(No Model.) 2 Sheets—Sheet 1.

E. HOULBROOK.

TOOL SHARPENER.

No. 487,328. Patented Dec. 6, 1892.

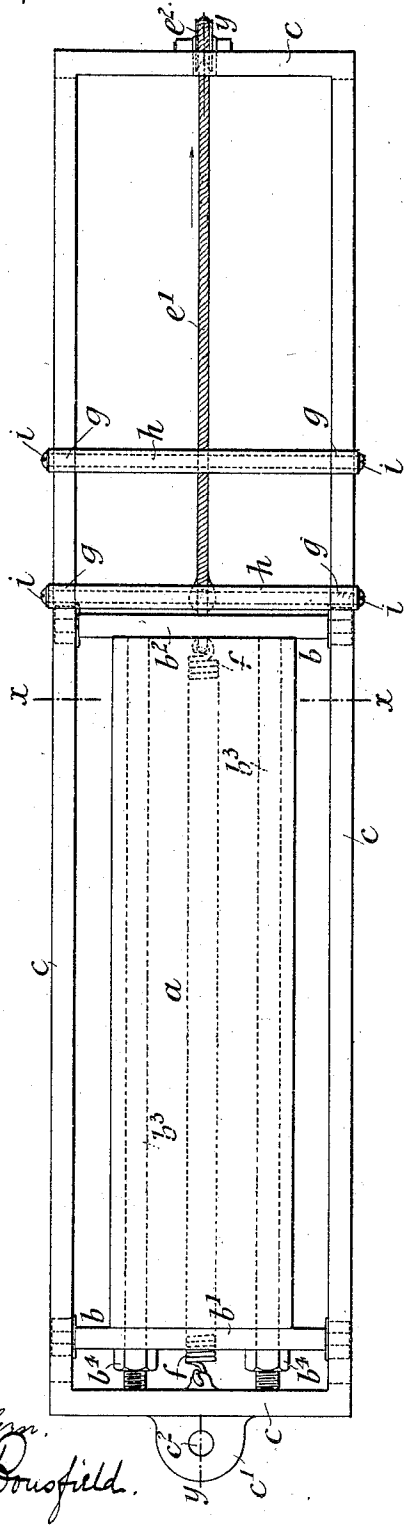

Fig. 1.

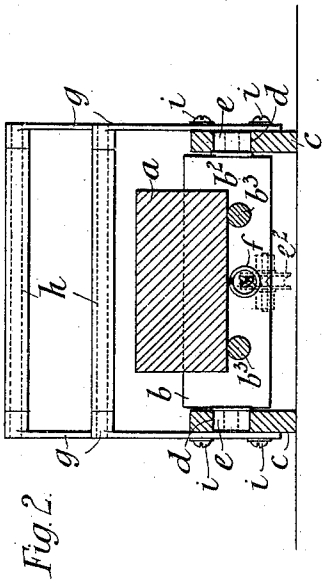

Fig. 2.

Witnesses.
G. F. Redfern.
John E. Bousfield.

Inventor.
E. Houlbrook.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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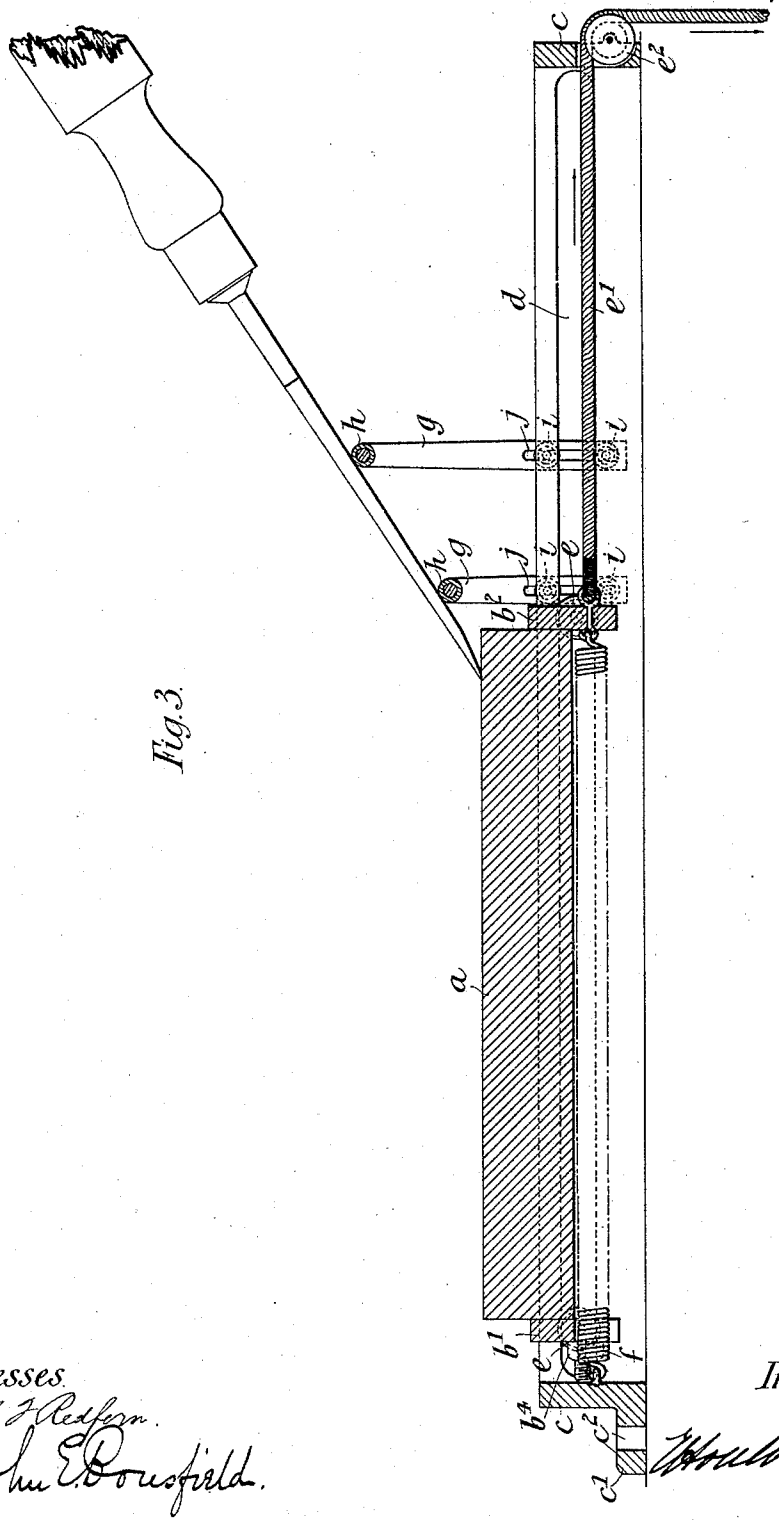

