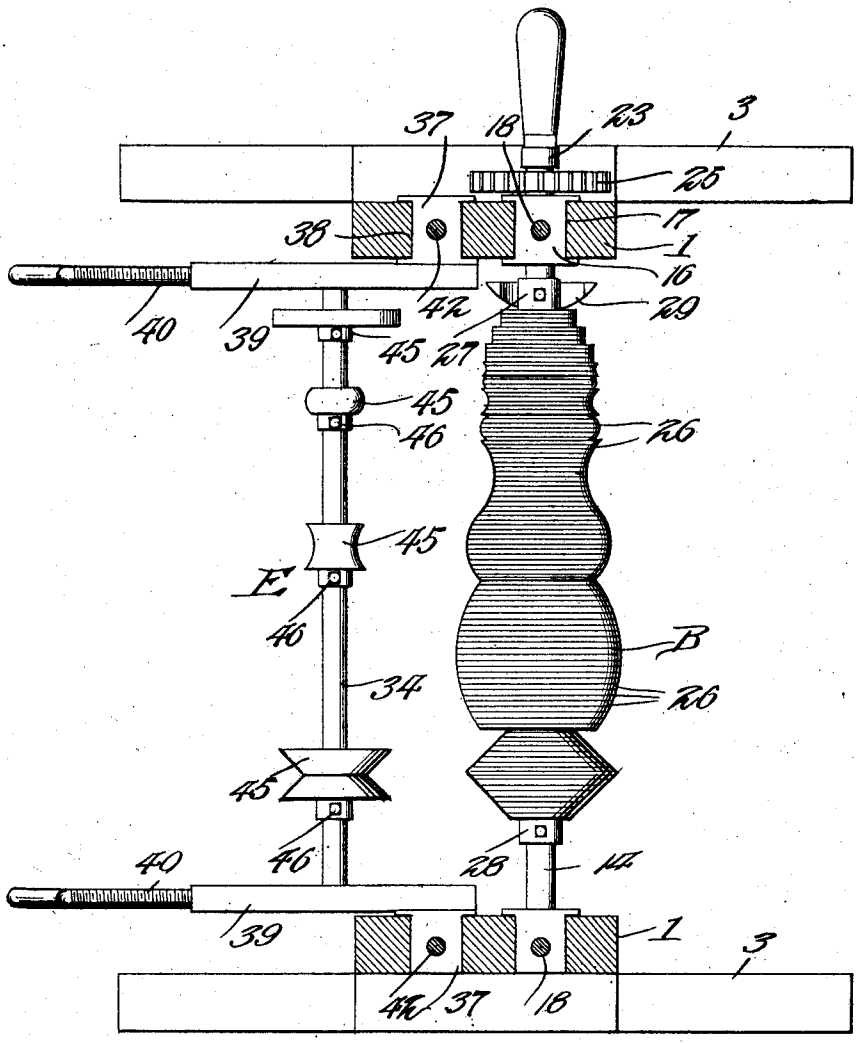


Fig. 3.

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4 SHEETS—SHEET 4.

Fig. 4.

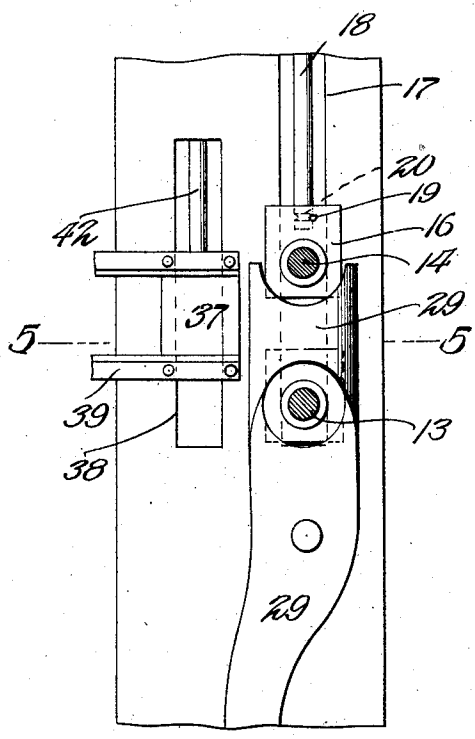


Fig. 6.

