

(No Model.)

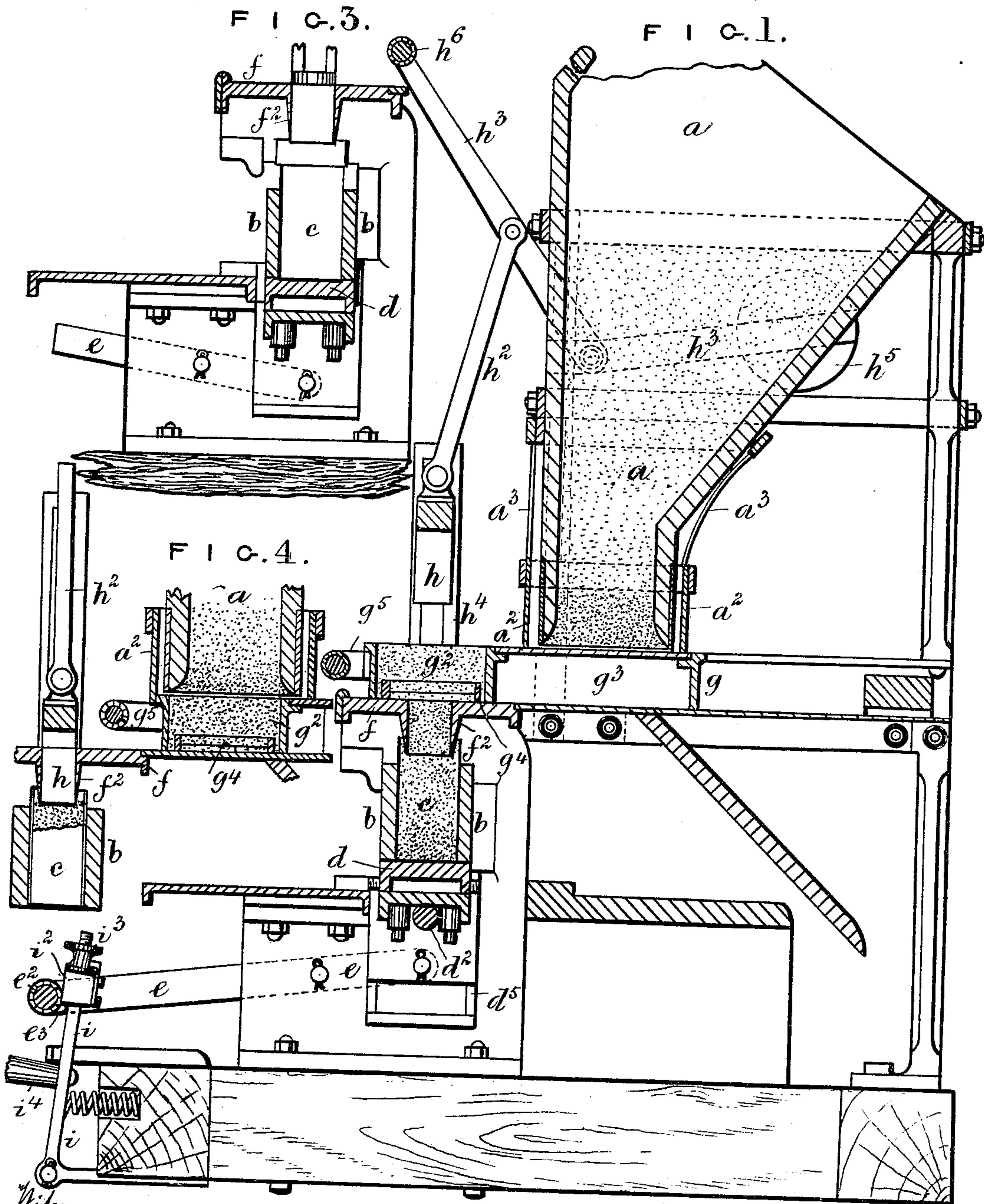
2 Sheets—Sheet 1.

J. TICKLE & F. LEONARDT.

FILLING AND COMPRESSING MACHINERY.

No. 328,439.

Patented Oct. 13, 1885.



