

(No Model.)

H. T. WEIRBACH & M. B. BITTING.

SANDPAPERING MACHINE.

No. 277,090.

Patented May 8, 1883.

Fig. 1.

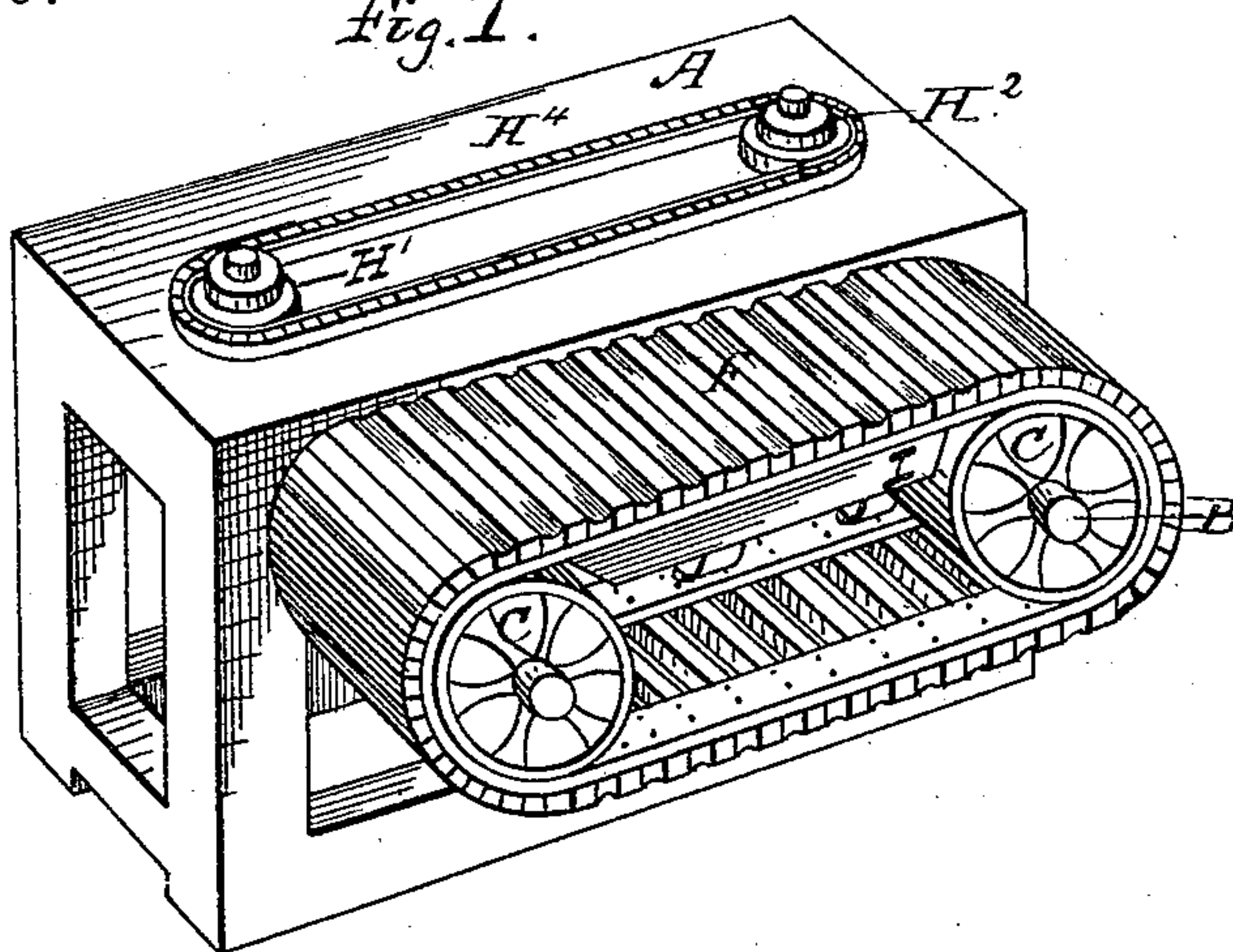


Fig. 2.

