

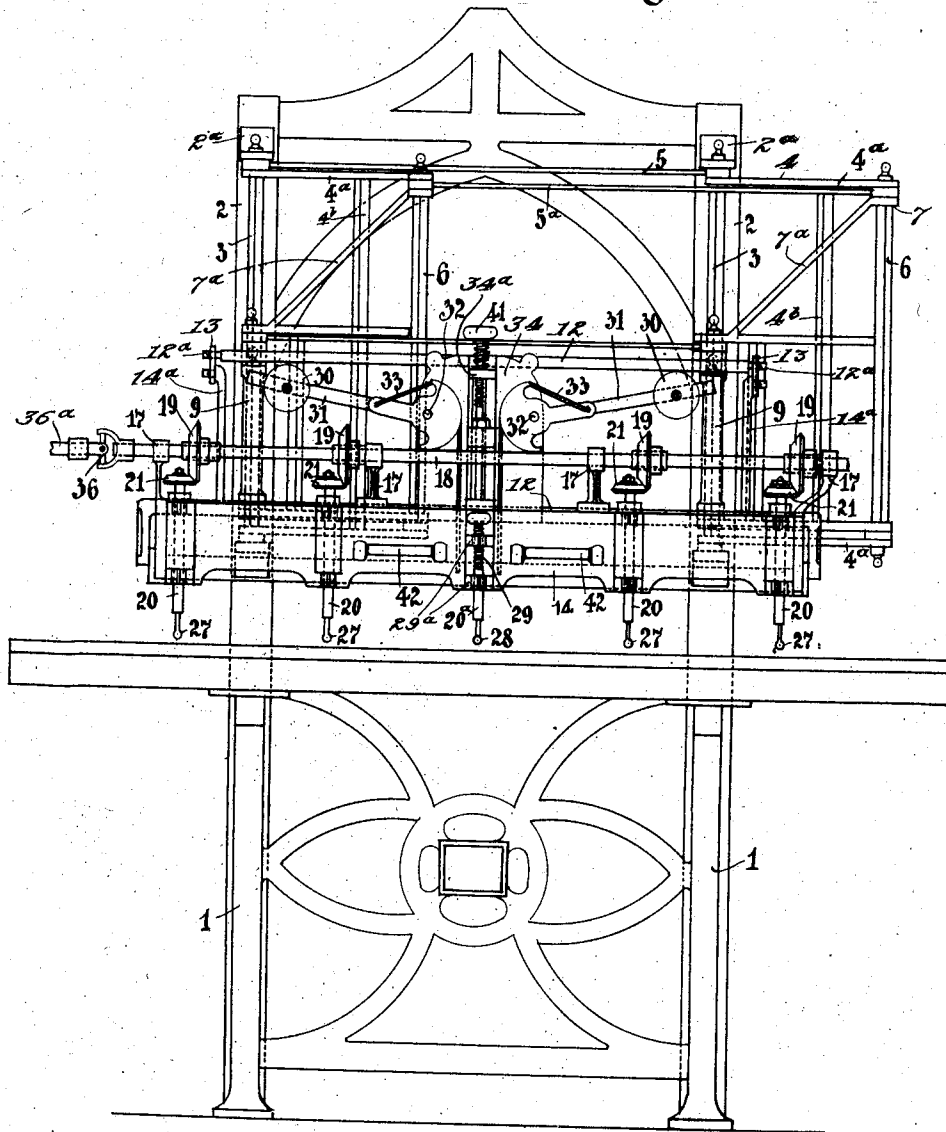
No. 834,346.

PATENTED OCT. 30, 1906.

C. S. VAN ACKER.  
CARVING MACHINE.  
APPLICATION FILED JULY 7, 1905.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:-