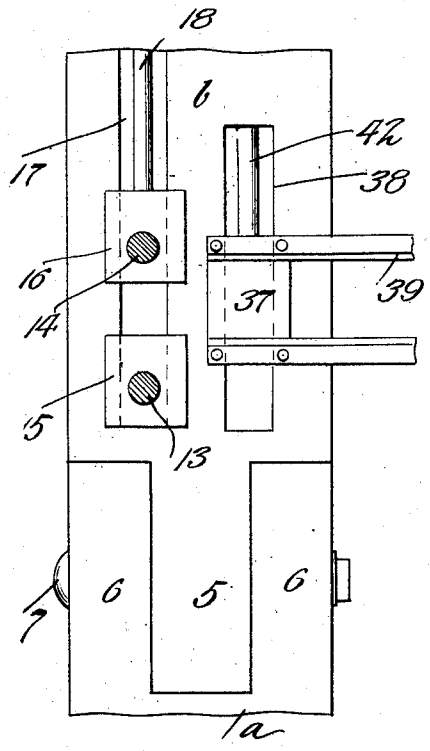


Fig. 7.

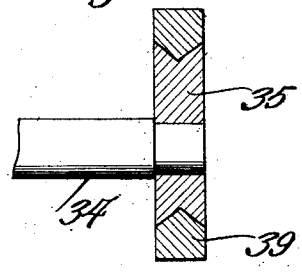
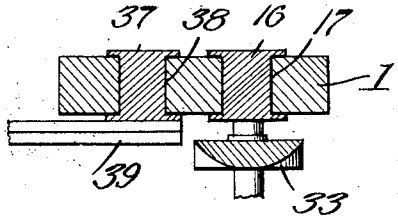


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD McMAHON, OF SPRINGFIELD, ILLINOIS.

CORNICE-MAKING MACHINE.

No. 901,364. Specification of Letters Patent. Patented Oct. 20, 1908.

Application filed January 14, 1908. Serial No. 410,809.

To all whom it may concern:

Be it known that I, EDWARD McMAHON, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented new and useful Improvements in Cornice-Making Machines, of which the following is a specification.

This invention relates to sheet metal working machines, and more particularly to a machine designed for making cornices.

The invention has for one of its objects to improve and simplify the construction and operation of machines of this character so as to be comparatively easy and inexpensive to manufacture, thoroughly reliable and efficient in use, and readily adaptable for making cornices of various designs and shapes.

A further object of the invention is the provision of rolls built up of metal disks having peripheries of different shapes so as to be assembled on spindles of shafts in any desired relation for producing rolls of various contours, the disks being easily removable so that they can be re-arranged for producing a cornice of any required design.

A further object of the invention is to so design and arrange the parts of the machine to facilitate the operation of changing the disks of which the rolls are composed for the purpose of adapting the machine for making cornices of another design.

Another object is the employment of a guiding device which is adjustable with respect to the forming rolls whereby the cornice can be made circular on any desired radius.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one of the embodiments of the invention, Figure 1 is a front view of the machine. Fig. 2 is a vertical section on line 2—2, Fig. 1. Fig. 3 is a horizontal section on line 3—3, Fig. 2. Fig. 4 is a section on line 4—4, Fig. 1. Fig 5 is a transverse section on line 5—5, Fig. 4. Fig. 6 is a vertical section on line 6—6, Fig. 1. Fig. 7 is a section on line 7—7, Fig. 2.

Similar reference characters are employed to designate corresponding parts throughout the several views.

Referring to the drawing, A designates the frame or supporting structure of the machine and comprises a pair of spaced uprights 1 which are secured adjacent their lower ends to a cross piece 2, and the frame is supported in a vertical position by the feet 3. The upper ends of the vertical members 1 are braced one on the other by the bars 4 disposed flat against the front and rear sides of the uprights 1. The left upright in Fig. 1, is preferably composed of two sections *a* and *b*, the latter of which has a tongue 5, Fig. 6, that engages between the bifurcations 6 on the section *a*, and these sections are hingedly connected by a bolt 7 passing through the bifurcations and tongue. The ends of the tongue and bifurcations are beveled to engage the beveled surfaces 8, Fig. 1, which surfaces are so arranged as to prevent the upper section *b* from swinging inwardly beyond the vertical, while permitting the said section to swing outwardly and downwardly for the purpose hereinafter to appear. Since the upper section has a swinging movement, the bars 4 are pivoted at 10 to the right upright and the free ends of the bars are provided with vertical slots 11 whereby the bars can be hooked over the laterally extending headed pins or the like 12 of the upper end of the section *b*, thereby locking the latter in normal position.

Mounted on the frame A are metal-forming rolls B and C that are disposed horizontally and carried by shafts 13 and 14. The shafts rotate in bearings 15 and 16 and are disposed one above the other in a vertical plane. The uprights 1 are provided with vertically extending slots 17 extending from the upper ends to a suitable distance and the bearings 15 rest in the slots at the lower ends thereof. The bearings 16 are slidable in the slots 17 and each bearing is supported on the lower end of an adjusting screw 18, there being a swivel joint between the screw and adjacent bearing which consists of a pin 19 fixed in the bearing and engaging in an annular groove 20 of the lower end of the screw which projects into a socket in the bearing, as shown in Fig. 4. On the upper ends of the uprights 1 are metal plates 21 that have threaded apertures 22 in which the adjusting screws 18 engage so that by turning the screws, the upper row *b* can be moved toward or away from the

roll C to accommodate sheet metal of different gages. On the shaft 13 is mounted a driving means such for instance as an operating crank 23, when it is desired to work the machine by hand and the shaft 14 is driven from the shaft 13 by the meshing gear wheels 24 and 25.

