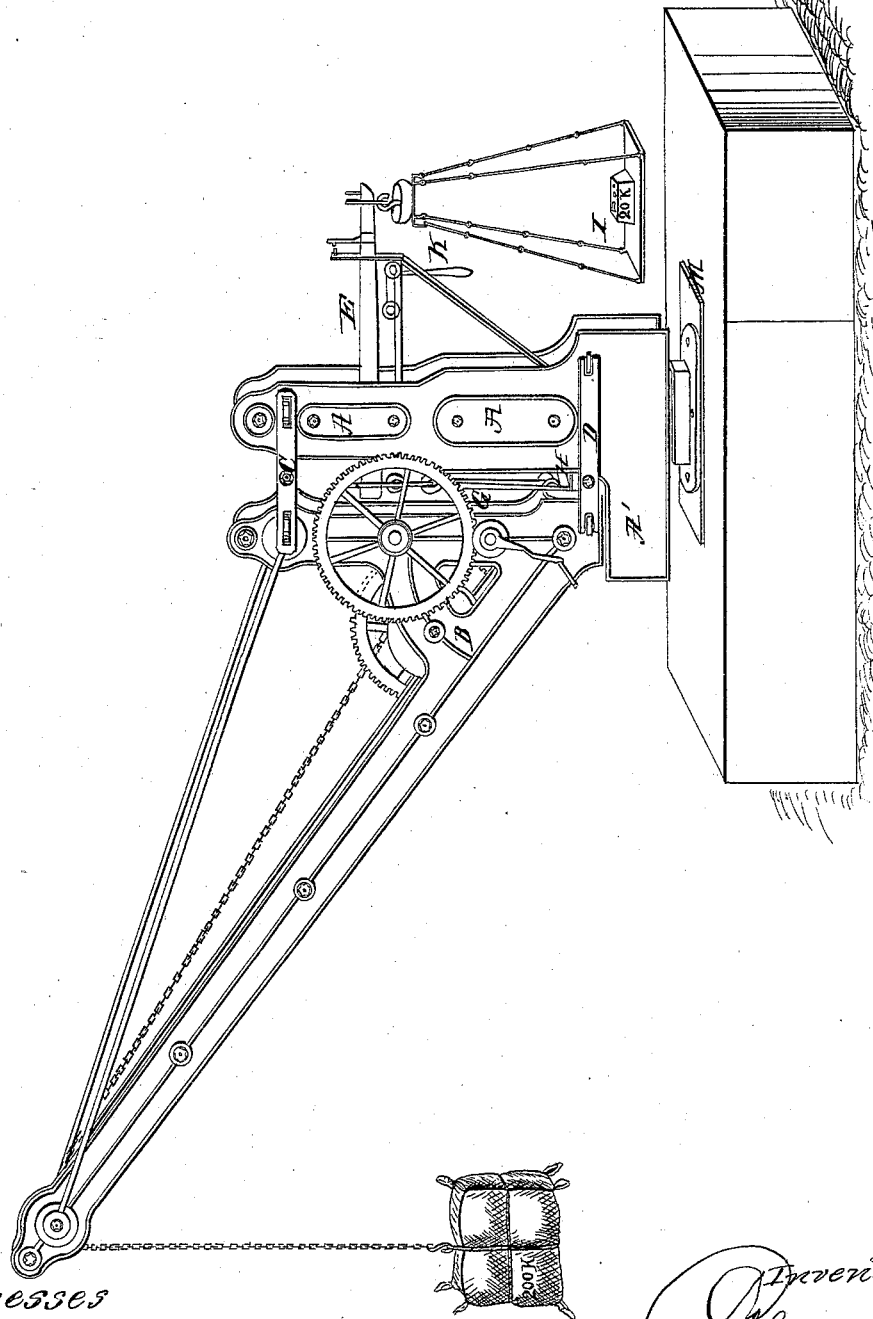


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*N<sup>o</sup> 3,813.*

*Patented Nov. 9, 1844.*



*Witnesses  
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# UNITED STATES PATENT OFFICE.

