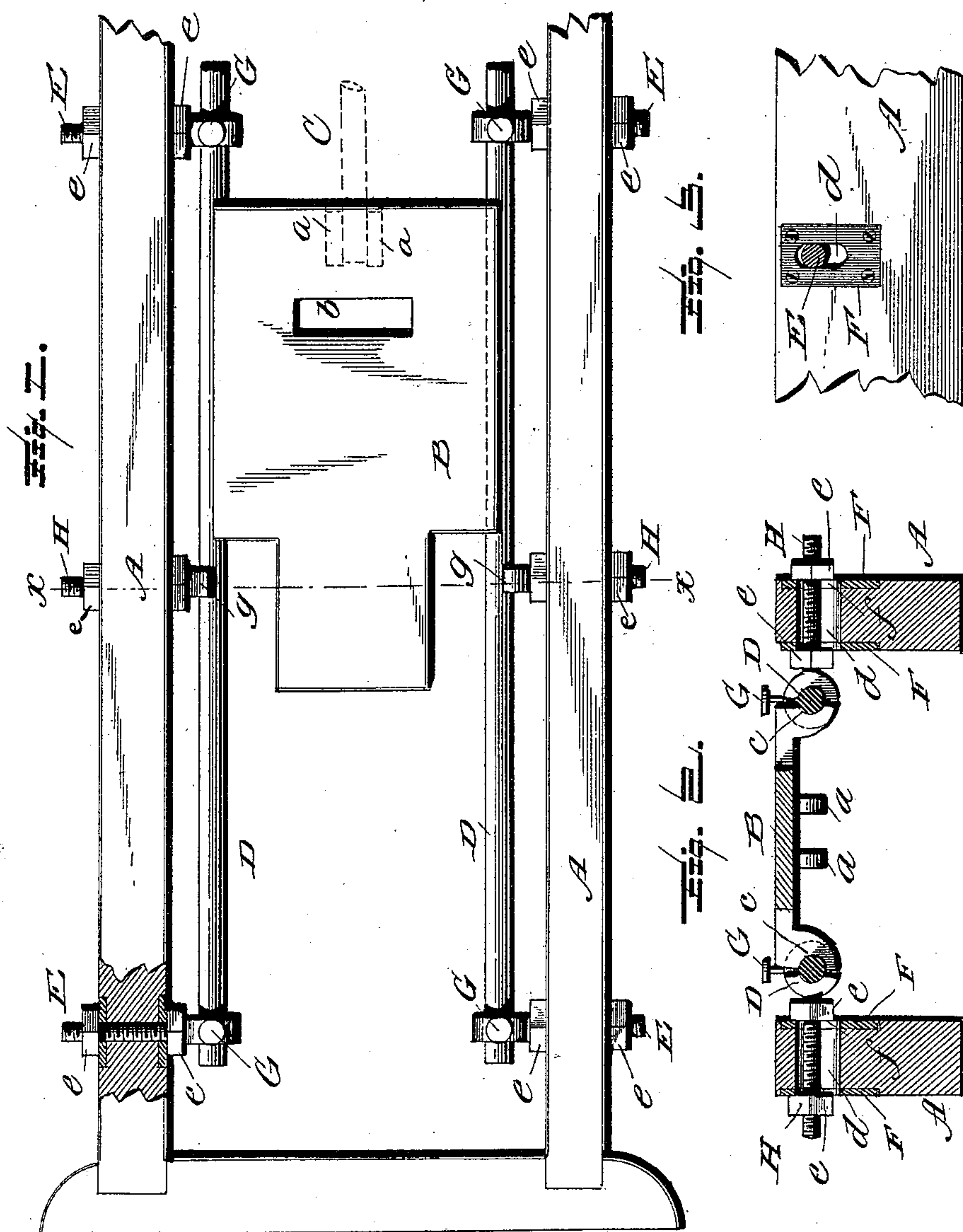


(No Model.)

W. S. MINOR.
EXCELSIOR MACHINE.

No. 463,530.

Patented Nov. 17, 1891.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM S. MINOR, OF NORTHVILLE, NEW YORK.

EXCELSIOR-MACHINE.

SPECIFICATION forming part of Letters Patent No. 463,530, dated November 17, 1891.

Application filed April 1, 1891. Serial No. 387,216. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. MINOR, a citizen of the United States, residing at Northville, in the county of Fulton, State of New York, have invented certain new and useful Improvements in Excelsior-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in excelsior-machines; and it has for its objects among others to provide simple and cheap means for adjustment of the parts, whereby the guide-rods may be turned when worn, adjusted either vertically or horizontally, and readily removed when necessary to replace them with new ones.

