

O. SAWYER, A. & H. C. KNOWLTON.
SANDING-MACHINE.

No. 177,018.

Patented May 2, 1876.

Fig. 1.

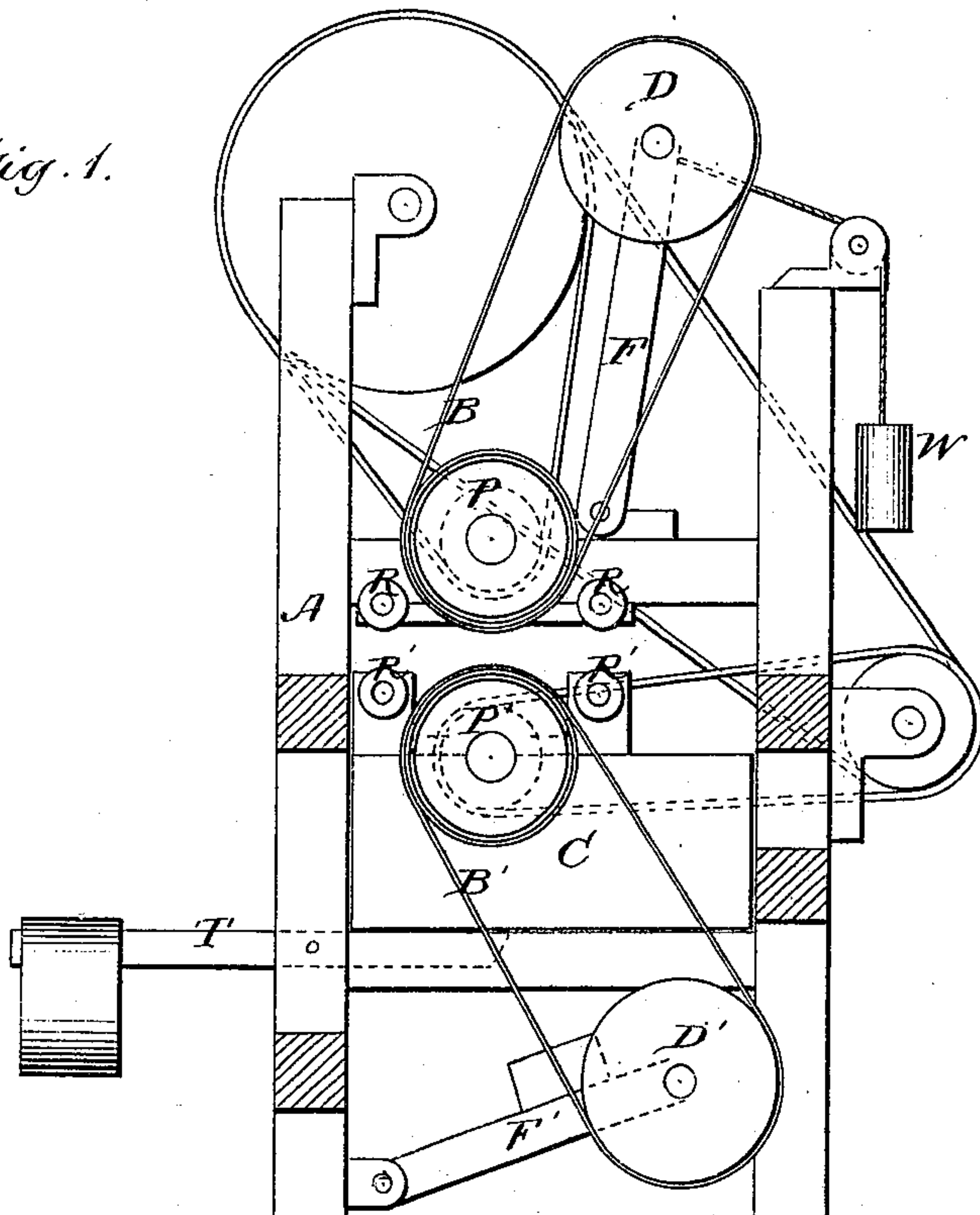
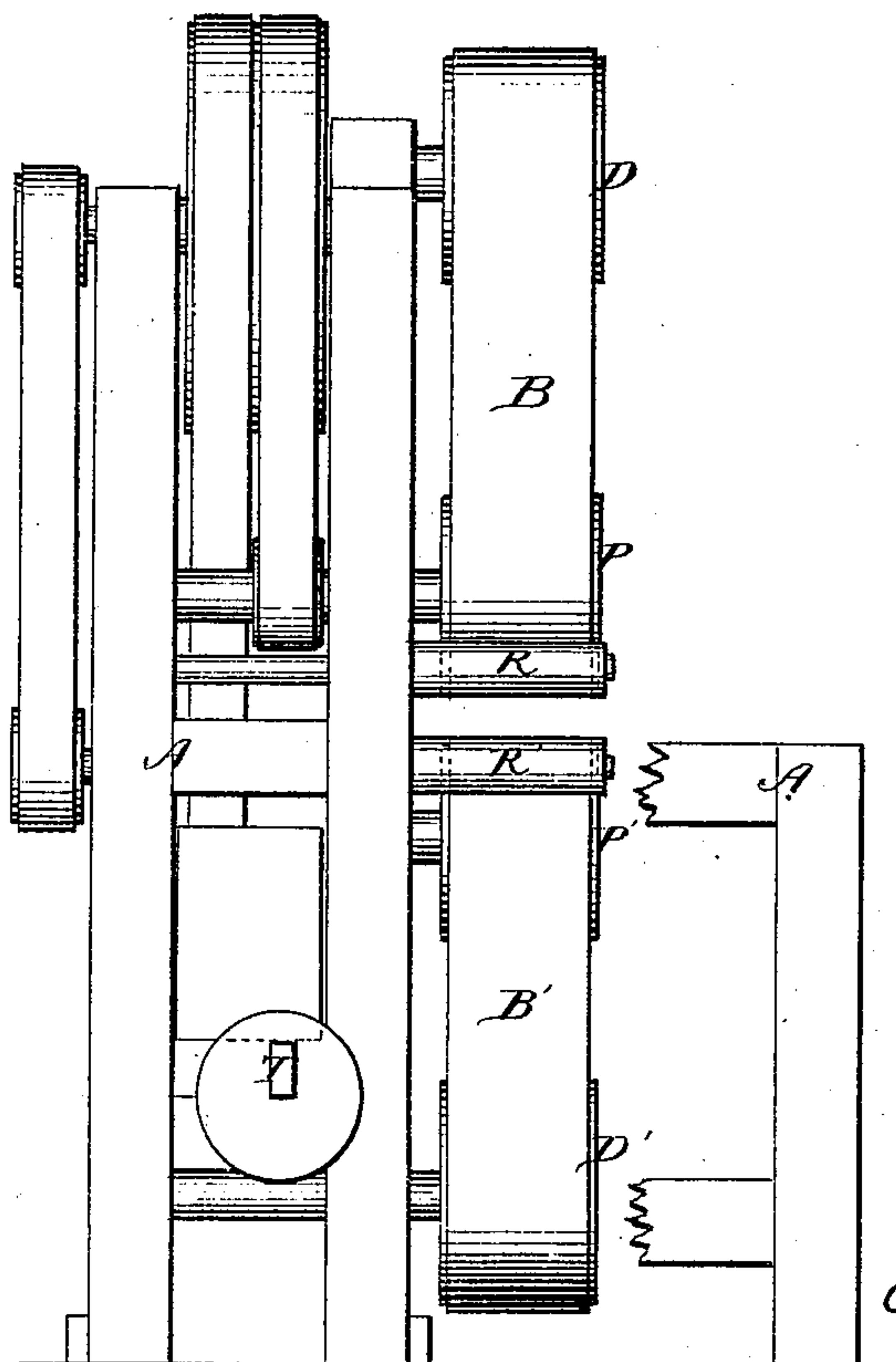