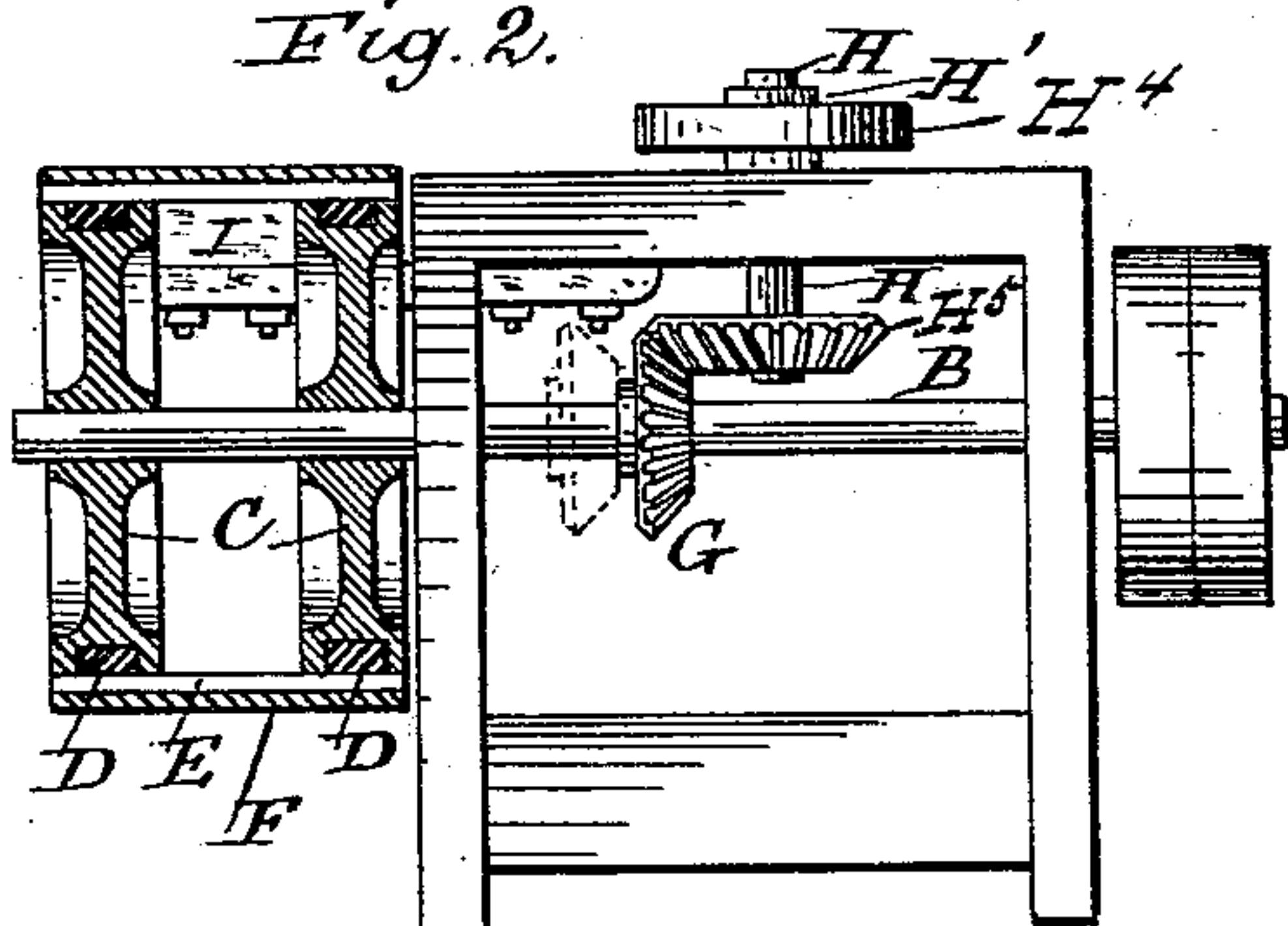


Fig. 3.

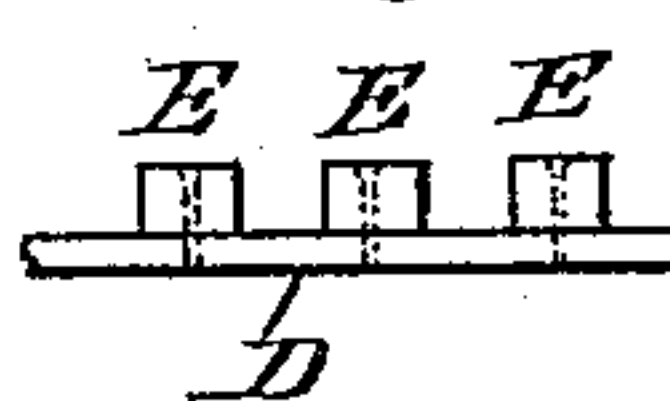


Fig. 4.

