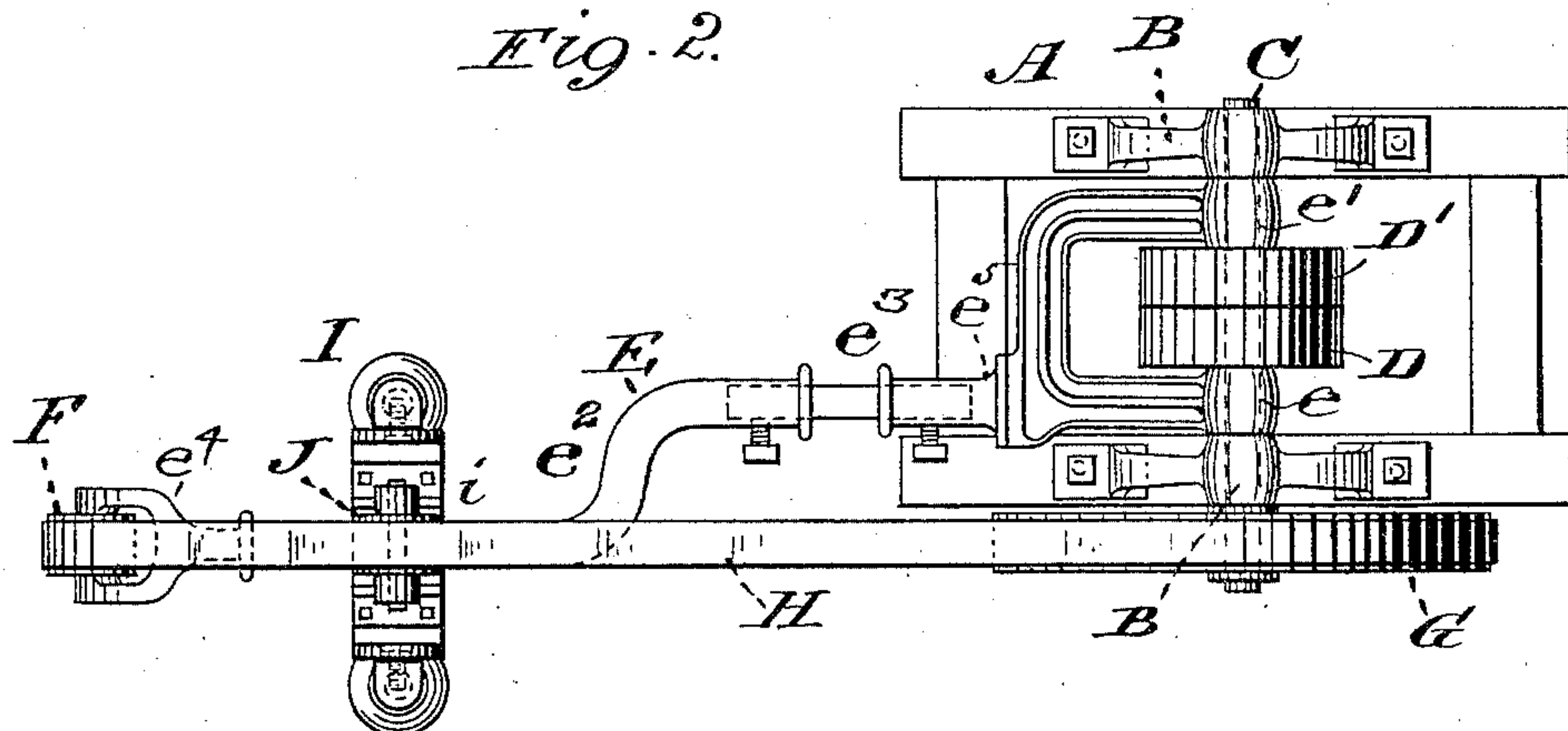


3 Sheets—Sheet 1.

Patented Oct. 27, 1891.



WITNESSES  
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(No Model.)