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

OLIVER SAWYER, OF WINCHENDON, AND AUGUSTUS KNOWLTON AND
HENRY C. KNOWLTON, OF GARDNER, MASSACHUSETTS.

IMPROVEMENT IN SANDING-MACHINES.

Specification forming part of Letters Patent No. **177,018**, dated May 2, 1876; application filed
October 19, 1875.

To all whom it may concern:

Be it known that we, OLIVER SAWYER, of Winchendon, and AUGUSTUS KNOWLTON and HENRY C. KNOWLTON, of Gardner, in the county of Worcester and State of Massachusetts, have invented certain Improvements in Sanding-Machines, of which the following is a specification:

In the accompanying drawing, forming a part of this specification, Figure 1 represents an end elevation of a machine embodying our invention; and Fig. 2 is a front elevation of the same.

This invention relates to that class of smoothing or sanding machines in which a belt coated with sand or emery is employed for smoothing flat surfaces, the belt being supported, at the point where it operates on the stock, by a pulley having an elastic periphery.

The invention has for its object to provide means whereby pieces of flat stock of different degrees of thickness can be presented to the smoothing-belt at the point where it is supported by the elastic pulley, and sanded on one side alone, by the employment of one smoothing-belt, or on both sides simultaneously, by the employment of two smoothing-belts. To this end our invention consists in the combination of feed-rolls and sand-belt-supporting pulleys, which we will now proceed to describe, and point out in our claim.

In carrying out our invention we employ a frame-work, A, adapted to support the operative parts of our invention. B represents a belt coated with sand or emery in the usual manner. P D represent the pulleys on which the belt is supported and driven. The pulley P we term the bearing-pulley, the same being located in such relation to the feed-rolls hereinafter described as to constitute a bearing or support for the belt B at the point where it operates on the stock presented to it by said feed-rolls. The periphery of the bearing-pulley is made of any suitable yielding or elastic material—such as cloth, rubber, &c.—and forms a bearing for the belt B sufficiently yielding to prevent the coating of the belt from being held positively against the surface to be sanded. R R R' R' represent feed-rolls, which are preferably rubber-coated, and are

located with their axes substantially parallel with the axis of the bearing-pulley P. These feed-rolls are arranged in such relation to the bearing-pulley P that a piece of stock passing between them will be subjected to the action of the belt B at the point where it is supported by said bearing-pulley. The rolls R' R' we prefer to locate in yielding bearings, so as to admit of the introduction of pieces of stock of different thicknesses between said rolls and the rolls R R, whose bearings are stationary, suitable devices being employed for imparting a yielding pressure to the rolls R' R' in the direction of the rolls R R, as will be hereinafter described. The motive power may be applied to either of the pulleys P D. We prefer to connect the bearing-pulley P to the prime motor, and locate the pulley D in a swinging frame, F, which is provided with a weight, W, the latter tending to draw the pulley D away from the pulley P, and thus tighten the belt.

It will be seen that a flat piece of stock presented by the feed-rolls to the belt in a direction at right angles with the axis of the bearing-pulley will be acted on uniformly by the supported portion of the belt, the stock being passed along by the rolls until it is sanded from end to end. The elastic periphery of the bearing-pulley prevents the rapid destruction of the coating of the belt which would result if the pulley had a rigid periphery.

We have thus far described an adaptation of parts for sanding one side of a flat piece of stock at a time. For operating simultaneously on opposite sides of a flat piece we employ an additional belt, B', bearing-pulley P', and tightening-pulley, D', these parts being substantial duplicates of the belt B and pulleys P D, and so located as to cause the belt B' and bearing-pulley P' to assume the same relation to the feed-rolls R' R' that the belt B and pulley P sustain to the feed-rolls R R, the belt B' being thus caused to operate on one side of the stock, while the belt B operates on the opposite side, the axes of the pulleys being parallel. The pulley P' and feed-rolls R' R' have their bearings in a block or carriage, C, which is adapted to slide vertically in suitable ways. T is a weighted arm or lever, which exerts an upward pressure on the car

riage C and its attachments, and holds the bearing-pulley P' and belt B' with a yielding pressure against the stock to be smoothed, thus adapting the machine to operate on stock of different thicknesses. The tightening-pulley D' is journaled in a swinging weighted frame, F', which operates substantially like the frame F of the pulley D.

By this invention we are enabled to rapidly, economically, and uniformly sand pieces of stock having flat surfaces, and of different degrees of thickness.

We do not limit ourselves to the employment of both belts B B', as either may be dispensed with, if desired; neither do we limit ourselves to the employment of the tightening-pulleys D D', as any suitable arrangement of pulleys may be employed in connection with the elastic bearing-pulleys; and any suitable belt-tightening devices may be substituted for the swinging weighted frames without departing from the spirit of our invention.

We claim—

In a sanding machine, the combination of the feed-rolls R R, located in fixed bearings, and the feed-rolls R' R', located in yielding bearings, with the pulley P located in fixed bearings, and supporting the sand-belt B, or with the pulleys P P' located, respectively, in fixed and yielding bearings, and supporting the belts B B', substantially as described, for the purposes specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

OLIVER SAWYER.
AUGUSTUS KNOWLTON.
HENRY C. KNOWLTON.

Witnesses:

THATCHER B. DUNN,
JNO. HEYWOOD.