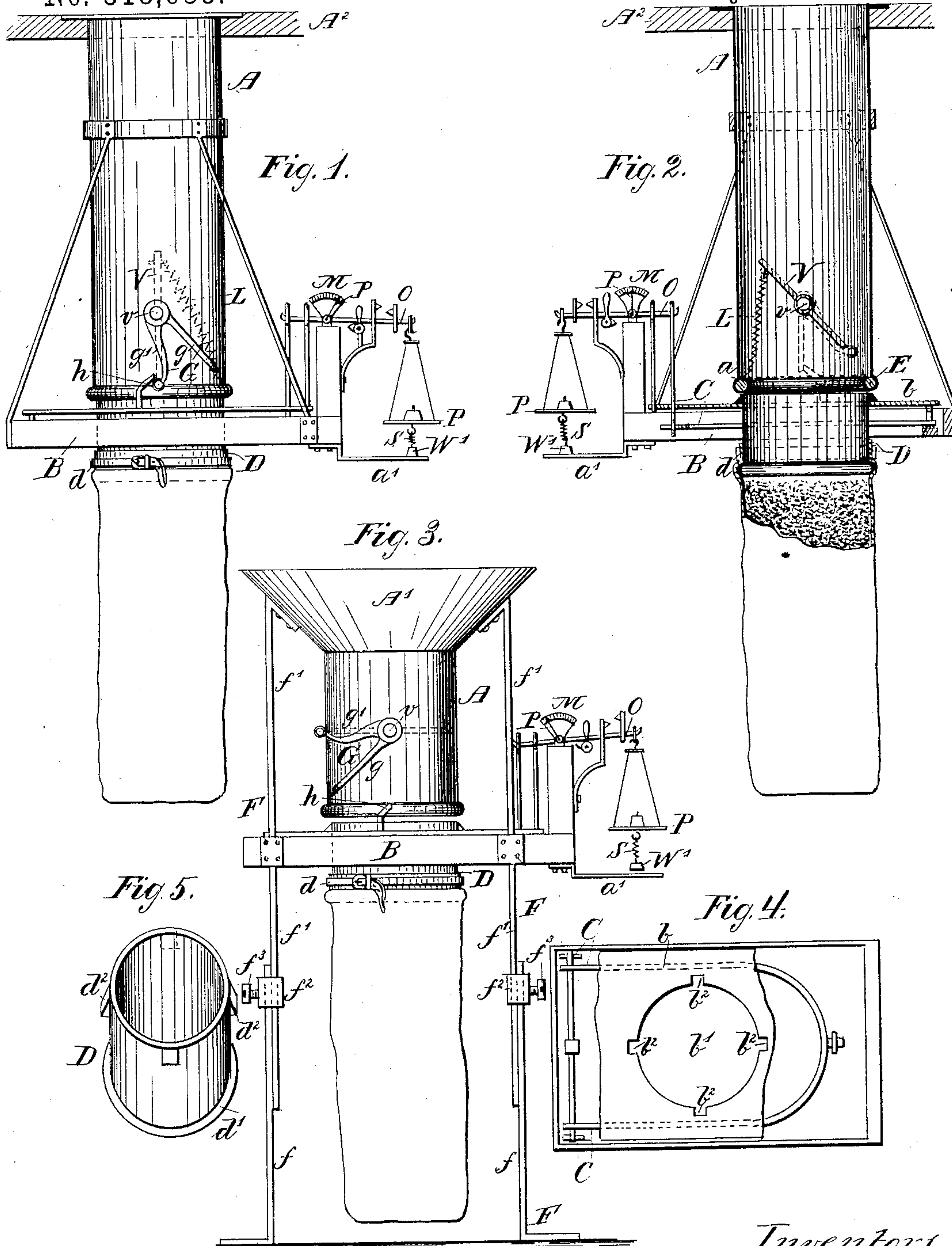


(No Model.)

V. & E. LAPLACE.
GRAIN BAGGING APPARATUS.

No. 318,633.

Patented May 26, 1885.



Witnesses.

W. E. Boulter
Samuel Owen Edmonds

Inventors

Edouard Laplace
Vincent Laplace
per Henry Orth
their atty

UNITED STATES PATENT OFFICE.

VINCENT LAPLACE AND EDOUARD LAPLACE, OF ISSOUDUN, FRANCE.

GRAIN-BAGGING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 318,633, dated May 26, 1885.

Application filed December 13, 1882. (No model.) Patented in France June 17, 1882, No. 149,665; in Belgium December 5, 1882, No. 59,744; in Germany December 5, 1882, No. 23,280; in Austria-Hungary December 5, 1882, No. 41,885/261 and No. 7,014/304; in England December 5, 1882, No. 5,794; in Italy December 5, 1882, XVI, 14,864; in Sweden December 5, 1882; in Denmark December 5, 1882; in Russia December 8, 1882, No. 8,898, and in Spain December 27, 1882, No. 4,298.

