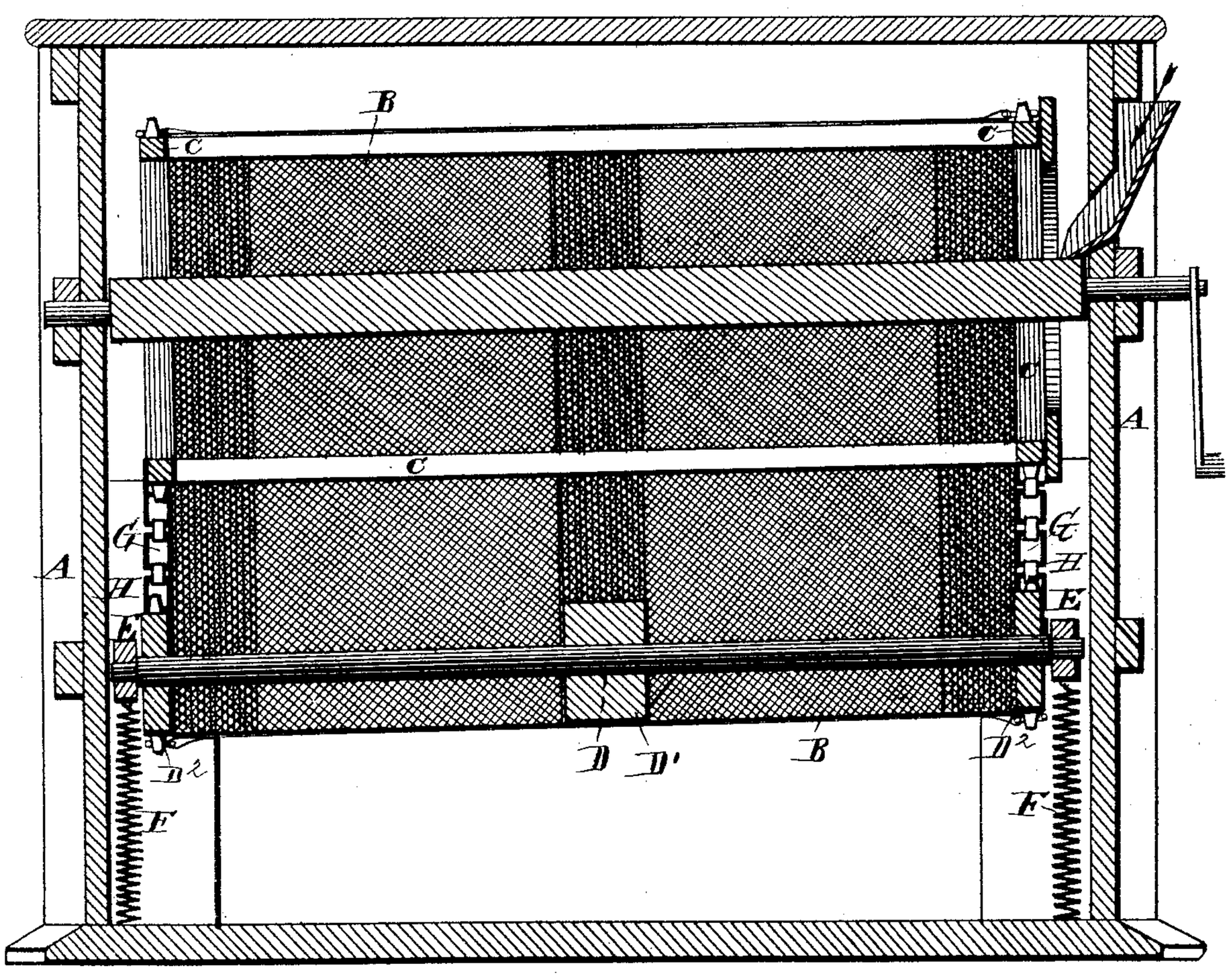
2 Sheets—Sheet 1.

S. LEWIS & F. A. BAKER, Jr.

Flour-Bolts.

No. 210,865. **Patented Dec. 17, 1878.**

Fig. 1.



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2 Sheets—Sheet 2.

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Fig. 2.

