To all whom it may concern:

Be it known that I, CLINTON G. WILDERSON, a citizen of the United States, residing at Leetonia, in the county of Columbiana and State of Ohio, have invented a new and useful Improvement in Mortising and Boring Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in

Figure 1 is a side elevation showing my invention applied to a hollow chisel mortiser;

Figure 2 is a vertical section showing the chisel holder and its guides;

Figure 3 is a side elevation of the same; and

Figure 4 is a section on a larger scale, and taken on the line IV—IV of Figure 3.

My invention has relation to improvements in chiseling and boring machines; and is designed to provide a simple and effective construction and arrangement whereby the tool actuating spindle may be directly driven by the shaft of an electric motor.

Referring first to that form of my invention illustrated in Figures 1 to 4, inclusive, and in which I have shown the invention as applied to a direct motor driven hollow chisel mortising machine, the numeral 2 designates the upright frame of the machine supporting any usual or suitable adjustable work holder 3. The upper portion of the frame 2 extends horizontally above the work holder 3 and has supported therein an electric motor 4 of any well known or suitable type. This motor is provided with a hollow armature shaft 5 having therein a key which engages a keyway 6 in the vertical mortiser spindle 7, said spindle extending vertically through the hollow motor shaft 5. 8 designates the bit or auger held in a suitable chuck 9 in the lower end of the spindle 7, and which works through the square hollow chisel 10. This chisel is rigidly fixed against rotation in a slide member 11 which is arranged to move vertically in the guides 12, these guides being bolted to the lower end of the casing of the motor 4. The slide member 11 has the oppositely extending trunnions 13 which are engaged by the forked arms 14 of a lever 15 pivoted to the frame 2 at 16 and adjustably connected at 17 with a link 18. The other end of the link 18 is connected to a foot treadle 19, said treadle and the connections forming means for feeding the tool to the work. 20 is a spring acting on the lever 15 in opposition to the treadle.

The lower end portion of the spindle 7 is rotatably mounted in suitable bearings 21, preferably ball bearings, in the upper portion of the slide member 11.

It will be noted that by the construction and arrangement above described, I provide very simple and efficient means for a direct motor drive of the tool actuating spindle.

I do not desire to limit myself to the particular embodiment of my invention which I have herein shown and described, since it is obvious that the invention may be applied to other types of machines, and that the details of construction and arrangement may be widely varied without departing from the spirit and scope of my invention as defined in the appended claims.

I claim:

1. In a mortising machine, a frame, a fixed bearing member on the frame, a hollow shaft rotatably mounted in said bearing but fixed against longitudinal movement, guides extending downwardly from said bearing member and secured thereto, a spindle in the hollow shaft arranged to be driven thereby and adapted for reciprocation therein, a slide mounted between the guides, a connection between the spindle and the slide whereby the spindle and slide are reciprocated together, a hollow chisel connected to the slide and arranged to be moved therewith, and a boring tool mounted in the spindle and extending through the slide and chisel.

2. In a mortising machine, a frame, a motor supported on the frame having a hollow shaft, bearings for the shaft, a spindle slidably mounted in the shaft and arranged to be rotated thereby, fixed guides in line with the motor shaft, a slide mounted in the guides, a bearing in the slide for the spindle arranged to move the slide with the spindle, a hollow chisel connected to the slide, and a boring tool connected to the spindle, extending through the slide and hollow chisel.

3. In a mortising machine, a frame, a work holder mounted on the frame, a motor on the frame having a hollow spindle, a spindle slidably mounted in the motor shaft
and arranged to be rotated thereby, guides between the work holder and motor; a slide in said guides, a connection between the spindle and slide for moving the slide longitudinally with the spindle, but to permit the spindle to rotate relative to the slide, a hollow chisel connected to the slide extending toward the work holder, and a boring tool connected to the spindle and extending through the chisel.

In testimony whereof, I have hereunto set my hand.

CLINTON G. WILDERSO.