Witnesses,
George Shaw
Richard Kerrett

Inventors
John Tickle
Frederick Leonardt

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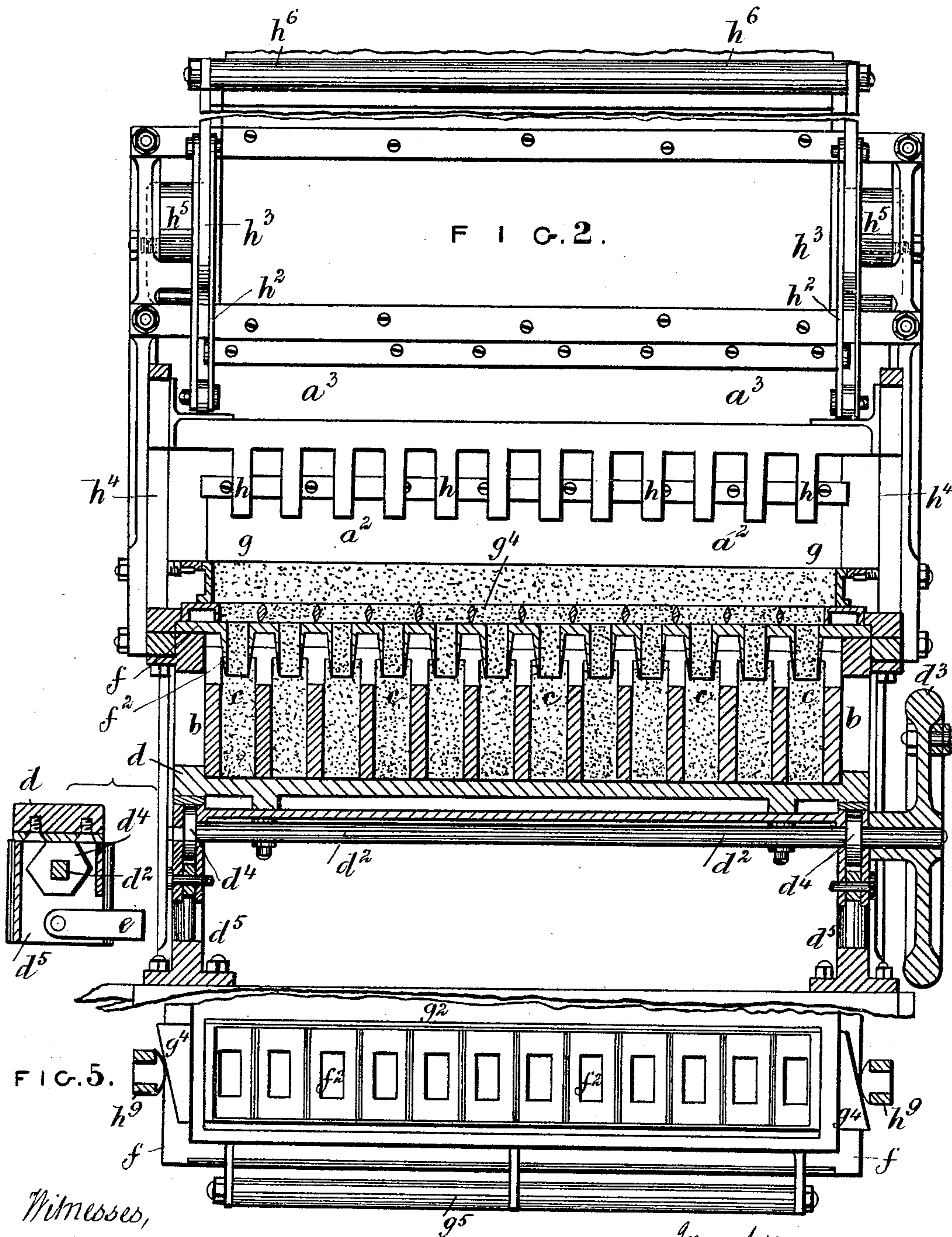
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UNITED STATES PATENT OFFICE.

JOHN TICKLE, OF WEST BROMWICH, AND FREDERICK LEONARDT, OF HANDSWORTH, COUNTY OF STAFFORD, ASSIGNORS TO EDWARD CAD-DICK, OF WEST BROMWICH, WILLIAM CREED, OF STROUD, AND AR-NOLD THOMAS, OF NEWNHAM, ENGLAND.

FILLING AND COMPRESSING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 328,439, dated October 13, 1885.

Application filed February 17, 1885. Serial No. 156,194. (No model.). Patented in England May 15, 1884, No. 7,743; in France January 22, 1885, No. 166,593, and in Belgium January 26, 1885, No. 67,655.

