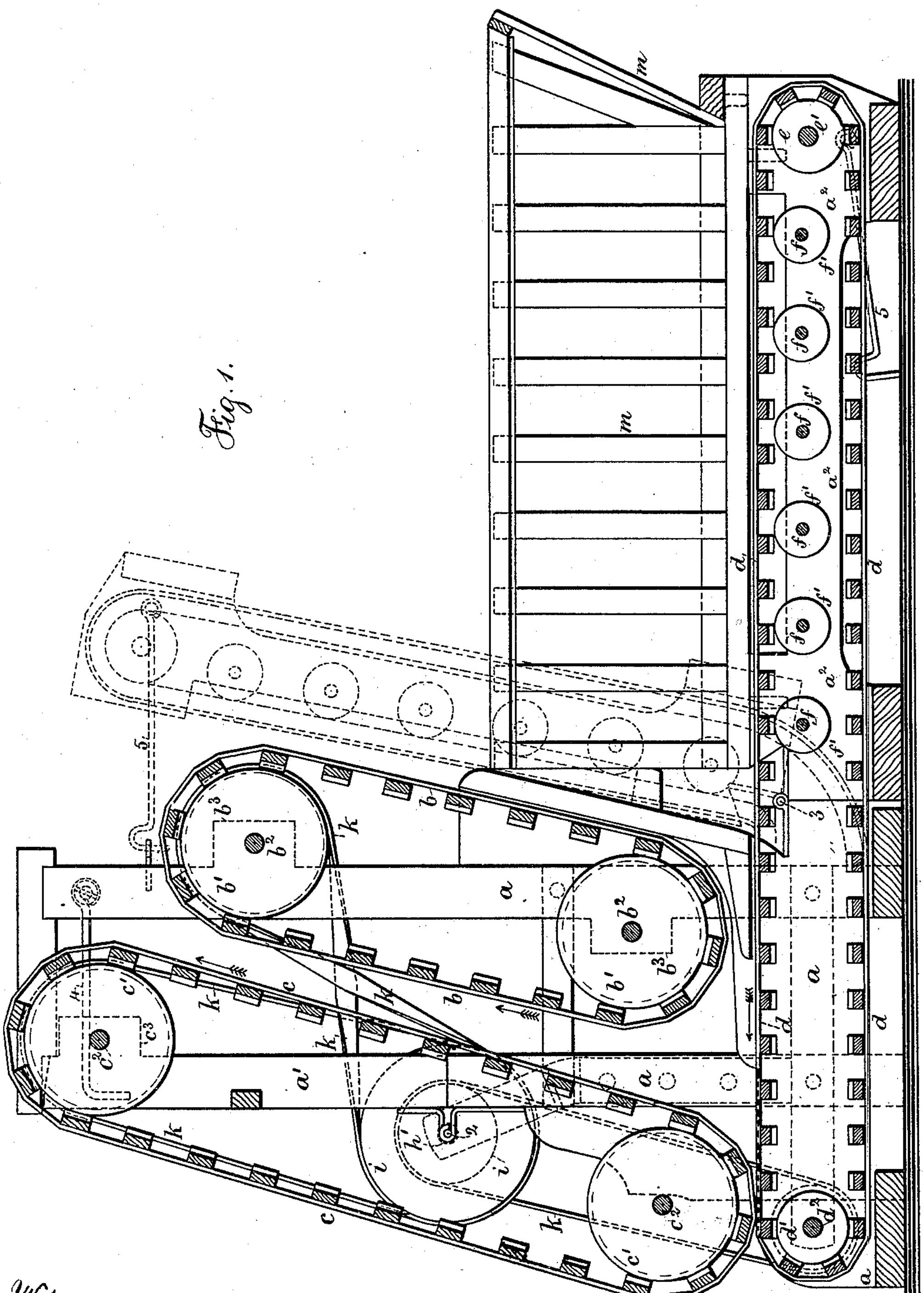
(No Model.) 2 Sheets—Sheet 1.