The forming rolls B and C are constructed with the object in view of permitting them to be readily converted into different shapes and designs so that a large variety of cornices can be made by the machine, and for this purpose each roll is built up of metal disks 26 of different diameters and which have their peripheries beveled, straight or cylindrical, concave or convex, so that by properly assembling the disks, any desired contour can be produced. The disks are clamped together on their respective shafts between the collars 27 and 28 and to enable the disks to be readily removed from the shafts and replaced, the section *b* of the left upright 1 is unclamped and swung downwardly so as to leave the shafts 13 and 14 free of the bearings 15 and 16 which are mounted on and moved with the said section *b*. The bearings in the right upright support the shafts 13 and 14 while the section *b* is removed and the disks 26 of the rolls can be then freely taken off or replaced over the left ends of the shafts.

In order to properly gage the strip of sheet metal while passing between the rolls, a gage D is employed, the same consisting of a vertically extending member 29 that is pivoted at its lower end in a block 30, Fig. 1, which block is supported on the cross piece 2, and the upper end of the said member is presented to the right ends of the rolls the shaft of the lower roll being extended through an opening in the member or gage 29. The gage is adjusted by means of a screw 31 having threaded engagement in the horizontal opening 32 of the right upright and suitably connected with the gage for swinging the latter to the right or left into proper relation with the rolls. The face of the gage presented to the rolls is convex as shown at 33 in Fig. 5, so that when the edge of the metal strip is started between the rolls, said face will guide the strip into the proper position.

For adapting the machine for making curved cornices, a guiding device designated generally by E, Figs. 2 and 3, is employed. This device comprises a shaft 34 disposed parallel with the axes of the rolls and adjustable in a horizontal and a vertical plane for the purpose of varying the radius of curvature of the cornice formed by the machine. This shaft is mounted in bearings 35 that are slidable back and forth in horizontal guideways 36, which guideways are formed with bearing blocks 37 slidable in vertical slots 38 provided in the uprights 1. On the frames 39 in which the guideways 36 are formed, are adjusting screws 40 swiveled on the respective bearings 35 and provided with operating cranks 41. The frames 39 are vertically adjusted by screws 42 having threaded engagement in the openings 43 of the top plates 21 on the uprights 1, so that by turning the screws, the shaft 34 can be raised or lowered. On the shaft 34 are positioned supporting elements 45 that are assembled by sliding longitudinally of the shaft and clamped in position by set screws 46, the elements being of appropriate contours to engage the parts of the work directly in line therewith. By this construction, the device for curving the work can be moved horizontally toward the forming rolls and vertically above or below the central plane between the rolls when a curve of small radius is desired, and when a cornice of large curvature is to be made, the curving device E can be moved outwardly from the rolls and vertically to proximity with the central horizontal plane between the rolls, as will be readily understood. With a machine of this character, a large variety of work can be easily, quickly and accurately turned out and cornices of various designs produced without the necessity of a large stock of forming rolls.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that various changes may be made when desired as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. In a machine of the class described, the combination of a frame including a pair of uprights each having longitudinal slots and one having a movable part, a pair of relatively-movable bearings in one slot of each upright, one pair of bearings being carried by and movable with said part, means for adjusting the said bearings, roll-carrying shafts mounted on the bearings, bearings in each of the other slots and provided with frames forming guideways, one of the frame-carrying bearings being mounted on the said part to move therewith, means for adjusting the last-mentioned bearings, bearing blocks, means for adjusting the bearing blocks, a shaft rotatably mounted in the said blocks, and curving devices mounted on the said shaft.

2. In a machine of the class described, the combination of a frame having spaced supporting members, means for hingedly mount-

ing one of the members, a cross-bar extending from one member to the other and holding the latter in normal position, relatively-adjustable roll-carrying shafts mounted on the members, a plurality of disks removably mounted on the shafts for forming the rolls, and means for driving the shafts.

3. In a machine of the class described, the combination of a pair of uprights, one of which is composed of hingedly connected sections, members extending from one upright to the other for holding the movable section in fixed relation with respect to the other upright, roll-carrying shafts, bearings for the shafts arranged in the movable section of the one upright and also in the other upright, means for adjusting the bearings of one of the shafts, and rolls on the shafts comprising disks of various diameters and contours, the disks of each roll bearing directly on each other.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD McMAHON.

Witnesses:
J. W. Cooper,
L. B. Nunes.