

W. A. HOLWELL.
Door-Pulleys.

No. 146,675.

Patented Jan. 20, 1874.

Fig. 1.

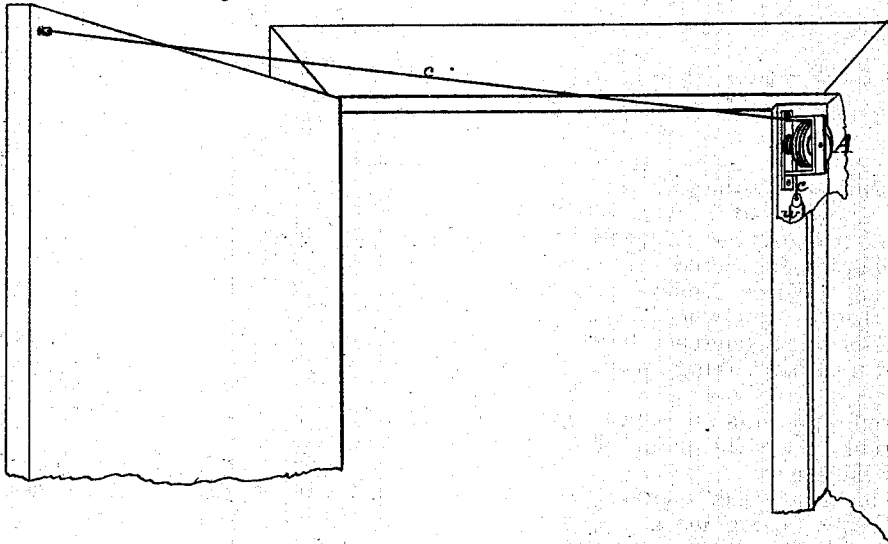


Fig. 2.

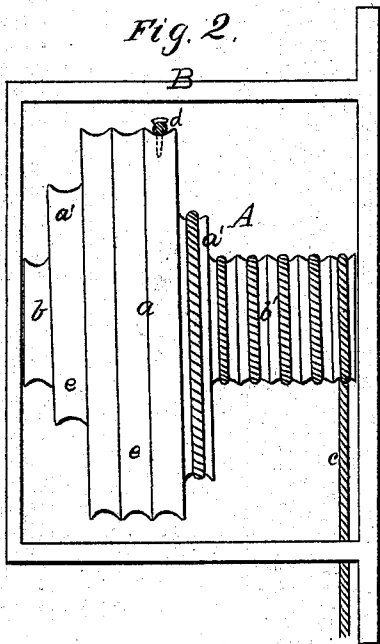
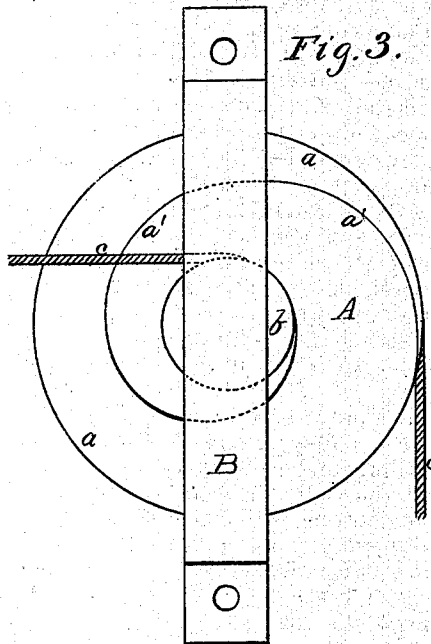


Fig. 3.



WITNESSES
George E. Chas.
Phil. C. Hosi.

By

INVENTOR
W. A. Holwell
Chipman & Foster & Co.
 Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM A. HOLWELL, OF QUEBEC, CANADA.

IMPROVEMENT IN DOOR-PULLEYS.

Specification forming part of Letters Patent No. 146,675, dated January 20, 1874; application filed August 4, 1873.

To all whom it may concern:

Be it known that I, W. A. HOLWELL, of Quebec, in the province of Quebec, Dominion of Canada, have invented a new and valuable Improvement in Door-Pulleys; and I do hereby declare that the following is a full, clear, and exact description, reference being had to the annexed drawings making a part of this specification.

Figure 1 represents the pulley applied. Fig. 2 is a front view of the pulley. Fig. 3 is a side view of the same.

This invention has relation to means for automatically closing doors; and it consists in the construction and novel arrangement of the parts constituting a tripartite door-pulley having the worm or screw-groove formed at its ends on cylinders of varying lengths and small diameters, and between said end cylinders on an intermediate enlargement or cylinder of greater diameter, said groove being continuous from one end to the other of the pulley, and being designed for the passage of the weight-cord, which is attached by one end to the door, as hereinafter more fully described. The object of this invention is to provide means whereby a door, in the first place, may be automatically closed, and, in the second place, held closed with considerable force. Finally, it is designed to enable the door to be opened widely without much exertion and to be readily held open.

In the accompanying drawings, the letter A designates the pulley, and B the bracket in which it is hung, and by means of which it is attached to the wall of a recess in the door-jamb or other suitable place. The intermediate or enlarged portion of the pulley lettered *a* on the drawings is usually nearer one end than the other. Of these ends *b* designates the shorter, and *b'* the longer. *c* designates the cord attached by one end to the door, wound several times about the pulley, and provided at its other end with a pendent weight, *w*. This cord may be secured to the enlarged portion of the pulley at about the point marked

d on the drawings. *e* designates the cord-groove, which is helical and continuous from one end of the pulley to the other, passing from the more contracted ends to and from the enlargement *a* by means of spiral or scroll-like steps, *a'*.

The cord is designed to be attached to the pulley in such a manner that when the door is closed that branch of the cord which is attached to the door will be wound upon the small cylinder *b*, passing thence by the step *a'* to the enlargement *a*, from which the weight hangs. In this position the difference in leverage between the enlargement *a* and the end cylinder *b* causes the door to be held closed with considerable force.

When the door is opened, the door-branch of the cord will be run upon the enlargement *a*, and the weight-branch thereof will be run out upon the long end cylinder *b'*, from which the weight will hang. In this position while the weight has sufficient force to automatically close the door, if not held open, the difference in leverage between the enlargement *a* and cylinder *b'* lessens this force, so that the door may be readily moved.

I am aware that differential pulleys resembling mine have been used in spinning-machines and hay-presses. I do not, therefore, claim such a pulley broadly; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The triple door-pulley hung in the bracket B in the door-frame, and having the end cylinders *b b'*, the intermediate enlargement *a*, the spiral steps *a'*, and the helical cord-groove *e*, continuous from end to end of the pulley, in connection with the cord *c* attached to the door and weight *w*, as and for the purpose specified.

Quebec, 31st July, 1873.

W. ANTROBUS HOLWELL.

Witnesses:

W. DARLING CAMPBELL,
of Quebec, Notary Public.

JAS. ALLPU,
of Quebec, Notary Public.