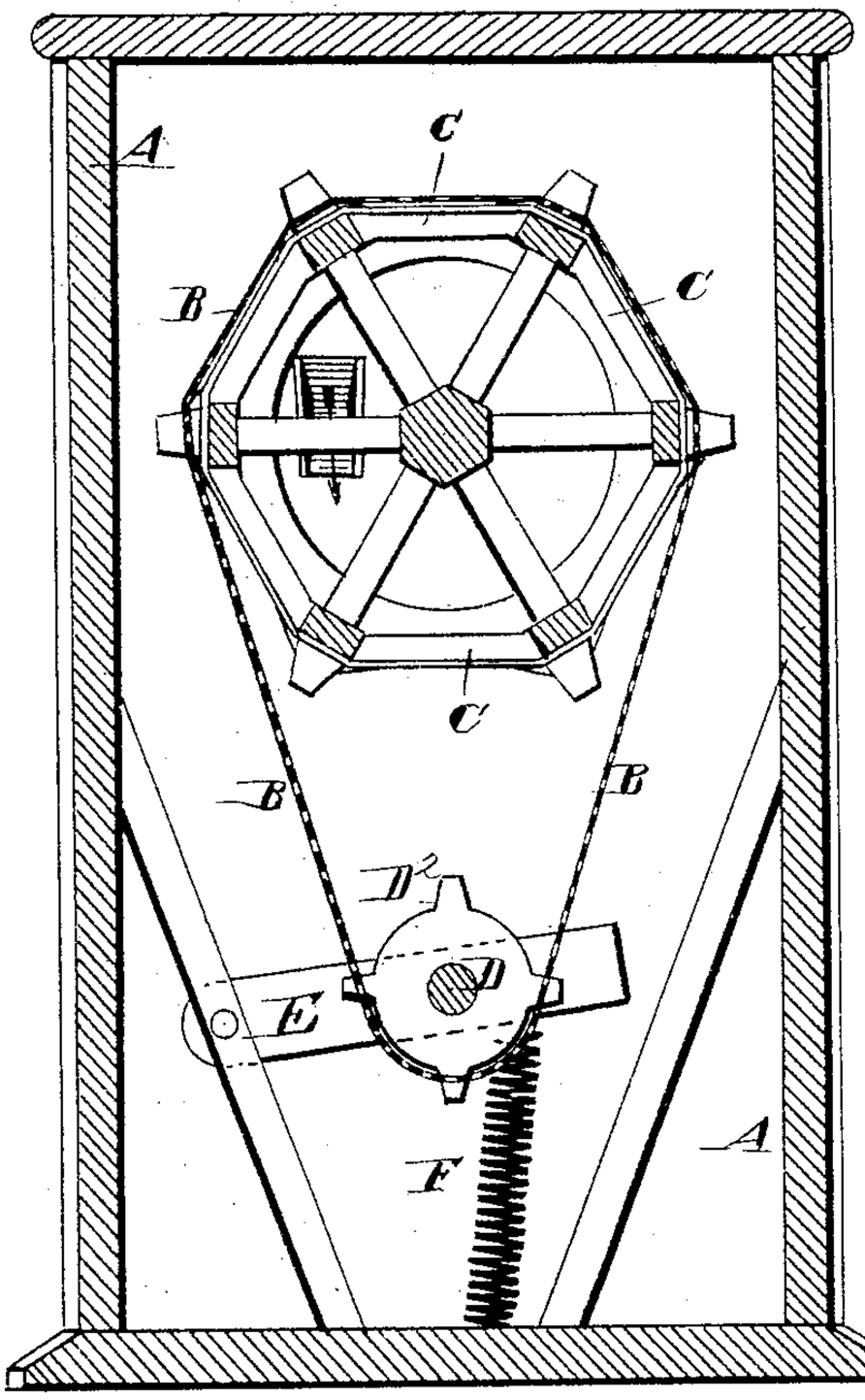
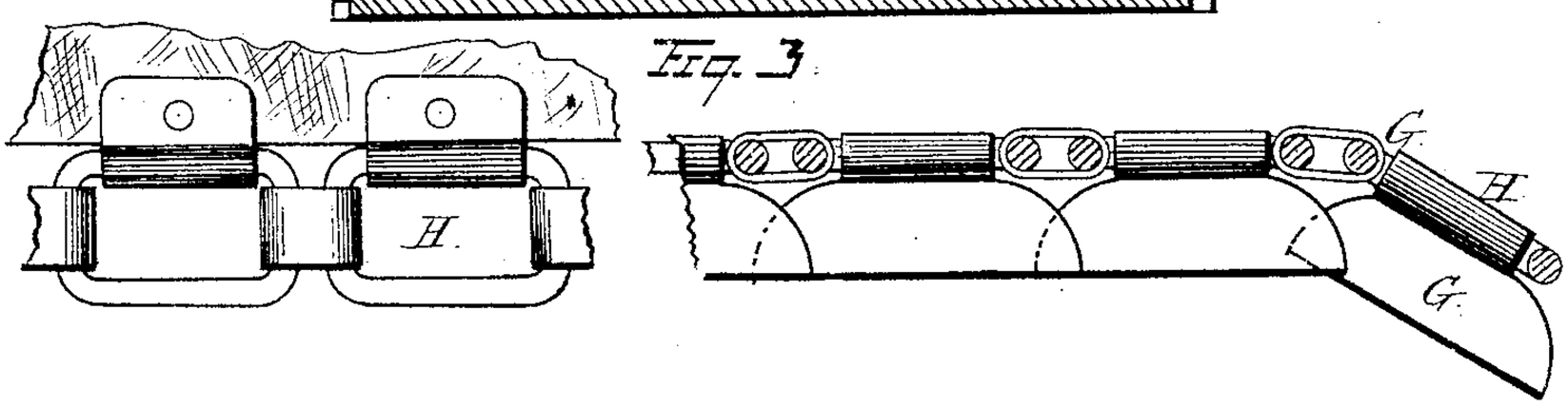
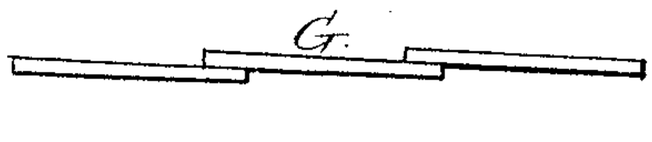


Fig. 3.





