

(No Model.)

3 Sheets—Sheet 1.

A. K. WASHBURN.
SOLE LEVELING MACHINE.

No. 561,035.

Patented May 26, 1896.

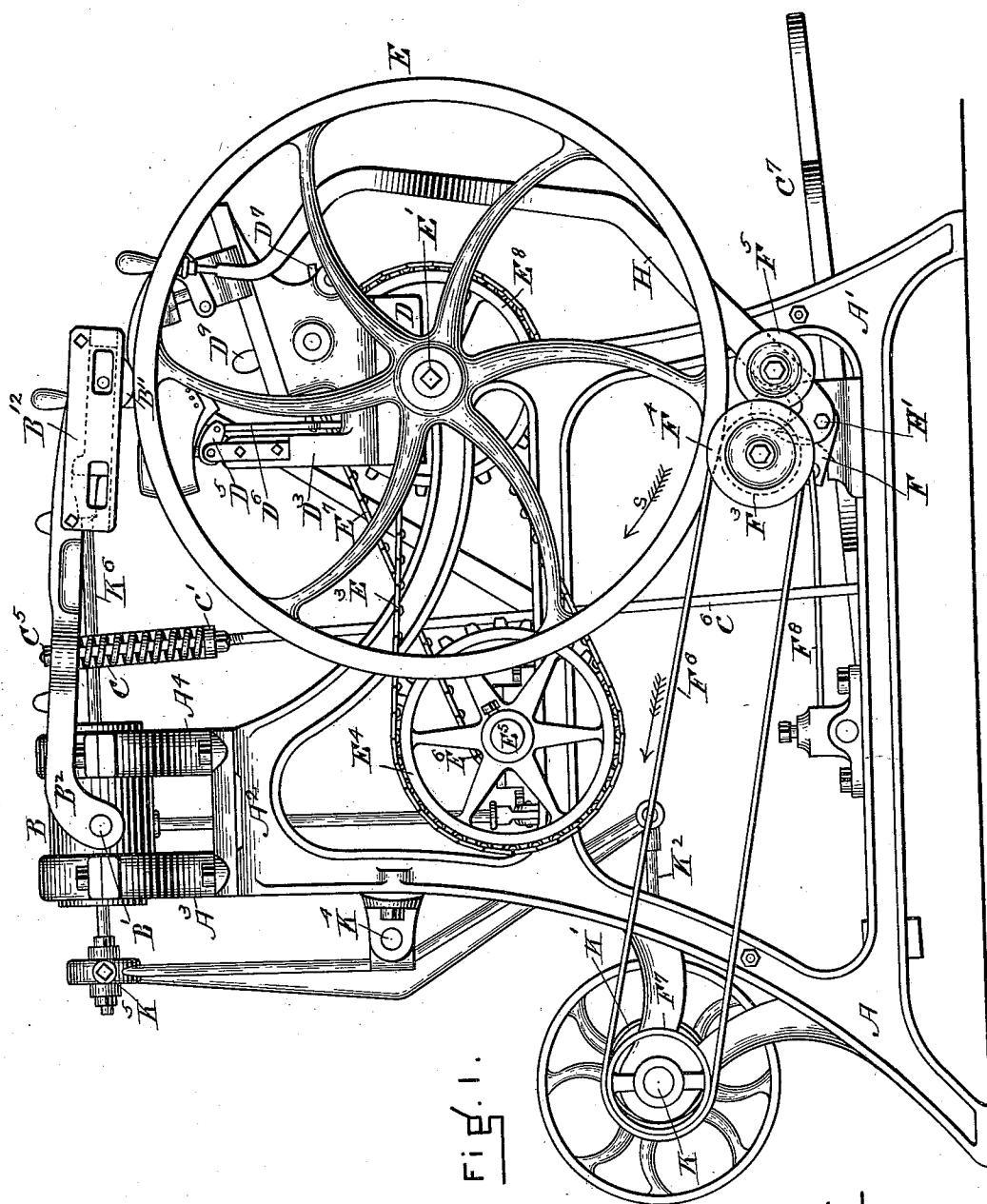


Fig. 1.