J. HOTHERSALL.

CARPET CLEANING MACHINE.

No. 418,286. Patented Dec. 31. 1889.



Witnesses:
J. Stait
Chas. H. Smith

Inventor:
James Hothersall
per Lemuel W. Serrell atty

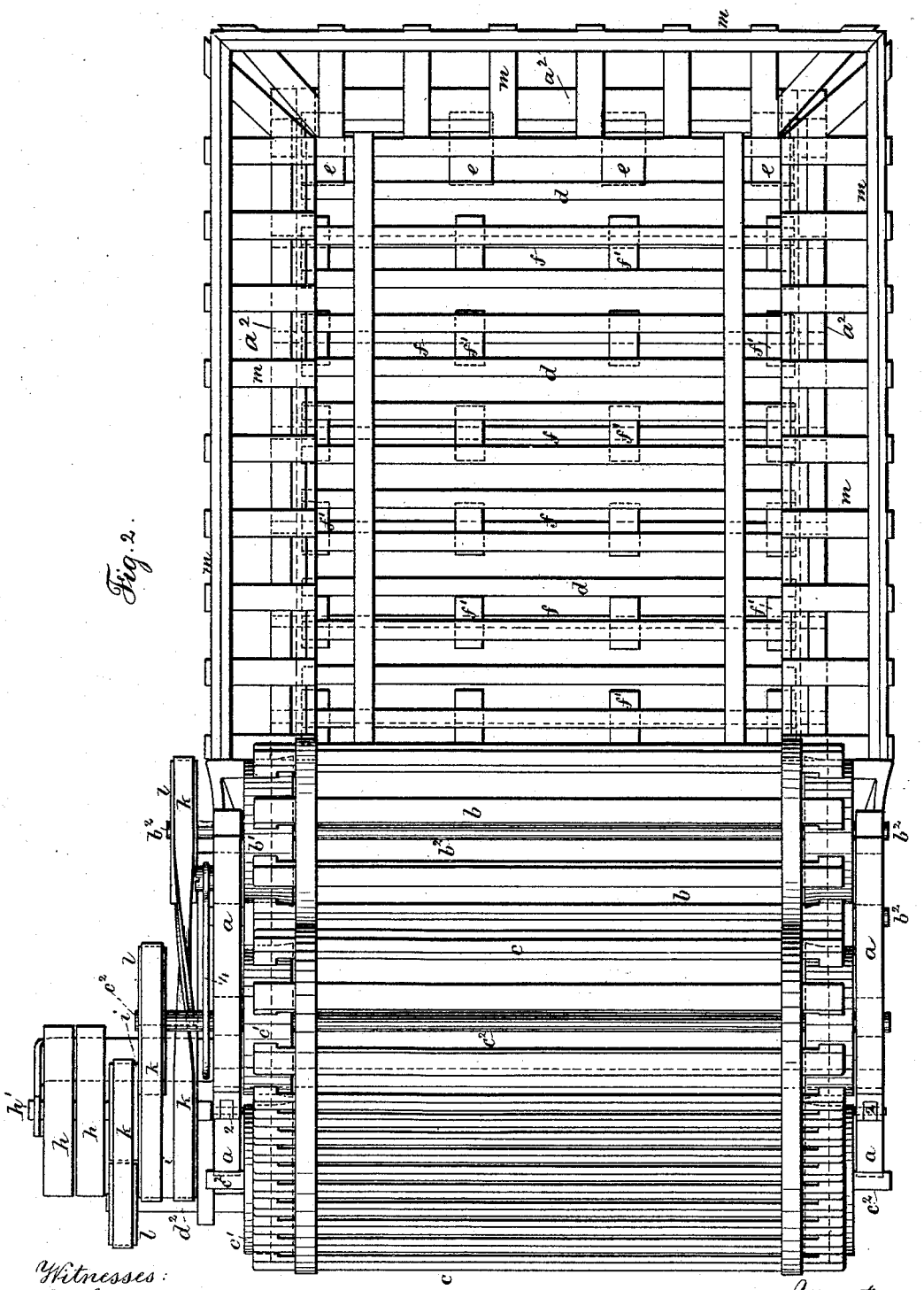
(No Model.) 2 Sheets—Sheet 2.