Fig. 3.

Witnesses.
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Inventor.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD HOULBROOK, OF ROSSALL, ENGLAND.

TOOL-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 487,328, dated December 6, 1892.

Application filed May 20, 1892. Serial No. 433,761. (No model.)

To all whom it may concern:

Be it known that I, EDWARD HOULBROOK, a subject of the Queen of Great Britain, residing at Rossall, Hendon, England, have invented a new and useful Improved Tool-Sharpener, of which the following is a specification.

My invention relates to improved apparatus for shapening wood-cutting and similar edge tools by means of oil-stones.

In my invention I arrange the oil-stone to slide in a frame, and I advantageously move the stone in the frame by means of a cord looped to receive the foot and passing over a pulley at the end of the frame. I also arrange rests, against which the tool may be held while being sharpened.

To enable my invention to be fully understood, I will describe the same by reference to the accompanying drawings, in which—

Figure 1 is a plan of my improved tool-sharpener, and Fig. 2 is a transverse section on the line $x\ x$, Fig. 1. Fig. 3 is a longitudinal section on the line $y\ y$, Fig. 1.

a indicates an oil-stone, and b indicates a carriage, in which the same is mounted, the said carriage, as shown in the drawings, consisting of the two end pieces b' b^2 and the bolts b^3 b^3. The end piece b' is loosely carried upon the bolts b^3 b^3, so that by tightening the nuts b^4 b^4 the stone may be tightly clamped upon the carriage between the end pieces b' b^2 thereof. The said bolts are preferably screw-threaded for a considerable portion of their length, in order that the end piece b' may be rendered capable of considerable adjustment relative to the end piece b^2 to enable stones of considerable variation in length to be fixed in the carriage.

c is the frame in which the carriage slides, the said frame, as shown, being provided with longitudinal slots d, in which rollers e e, supporting the carriage b, roll during the reciprocations of the stone. At one end of the frame is a lug c', having a hole c^2, in which a screw can be inserted to attach the frame to a bench.

e' is a cord, belt, or chain, which is advantageously connected at one end with a treadle or provided with a loop or stirrup to receive the foot, the said cord passing over a pulley e^2, and at the other end being connected to the carriage to enable the same with the stone to be reciprocated.

f is spring secured at one end to the frame c and at the other end to the end piece b^2 of the carriage, the said spring serving, after the carriage has been moved in one direction by means of the cord e', to move the said carriage in the reverse direction. In the drawings I have represented the spring f as a spiral spring; but it is to be understood that any other suitable form of spring may be employed.

g g are rests, against which the tool may be placed in the manner shown in Fig. 3 for the purpose of holding the same at a uniform angle during the sharpening operation, each of the said rests being provided with a roller h, revolving on a spindle. The rests are connected to the frame c by screws i i, slots j j being provided for the purpose of permitting the said rests to be adjusted in height according to the angle at which it is required to sharpen the tool.

It is to be understood that in carrying out my invention I do not confine myself to any particular method of imparting motion to the stone, as such may be effected by any desirable means.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In combination with a sharpening-stone adapted to be reciprocated in suitable guides, the two vertically-adjustable tool-rests g g, the rear one being higher than the front one and located at a distance from it, all substantially as shown and described.

2. In combination with the frame, its sliding rods b^3, vertically-adjustable rests g g, spring f, and cord e', the combination being and operating substantially as set forth.

EDWARD HOULBROOK.

Witnesses:

G. F. REDFERN,

JOHN E. BOUSFIELD,

Of the firm of G. F. Redfern & Co., 4 South Street, Finsbury, London, Patent Agents.