WITNESSES

Frank G. Parker.
Frank G. Kattie.

INVENTOR.

Albion H. Washburn

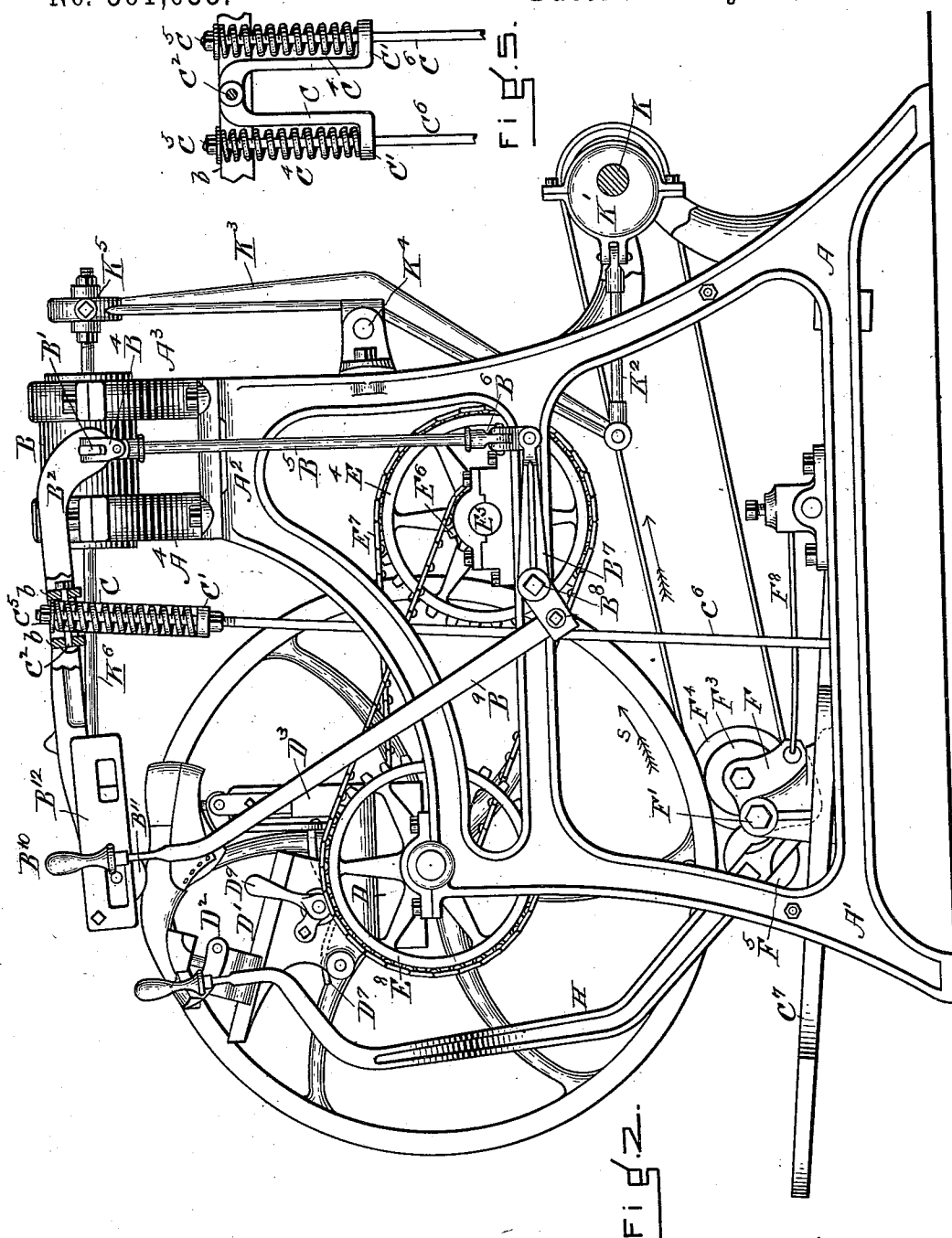
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Frank G. Hattie.

INVENTOR.