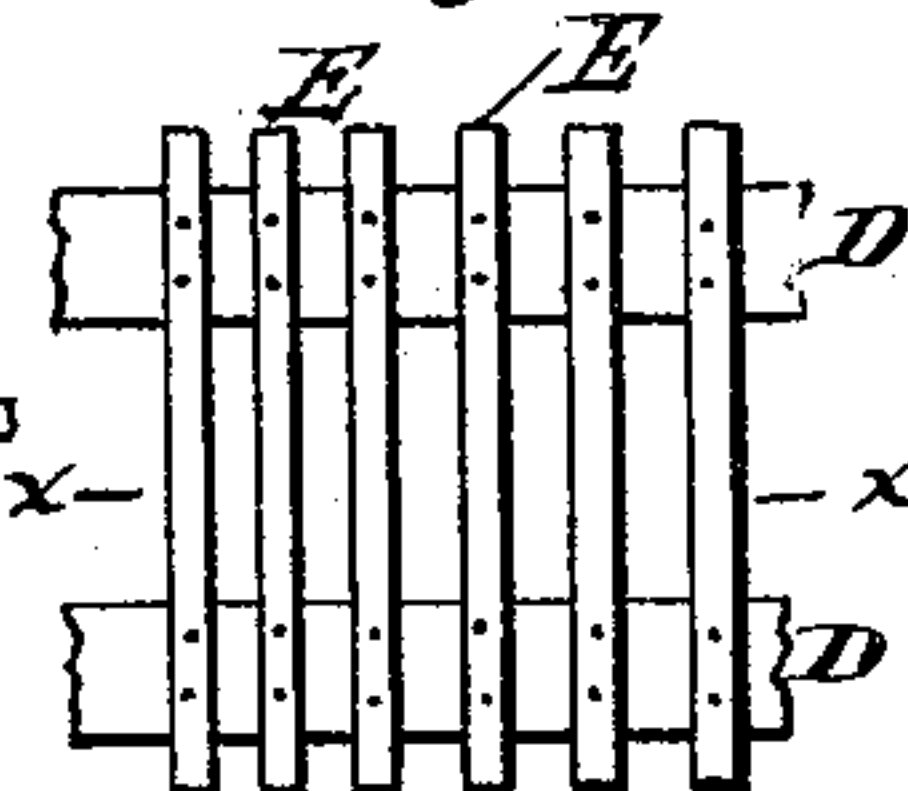


Fig. 5.

