

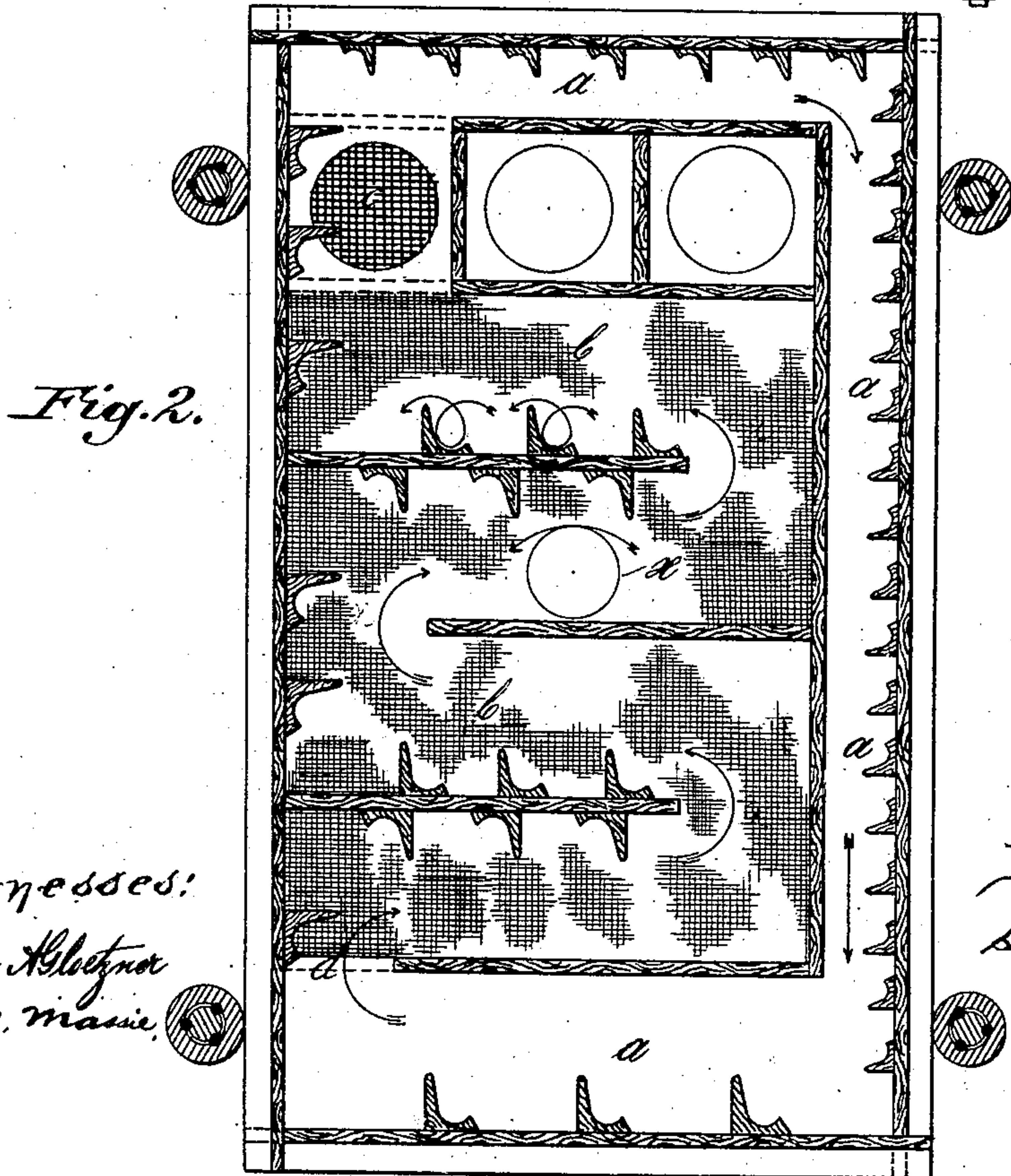