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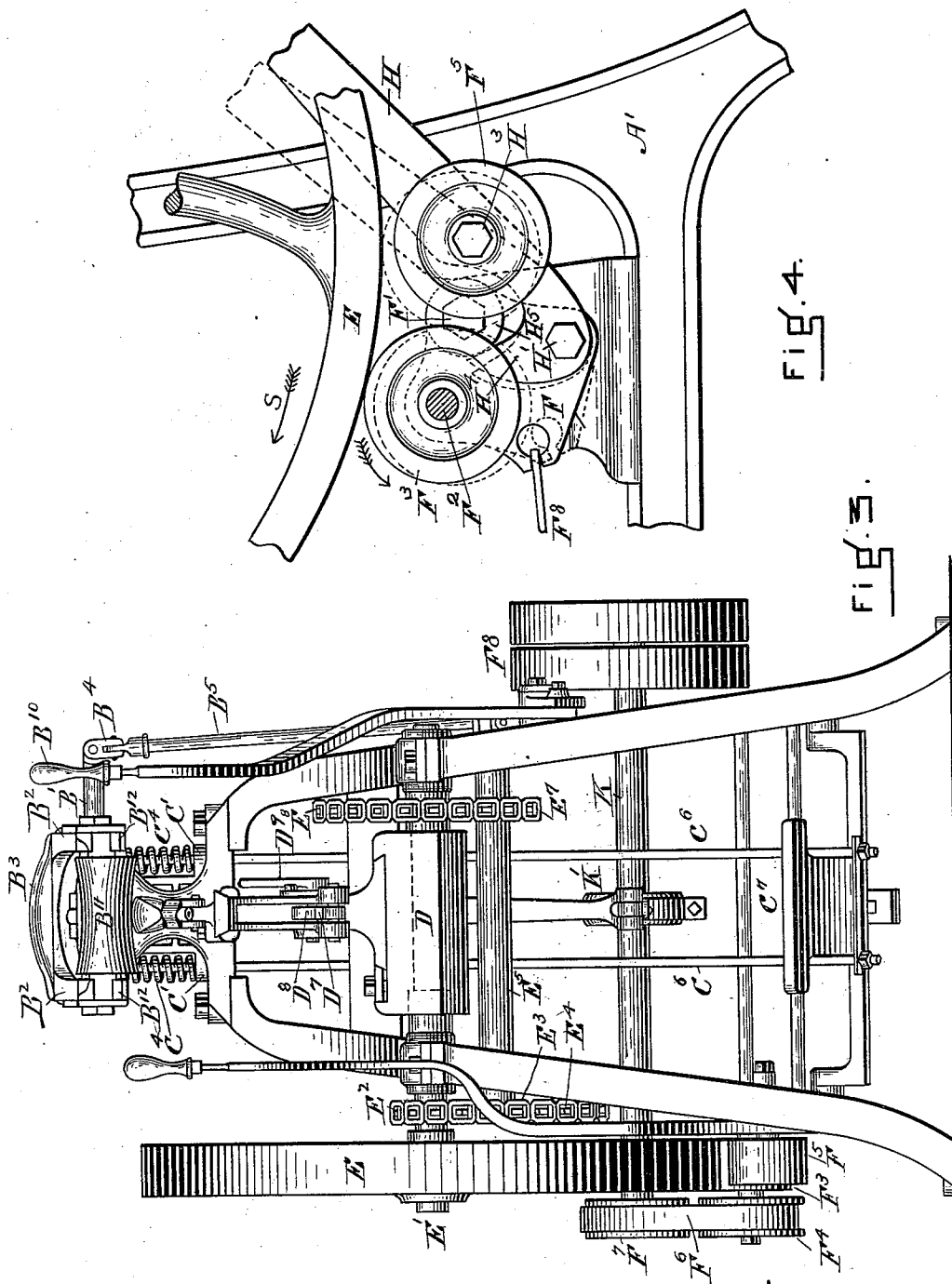
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WITNESSES.

Wm. G. Parker
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INVENTOR

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UNITED STATES PATENT OFFICE.

ALBION K. WASHBURN, OF BRIDGEWATER, MASSACHUSETTS.