J. HOTHERSALL.

CARPET CLEANING MACHINE.

No. 418,286. Patented Dec. 31, 1889.

Fig. 2.



Witnesses:
J. Stail
Chas. H. Smith

Inventor:
James Hothersall
per Lemuel W. Serrell atty.

UNITED STATES PATENT OFFICE.

JAMES HOTHERSALL, OF BROOKLYN, NEW YORK.

CARPET-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 418,286, dated December 31, 1889.

Application filed March 25, 1889. Serial No. 304,641. (No model.)

To all whom it may concern:

Be it known that I, JAMES HOTHERSALL, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Carpet-Cleaning Machines, of which the following is a specification.

The object of my invention is to provide a simple and inexpensive mechanism that shall quickly and thoroughly clean or shake the dirt from carpets.

I make use of two nearly-upright endless conveyers formed of slats and belts for carrying up the carpet between them and rapidly projecting it from the top, so that it falls into an inclosure or receptacle having at the bottom a horizontal endless conveyer of slats, upon which the carpet falls, and by the concussion the dust and dirt are shaken from it, and the horizontal conveyer carries the carpet back to the bottom of the nearly-upright conveyers to be again carried up and dropped. These conveyers are provided with pulleys and shafts, around which they revolve, and there are pulleys or frames intermediately placed within the horizontal conveyer acting to receive and support the weight of the carpet.

In the drawings, Figure 1 is a vertical longitudinal section of my improved carpet-cleaning machine, and Fig. 2 is a plan of the same.

a represents a stationary frame resting upon the floor, and *a'* a vertical frame-piece pivoted to the frame *a* at 2, and a^2 represents a horizontal frame pivoted at 3 to the frame *a*.

b, *c*, and *d* represent the endless slat conveyers, *b* and *c* being placed vertically and *d* horizontally, the conveyer *b* passing around drums *b'*, connected to the shafts b^2, which shafts are mounted in stationary bearings b^3 upon the frame *a*. The endless slat conveyer *c* passes around drums *c'* upon shafts c^2, the uppermost shaft being held in bearings c^3, connected to the pivoted frame-piece *a'*, and the lowermost shaft c^2 resting against the surface of the stationary frame *a*, and there are hooks, stops, or similar devices 4 connected to the stationary frame *a*, and passing around the ends of the uppermost shaft c^2, or otherwise connected to the frame *a'*, so as to limit the movement of the swinging pivoted frame *a'*, and it will thus be seen that the endless slat conveyer *c* and its bearings will move so that said conveyer occupies a position nearer to or farther from the slat conveyer *b*, for the purposes hereinafter explained. The drums *b' c'* are by preference slightly conical, their smaller ends being next to the bearings of their shafts. This conical construction serves to keep the conveyers *b* and *c* central, so that neither one will at either side ride off its pulleys.

One end of the endless slat conveyer *d* passes around drums *d'* upon the shaft d^2, which shaft is mounted in bearings in the frame *a*, and these drums *d'*, together with one end of the conveyer *d*, are located beneath the lower end of the conveyer *c*. The opposite end of the conveyer *d* passes around drums *e*, which are mounted upon a shaft *e'* in bearings on the outer end of the swinging frame-piece a^2, and this frame-piece a^2 and the portion of the endless conveyer between the same can by means of suitable power be elevated into the position shown by dotted lines after the fence *m* has been removed, and be secured in that position by hooks 5 or in any other desired manner, so that dust beaten from the carpets as cleansed can be periodically swept up and removed from the floor. Between the side pieces of the pivoted frame a^2 there are a number of shafts *f* in bearings in said frame, and upon said shafts are pulleys *f'*, and the endless slat conveyer *d* is moved over the surface of said pulleys *f'*, and said pulleys act as a bearing-surface for the slat conveyer to receive the weight of the carpet and the shock incident to the fall of the carpet as it passes over the top of the conveyer *b;* or, if desired, a stationary framework of longitudinal slats may be employed in their stead. These endless slat conveyers are each formed from a number of slats connected together by flexible belts, the ends of which slats being preferably thickened or stiffened where the same pass around their respective pulleys.

