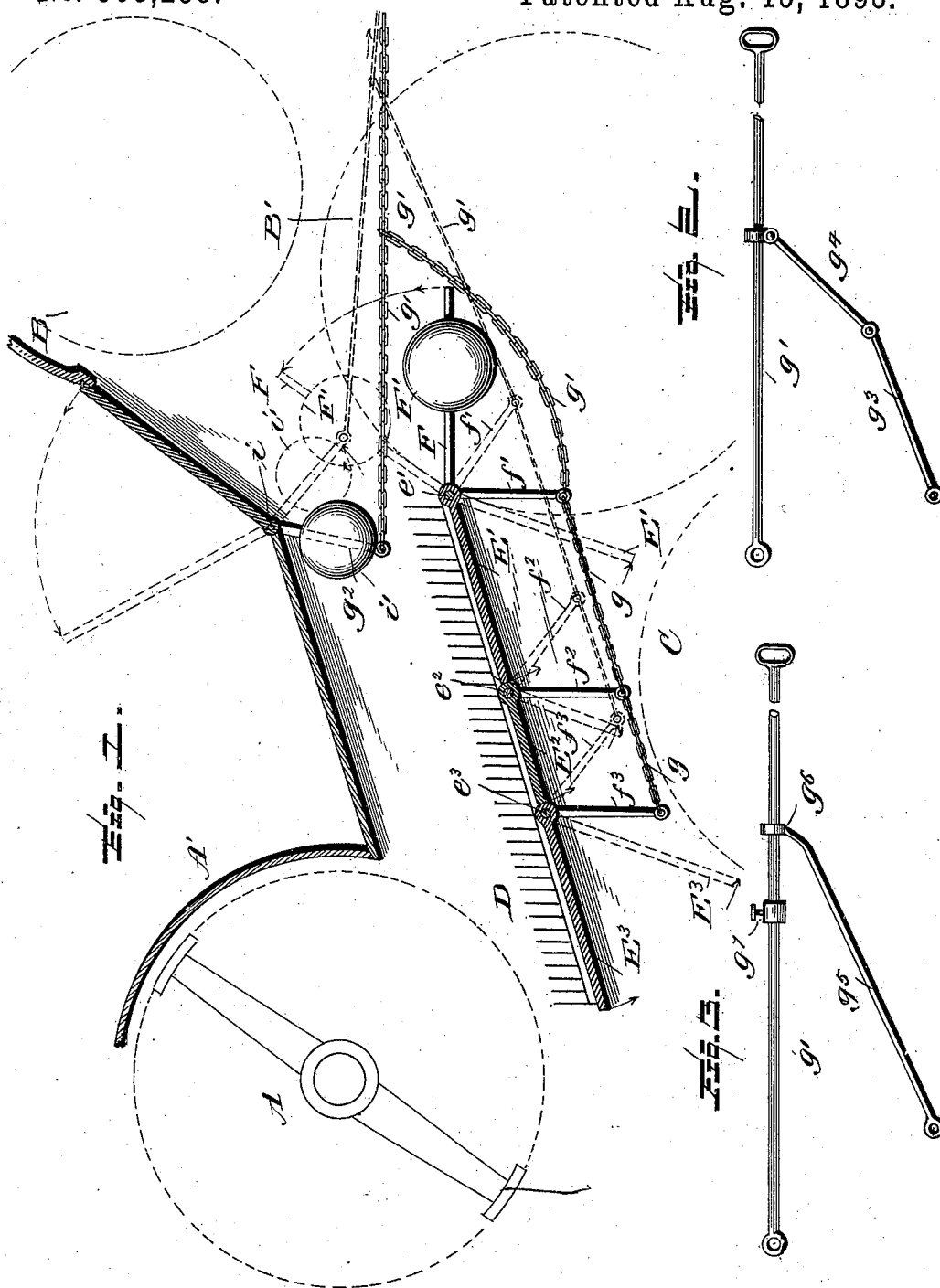


(No Model.)

R. SCHAELLIBAUM.
DAMPER FOR COTTON OPENERS AND LAPPERS.

No. 503,255.

Patented Aug. 15, 1893.



Witnesses
L. C. Hills
E. Wallace

Inventor
Robert Schaellibaum
by H. A. Bailey
Attorney

UNITED STATES PATENT OFFICE.

ROBERT SCHAELLIBAUM, OF LOWELL, MASSACHUSETTS.

DAMPER FOR COTTON OPENERS AND LAPPERS.

SPECIFICATION forming part of Letters Patent No. 503,255, dated August 15, 1893.

Application filed November 28, 1892. Serial No. 453,410. (No model.)

To all whom it may concern:

Be it known that I, ROBERT SCHAELLIBAUM, of Lowell, in the State of Massachusetts, have invented certain new and useful Improvements in Dampers for Cotton Openers and Lappers, of which the following is a specification.