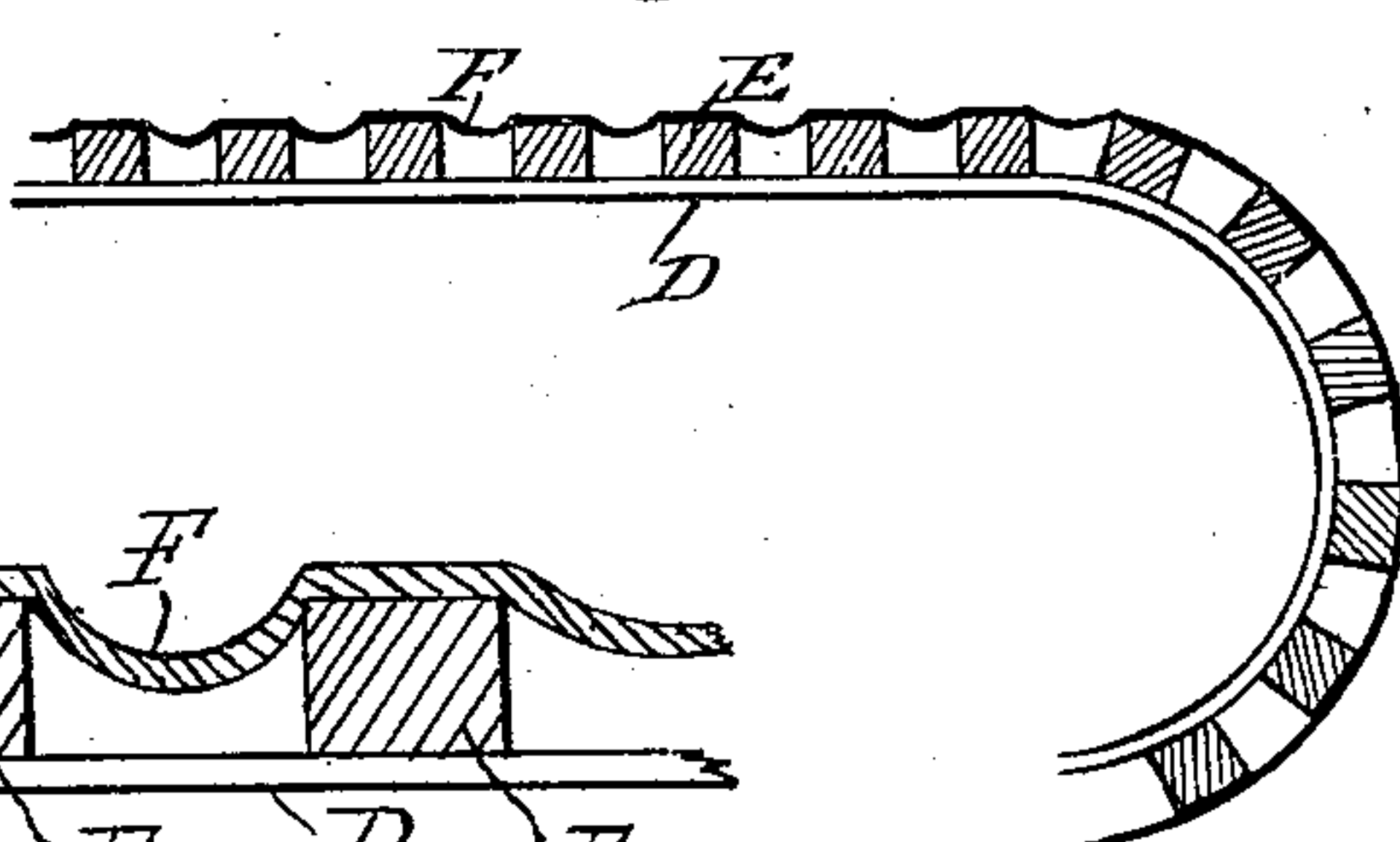
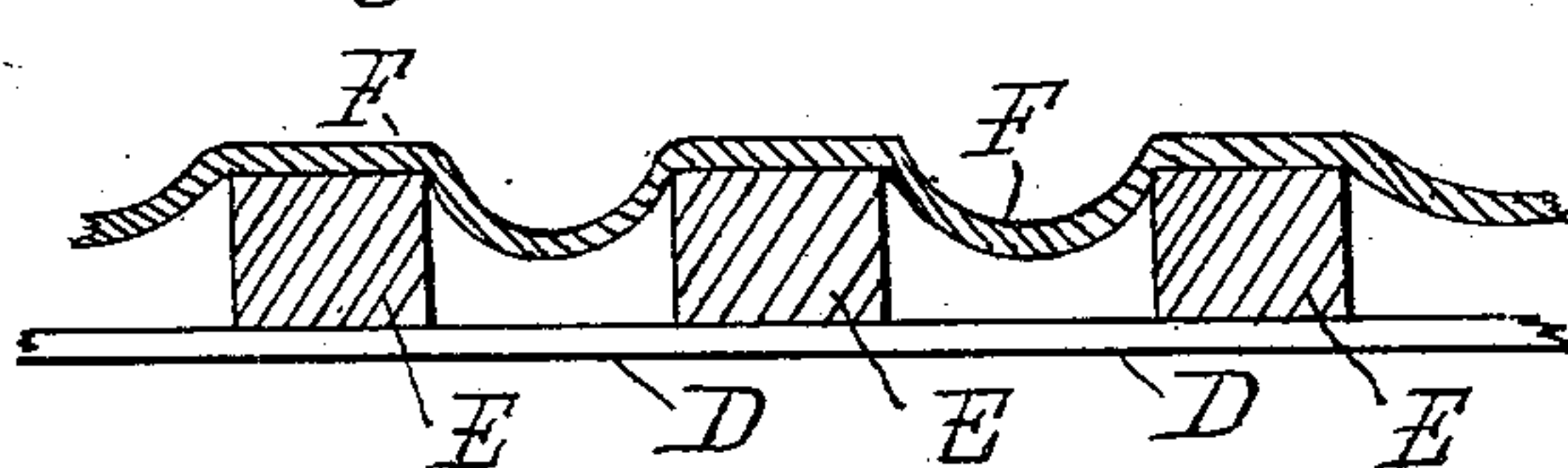


Fig. 6.



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# UNITED STATES PATENT OFFICE.

HENRY T. WEIRBACH AND MAHLON B. BITTING, OF ALLENTOWN, PA.

## SANDPAPERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 277,090, dated May 8, 1883.

Application filed February 27, 1883. (No model.)

*To all whom it may concern:*

Be it known that we, HENRY T. WEIRBACH and MAHLON B. BITTING, citizens of the United States, residing at Allentown, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Sandpapering-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to that class of sandpapering-machines which comprise an endless apron coated with abrading material and mounted on suitable pulleys or rollers, whereby when the apron is in motion articles may be held against the same to produce a smooth finish; and our invention consists in certain features of construction hereinafter described, and specifically set forth in the claims.

