

No. 672,264.

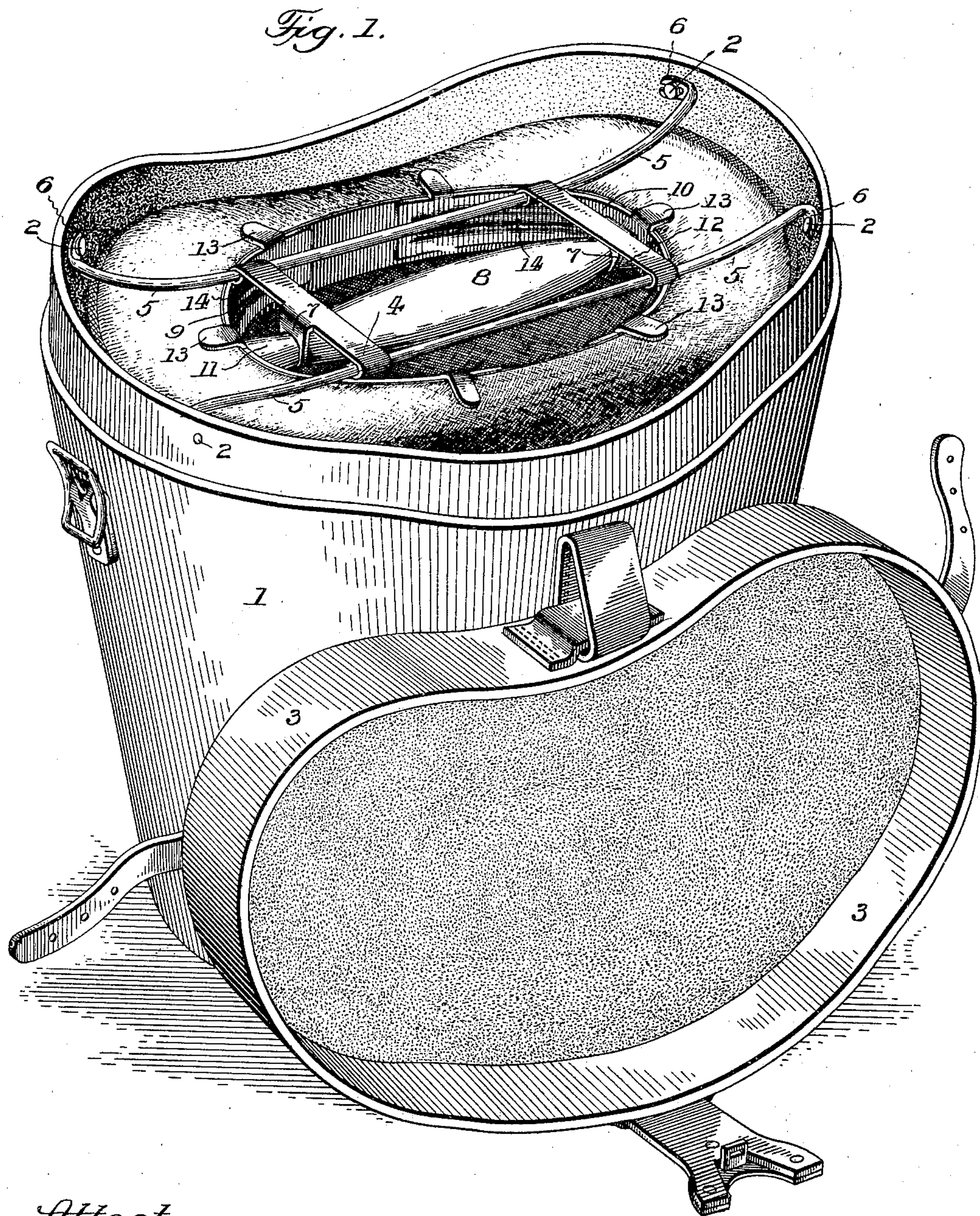
Patented Apr. 16, 1901.

J. C. DUNLOP.
HAT BOX ATTACHMENT.

(Application filed Nov. 23, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Attest:

John Enders Jr.
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Inventor:

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by Robert Burns
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open a port while the first succeeding port is beginning to receive air and the first preceding port is closed and the cylinder-piston operated by the expansive force of the air, and operative connections provided between said valve and said driving-gear, substantially as described.

13. In a pneumatic drill, the combination, with a casing, of a shaft mounted therein, a drill-spindle operatively connected with said shaft, a driven gear mounted on said shaft, an oscillating driving-gear having a greater number of teeth than said driven gear and adapted to mesh therewith, a series of cylinders provided with ports having their intake ends in advance of the cylinders with which they are respectively connected, pistons therefor having their stems connected with said driving-gear, a gyrating valve adapted to alternately close and open said ports, and means connecting said valve with said driving-gear.

14. In a pneumatic drill, the combination, with a casing having suitable handles, of a shaft mounted therein, a drill-spindle operatively connected with said shaft, a driven gear on said shaft, a driving-gear having a socket to receive the rounded upper end of said shaft and whereon said gear is adapted to rock or oscillate, said driving-gear having a greater number of teeth than said driven gear, an axis or stud provided on said driving-gear, a series of cylinders provided with air-inlet ports, pistons for said cylinders connected with said driving-gear, a valve adapted to alternately open and close said ports, and means connecting said driving-gear axis and said valve, substantially as described.

15. The combination, with a casing, of a driven gear therein, an oscillating driving-gear above the same and having a greater number of teeth than said driven gear and meshing therewith, and suitable struts provided between said casing and said driving-gear and preventing the revolution of the latter while permitting its oscillation substantially as described.