L. Waldman  
C. Heymann

Inventor:-

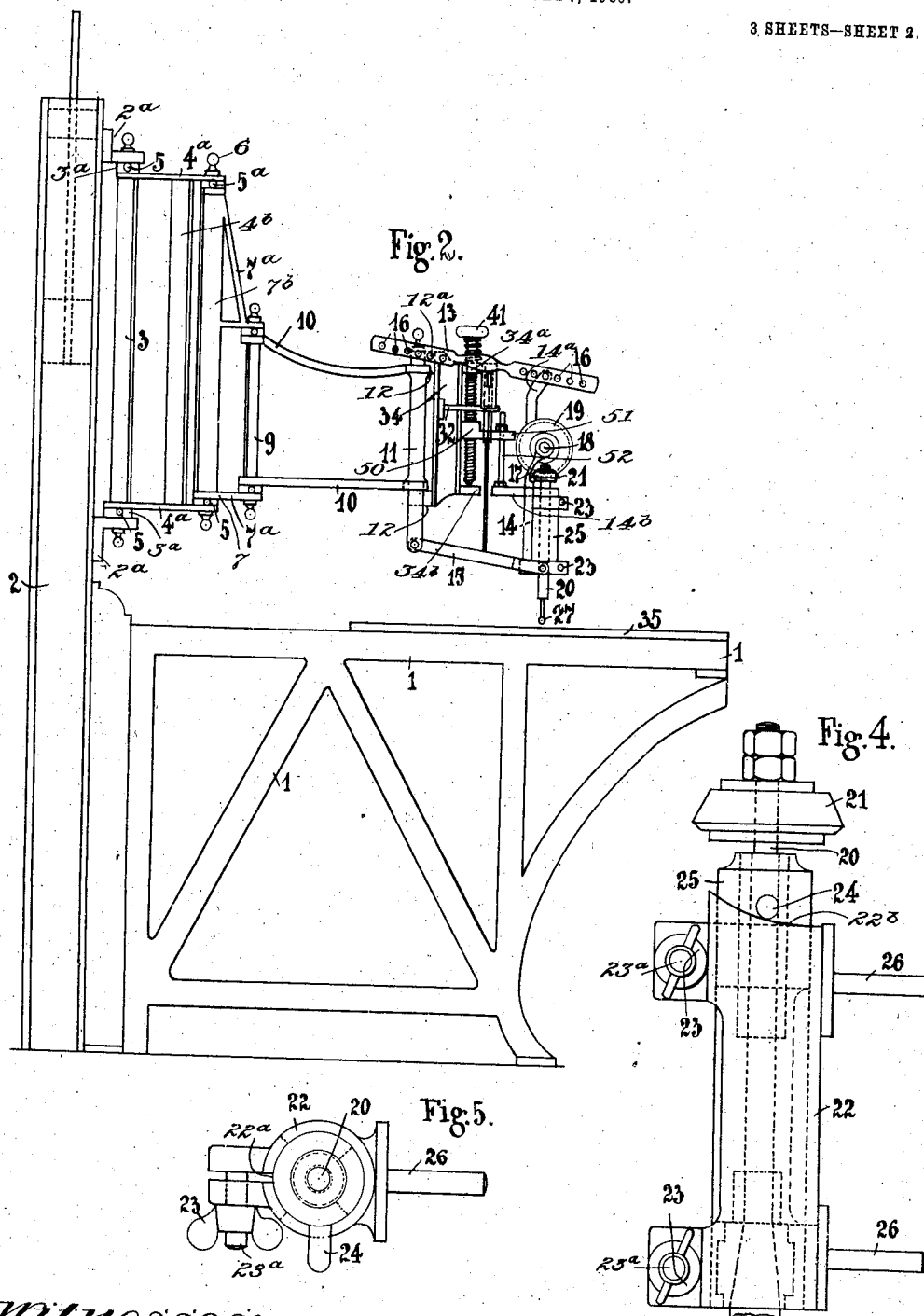
Charles Smitz van Acker  
by P. Singer  
Attorney

No. 834,346.

PATENTED OCT. 30, 1906.

C. S. VAN ACKER.  
CARVING MACHINE.  
APPLICATION FILED JULY 7, 1905.

3 SHEETS—SHEET 2.



Witnesses:—

L. Goldman  
C. Heymann.

Inventor:—

Charles Smitz van Acker  
by P. Singer  
Attorney

No. 834,346.

PATENTED OCT. 30, 1906.