To all whom it may concern:

Be it known that we, VINCENT LAPLACE and EDOUARD LAPLACE, both citizens of the French Republic, residing at Issoudun, in France, have invented certain new and useful Improvements in Bagging Apparatus, (for which we have obtained Letters Patent in France, No. 149,665, dated June 17, 1882; in Belgium, No. 59,744, dated December 5, 1882; in Germany, No. 23,280, dated December 5, 1882; in Austria-Hungary, No. 41,885 and No. 7,014, dated December 5, 1882; in England, No. 5,794, dated December 5, 1882; in Denmark, dated December 5, 1882; in Italy, No. 14,864, dated December 5, 1882; in Spain, No. 4,298, dated December 27, 1882; in Sweden, dated December 5, 1882, and in Russia, No. 8,898, dated December 8, 1882;) and we do hereby declare the following to be a full, clear, and exact description of the invention.

The invention relates to improvements in devices for bagging and simultaneously weighing grain and other substances; and it has for its object to provide a simple and convenient means whereby such substances may be bagged and accurately weighed.

The invention consists, essentially, in the combination, with the bagging devices, of a platform-scale for weighing the material bagged, from the platform of which the bag to be filled is suspended.

The invention further consists in the combination, with the bagging devices and a scale-beam, of a feed-valve controlled by the scale-beam.

The invention further consists in the combination, with the feed-valve and the scale-beam, of a weight constituting a fraction of the weight of the volume of material to be bagged and operating to control the feed-valve.

The invention further consists in a portable and vertically-adjustable bagging and weighing apparatus.

Lastly, the invention consists in structural features and the combination of parts, all substantially as hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of our improved stationary apparatus. Fig. 2 is a vertical transverse section thereof. Fig. 3 is an elevation of our improved portable apparatus. Fig. 4 is a top plan view of the platform-scales, the platform being partly broken away, and the mechanism connected therewith, and with the levers removed to show the arrangement of the supporting-levers, and means for supporting a bag from said platform. Fig. 5 is an isometric view of the tubular bag-holder. Like letters of reference indicate like parts wherever such may occur in the above figures of drawings.

Referring to Figs. 1, 2, 4, and 5, A indicates a feed-tube or tubular spout, secured in any convenient manner in a suitable opening in the floor A² of a storage chamber or bin, on or in which the material to be bagged and weighed is stored.

B indicates a platform-scale of any ordinary or well-known construction, the operation of which is based on the well-known principles that govern the operation of this class of scales, the construction thereof differing only in that the levers C, Figs. 2 and 4, that support the platform and to which the scale-beam is connected, are so arranged as to admit of a bag being suspended from the platform b, said bag hanging between the levers, so as not to interfere with their oscillations.

The suspension of the bag from the platform b is effected as follows: The platform has an opening, b', formed therein of cylindrical form, the periphery whereof is provided with (preferably) rectangular notches or recesses b²; and D is a tubular bag-holder, that is provided at one end with wedge-shaped projecting lugs d², corresponding in number to the number of recesses b², formed in the edge of the opening b' of the platform b. At its lower end the bag-holder has an annular flange, d', preferably semi-cylindrical in section, the mouth of the bag being applied to said tubular holder, and secured thereto above the flange d' by means of a strap, d, or a cord or wire, said flange serving to retain the bag on the holder. It is obvious that by applying the holder D to the opening b' in the platform B, so that its lugs will register with

the recesses thereof, the holder may be passed through said opening, and by imparting a partial rotation to said holder to move its lugs, now above the platform, clear of the recesses, said lugs will rest on the platform and support the holder in position.

At its lower end the feed-tube A is provided with a packing ring or disk, E, sprung into an annular recess, *a*, so that when the bag-holder D is in proper position its upper end will bear against the packing-ring and form a sufficiently tight joint to prevent the escape of the material while being fed to the holder.

Within the feed-tube is arranged a weighted or spring-actuated valve, V, the stem *v* of which projects through said tube on one side, and has secured to said projecting end a two-armed lever, G. The arms *g* and *g'* of lever G rotate with the valve in the path of a lug, *h*, that projects from the platform *b* of the scale.

W' is a weight suspended by means of a spring, S, from the under side of the scale-pan P, said weight resting normally on a platform or bracket, *a'*, projecting from the scale-frame. The scale represented in the drawings is of the type commonly used in France and other European countries; and it is evident that any other form of platform-scale may be employed—such, for instance, as those of the Fairbanks or other patterns—by suitably arranging the scale-levers so that a bag may be suspended from the platform and by providing a suitable support for the weight W'.

In practice the floor-opening, in which is secured the feed-tube A, is or may be provided with a slide or other convenient means for closing the same or regulating the passage of the material.

In Fig. 3 I have illustrated my apparatus in a portable form, the feed spout or tube A being provided with a feed-hopper, A', supported from the upper end of uprights *f'*, forming part of a vertically-adjustable frame, F, to which uprights is also secured the platform-scale, as shown. The uprights *f'*, of which there are preferably four, pass through sockets *f''*, secured to or near the upper end of similar uprights or legs, *f*, the vertical adjustment being effected by means of the set-screws or bolts *f'''*, as shown. Instead of this arrangement the supports may be made to telescope into one another, and secured in proper position by set-screws or other convenient means.

