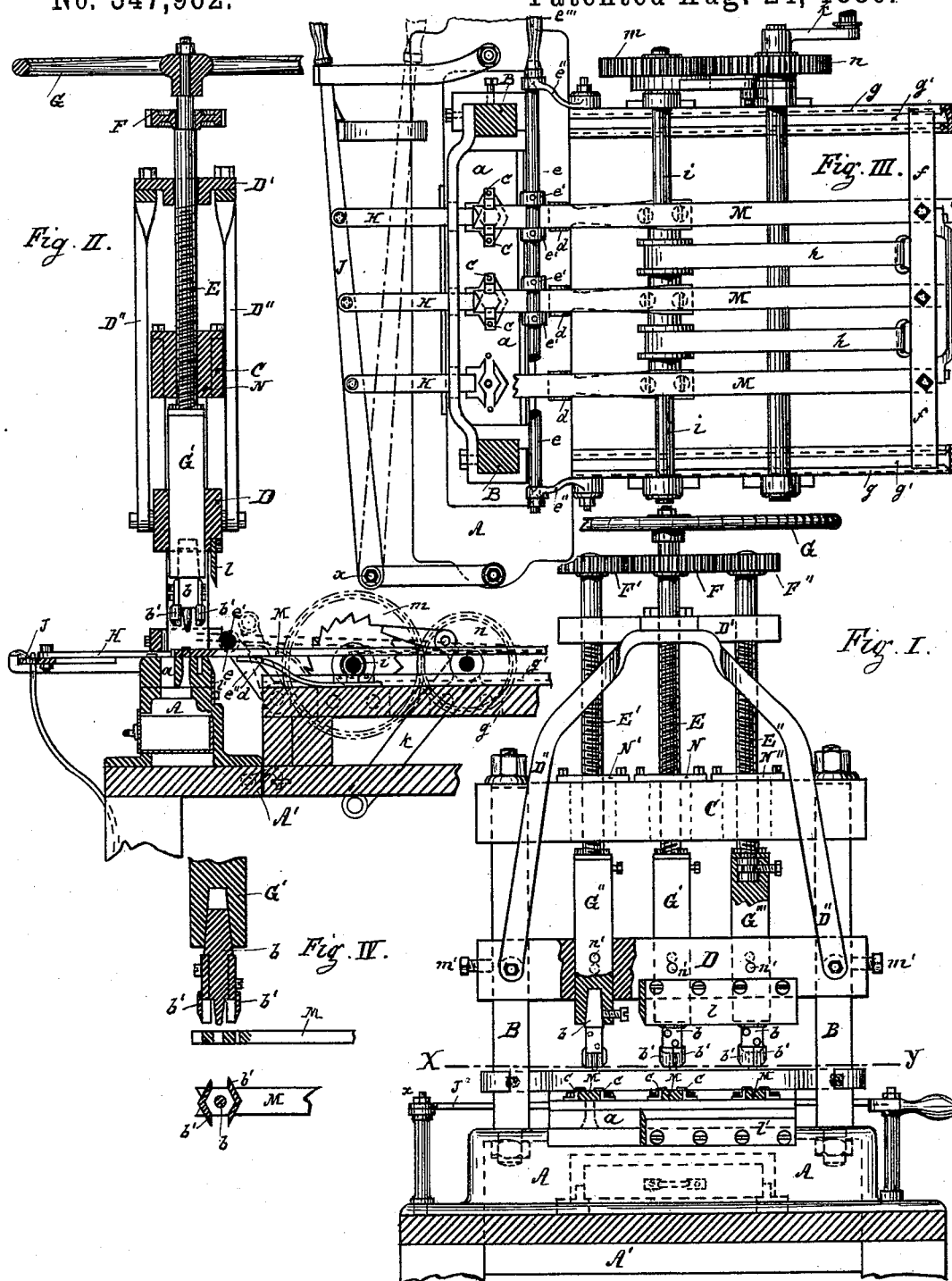


(No Model.)

J. SCHLICHTING.  
CUTTING MACHINE.

No. 347,962.

Patented Aug. 24, 1886.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

JULIUS SCHLICHTING, OF MERSEBURG, GERMANY.

## CUTTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 347,962, dated August 24, 1886.

Application filed December 31, 1885. Serial No. 187,280. (No model.)

*To all whom it may concern:*

Be it known that I, JULIUS SCHLICHTING, of Merseburg, Germany, have invented a new and Improved Shaping and Cutting Machine, of which the following specification is a full, clear, and exact description.

This invention relates to a machine containing a number of spindles which act simultaneously either to shape or to cut the material, as may be desired.

The invention consists in the elements of improvement hereinafter more fully pointed out.