C. S. VAN ACKER.  
CARVING MACHINE.  
APPLICATION FILED JULY 7, 1905.

3 SHEETS—SHEET 3.

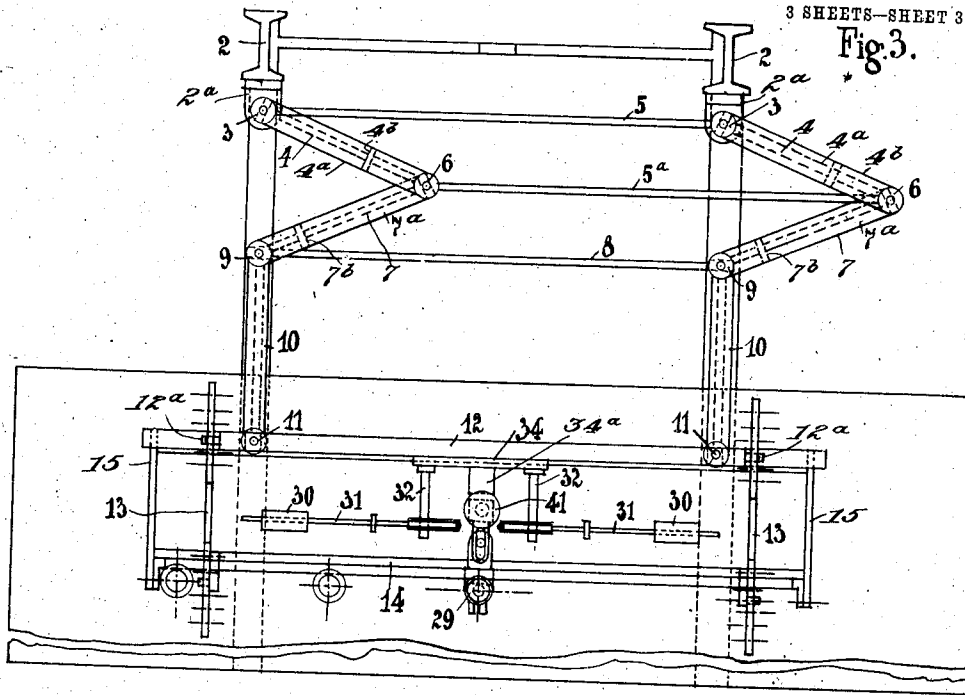


Fig. 6.

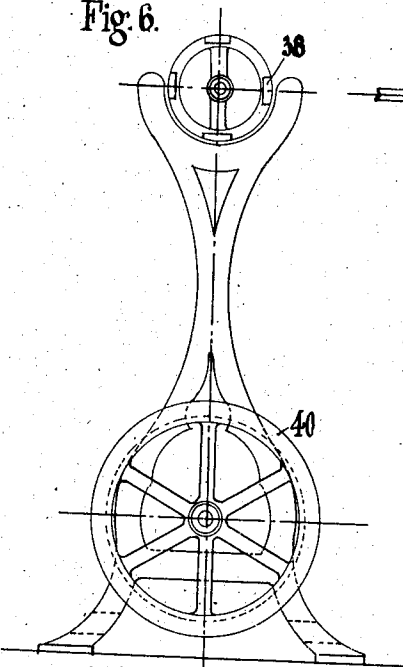
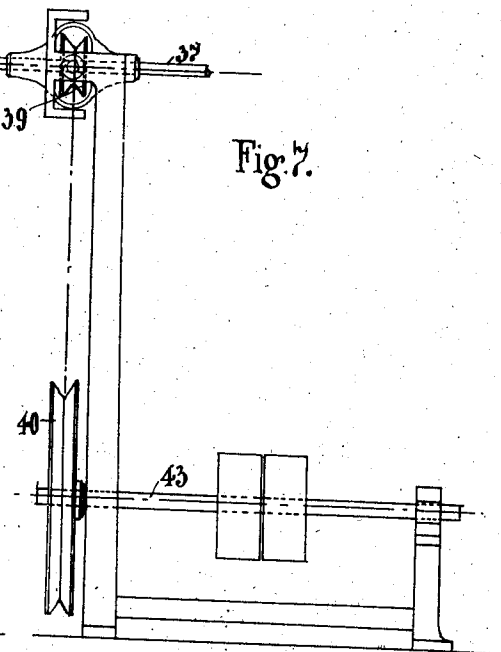


Fig. 7.