The machine with my improvements will make uniform stock, will run with less friction, less noise, is less complicated, more easily repaired, and much more durable.

I form the carriage, which carries the dado-cutter, of novel configuration, its edges being concaved to engage the guide-rods and provide simple and efficient means for adjusting the parts in the various directions necessary. I provide eyebolts which support the guide-rods, the said eyebolts being adjustable vertically and horizontally and the rods being adjustable radially in the eyebolts. I provide intermediate guides for the rods.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a plan with portions broken away and a portion in section illustrating my improvements. Fig. 2 is a vertical cross-section through the line *x x* of Fig. 1. Fig. 3 is a detail in side elevation, showing the adjustment of the eyebolt vertically.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the side pieces of the frame of an excelsior-machine, which, ex-

cept in the particulars hereinafter specified, may be of any of the well-known forms of construction.

B is the reciprocatory carriage provided with the transverse opening *b*, through which is designed to operate the cutter usually employed in this class of machines, and this carriage or block is designed to be reciprocated through the medium of any suitable mechanism, being provided upon its under face with ears or lugs *a* for the connection of the rod C, actuated by the said mechanism.

D are the guide-rods for the carriage and on which it is held and guided. The edges of the carriage are concaved, as shown at *c* in Fig. 2, to conform substantially to the curvature of the rods and to lessen the frictional contact thereof. The rods are held in the eyes of the eyebolts E, the shanks of which are screw-threaded, as shown in Figs. 1 and 2, and which pass through vertical slots *d* in the side pieces of the frame, the threaded shanks being provided with jam-nuts *e*, one upon each side of the side piece, and the slots in the side pieces being preferably re-enforced by the metallic plates F, which are provided with coincident slots *f* and secured to the said side pieces in any suitable manner. I employ two of these eyebolts upon each, one near each end of the rod, as seen in Fig. 1. These eyebolts are adjustable in and out by the manipulation of the said nuts, and also vertically in the same manner, as will be readily understood from Fig. 2. The rods are held in the eyebolts by the set-screws G, which prevent them from turning and yet permit of their being partially turned around when the one part becomes worn, so as to bring an unworn portion into position to be engaged by the edges of the carriage. Between the eyebolts I provide intermediate bolts H, the inner ends of which are formed with half-eyes *g*, as seen in Figs. 1 and 2, and which serve as guides for the rods to prevent them from being bent or distorted, the said half-eyes being thus formed so as not to interfere with the reciprocation of the carriage. Eyes could not be employed at these points. These intermediate bolts are adjustable in and out as well as vertically in the same manner as the end eyebolts. Protect-

ing-plates similar to the plates F may be provided at the openings or slots through which the said bolts pass.

5 The advantages of the present construction will be readily appreciated by those familiar with the workings of excelsior-machines. The adjustments provided permit of the taking up of the wear, so that the parts will run true, the stock can be worked up
10 more closely, the vertical adjustment allowing me to adjust the carriage upward or downward, as may be required, so that the block can be worked up even when it gets very thin and the other adjustments permit me to keep
15 the parts tight and prevent wobbling with the result that I produce more uniform excelsior.

20 The rods may be turned or removed and new ones placed in their stead without removal of the eyebolts.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

- 25 1. In an excelsior-machine, the combination, with the carriage and its guide-rods, of the adjustable eyebolts, in the eyes of which the rods are held, and the adjustable supports for the rods between the eyebolts, as set forth.
30 2. In an excelsior-machine, the combina-

tion, with the carriage having concaved edges, of the guide-rods having convex portions engaging the concavity of the carriage, and means for adjusting the rod-supports vertically and laterally, simultaneously, as set forth. 35

3. In an excelsior-machine, the combination, with the side pieces provided with vertical slots, of the eyebolts passed through said slots, the jam-nuts on the bolts, the rods held in the eyes of the eyebolts, and the reciprocatory carriage having concave edges engaging the convex surface of the rods, substantially as and for the purpose specified. 40

4. In an excelsior-machine, the combination, with the side pieces provided with vertical slots and re-enforcing plates having coincident slots, of the eyebolts passed through said slots and provided with jam-nuts, the rods held in the said eyes, the set-screws, the reciprocatory carriage provided with edges to conform to the curvature of the rods, and the intermediate bolts having half-eyes, substantially as and for the purpose specified. 45

In testimony whereof I affix my signature in presence of two witnesses. 55

WILLIAM S. MINOR.

Witnesses:

E. A. TANNER,

FRED. N. BENTON.