To all whom it may concern:

Be it known that we, JOHN TICKLE, of West Bromwich, in the county of Stafford, Eng-
land, mechanical engineer and iron-founder,
5 and FREDERICK LEONARDT, of Handsworth,
in the county of Stafford, England, merchant,
subjects of the Queen of Great Britain, have
invented new or Improved Filling and Com-
pressing Machinery to be Used in the Making
10 Up of Packets of Powdered Material and other
Commodities for Sale, (for which we have
made application for Letters Patent in Great
Britain on the 15th day of May, 1884, No.
7,743, and in France on the 22d day of Janu-
15 ary, 1885, and in Belgium on the 26th day of
January, 1885,) of which the following is a
specification.

Our invention consists of the construction
and combination, hereinafter described and
20 illustrated in the accompanying drawings, of
the parts of hand-worked machinery for fill-
ing at one operation a series of bag-like wrap-
pers or cases contained in a divisional mold
or box with powdered materials and other
25 commodities—such as sugar, flour, starch, and
meal—and for pressing or consolidating the
material or commodity placed in the said
wrappers or cases.

Figure 1 of the accompanying drawings
30 represents in transverse vertical section, and
Fig. 2 partly in elevation and partly in longi-
tudinal vertical section, with a portion in
cross section, filling and compressing ma-
chinery constructed according to our inven-
35 tion, the parts being in position for filling the
series of bags or cases in the partitioned or
divided mold or box carried by the rising and
vibratory platform; Fig. 3, in transverse sec-
tion, the vibratory and rising platform, and
40 parts carried by it, and the stationary plat-
form and filling-spouts detached; and Fig. 4
represents in transverse section a portion of
Fig. 1, with the rammers or compressing-pis-
tons in their lowest position and the sliding
45 drawer brought under the hopper. In Figs.
1 and 2 the rising and vibratory platform is

represented in its highest position, and in
Fig. 3 in its lowest position. Fig. 5 repre-
sents in plan the sliding drawer in position
over the filling-spouts, and illustrates the 50
manner in which the lateral movement is
given to the grid of the sliding drawer.

The same letters of reference indicate the
same parts in the several figures.

a is the stationary hopper containing the 55
powdered material with which the bags or
cases are to be filled.

b is the partitioned or divided mold or box,
open at top and bottom, in which the bags or
cases *c* to be filled are placed. 60

d is the rising and vibratory platform on
which the mold or box *b* is supported, the
prolonged ends of the said platform working
in guides *d*⁵ on the bed of the machine. The
said platform *d* is raised and lowered by end 65
levers, one of which is seen in Fig. 1 and
marked *e*, the said end levers *e* being con-
nected together by the cross-handle *e*². In
the middle of the said handle *e*² is a tooth, *e*³,
(see Fig. 1,) which, when the levers *e* are 70
moved downward, engages underneath the ad-
justable block *i*², thereby supporting the
platform *d* in its raised position. The block
*i*² is carried by the spring-lever catch *i*,
pressed outward by the coiled spring repre- 75
sented. By pressing the lever-catch *i* inward
by means of its handle *i*⁴ the levers *e* are re-
leased, and the platform *d* descends to the
lower position, Fig. 3. A vibratory motion
is given to the platform *d*, for the purpose 80
hereinafter described, by means of the hex-
agonal cams *d*⁴ on the shaft *d*², worked by the
hand-wheel *d*³. (See Fig. 2.)

f is the upper and fixed platform carrying
the series of filling-spouts *f*². 85

*g g*² *g*³ is the sliding drawer for receiving the
powdered material from the hopper *a* and
transferring it to the bags or cases *c*. The part
*g*² of the sliding drawer is open at top, and the
part *g*³ is closed. (See Fig. 1.) The part *g*² 90
has at bottom a movable grid or grating, *g*⁴.
When the sliding drawer, filled with pow-

dered material, is pulled forward by the handle g^5 , a lateral movement is given to it, thereby causing the powder contained in the part g^2 to fall from it down the spouts f^2 , and fill the bags or cases c . The sliding drawer being pushed back into its original position, Fig. 4. leaves the filling-spouts f^2 filled with the powder level with the platform f . The lateral movement of the grid g^4 is effected by its inclined ends bearing against the fixed bearings h^9 . (See Fig. 5.) On reaching its back position the part g^2 of the drawer is again filled with the powdered material from the hopper a .