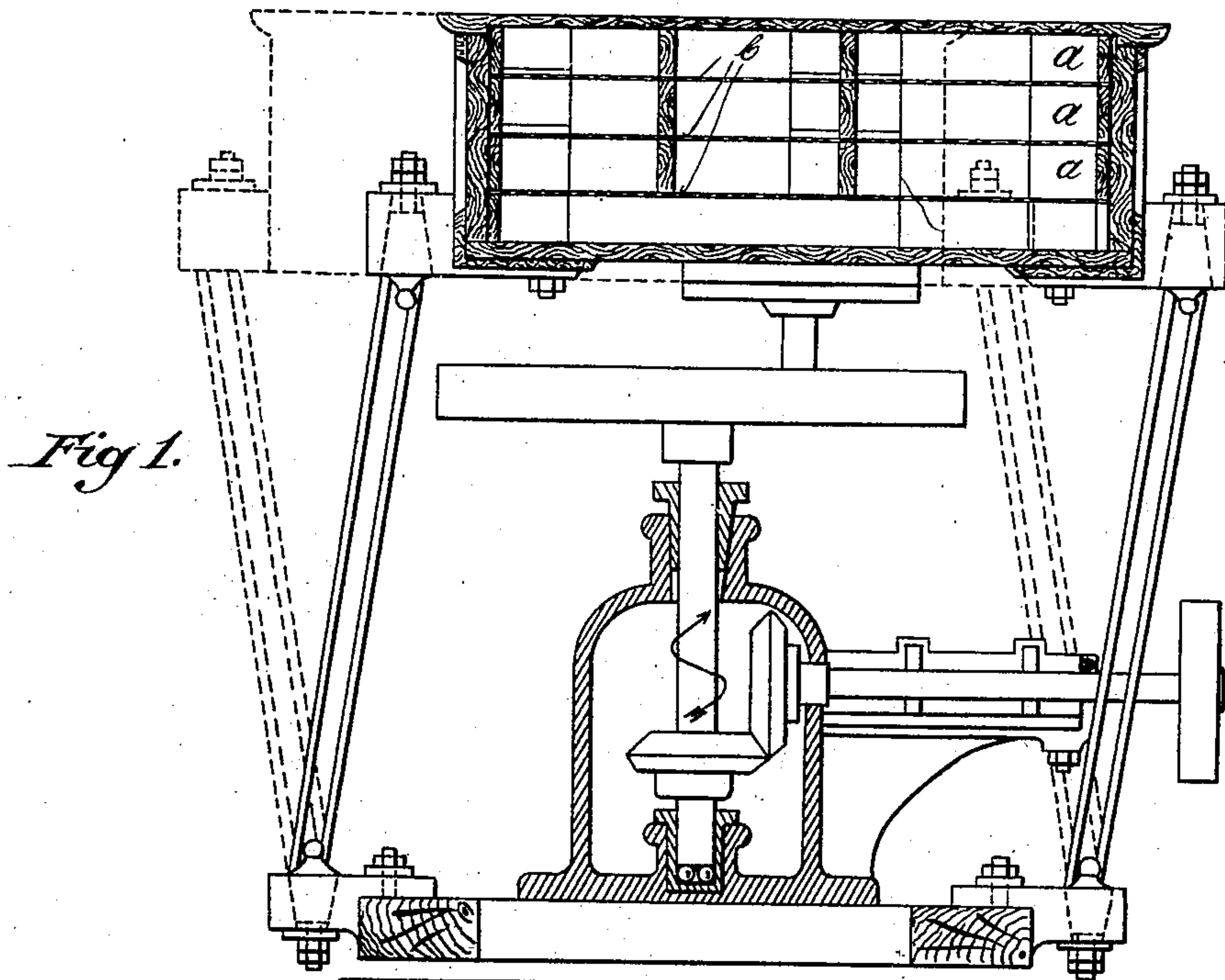
No. 685,133.