The object of making the portable apparatus vertically adjustable is to adapt it for use in store-rooms having the discharge-spouts located at different elevations, or with grain-cleaning machines provided with elevators having their discharge-orifice at different elevations.

The operation of our improved apparatus is as follows: The valve V being closed and the lever G in the position shown in Fig. 3, the bag being secured to the tubular bag-holder, as above described, and supposing said bag to hold one hundred kilograms, net, of the substance to be bagged and weighed,

weights are now placed on the scale-pan equal to ninety-five kilograms, and a weight equal to five kilograms is suspended from the spring below the scale-pan, so as to rest on the bracket *a'*, and the valve V is now opened by rotating the lever G, to bring its arm *g'* into engagement with the lug *h*, that projects from the scale-platform, the parts being now in the position shown in Fig. 1, the valve V being fully open. When a sufficient quantity of the substance to be bagged and weighed has entered the bag to counterbalance the weight on the scale-pan P, the platform *b* descends. This downward movement of the platform disengages the arm *g'* from lug *h*, and, under the tension of spring L, the valve V and lever G are rotated until the lever-arm *g* engages the lug *h*, said arm *g* being slightly longer than the arm *g'* to accomplish this. This rotation of the valve closes the passage of the feed-tube more or less, the parts being now in the position shown in Fig. 2. The material to be bagged will now fall slowly into the bag until the weight therein counterbalances the weight W', in addition to the weight on the scale-pan, when the platform will descend farther, the lever-arm *g* will be released from lug *h*, and the spring L will close the valve, as in Fig. 3.

It is obvious that if the valve V were so arranged as to be closed suddenly when the scale-beam is tipped at the weight desired, an accurate weight could not well be obtained, for the reason that all of the material between the valve and bag at the time of the closure of the latter would not have been weighed, and the weight of the material in the bag would exceed the net weight required. The lever G may be set at any desired angle to the valve-stem to regulate the extent of the partial closure of the feed-tube according to the material fed through it, the space left open being dependent on the rapidity at which the substance will pass through the feed-tube, as it is obvious that the smaller the grain or pieces the less space will be required to feed the same sufficiently slowly into the bag to weigh its contents accurately.

In order to better observe the process of weighing, and to afford an index whereby it may be readily ascertained when the proper quantity of material has been admitted to the bag, so that the valve V may be closed by hand in case of a failure of the spring or weight to close the same, we have applied a graduated sector, M, over which travels a pointer, P, secured to the pivot of the scale-beam O.

It will be understood that any weight, W', constituting a fraction of the weight of the volume of the substance to be weighed, may be suspended from the scale-beam or the scale-pan, as it may be desirable, in order to obtain a more accurate weighing to use a heavier weight W' for such substances that pass more rapidly through the feed-tube than would be the case with substances that pass more slowly through said tube.

Having now described our invention, what we claim is—

1. In a bagging and weighing apparatus, the combination, substantially as described, with a feed-spout, a valve therein, a tripping-lever connected with the valve, and a bag-holder, of a platform-scale, the platform of which is arranged below the feed-spout and provided with an opening for the reception and suspension of the bag-holder, and a tripping device connected with the platform to trip the valve through the medium of the tripping-lever, for the purposes specified.

2. In a bagging and weighing apparatus, the combination, substantially as described, with a feed-spout, a valve therein, a two-armed tripping-lever connected with the valve, and a bag-holder, of a platform-scale, the platform of which is arranged below the feed-spout and provided with an opening for the reception and suspension of the bag-holder, a tripping device connected with the platform to trip the valve through the medium of the valve-lever, the scale-beam, and a fractional weight, W' , for the purposes specified.

3. The combination, substantially as described, of the valved feed-spout A, provided with a packing at its discharge end, and a tubular bag-holder, with a platform-scale, the platform b thereof provided with an opening

for the reception and suspension of the bag-holder, the upper edge of which is adapted to bear against the packing of the feed-spout, for the purposes specified.

4. The combination, substantially as described, with the feed-spout A, the valve V thereof, the lever G, connected with the valve, and a tubular bag-holder, of a platform-scale, the platform b thereof provided with an opening for the reception and suspension of the bag-holder, a tripping-lug, h , connected with said platform, the scale-beam, and the fractional weight W' , said parts being arranged for co-operation, for the purposes specified.

5. In a bagging and weighing apparatus, the combination, with a feed-spout, a scale, and a bag-support adapted to be suspended from the platform of said scale, of a vertically-adjustable supporting-frame for said parts, as and for the purpose specified.

In testimony that we claim the foregoing we have hereunto set our hands this 18th day of November, 1882.

VINCENT LAPLACE.
EDOUARD LAPLACE.

Witnesses:

LOUIS TOUSSAINT,
LEON SCHMITTBUHL.