In order to give the sliding drawer g g^2 g^3 freedom of motion underneath the hopper a , it is provided with an outer shell, a^2 , which, by bearing on the drawer g , prevents the powder escaping from the hopper a . The top of the shell a^2 has fixed to it a canvas covering, a^3 , by which the said shell is connected by a flexible connection to the hopper. (See Fig. 1.) Said covering a^3 prevents the escape of dust.

h h is a series of rammers or compressing-pistons working in vertical slides h^4 . The said rammers are made to descend through the filling-spouts f^2 by means of the levers h^3 h^3 and connecting-rods h^2 h^2 , the said levers being provided with counter-balance weights h^5 h^5 , for returning the rammers, when released, to their raised or original positions. The levers h^3 h^3 are operated by the handle h^6 , connecting them together. The spring-lever catch i , besides being used for sustaining the vibratory and rising platform d at the required height, is also used for adjusting or regulating the height to which the said platform can be lifted to allow of the varying densities of the material to be measured, so as thereby to insure a uniform weight being fed to the bags or cases c . This is effected by raising or lowering the adjustable block i^2 by the regulating-screw i^3 , working on the screwed top of the lever-catch i , the said block i^2 being connected by a finger with the neck of the regulating-screw i^3 , as represented.

The machine is used, and the filling of the bags or cases, and the compressing of the material in the said bags or cases effected in the following manner: The partitioned or divided mold or box b , containing the bag-like cases or wrappers c , having been placed on the platform d , the said platform is raised into the position represented in Figs. 1 and 2 by depressing the handle e^2 , and the mouths or open ends of the bags c are thereby made to pass onto the filling-spouts f^2 , carried by the fixed platform f . As the handle e^2 is depressed, the tooth e^3 on it first presses inward the spring-catch i , and when the platform has reached the required height the adjustable block i^2 snaps upon the said tooth e^3 , and thereby supports the platform in its raised position. The sliding drawer g g^2 g^3 , with the part g^2 filled with the powdered material from the hopper a , is next pulled forward by its handle g^5 into the

position represented in Fig. 1, so as to bring the said part g^2 over the filling-spouts f^2 , the forward movement of the said drawer causing a lateral movement in the grid g^4 . The powder in the part g^2 is thereby made to fall down the spouts f^2 and fill the bags or cases c . The sliding drawer is next pushed back into the position represented in Fig. 4, thus leaving the filling-spouts f^2 filled with the powdered material to the level of the platform f . By now turning the hand-wheel d^3 a vibratory or shaking motion is given to the platform d by the action of the cams d^4 on the shaft d^2 , and the powder in the spouts is thus made to fall into the bags c . The pushing back of the drawer having removed it from over the filling-spouts f^2 , the rammers or compressing-pistons h h are next brought down by operating upon the handle h^6 . The said rammers pass through the filling-spouts f^2 , and press upon and consolidate the powdered material in the bags, as illustrated in Fig. 4. On loosening the handle h^6 the rammers are raised to their normal positions by the action of the weighted levers h^3 h^3 . The levers e are next released from the spring-catch lever i by pressing inward the handle i^4 , and the platform d descends by its own weight to the position represented in Fig. 3, and the mold containing the filled bags or cases is passed to the machine for creasing or folding the open ends of the bags or cases and for protecting the shape of the closed packets.

While we have specifically mentioned sugar, flour, starch, and meal as the materials to be placed in bags, it will be obvious that our invention is useful in making up packages of any powdered substances.

Having now described the nature of our invention and the manner in which the same is to be performed, we claim—

1. The combination of the rising and falling platform d , the divided mold b , supported thereby, the fixed platform f , having pendent spouts f^2 , the shaft d^2 , carrying cams d^4 , for imparting motion to platform d , the levers e , connected together by handle e^2 , to raise and lower said platform, and the spring-actuated lever-catch i , carrying blocks i^2 , substantially as described.

2. The combination, with the rising and falling and vibratory platform d d^2 d^3 d^4 and fixed filling-spout platform f f^2 , of the horizontal sliding drawer g g^2 g^3 , and laterally-moving grid or grating g^4 of the said drawer, for receiving the powdered material or commodity from the fixed hopper a and conveying it over the filling-spouts of the fixed platform, the several parts being constructed, arranged, and working substantially as described and illustrated.

3. The combination of the mold b , the fixed platform f , having pendent spout f^2 , the sliding drawer g^2 , having grating g^4 , the hopper a , the guides h^4 , the plungers h , moving

therein, the weighted levers h^3 , and the jointed rods h^2 , connecting levers h^3 and plungers h , substantially as and for the purposes described.

- 5 4. The combination of the parts $e^3 i i^2 i^3$, for supporting the movable platform d and for adjusting the height to which the said platform shall be lifted for insuring a uniform

weight of material being fed to the bags or cases.

JOHN TICKLE. [L. S.]
FREDERICK LEONARDT. [L. S.]

Witnesses:

GEORGE SHAW,
RICHARD SKERRETT.