Patented Oct. 22, 1901.

L. GRAF.
BOLTING APPARATUS.

(Application filed Aug. 14, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

LOUIS GRAF, OF MUNICH, GERMANY.

BOLTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 685,133, dated October 22, 1901.

Application filed August 14, 1900. Serial No. 26,813. (No model.)

To all whom it may concern:

Be it known that I, LOUIS GRAF, obermüller, a citizen of Bavaria, Germany, residing at Munich, Bavaria, Germany, (whose post-office address is Wienerstrasse 15,) have invented certain new and useful Improvements in Bolting Apparatus; and I 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 appertains to make and use the same.

My invention relates to an improvement in gyratory bolting apparatus.

The general object of my invention is to provide means for avoiding the stoppage or clogging of the sieves which frequently occurs in such bolting apparatus.

With this main object in view my invention consists in the features, details of construction, and combinations of parts, which will first be described in connection with the accompanying drawings and then particularly pointed out in the claim.

In the drawings, Figure 1 is a sectional elevation of a device embodying my invention, and Fig. 2 a plan view of one of the sieves.

It has been common in the art heretofore to provide the sieves of a gyratory bolting apparatus with material which is too large to pass through the meshes of the bolting-cloth of such sieve, which material—such as grains of corn, steel or wooden balls, rubber, or the like—is intended to keep the sieve clean by moving over the bolting-surface and by its superior weight driving through the meshes of the cloth any particles of the material to be sieved which are sticking into said meshes, or by virtue of its superior inertia carrying along any particles of the material to be sieved which have become clogged in corners of the sieve. Such cleaning material passes over the bolting-surface along with the material to be sieved, the latter principally falling through the meshes of the bolt, the tailings falling through a large-mesh tailings-screen at the outlet of the bolt, while the cleaning material which is too large to pass through the said tailings-screen is returned to the inlet portion of the bolt, ready to be used over again. It has been customary heretofore to provide a channel in the sieve whereby the outlet of the sieve is connected with the in-

let, and thereby the cleaning material escaping from the outlet is enabled to work its way around to the inlet of the sieve. In these prior constructions, however, the path provided for the sieve has also been part of the sieve—that is to say, it has had a bottom of bolting fabric in order that it may act as a sieve. The reason for thus constructing the bottom of the return path or channel has been that it is generally the case that quite a considerable amount of the material to be sieved will pass over the tailings-screen without going through the same. This has been due to the fact that frequently a number of particles of the material to be sieved will adhere so firmly together that they form a mass of material larger than the individual meshes of the tailings-screen, and hence pass over the same in their combined condition without dropping through. By making the return-channel for the cleaning material with a sieve-bottom it is intended that the material passing the tailings-screen in the manner above described will be sieved in the said return-channel.

My invention differs from the prior art in that I provide a return-channel for the cleaning material which is independent of and outside of the sieve proper—that is to say, I provide a return-channel which is in the same horizontal plane with the sieve and connecting the inlet and outlet of the sieve, but with a smooth bottom. In other words, in my construction the return-channel does not have a sieve-bottom.

For example, as shown in Fig. 2, *a* is the return-channel for the cleaning material, which channel connects the outlet *c* of the sieve with the inlet *d*, the path through that part of the apparatus in which the bolting takes place being indicated at *b*, the general direction of travel of the material to be sifted being indicated by the arrows, the circular arrow *x* indicating the gyratory motion of the sieve. At the outlet *c* of the sieve is located a tailings-screen, in this case made circular in form, as shown, and of such coarse mesh as to permit the tailings from the bolt to pass through, while at the same time not allowing the cleaning material to escape. Of course it is true that when a number of the particles of the material to be sifted adhere to each

other, as often occurs, the combined mass thus formed may be too large to escape through the tailings-screen and will pass over the same and into the return-channel *a*; but in this
5 channel there is no sieving action, and consequently there will be the minimum amount of friction between the material contained therein and the bottom of the channel. Thus there will be no danger of the said channel
10 becoming clogged because of particles of the material sticking in the meshes. If, now, owing to a failure to remove a full sack from the outlet of the bolting apparatus or to the clogging of the chute leading therefrom, if
15 such be employed, or to the clogging of the meshes of the bolt, as might occur with damp flour or meal, the bolt becomes clogged, it will not be necessary to remove the screen in order to clean the same, because the return-
20 channel will not become clogged and always contains a considerable quantity of cleaning material which is free to move and quickly works its way to the inlet of the bolt proper and then commences its work of clearing the
25 sieve-surface at the inlet, thus soon clearing the whole sieve-surface. This action, however, would not take place if the return-channel itself were part of the sieve, since said channel would also become clogged by the
30 backing into it of the material to be cleaned, owing to the more sluggish or retarded action of the cleaning material when working over a bolting fabric instead of over a smooth surface. Owing to this difference in the free-
35 dom of movement of the cleaning material in the return-channel, that part of the meal or flour which in its adherent condition passes over the tailings-screen is soon separated into

its component particles, which readily pass through the sieve as soon as they reach the
40 inlet after passing through the return-channel, and said particles cannot in any way clog the return-channel. Moreover, by this said freedom of action of the cleaning material in the return-channel all incipient clog-
45 ging of the sieve is at once checked by the entry of the freely-acting cleaning material onto the sieve at its inlet.

In the drawings I have shown my invention embodied in a gyratory bolt having forwarding-blades of a peculiar construction.
50 These blades, however, are not claimed herein, as they form the subject-matter of my application Serial No. 26,812, filed August 14, 1900; also, the said drawings show the sieve-
55 box supported by a special form of standard, which is not claimed in this application, as it forms the subject-matter of my application Serial No. 26,814, filed August 14, 1900.

Having thus fully described my invention, 60 what I claim as new, and desire to secure by Letters Patent, is—

In a gyratory bolt, the combination, with a sieve, having an inlet and an outlet, of a
65 return-channel for cleaning material connecting the outlet of the sieve with its inlet, the said return-channel being located in the same horizontal plane with the sieve and having a smooth imperforate bottom.

In testimony whereof I affix my signature 70 in presence of two witnesses.

LOUIS GRAF.

Witnesses:

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