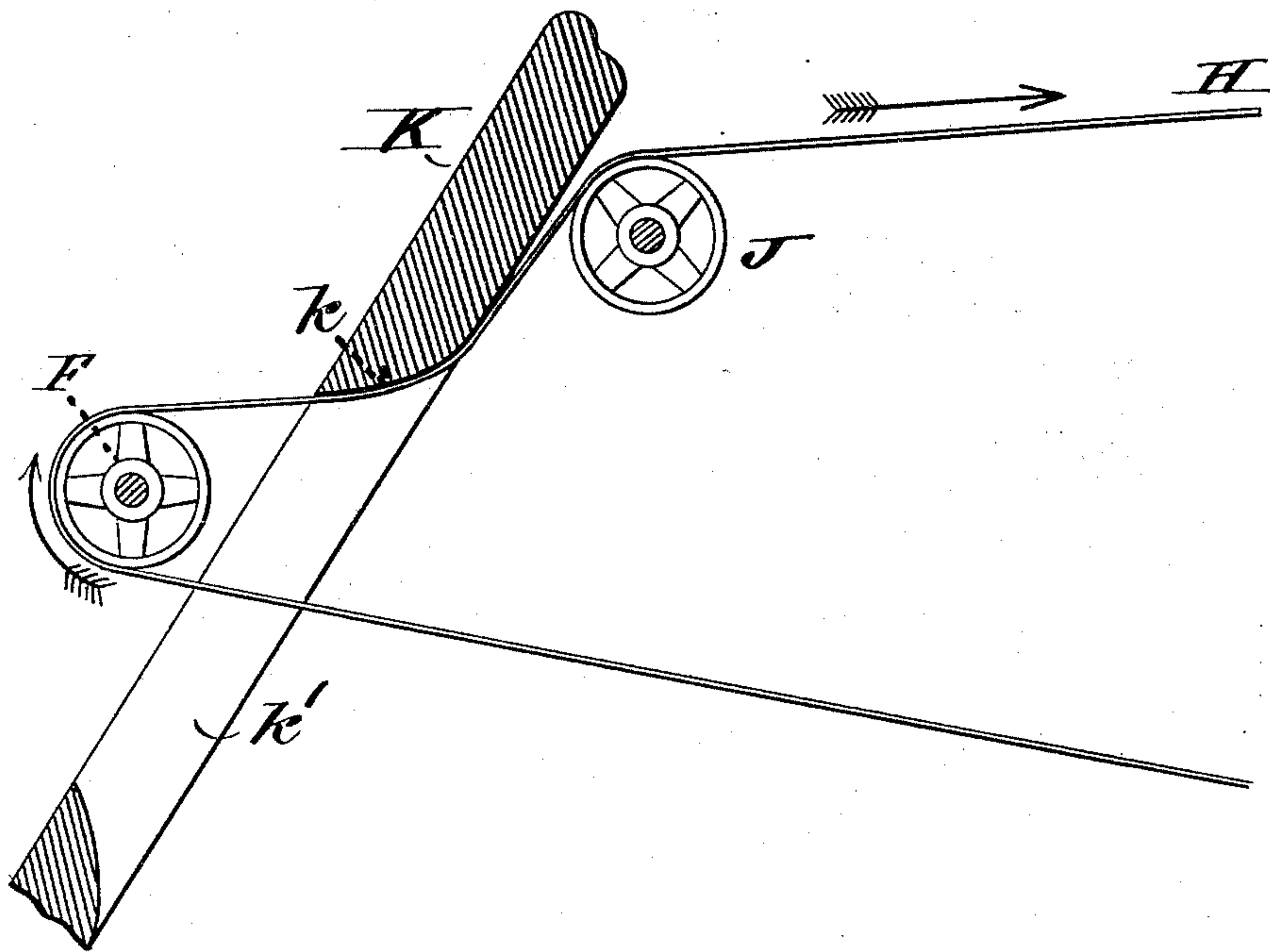
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J. D. WILSON & W. J. DELANO.  
SAND POLISHING MACHINE.

No. 462,185.

Patented Oct. 27, 1891.

*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

JAMES D. WILSON AND WILLIAM J. DELANO, OF EDWARDSVILLE, ILLINOIS,  
ASSIGNORS TO THE N. O. NELSON MANUFACTURING COMPANY, OF ST.  
LOUIS, MISSOURI.

## SAND POLISHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 462,185, dated October 27, 1891.

Application filed May 22, 1891. Serial No. 393,774. (No model.)

*To all whom it may concern:*

Be it known that we, JAMES D. WILSON and WILLIAM J. DELANO, of Edwardsville, Illinois, have jointly made a new and useful Improvement in Sand Polishing-Machines, of which the following is a full, clear, and exact description.

The present improved machine is well adapted for hollow or other work having interior parts to be polished.

Another feature of the machine is its adjustableness, whereby provision is made not only for operating upon objects held at a higher or lower level, but also in different parts of the room containing the machine, all, together with minor features of the construction, substantially as is hereinafter described and claimed, aided by the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation of the improved machine. The view includes a sample of the work operated upon by the machine; Fig. 2, a plan of the machine; Fig. 3, a side elevation of the machine, but as when reversed from its position of Fig. 1; Fig. 4, a vertical cross-section on the line 4 4 of Fig. 1; Fig. 5, a view similar to that of Fig. 1, illustrating the vertical adjustment of the polishing-belt at the outer end thereof; and Fig. 6, a detail upon an enlarged scale, illustrating the relative position of the belt and the work during the polishing operation.

The same letters of reference denote the same parts.