Witnesses:  
L. Waldman  
C. Kuyman

Inventor:  
Charles Smith van Acker  
by P. Singer  
Attorney

# UNITED STATES PATENT OFFICE.

CHARLES SMITZ VAN ACKER, OF EECLOO, BELGIUM.

## CARVING-MACHINE.

No. 834,346.

Specification of Letters Patent.

Patented Oct. 30, 1906.

Application filed July 7, 1905. Serial No. 268,892.

*To all whom it may concern:*

Be it known that I, CHARLES SMITZ VAN ACKER, sculptor, a subject of the Belgian King, residing at Eecloo, Belgium, have invented new and useful Improvements in Carving-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same.

My present invention relates to carving-machines, the object being to provide an improved machine of this class for economically carving ornaments and statues of any desired design in wood, marble, or other material and also copying patterns of any desired kind, the improved machine being capable of producing in one operation any number of copies of the pattern.

This invention comprises a universally-movable support adapted to carry a plurality of forming-tools and a tracer in a manner to permit the latter to be guided to trace the lines of a pattern or model and reproduce the same through the forming-tools upon the material to be modeled, the said support being mounted upon an articulated or jointed framework in a manner to permit universal movement of the support, and thereby cause movement of each of the forming-tools in exact correspondence to the movement of the tracer.

The invention also has for its object the provision of improved tool-holders for rotatively mounting the tools on the support in a manner to permit vertical adjustment of said tools and maintain the same in operative connection with a driving-shaft, there being also provided improved means for adjusting the tracer upon the support.

In the drawings, Figure 1 is a front elevation of the machine embodying the main features of my invention. Fig. 2 is a side elevation, and Fig. 3 is a plan view, thereof. Figs. 4 and 5 are detail views of the improved tool-holders. Figs. 6 and 7 are end and front elevations, respectively, of the preferred form of driving means.

The machine is mounted upon a supporting-frame 1, provided with vertically-extending pillars 2, which directly carry the operating mechanism, and a bed-plate 35, on which the pattern and material to be carved are mounted. Bearings 2<sup>a</sup> carry vertically-disposed pins or spindles 3, which extend through bearing-washers 3<sup>a</sup>, the latter being connected above and below by rods 5. As shown, said rods extend through the spindles

3 and serve to prevent rotation of the latter. Horizontal supporting-arms 4<sup>a</sup> are mounted on spindles 3, the upper and lower arms 4<sup>a</sup> at each side of the machine being connected at their free ends by vertical pins or spindles 6. Said arms 4<sup>a</sup> are rigidly connected by struts 4<sup>b</sup>, forming at each side of the machine two horizontal swinging and carrying frames 4. There are also provided two similar horizontal swinging and carrying frames 7, composed of upper and lower members 7<sup>a</sup>, connected by struts 7<sup>b</sup>, which frames are pivotally mounted on the spindle 6. The outer ends of said frames 7 carry spindles 9, on which are pivotally mounted horizontally-swinging frame members 10, the latter being pivotally connected to vertical supporting-spindles 11, on which horizontal rods or bars 12 are secured. In order to effect movement of the swinging frames 4 and 7 in unison, the latter are connected by rods 5<sup>a</sup> and 8, the latter extending through the spindles 6 and 9. The upper horizontal rod 12 is provided on its outer opposite ends with trunnions 12<sup>a</sup>, on which vertically-swinging supporting-links 13 are pivotally mounted, the said links being connected at their other ends with arms 14<sup>a</sup>, extending upwardly and rigidly secured to the tool-support 14. The tool-support 14 is connected at its lower end with the pins 11 by means of links 15. Each of the links 13 is provided with a plurality of holes adapted to receive the trunnions 12<sup>a</sup> and like trunnions formed on the supporting-arm 14<sup>a</sup>, which construction permits the tool-support 14 to be inclined to any desired position from the vertical in either direction from the position shown in Fig. 2.

From the foregoing it will be seen that free movement of the tool-support is permitted in a vertical plane, the swinging bars 10 permitting movement endwise of the machine in a horizontal plane within the radii formed by the spindles 9 as the centers. If the work requires a longitudinal movement of the support 14 greater than the arms 10 afford, such movement is permitted by the swinging frame members 4 and 7, which also permit of the rearward movement of the tool-support 14 in a direction toward the pillars 2, as will be clearly seen by reference to Fig. 3 of the drawings.