SOLE-LEVELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 561,035, dated May 26, 1896.

Application filed January 2, 1896. Serial No. 574,138. (No model.)

To all whom it may concern:

Be it known that I, ALBION K. WASHBURN, of Bridgewater, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Sole-Leveling Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to improvements in the construction and arrangement of parts of a leveling-machine; and it consists in so arranging the frame that holds and guides the leveling-roller that the inclination of the axis of the said roller may be controlled by the operator by a lever mechanism which will not transmit any of the vibration, due to the rapid movement of the roller-frame, to the hands of the operator.

The invention also consists in a device by which the shoe-jack is made to oscillate so as to present all parts of the sole to the action of the leveling-roller, the object being to so improve the mechanism as to make it more effective in its work and much easier for the operator. This object I attain by the mechanism shown in the accompanying drawings, in which—

Figure 1 is an elevation of one side of the machine, looking from the left. Fig. 2 is an elevation of one side of the machine, looking from the right. Fig. 3 is a front elevation of the machine. Figs. 4 and 5 show parts in detail.

In the drawings the frame of the machine is represented by A A' A². At the upper part A² of the frame are bolted two housings A³ A⁴. These housings serve as journal-bearings for the hollow drum B, which is free to turn on its axis. Attached to the drum B by means of the trunnions B' B' are two arms B³, which, together with the cross-piece B³ and the way-pieces B¹², form a frame for the roller B¹¹ and its connecting parts to slide in. The roller B¹¹ is mounted in a suitable housing-piece which is adapted to slide in the ways B¹² B¹². (See Fig. 3.) Motion is given to the roller B¹¹ by means of the pitman K⁶, which passes through the hollow drum B and is connected at K⁵ to the lever K³, said lever K³ being pivoted at K⁴ and operated by the pitman K² and eccentric K' on the shaft K, motion being given to the shaft K by the power-driven pul-

ley F⁸. The leveling-roller B¹¹ is rolled rapidly back and forth lengthwise of the sole of the shoe, but with a yielding pressure, which is exerted upon it by the yoke-piece C C' C'. (See Fig. 5.) The upper end of this yoke-piece is connected by a pivot C² (Figs. 2 and 5) to the cross-pieces b b of the roller-frame B² B², so that the frame is free to turn on its longitudinal axis, thus allowing the leveling-roller B¹¹ to work upon all parts of the sole. A yielding pressure is brought to bear upon the roller and its frame by the treadle C⁷ and rods C⁶ C⁶. The said rods pass up through the foot-pieces C' C' of the yoke C and through compression spiral springs C⁴ C⁴. Screw-nuts C⁵ C⁵ at the upper ends of the rods C⁶ C⁶ serve to bring a pressure to bear on the upper ends of the springs, the said pressure being transmitted to the yoke C C' C', and thence to the frame B² B² and the leveling-roller B¹¹.

I will now describe my device for causing the leveling-roller B¹¹ to assume any desired axial inclination, so as to adapt itself to the surface of the sole. One of the trunnions B', (see Figs. 2 and 3,) that extend from the drum B, has attached to it, by a swivel-piece B⁴, a rod B⁵, the other end of the rod B⁵ being connected by a swivel-joint B⁶ to a hand-lever B⁷ B⁹, said lever being pivoted at B⁸ and having a handle B¹⁰. The operator by simply moving the lever B⁷ B⁹ may give any desired inclination to the axis of the roller B¹¹, and as the lever, through its link B⁵, is connected directly to the drum B it will not in any degree receive or partake of the vibrating motion given to the frame B² B², and consequently the operator is in no way incommoded or disagreeably affected by the vibrations, as in the case of ordinary machines of this class.