Figure 1 is a perspective, Fig. 2 an end elevation, partly in section, and Figs. 3 and 4 are details, of a machine constructed in accordance with our invention. Fig. 5 is a sectional view of the abrading-belt, the section being taken on the line *xx*, Fig. 4. Fig. 6 is an enlarged similar section of the same.

Like letters refer to like parts in all the figures.

In any suitable frame-work, as A, we support two horizontal shafts, B, each provided with two pulleys, C, the peripheries of which are grooved for the retention thereon of two endless steel bands, D. Upon the outer surfaces of these bands transverse slats E are secured by any suitable means, preferably by rivets *e*—two at least in each slat, at or near its end—so as to preserve the slats and bands rigidly at right angles to each other, as clearly shown in Fig. 4, where it will also be seen that the slats are arranged upon the bands so as to leave vacant spaces between them equal in extent at least to the width of the slats. These spaces may be greater or less, as desired. Upon the slats is secured in any suitable manner—as, for instance, by glue, cement, tacks, or screws—a backing of textile fabric, leather, rubber, or paper, or of any of these combined. To this backing may be applied or secured any of the well-known abrading materials. In this instance we have shown an abrading-surface consisting of ordinary sand-paper secured to the slats by glue.

To one of the shafts B are secured a fast and a loose pulley, B' B<sup>2</sup>, of usual construction, by which the machine may be operated from any usual source of power. A shifting miter-gear, G, is also mounted upon the shaft B, whereby the motion of said shaft may at will be communicated by said gear to a vertical shaft, H, passing upward through the framework and the table of the machine.

To the shaft H, at that portion thereof which projects above the table, is secured a pulley, H', which may, if desired, be grooved, and at the opposite end of the machine a companion pulley, H<sup>2</sup>, is located, and about these pulleys a single endless steel band having transverse strips equal to the width thereof is secured, and upon these strips is secured an abrading-band, H<sup>4</sup>, which may be constructed as hereinbefore set forth with relation to the abrasive belt or apron F.

I represents a band-supporting bed secured by cleats to the main bed of the machine, as clearly shown, Fig 2.

The operation of the machine is as follows: Power being applied to the shaft B, motion is communicated to the abrading belt or apron F, and articles held thereupon are smoothed and finished. Now, it will be noticed that when the abrading belt or apron F is in a straight line, as when upon the bed I, that portion thereof between the slats E droops or is slack, and forms pockets in which the substance or dust removed from the article is gathered as fast as it is produced, thus leaving that portion of the belt or apron upon the slats free from dust, whereby a more effective operation of the belt or apron is secured. It will be seen, also, that when the belt or apron is in a curved line, as when on either of the pulleys C, the portion of the belt or apron between the slats is distended, whereby the dust collected thereon is delivered therefrom, and this, when the machine is in rapid motion, is accomplished with considerable force, so that the belt or apron is kept practically free from dust. By shifting the gear G to mesh with its companion gear, H<sup>5</sup>, on the shaft H, the belt H<sup>4</sup> may be employed simultaneously with the belt F, if desired, for smoothing articles having curved surfaces, which articles may be rested upon the main bed of the machine.



Various modifications may be made in the minor details of the construction and location of the principal elements of the machine without a departure from our invention. Other than steel bands D may be employed, and their number and that of the pulleys C may be varied, and instead of said pulleys plain rollers of any desired width or length suited to the width of any desired belt or apron may be used.

A quarter-turn belt may be substituted for the bevel-gearing, and any ordinary smoothing belt or apron may be used upon the upper surface of the table, if desired.

Having described our invention and its operation, what we claim as new is—

1. In a sandpapering, polishing, or smoothing machine, an abrading belt or apron comprising a band or bands, transverse slats arranged thereon with spaces between them, and an endless abrasive belt or apron secured to

the tops of the slats, substantially as and for the purpose set forth.

2. The combination of an endless band, transverse slats secured thereto, and an endless abrasive belt secured to the upper or outer faces of the slats, substantially as specified.

3. The combination of the pulleys C, bands D, slats E, and abrasive apron or belt F, secured to the slats, substantially as shown and described.

4. The combination of the pulleys C, belt or apron F, shaft B, shifting gear G, shaft H, gear H<sup>5</sup>, abrasive belt H<sup>4</sup>, and pulleys H' H<sup>2</sup>, substantially as shown and described.

In testimony whereof we affix our signatures in presence of two witnesses.

HENRY T. WEIRBACH.  
MAHLON B. BITTING.

Witnesses:

JACOB D. BURGER,  
EDWARD H. RENINGER.