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UNITED STATES PATENT OFFICE.

SPENCER LEWIS AND FREDERICK A. BAKER, JR., OF TIFFIN, OHIO.

IMPROVEMENT IN FLOUR-BOLTS.

Specification forming part of Letters Patent No. **210,865,** dated December 17, 1878; application filed August 21, 1878.

To all whom it may concern:

Be it known that we, SPENCER LEWIS and FREDERICK A. BAKER, Jr., of Tiffin, in the county of Seneca and State of Ohio, have invented certain new and useful Improvements in Flour-Bolts; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to flour-bolts; and consists in the parts and combinations of parts hereinafter described and claimed.

In the drawings, Figure 1 is a longitudinal, and Fig. 2 a cross-sectional, view of a bolt embodying the features of our invention. Fig. 3 presents separate views of the flexible flange.

A is a suitable frame-work. B is the bolt-cloth; C, the upper reel. It is made as an open slat-frame, with hexagonal or other polygonal heads, the slats crossing from an angle on one head to the corresponding angle on the other. D is another reel, or, preferably, it is simply a shaft, bearing at its center a pulley, D^1, which keeps the central portion of the cloth taut, and at the ends provided with spur-wheels D^2, which engage with the links of the continuous chains by which the cloth is bounded. E E are swinging frames or other suitable devices, for supporting the boxes in which the journals of the shaft D are hung, so that the weight of the shaft may operate to keep the cloth B taut. F F are springs, assisting the weight of the shaft in keeping the bolt-cloth on a tension.

Another reason for making the journals on the shaft D yielding is that, as the upper reel revolves, its angles, in coming in contact with the cloth, will make a corresponding angle in the cloth, and this necessitates that the cloth should yield from below or be torn.

The object in making the upper reel polygonal is that its edges may beat and thus agitate the cloth, so as to dispense with an agitator; and the weight of the shaft below, together with the spring or its equivalent, assist by their reaction to make the strokes of the bars of the reel effective.

I prefer, though it is not absolutely essential, that the lower shaft should be smaller in diameter than the upper reel, in order that the sides of the bolting-cloth may incline from the top downward and inward. In this way the chop or grindings may drop so as to strike the side and face slowly, and be partially lifted by the other side, and again dropped, and so on, until the material delivers at the tail of the bolt.

In order to facilitate the forward travel and delivery of the material, the bolt is inclined downward slightly from the entrance to the tail.

If desired, the cloth may pass over more than two reels, though two are sufficient for all ordinary purposes. The head of the upper reel, as shown, should be partially closed to prevent the escape of the material at this point, though it should be provided with an annular opening about the axis to admit of the entrance of the feed-spout. The other end of the bolt is left open and free to deliver.

At the feed end of the bolt there is provided preferably, a yielding or flexible flange, G, (shown in detail in Fig. 3,) composed of separate flat links, which may shut past each other, so as to maintain an unbroken flange; or it may be effected in other ways. This flange is to prevent the material from escaping at the edge of the bolt-cloth. It is only provided at the edge adjacent to the feed.

The bolt-cloth is retained to the reels in any suitable way. We prefer, however, to use a continuous chain, H, attached at each edge of the cloth, the links of which engage with teeth or spurs on the heads of the reels, such spurs, as shown at H, engaging with the links.

By this construction it will also be seen that the chop is not carried around with the bolt, but is continually lifted and dropped, and much power thus saved.

What we claim is—

1. The combination, with a polygonal slatted reel and a yielding shaft or reel, of a bolt-cloth passing about the same as a continuous belt, substantially as set forth.

2. The combination, with a polygonal slatted reel and a yielding shaft or reel, both said reels being provided with pinions at their re-

spective opposite extremities, of a bolt-cloth made in continuous-belt form, and having its edges provided with chains, which bind the cloth and engage with said pinions, substantially as set forth.

3. The combination, with a polygonal slatted reel and a continuous bolt-cloth, of a reel or shaft about which the latter passes, said reel or shaft being provided with a pulley located between its extremities which is adapted to maintain the central portion of the cloth taut, substantially as set forth.

4. The combination, with a continuous bolt-cloth, of upper and lower shafts or reels about which the same passes like a belt, said lower shaft or reel being formed of less diameter than the upper one, and thereby adapting the sides of said bolt-cloth to incline downwardly and inwardly, substantially as set forth.

5. The combination, with the bolt-cloth, of the flexible flange at its edge adjacent to the feed, substantially as and for the purposes described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

SPENCER LEWIS.
FREDERICK A. BAKER, JR.

Witnesses:
WM. H. GIBSON,
JESSE H. LEIDY.