In the accompanying drawings, Figure I represents a front view of the machine, partly in section. Fig. II is a cross-section of the same. Fig. III is a horizontal section on line *x y*, Fig. I, and shows a top view of the lower part of the machine. Fig. IV is a section of the lower part of one of the spindles.

Similar letters represent similar parts in all the figures.

To a frame, A, secured to a suitable foundation, A', the upright posts B B are attached, supporting the cross-bar C, which is firmly secured to said posts B.

D is a lower cross-bar attached to the posts B B by means of screws *m' m'*.

G' G'' G''' are rods or stamps guided in the cross-bar D, and provided at their upper ends with screws E E' E''. These screws work in nuts N N' N'', secured in the cross-bar C, and are attached to the rods or stamps in such a manner that they may turn freely, while the rods receive only an upward or downward reciprocating motion, as is clearly shown at G''', Fig. I. The upper ends of the screws E' E E'' pass freely through a cross-bar, D', which is connected through braces D'' D'' with the cross-bar D.

On the ends of the spindles of the screws E E' E'' toothed wheels F F' F'' are attached, meshing into each other. The central screw-spindle, E, is provided with a fly-wheel, G, through which motion is communicated to the same. The wheels F F' F'' are all of the same diameter, and the central screw, E, is provided with a right-handed and the outer screws, E' E'', with left-handed screw-threads, whereby the motion given to the central screw-spindle will be communicated in equal proportion to the two outer spindles, and consequently an

even up or down reciprocating motion is imparted to the rods or stamps G' G'' G'', and to their tools or cutters.

Into the lower ends of the rods G' G'' G''' the bolts *b* are securely fastened, to which the knives *b'*, corresponding to the desired size and shape of pieces to be cut, are firmly secured.

Upon the frame A the matrix-block *a* is securely fastened and provided with suitable guide-pieces, *c*, between which the work or bars, M, of metal from which the desired pieces are to be cut or stamped is guided during the operation. The work M is secured to a cross-bar, *f*, Fig. III, moving on ways *g*, attached to the frame *g*. This cross-bar *f* is attached by belts *h* to pulleys fast on a shaft, *i*, carrying a toothed wheel, *m*, into which a pinion, *n*, works, which latter is operated by the crank *k*. The hub of the wheel *m* is provided with a suitable ratchet-wheel acted upon by a pawl. By this arrangement the work M is moved forward the required distance after the piece has been cut off.

Below the bars M, close to the matrix-block *a*, springs *d* are placed under each bar, and a shaft, *e*, is placed above the bars, and is provided with collars *e'*, between which the bars are guided. Behind the matrices rods H are arranged, connected to a lever, J, pivoted on a center, *x*. As soon as the desired piece has been cut off or stamped out of the bar, the springs *d* press the forward end of the bars M upward. The lever J is then moved inward, so that the rods H push the cut-off pieces away from the matrix-block below the upwardly-pressed bar M. The rods H are then withdrawn, and the shaft *e*, pivoted in the ends of the levers *e''*, is moved downward by means of its handle *e'''*, whereby the bars M are pressed again in position, so that when moved forward by the action of the belts *h* the forward ends of said bars will enter again between the guides *c*, in position ready for the next operation.

To use the machine for shearing, the matrix-block *a* is removed, and a suitable knife-blade, *z*, is attached to the frame A, the screws *m'*, which fastened the cross-bar D to the upright rods B B, are removed, and the rods or stamps G' G'' G''' are secured to the cross-bar D by means of keys or bolts inserted into the holes *n'*,

and a suitable blade or knife, *l*, is attached to the side of this cross-bar *D*, corresponding with the stationary blade or knife *l'* on the frame *A*. The action of the fly-wheel *G* is communicated to the rods *G' G'' G'''*, as above described, and will be communicated to this cross-bar *D*, moving the same upward or downward, as may be desired, and operating the shear-blades.

10 I claim as my invention—

1. The combination of rods *G' G'' G'''* with screws *E E' E''*, and with the nuts *N N' N''*, bolts *b*, and knives *b'*, all being so arranged that reciprocating motion is imparted to the rods and reciprocating and rotating motion is imparted to the screws, substantially as specified.

2. The combination of reciprocating rods

*G' G'' G'''*, bolts *b*, and knives *b'* with the guide *c*, shaft *i*, belt *h*, and cross-bar *f*, moving upon ways *g'*, substantially as specified. 20

3. The combination of rods *G' G'' G'''* with guide *c*, springs *d*, shaft *e*, collars *e'*, and with the rods *H* and lever *J*, substantially as specified. 25

4. The combination of rods *G' G'' G'''* with cross-bar *D*, bolts *n'*, movable blade *l*, and stationary blade *l'*, attached to foot *A*, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 30

JULIUS SCHLICHTING.

Witnesses:

EDMUND BACH,  
OTTO GÜNTHER.