The machine under consideration, generally considered, comprises a base A, supporting bearings B B; a shaft C, which is journaled in said bearings and is provided with a fast and a loose pulley D D'; an arm E, journaled at  $e e'$  upon said shaft C and extending thence outward therefrom and carrying a small pulley F at its outer end and having a lateral offset  $e^2$  to enable said pulley F to be in line with a larger driving-pulley G, which is mounted upon said shaft C; a sand polishing-belt H, which is carried around said pulleys G F, and a support I for said arm E toward the outer end thereof. Said arm E is made extensible, as indicated at  $e^3$ , to enable the outer portion  $e^4$  to be set outward from or drawn in to-

ward the inner portion  $e^5$  of said arm according as it may be needed to suitably tighten the belt H upon its bearing. It (the arm E) can also be turned upon the shaft C, as indicated by the arrows  $x y$ , to and from its positions shown, respectively, in Figs. 1 and 3. In either of said positions the support I serves to uphold the outer end of the arm; but said support is connected with said arm at a point  $i$  far enough inward from the position of the pulley F to provide ample room for operating the part which is being polished by the belt. To enable the support I to be used in either of said positions of the arm E, it is constructed substantially as follows:  $i'$  represents a block of any suitable form for supporting the arm E. In the present instance said arm extends through a notch  $i^2$  in the block, and a keeper  $i^3$  is applied to the block  $i'$  to confine the arm E therein. This block  $i'$  at its sides, respectively, is provided with journals upon which the legs  $i^4 i^4$  and the support I are hung and in such a manner as to enable said legs to be turned from their position of Fig. 1 into their position of Fig. 3. Said blocks  $i'$  also sustain a pulley J, which is an additional support for the belt H in the vicinity of the point at which the work to be polished is applied to the belt. Said pulley J is journaled in a bearing  $j$ , which in turn is secured to said block  $i'$ . An additional feature of said support I is its vertical adjustableness. To this end the legs  $i^4 i^4$ , as indicated at  $i^5$ , are adapted to be lengthened or shortened—that is, if it is desired to present the work K at a higher level to the belt the legs  $i^4 i^4$  are lengthened, by which means the arm E is turned upward upon its bearing C, and when it is preferred to hold the work K at a lower level the legs  $i^4 i^4$  are shortened, by which means the arm E is turned downward upon its bearings C. These last described adjustments are indicated, respectively, by the broken and by the full lines in Fig. 5.

A mode of operating the present machine is indicated in Fig. 1 and illustrated in Fig. 6. Motion having been imparted to the belt H by means of power applied to the pulley D, and the outer end of the arm E being ad-



justed as to position and height, the work—say the seat K—is presented to the projecting portion of the belt, as indicated in Fig. 1, and then slipped thereonto and ultimately  
 5 adjusted, so that the beveled edge  $k$ , inclosing the opening  $k'$  therein, is applied to the belt substantially as shown in Fig. 6—that is, so as to bear upon the belt at a point between its supports F J. In this position of the seat  
 10 that portion of the edge  $k$  which for the time being is being polished is pressed against the belt, so as to bend the same, substantially as shown in Fig. 6, and cause the entire bevel of said edge  $k$  to be subjected to the action of  
 15 the belt. That portion of the edge, therefore, which is subjected to the action of the belt is readily polished, and owing to the extension of the arm E and the manner in which the belt is carried around the extension the  
 20 work can be turned around the belt and extension and all parts of the edge surrounding the opening  $k'$  be subjected to the action of the belt and the operation effectively and rapidly performed. As work of the kind un-  
 25 der consideration is of a more or less bulky nature, it is occasionally desirable, after operating in one part of the room containing the machine, to be able to operate in another part of the room without delaying to clear  
 30 away the work which has already been operated upon. In such an event it is the practice to reverse the belt and its support from its position shown in Fig. 1 into its opposite position shown in Fig. 3 and in the last-  
 35 named position to proceed at once with a fresh lot of material. This described adjust-

ment is also of value in handling the work into and out of bulky receptacles, such as crates, in which it is the custom oftentimes to transport such goods. In thus changing  
 40 the position of the arm and belt with relation to the base A the block  $i'$  is rotated on the arm E, and the legs  $i^1 i^2$  are turned upon their journals to enable the support I to assume its position shown in Fig. 3. 45

We claim—

1. In a sand polishing-machine, the combination of the shaft C, the arm E, the pulleys F G, the belt, and a support for said arm toward the outer end thereof and said arm be-  
 50 ing reversible, substantially as described.

2. In a sand polishing-machine, the belt-arm projecting outward beyond its support and having the sanding-belt carried around a bearing at the outer end of said arm, the  
 55 upper and lower portions of said belt, at and in the vicinity of said bearing, being parallel or approximately parallel to adapt the same to hollow work, substantially as and for the purpose described. 60

3. The belt-supporting arm E, reversible upon its bearing C and having its outer end supported upon a vertically-adjustable support, substantially as described.

Witness our hands this 9th day of May, 65  
 1891.

JAMES D. WILSON.  
 WILLIAM J. DELANO.

Witnesses:

T. L. GAERTNER,  
 EDWARD GAERTNER.