16. The combination, with a casing, of a driven gear therein, an oscillating driving-gear above the same having a greater number of teeth than said driven gear and meshing therewith, struts 16 and 22 provided between said casing and said driving-gear and said strut 22 having a yielding connection with said gear, for the purpose specified.

17. The combination, with a casing, of a shaft mounted therein, a driven gear, an os-

illating driving-gear having a greater number of teeth than said driven gear and adapted to mesh therewith, struts 16 provided between said casing and said driving-gear and preventing the revolution of the latter, a strut 22 and a hollow pin 23 having a spring 24 interposed between said strut 22 and said driving-gear, for the purpose specified.

18. The combination, with a suitable casing having an air-chamber, of a series of cylinders having ports opening into said chamber, pistons for said cylinders, the inlets of said ports being in advance of the cylinders with which they are connected, whereby each piston is operated before the valve passes over the same, and a valve adapted to gyrate over said ports and open one port while the first succeeding port is beginning to receive air and the first preceding port is closed and the cylinder-piston operated by the expansive force of the air, substantially as described.

19. The combination, with a casing, of a shaft and driven gear, a rocking driving-gear having a greater number of teeth than said driven gear and adapted to mesh therewith, a series of cylinders, pistons therefor connected with said driving-gear, ports for said cylinders, a valve adapted to alternately open and close said ports, a pivoted guiding member for said valve and operative connections provided between said member and said driving-gear, whereby the movement of said gear will operate said valve, for the purpose specified.

20. The combination, with a casing, of a shaft and driven gear, a rocking driving-gear having a greater number of teeth than said driven gear and adapted to mesh therewith, a series of cylinders, pistons therefor connected with said driving-gear, ports for said cylinders, the inlet-openings to said ports being in advance or preceding the cylinders with which they are respectively connected, a valve adapted to alternately open and close said ports, a pivoted guiding member for said valve and operative connections provided between said member and said driving-gear, whereby the movement of said gear will operate said valve, for the purpose specified.

In witness whereof I have hereunto set my hand this 29th day of August, 1900.

WILLIAM E. DEAN.

In presence of—

A. S. EATON,
MARTIN O. HAUGNER.

UNITED STATES PATENT OFFICE.

JAMES C. DUNLOP, OF CHICAGO, ILLINOIS.

HAT-BOX ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 672,264, dated April 16, 1901.

Application filed November 23, 1900. Serial No. 37,539. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. DUNLOP, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hat-Box Attachments, of which the following is a specification.

The present invention relates to an attachment for that type of portable hat-boxes used by gentlemen in traveling and adapted to contain a silk hat with safety in transportation from place to place.

The object of the present improvement is to provide a simple, durable, and convenient device whereby the silk hat is held from its interior and suspended within the hat-box without any contact of the exterior of the hat with the interior portions of the hat-box and by so doing prevent the usual abrasion, &c., of the exterior surface of the hat, which rests upon the ledges or supports of the hat-box to support the hat in position within the hat-box, all as will hereinafter more fully appear, and be more particularly pointed out in the claims. I attain such object by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of an ordinary hat-box having the present improvement applied, the cover of the box being shown in a removed condition. Fig. 2 is a longitudinal sectional elevation of the upper portion of the hat-box with the present improvement in place, and Fig. 3 a plan view of the same with the box-cover removed.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents the body portion of a portable hat-box of any usual form and construction and which for use in connection with the present invention is provided with any usual means of engagement—such, for instance, as studs 2, arranged in the inner walls of such body portion, near the upper end thereof, and at opposite sides, as shown.

3 is the usual cover or lid for the hat-box body.

The present improvement involves, broadly, a hat-holding attachment for hat-boxes comprising a frame or spider provided with an

expansible hat-holding appliance that is adapted to be expanded within the head-opening of the hat to firmly engage and carry or support the hat, and which frame or spider is in turn adapted to engage with any usual attaching means upon the interior walls of the hat-box to be supported thereby in a substantial yet readily-detachable manner.

In the construction shown in the accompanying drawings as illustrative of the preferred form of the present invention, 4 is a skeleton frame or spider provided with oppositely-projecting pairs of arms 5, the ends of which are provided with engaging lugs 6, that are adapted to engage the studs 2 on the hat-box body to connect the said frame to the hat-box body in a substantial yet detachable manner and with a view to a ready engagement and disengagement when required, and in addition to the assurance of a certain and effective attachment after an engagement of the parts has been made the lugs 6 will be arranged to project laterally and be provided with open-sided recesses adapted to engage in a lateral direction onto the studs 2. With such construction the arms 5 will be formed so as to be capable of being sprung toward each other, as indicated in dotted lines in Fig. 3, by the hands of the operator in effecting an engagement or disengagement of the hat-carrying frame from the hat-box body.

7 represents depending lugs upon the frame or spider 4, forming the journal-bearings for the centrally-arranged revoluble handle 8.

8 is the revoluble handle, turning in the bearing-lugs 7 and having end bores which are respectively formed with right and left hand screw-threads, as illustrated in Fig. 2.

9 and 10 are a pair of counterpart clamping-heads curved to correspond to the curvature of the head-opening of the hat and each provided with screw-threaded extensions 11 and 12, which are adapted to engage in the respective screw-threaded bores of the revoluble handle 8 and is formed with corresponding right and left handed screw-threads, the construction being such that a revolution of the handle 8 in one direction will cause the said clamping-heads to move apart and in so doing be firmly clamped against the sweat-band or lining of the hat to firmly and rigidly attach the hat to the present hat-hold-