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## BALANCE-CRANE.

Specification of Letters Patent No. 3,813, dated November 9, 1844.

*To all whom it may concern:*

Be it known that I, LOUIS HENRY, of Paris, in the Kingdom of France, have invented a new and useful machine which I  
5 denominate a Balance-Crane; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the following figures in the accompanying drawings.

10 Plate 1 represents a perspective view of an iron crane. Plate 2, Figure 1, a wooden crane, and Figs. 2 to 11, inclusive, represent detached parts of the machine.

The nature of my invention consists in  
15 combining with a lifting crane a weighing apparatus, so that the articles that are raised by the crane can be at once weighed, thereby facilitating the double operation.

Plate 2, Fig. 1, represents a side elevation  
20 of the machine as formed of wood. The part designated by the letter A, is the pivot or spindle, which is securely fixed in an upright position so as to revolve.

B, is the crane part. This is constructed  
25 in any of the ordinary ways, one of which is represented in the drawing, but needs no particular description, it supports the machinery for drawing up weights, that is also of the usual character. Fig. 2, same plate  
30 shows a back view of this part. The part B, is connected with the upright spindle A, by four links or braces so as to allow it a vibration up and down; all the parts of said crane B being kept in the same relative position  
35 to each other. Near the upper end of the upright part of crane B, which is parallel with spindle A, there are two studs or ears *a''*, standing out from the sides of said upright part of B, the sides of said ears opposite to A are sharpened into knife edges  
40 or nearly so like common weighing beam fulcrums; opposite to these ears on B, there are two others on A, marked *a'*, these are connected by the links C, a top plan of the  
45 spindle A, is represented at Fig. 5, showing the ears; there are two other ears or studs *a'''* on each side of the spindle A, and crane B, near the bottom, similar to those above described, with thin knife edges turned inward toward each other; these have two  
50 braces D between them, one on each side to keep out the foot of the crane piece parallel; this form of connection between the spindle A and crane B, will allow the latter to be  
55 raised and lowered parallel with the former,

and sustain it in its position for hoisting. The lower end of crane B ordinarily rests on a foot or support A', projecting from spindle A, directly under it for that purpose. With this part of the apparatus, burdens can be raised and moved around as in ordinary cranes, but if the articles are to be weighed another part of the apparatus is brought into action, now about to be described. On the side of the spindle next  
60 the crane, B, there is a double projecting bracket F, which serves as a fulcrum of support to the steelyard E, this steelyard is put through a mortise in the spindle and two ears which project one on each side,  
65 rest on knife edges on the fulcrum, the end or short arm that extends beyond the fulcrum next the crane is connected with said crane by means of suspension rods G which are attached to the crane near the foot of  
70 the upright by pieces H projecting therefrom so that the suspension rods will hang vertically. The long arm of the steelyard that extends through the mortise in the spindle A, and out beyond it is connected  
75 at its end with a small platform I, by means of rods J, said platform being the receptacle for the weights, and serves as an equipoise to the crane also.

L represents a bracket that projects out  
85 under the steelyard beam E nearly to the junction of the suspension rods J, on the end of this bracket there is a standard *k*, with a vertical slot in it for the beam E, to play in, and just inside of said standard  
90 there is a bent lever K jointed to the bracket L and furnished with a handle on its long arm, the short arm has a roller on it and when it is required to bring the machine to a state of rest this roller is brought directly  
95 under the long arm E of the steelyard; in weighing this is turned down as shown in Fig. 1.

Having thus fully described my improvement and the operation of the same, what I  
100 claim therein as new and desire to secure by Letters Patent is—

The combination of the balance or steelyard with the lifting crane substantially in the manner and for the purpose herein set  
105 forth.

L. HENRY.

Witnesses:

D. GRIENZ,  
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