In order to normally maintain the tool-support in the vertical plane in which it is adjusted and to permit the same to be freely swung in such plane without requiring the

operator to lift the full weight of the tool-base, the latter is counterbalanced in the following manner: A supporting-plate 34 is mounted at its upper and lower ends and centrally upon the bars 12, said plate carrying horizontal pivot-pins 32, on which swinging levers 31 are pivotally mounted. Each of said levers carries at its outer end an adjustable weight 30 and is provided on its opposite end with a segmental sheave over which ropes or chains 33 are trained. Said ropes are secured to the levers 31 at one end and at their opposite ends to the tool-support 14.

It will be obvious from the foregoing that the weights may be adjusted toward and away from the pivots 32 in a manner to accurately counterbalance the tool-support, the latter being provided with handles 42, adapted to be grasped by the operator during the carving operation.

A driving-shaft 18 is mounted on the tool-base in bearings 17, projecting upwardly therefrom, said shaft carrying a plurality of longitudinally-adjustable beveled friction-wheels 19. As shown, the tool-base carries four carving or forming tools 27, although the number may be either increased or reduced by providing a tool-support of the required length. Each of said tools is mounted in holders which permit of adjustment and anchorage of the tool in a vertical plane, so that the latter may be continuously rotated in its adjusted position, the said holders being shown in detail in Figs. 4 and 5, to which reference will now be made. Said holders comprise outer clamping-sleeves 22, split at 22<sup>a</sup> and provided with ears, thumb-nuts 23, and bolts 23<sup>a</sup> for bringing the split sections together. Said sleeve is mounted by means of pins 26, adapted to be secured to the support 14 in any desirable manner. The upper ends of said sleeves are provided with beveled or cam-shaped surfaces 22<sup>b</sup> for a purpose which will now be described. The outer clamping-sleeves 22 carry inner bearing-sleeves 25, which are adapted to be clamped in place by the thumb-nuts 23.

Vertically-disposed tool-spindles 20, on which the tools 27 are directly mounted, extend through and have bearing in the sleeves 25 and carry on their upper ends beveled friction-wheels 21. The said sleeves 25 are provided with pins 24, adapted for engagement with the beveled upper ends 22<sup>b</sup>, serving when the sleeve 25 is rotated to permit any desired vertical adjustment of the sleeve 25 within the limits of said cam, the sleeve 22 being clamped upon the sleeve 25 when adjustment is effected. It will be obvious that as the tool-spindle 20 is adjusted in different vertical positions a corresponding adjustment of the wheels 19 will be necessary, which adjustment may be effected in any desirable manner. I preferably provide wheels

19 having a beveled surface of greater depth than the wheels 21, the beveled portion of said wheels 19 being increased according to the pitch or throw of the beveled portion 22<sup>b</sup>.

Means are provided whereby the downward vertical movement of the tool-support may be limited to prevent the tracer and the forming-tools from being accidentally injured by sudden contact with the bed-plate 35. It will be understood that the counterweights would normally prevent the tool-support from dropping by gravity and injuring the tools and tracer; but this additional means is provided in case the tool-support were suddenly thrust in a downward direction by accident or careless usage. The said means consists of a screw 41, which has free engagement with a lug 34<sup>a</sup> and supporting engagement with a lug 34<sup>b</sup>, carried by plate 34. A nut 50 is provided having threaded engagement with the screw 41 and a projecting arm 51, apertured to receive one end of the bolt 52. The opposite end of said bolt is rigidly secured to an arm 14<sup>b</sup>, anchored to the tool-support. On the upper end of the bolt 52 there is provided a nut adapted to limit downward movement. It will be seen from the foregoing that if it is desired to raise the tool-support from the position shown in Fig. 2 the bolt 52 passes freely through the arm 51, whereas if it is desired to lower the tool-support from said position the nut on said bolt engaging the projection on nut 50 will prevent such downward movement. The tracer 28 is adjustably mounted upon the tool-base 14 by means of a screw 29, Fig. 1, passing through lugs 29<sup>a</sup>, formed on the tool-base. As shown, the tracer 28 is mounted on a spindle 20<sup>a</sup>, which is formed integral with the screw-threaded rod 29.