The power to operate this mechanism is communicated by the belt to the fast and loose pulleys *h*, which are upon the shaft *h'*, said shaft having suitable bearings connected to the frame *a*, and upon this shaft *h'* there is a double pulley *i*, from which belts *k* pass to pulleys *l* upon the operating-shafts of the

respective endless slat conveyers *b c d*, and by these belts *k* these conveyers are caused to revolve in the direction shown by arrows.

The carpet to be cleansed is deposited upon the horizontal conveyer *d* within the inclosure formed by the fence *m*, which rests upon the frame a^2, and said carpet is carried along by said conveyer *d* toward the conveyer *b*, the end of said carpet being turned upwardly by the slats of the conveyer *c* into the space between the conveyers *b c*, and said carpet is elevated by said conveyers *b c* and projected above and thrown over the upper end of the conveyer *b*, so that it falls down upon the horizontal conveyer *d* within the inclosure formed by the fence *m*, the force of the fall of said carpet being received by the slats of the conveyer *d* and the pulleys *f'* and their shafts *f*, or suitable frames beneath the same, thus beating out a portion of the dust from said carpet, which is deposited on the floor beneath, and these operations are continuously repeated, each fall of the carpet removing a portion of the dust until the same is thoroughly cleansed. As the carpet is elevated between the conveyers *b c*, the conveyer *c*, if the carpet is in a thick mass, can yield sufficiently to accommodate itself to the thickness of the mass of carpet, and as the conveyer *c* yields to accommodate itself thus, the pivoted frame *a'* and the upper end of the conveyer *c* will swing outwardly away from the frame *a*, and the lower end will swing outwardly also. The pulleys *c'*, being located between the frames *a*, will prevent the parts becoming misplaced.

I claim as my invention—

1. The combination, with the vertically-placed endless slat conveyers *b c* and the horizontally-placed conveyer *d* and their pulleys and shafts, of the stationary frame *a*, the swinging pivoted frame *a'* and stops for the same, the swinging pivoted frame a^2, and mechanism, substantially as specified, for holding the frame a^2 in place when elevated, substantially as set forth.

2. The combination, with the stationary frame *a* and the pivoted frames *a' a²*, of the vertically-placed endless slat conveyers *b* and *c*, the horizontally-placed conveyer *d* and the bearings and pulleys for the same, the shafts *f* and pulleys *f'*, and the fence *m*, resting upon the frame a^2, and forming an inclosure around three sides of the conveyer *d*, to receive the carpet to be cleaned, substantially as and for the purposes set forth.

3. The combination, with the vertically-placed endless slat conveyer *b*, the pulleys and shafts, and supporting-frames for the same, of the horizontally-placed conveyer *d*, the pulleys and shafts for the same, and the frame a^2, the pivoted frame *a'*, the endless slat conveyer *c*, the pulleys and shafts for the same, and the bearing c^3 upon the frame *a'*, whereby the conveyer *c* is free to move to accommodate varying thicknesses of carpet, substantially as set forth.

4. The combination, with the frames *a a'* a^2, of the vertically-placed endless slat conveyers *b* and *c* and the horizontally-placed endless slat conveyer *d*, conical drums *b'* and *c'* and their shafts for the conveyers *b c*, and the pulleys and shafts for the conveyer *d*, and bearers beneath the slats of the conveyer *d*, substantially as and for the purposes set forth.

Signed by me this 20th day of March, A. D. 1889.

JAMES HOTHERSALL.

Witnesses:
GEO. T. PINCKNEY,
HAROLD SERRELL.