What is termed the damper in openers and lappers is a board or iron sheet placed under the grid which extends between the beater or opener cylinder and the collecting cages, and acting to exclude air from entering the machine through the grid. This damper is hinged at the end nearest the cages and is turned down from time to time to discharge the dirt which has collected upon it. Instead of making this damper in one continuous piece, requiring considerable free space underneath the grid for its play, I divide it transversely into a number of independently hinged sections, counterweighted so that they stand normally in closed position, and connected together among themselves so that they all can be operated or turned down simultaneously by a single operating rod, cord or chain. At the time the dampers are opened, dirt is apt to be drawn or blown through the grid onto the cotton on the cages, and to prevent this I provide in the cover of the machine just in advance of the point where the cages are located a door which opens into the cage inclosing case above the cotton passage from the beater to the cages, and I connect this door with the damper operating mechanism in such manner that the door will open with the dampers—the connections being such that at this time the door will open a little in advance of the dampers. In this way the cages will draw air through the aperture left by the open door, instead of taking it through the grid and open dampers; and consequently no dirt is drawn into the machine from beneath the grid. The door, like the dampers, is counterweighted so as to close of itself when permitted. This last arrangement can be used even when the damper is in one piece instead of in sections; but I much prefer its use in the latter connection, by reason, among other things, of the simple arrangement of operating mechanism which is made available when the dampers are in sections.

In the accompanying drawings—Figure 1 represents in sectional side elevation so much of a cotton opener as is needed to illustrate my improvements. Figs. 2 and 3 are details of modified connections between the door and the damper operating mechanism.

A and A' are the beater and beater cylinder; B, B' are the collecting cages; C is the exhaust fan for the cages; and D is the grid extending between the beater and the cages. All these parts are constructed and combined for operation in the usual or any suitable manner, and are represented for the most part diagrammatically or in outline merely.

The sectional damper beneath the grid is made in any suitable number of sections. It is in the present instance represented as composed of three sections E', E², E³, hinged independently of each other at e', e², e³ respectively. Each section is provided at each end with a counterweight which tends to keep it closed—which counterweight may conveniently be formed by a radial arm fastened to the axle of the section and carrying a weight. The counterweight of section E' is shown at F, F' (F being the arm and F' the weight thereon). The counterweights of the other sections are omitted in order to avoid obscuring the drawings. To the axle of each section is also attached an operating lever shown respectively at f', f², f³, these levers being connected together by a rod, cord or chain g extending between them and thence prolonged at g' to the delivery end of the machine to a point where it can conveniently be manipulated. By pulling on this device all the damper sections are opened simultaneously. When on the other hand it is released each section is at once closed by its counterweight. The parts are shown in closed position in full lines and in open position in dotted lines. If it be desired to arrange the operating mechanism so that the damper sections can be opened from the feed end of the machine, instead of from the delivery end, as illustrated in the drawings, all that is required is to reverse the position of the operating levers f', f², f³, turning them upward instead of downward, and then to extend the operating cord, chain or rod g' to the feed end of the machine instead of to the delivery end of the machine.

In the case surrounding the wire cages B, B', is a hinged door G which normally is closed. In order to open this door at the time the dampers are operated to discharge the dirt, and thus to prevent at this time dirt from being drawn or blown onto the cotton on the cages, I connect the door with the operating cord or rod g' by an extension g^2 , this extension being in the present instance made fast to the lever arm i of the door which carries the counterweight i' by which the door normally is kept in closed position. Under this arrangement the same pull on the operating rod g' which opens the dampers will open the door also, thus permitting air to be freely drawn through the aperture left open by the door. It is desirable however for obvious reasons that the door should open a moment or so before the dampers open. To this end as indicated in full lines in Fig. 1, the cord or chain g is connected to the operating end g' in such manner that when the dampers are closed there will be little slack in it between the end damper and the point where it connects to the part g' . Thus the pull of the operating end g' is first upon the door, which partly opens before the dampers begin to move.

If stiff rods are used, instead of chain or flexible connections, then the connection between the end damper and the operating rod g' may be in two parts g^3, g^4 , linked together as seen in Fig. 2 in order to permit the needed slack. Or in lieu of the last named arrangement the connection between the end damper and the operating rod g' may be a continuous rod g^5 , having an eye g^6 mounted to slide on the operating rod g' , and bringing up against a stop g^7 fixed to the latter rod in such position as to allow the needed longitudinal play to the eye g^6 , before it brings up against the stop. To prevent shock and breakage when the released door G falls back and down to its normal shut position, the counterweight i' is so placed as to very nearly balance the door, leaving such preponderance of weight only in the door as will cause it of its own motion to close gently and without undue shock.

In case the door is to be operated from the

feed end of the machine, there should be an additional but unweighted lever arm connected to and extending above the axis of the door, to which additional arm the operating cord or rod will be connected.

I have shown counterweights applied to the damper sections and door. Manifestly however springs can be used instead of weights, and I desire to be understood as including any such obvious modification in my claims.

Having described my improvements and the best way at present known to me of carrying the same into practical effect, what I claim, and desire to secure by Letters Patent, is—

1. The combination with the opener and opener cylinder, the collecting cages, and the grid extending between the opener cylinder and the cages, of a damper for the grid, damper operating mechanism, and a door in the case inclosing the cages connected to and operated by the damper operating mechanism at the time and in the manner substantially as hereinbefore set forth.

2. The combination of the grid and damper therefor, the opener cylinder, opener and collecting cages, a door in the case inclosing the collecting cages, and operating mechanism connected to the damper and door, substantially in the manner hereinbefore set forth so that the said mechanism shall open the door slightly in advance of opening the damper, as and for the purposes stated.

3. The combination of the opener cylinder and opener, the cages, the grid between the opener cylinder and cages, individually hinged and counterweighted damper sections for said grid, a counterweighted door closing an opening in the case surrounding the cages, and rods, cords or chains connecting the door and damper sections to an operating handle by which both the door and the dampers are opened at the time and in the manner substantially as hereinbefore set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT SCHAELEBAUM.

Witnesses:

WILLIAM F. HARRISON,
L. ELMER WOOD.