The shaft 18 may be driven by any means which will permit of universal adjustment of the tool-base. The driving means herein shown consists of a driving-shaft 37, connected with the shaft 18 by means of a universal joint 36 and any suitable form of flexible shafting 36<sup>a</sup>. The shaft 37 carries a sheave 39, which is connected by any suitable kind of belting with a driving-sheave 40, mounted upon a shaft 43, carrying fast and loose belt-pulleys. It will be obvious, however, that suitable foot-power means can be substituted where it is desired to operate the mechanism manually.

The pattern or model to be reproduced is arranged and fastened beneath the tracer 28, and the pieces of wood to be carved are likewise arranged and fastened beneath the tools 27 upon the bed-plate 35, the operation proceeding in a manner well known in carving machines of this kind. If it be desired to copy statues, the bed-plate 35 is removed and suitable center stocks substituted therefor, the pattern and work-pieces being arranged between the centers of said stocks.

After one side of the pattern has been copied the operator rotates the pattern, together with the material on which the pattern is copied, a portion of a revolution, the work being held in required positions by any suitable mechanism, and the operation is continued until the work is finished.

What I claim is—

1. A carving-machine of the class described comprising a universally-movable tool-support, a tracer adjustably mounted thereon, a plurality of carving-tools, tool-holders therefor comprising outer sleeves rigidly secured to said support and provided with beveled portions, and inner sleeves having pins engaging said beveled portions.

2. A carving-machine of the class described comprising a universally-movable tool-support, a plurality of carving-tools, tool-holders therefor comprising outer clamping-sleeves rigidly secured to said support and beveled on the upper ends, and inner bearing-sleeves provided with pins engaging said beveled ends.

3. A carving-machine of the class described comprising a tool-support, a plurality of carving-tools, tool-holders therefor comprising outer clamping-sleeves rigidly secured to said support and beveled on the upper ends, and inner bearing-sleeves provided with pins engaging said beveled ends.

4. A carving-machine comprising in combination a supporting-frame, a bed-plate mounted thereon for supporting the pattern and material to be carved, three sets of vertical spindles 3, 6 and 9, one set of spindles 3 being mounted in stationary parts, pairs of carrying-frames 4 and 7 pivotally united by spindles 6, said frames 4 being directly connected to spindles 3, the outer ends of said frames 7 carrying spindles 9, rods connecting corresponding members of said carrying-frames to insure movement thereof in unison, spindles 11, frame members 10 connecting said spindles 9 and 11, rods 12 connected with said spindles 11, a tool-support, and vertically-swinging arms 13 and 15 connecting said support to the spindles 11.

5. A carving-machine comprising a bed-plate for the pattern and material to be carved, pairs of vertical spindles, pairs of horizontally-swinging frames articulated by

one pair of said spindles and also connected by one pair of said spindles to a support, rods connecting corresponding members of said frames to insure movement thereof in unison, horizontally-movable frame members 10 connected to said first-mentioned frames, vertically-swinging members mounted on said members 10, a tool-support carried by said vertically-swinging members, and means whereby said tool-support may be inclined with respect to the vertical.

6. A carving-machine comprising a bed-plate for the pattern and material to be carved, pairs of vertical spindles, one of said pairs being connected to a stationary support, pairs of carrying-frames articulated by one pair of said spindles and adapted to swing in a horizontal plane, rods connecting corresponding members of said frames to insure movement thereof in unison, horizontally-movable members 10, vertically-swinging members mounted thereon, a tool-support carried by said vertically-swinging members, means whereby the tool-support may be inclined with respect to the vertical, and means preventing movement of said tool-support below a predetermined point and permitting free movement thereof above said point.

7. A carving-machine comprising a bed-plate for the pattern and material to be carved, pairs of vertical spindles, one of said pairs being connected to a stationary support, pairs of carrying-frames articulated by one pair of said spindles and adapted to swing in a horizontal plane, rods connecting corresponding members of said frames to insure movement thereof in unison, horizontally-movable members 10, vertically-swinging members mounted thereon, a tool-support carried by said vertically-swinging members, and means preventing movement of said tool-support below a predetermined point and permitting free movement thereof above said point.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES SMITZ VAN ACKER.

Witnesses:

T. VAN SHELDON,  
MICHEL DEDRICK.