H. M. IRWIN.

Horse-Powers.

No. 137,684. Patented April 8, 1873.

Fig. 1.

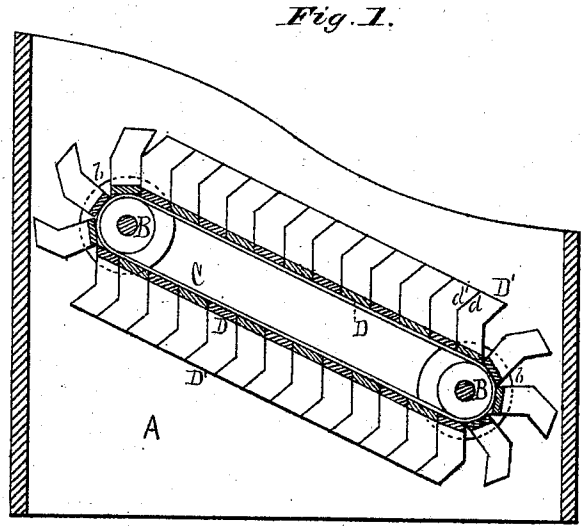


Fig. 2.

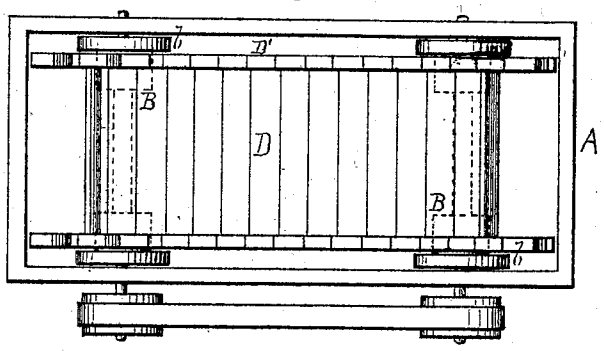
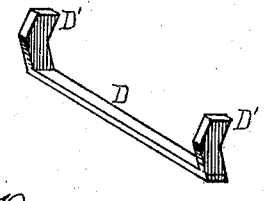


Fig. 3.



Witnesses:
Edwin James.
N. V. Gordon.

Inventor:
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UNITED STATES PATENT OFFICE

HALL M. IRWIN, OF DAVIDSON COLLEGE, NORTH CAROLINA.

IMPROVEMENT IN HORSE-POWERS.

Specification forming part of Letters Patent No. **137,684**, dated April 8, 1873; application filed December 27, 1872.

To all whom it may concern:

Be it known that I, HALL M. IRWIN, of Davidson College, in the county of Mecklenburg and State of North Carolina, have invented certain new and useful Improvements in Horse-Powers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing and the letters of reference marked thereon making part of this specification, in which—

Figure 1 is a side view, one side of the frame being removed. Fig. 2 is a top-plan view. Fig. 3 is a detached view of the foot-slats and double diamond-shaped blocks.

The object of my invention is the construction of a horse-power in which intermediate rollers and devices for stretching the band very tight to support the animal are dispensed with. The nature of my invention consists in permanently securing to each end of the foot-slats, which are attached to the endless belt, double-diamond-shaped blocks. These blocks are so formed and secured that, when the machine is in operation, the upper section of each block assists in supporting the adjoining block while they are traveling between the end rollers.

The construction and operation of my invention are as follows:

A is the frame-work containing the mechanism. B B are the rollers, and are journaled in the sides of the frame A at such relative positions that the endless band, when placed thereon, shall be inclined. On the ends of these rollers are flanges *b b*. Instead of these rollers being journaled in the frame A, a rectangular frame may be inserted longitudinally and at an angle of inclination in the main frame, and the rollers journaled in that. C is the endless belt or band, and is made of strong leather, elastic iron, steel, or any other suitable material. This band extends around the rollers B B, and is prevented from slipping off the same by means of the flanges *b b*. D D are a series of foot-slats, which are fastened transversely on the endless band C by any convenient means, and extend the whole length of the band, being placed close together. D′ D′ are a series of blocks, and are secured on top of each foot-slat and at each end of the same. These blocks are double-diamond-shaped, or of the contour presented when two diamonds are joined together at their sides, which, when placed one on top of the other, would be adjacent.

This peculiar form of block enables me to dispense with the usual means now employed, such as intermediate rollers, &c., to sustain the animal, as each block helps to sustain the adjoining block, and also does not render it necessary that the band should be stretched very tight.

By reference to Fig. 1 it will be seen that the blocks, in their movement down the inclined plane, have a tendency naturally to support one another. This tendency is increased by the peculiar shape of the blocks which I use, since, when one pair of them reaches the lower roller, its foot-slat rests upon and is supported by the roller, and its side *d* upholds the side *d′* of the adjoining block, and thus assists in supporting the same, as all the blocks are counterparts of each other. The same support is furnished each one in the series by its adjoining block.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

The frame A, rollers B B, band C, and slats D D provided with double-diamond-shaped blocks D′ D′, when the whole is constructed and arranged to form a horse-power, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HALL MORRISON IRWIN.

Witnesses:
WM. C. MAXWELL,
JAS. M. DUNLAP.