I will describe the shoe-jack but briefly, as its construction is not radically new. The jack consists of a base-piece D, having a heel-standard D³ and a slide-arm D' for receiving the toe-supporting piece D². The heel-last pin D⁴, Fig. 1, is mounted in a rocking piece D⁵, which is actuated by a link D⁶, a lever D⁷, and an eccentric D⁸, said eccentric being controlled by the hand-lever D⁹. These parts are old and do not require particular description. The jack has a peculiar motion given to it by a power mechanism within the control and discretion of the operator. The jack is hung

loosely upon the shaft E' of the jack-controlling wheel E, but is rigidly attached to the sprocket-wheel E⁸, (see Fig. 1,) so that any motion given to the said sprocket-wheel E⁸ will be transferred to the jack. The sprocket-wheel E⁸ is connected by a chain E⁷ to the small sprocket-wheel E⁶, keyed to the shaft E⁵.

E⁴ is a large sprocket-wheel also keyed to the shaft E⁵ and is connected by a chain E³ to a small sprocket-wheel (at E³, Fig. 3) connected directly to the jack-controlling wheel E. From the above it may be seen that any motion given to the jack-controlling wheel E will be transmitted, through the small sprocket on said wheel, (not shown,) the sprocket-chain E³, sprocket-wheel E⁴, shaft E⁵, sprocket-wheel E⁶, chain E⁷, and sprocket-wheel E⁸, to the jack, which is rigidly attached to said sprocket-wheel E⁸.

The mechanism by which motion in either direction is given to the jack-controlling wheel E is shown in Figs. 1 and 4 and consists in a swinging bracket-piece F, pivoted at F' to the frame of the machine. This bracket-piece F has but a small motion and is held in place by a stiff flat spring F⁶. A friction-wheel F³ is mounted on stud F², extending from the bracket-piece F. This wheel F³ is connected to a belt-wheel F⁴, (see Fig. 1,) said belt-wheel F⁴ being driven by the belt from the pulley F⁷. The friction-wheel F³ in its normal position is held by the spring F⁶, so as not to be in contact with the jack-controlling wheel E, so that it may be in constant motion, but doing no work. When it is required that the motion of the wheel F³ shall be imparted directly to the jack-controlling wheel E, then the operator by moving the lever H, which is pivoted to the bracket-piece F at H', causes the hook H⁴ on the lower end of the said lever to come in contact with a boss H⁵ on the bracket-piece F and, reacting through the pivot H', cause the said bracket-piece F to tilt, thus throwing the friction-wheel F³ into contact with the wheel E and causing it to rotate in the direction of the arrow S. When it is desired to cause the wheel E to rotate in a direction opposite to the arrow S, then the operator pushes the lever H away from him. This action brings the friction-wheel F⁵ (pivoted to the lever H at H³) first against the friction-wheel F³, from which it takes its mo-

tion. Then a continued movement of the lever H will tilt the bracket F downward and bring the friction-wheel F⁵ in contact with the jack-controlling wheel E and cause it to rotate in a direction opposite to the arrow S. As the motion of the jack-controlling wheel E is much reduced before it is finally transmitted to the jack, it will be understood that the operator has ample time to throw the lever H in one or the other direction, as he wishes the jack to swing either to or from him, or by allowing the bracket-piece F to be held in its normal position by the spring F⁶ then the jack-controlling wheel E may be turned by hand.

I claim—

1. In a sole-leveling machine a frame swinging upon the trunnions of a hollow drum, said drum being free to turn on its axis, and the said drum, a leveling-roller frame sliding in the said swinging frame and carrying a sole-leveling roller, means for operating said roller-frame, transmitting mechanism attached to the hollow drum and to a lever by means of which the said drum may be oscillated thereby giving the required inclination to the sole-leveling roller substantially as and for the purpose set forth.

2. In a sole-leveling machine the combination of a shoe-holding jack mounted upon the axis of the jack-controlling wheel E; with the bracket-piece F and its actuating-lever H, friction-housing wheels F³ F⁵ adapted to impart motion to the said jack-controlling wheel and mechanism for transmitting motion from the jack-controlling wheel to the said jack substantially as and for the purpose set forth.

3. In a sole-leveling machine the combination of the leveling-roller frame B² B² adapted to swing on a hollow drum said drum turning on its axis and having a trunnion B; with the link B⁵ connected to said trunnion and adapted to be operated by a lever substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 30th day of December, A. D. 1895.

ALBION K. WASHBURN.

Witnesses:

FRANK G. PARKER,
FRANK G. HATTEE.