

No. 704,728.

Patented July 15, 1902.

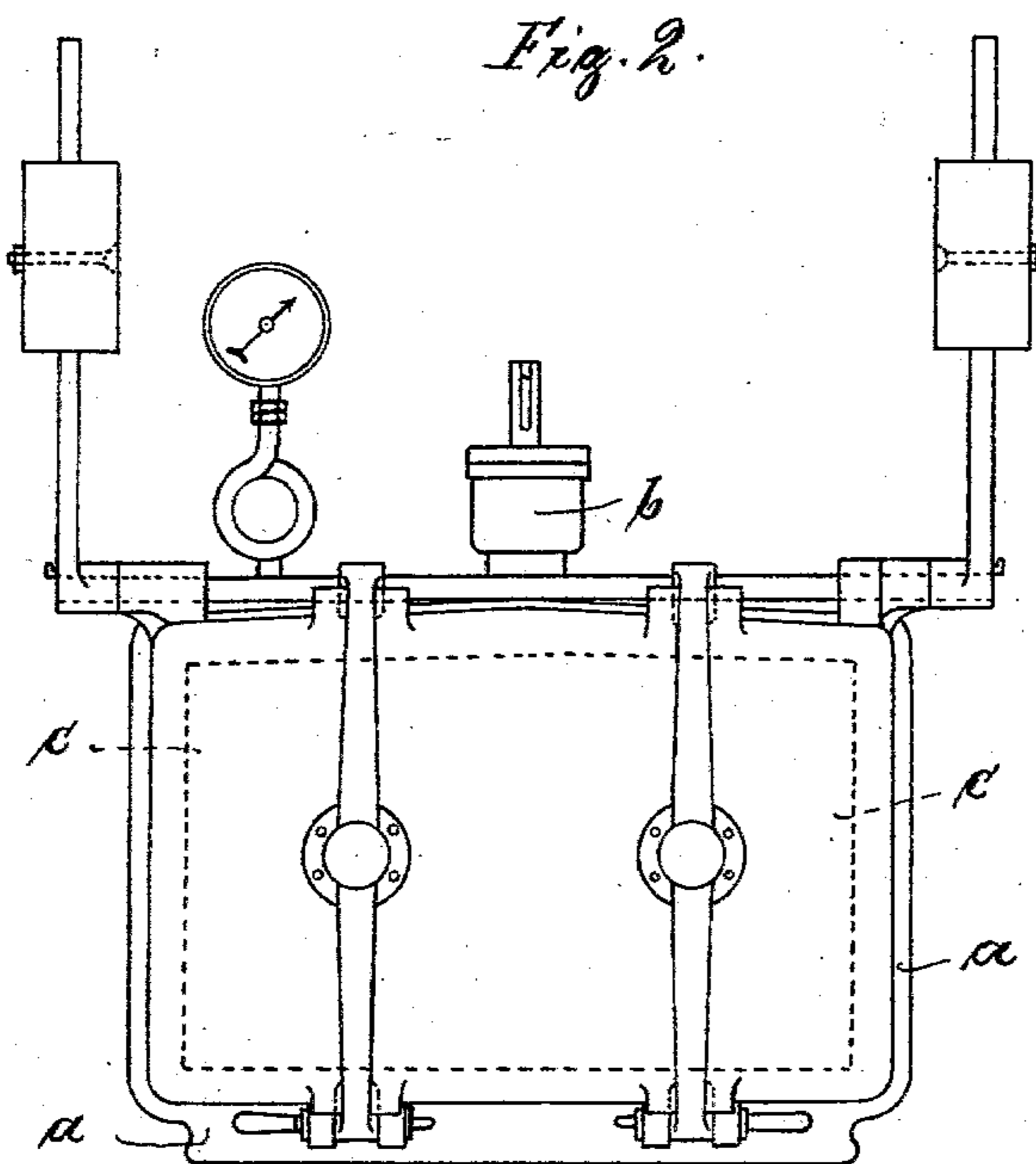
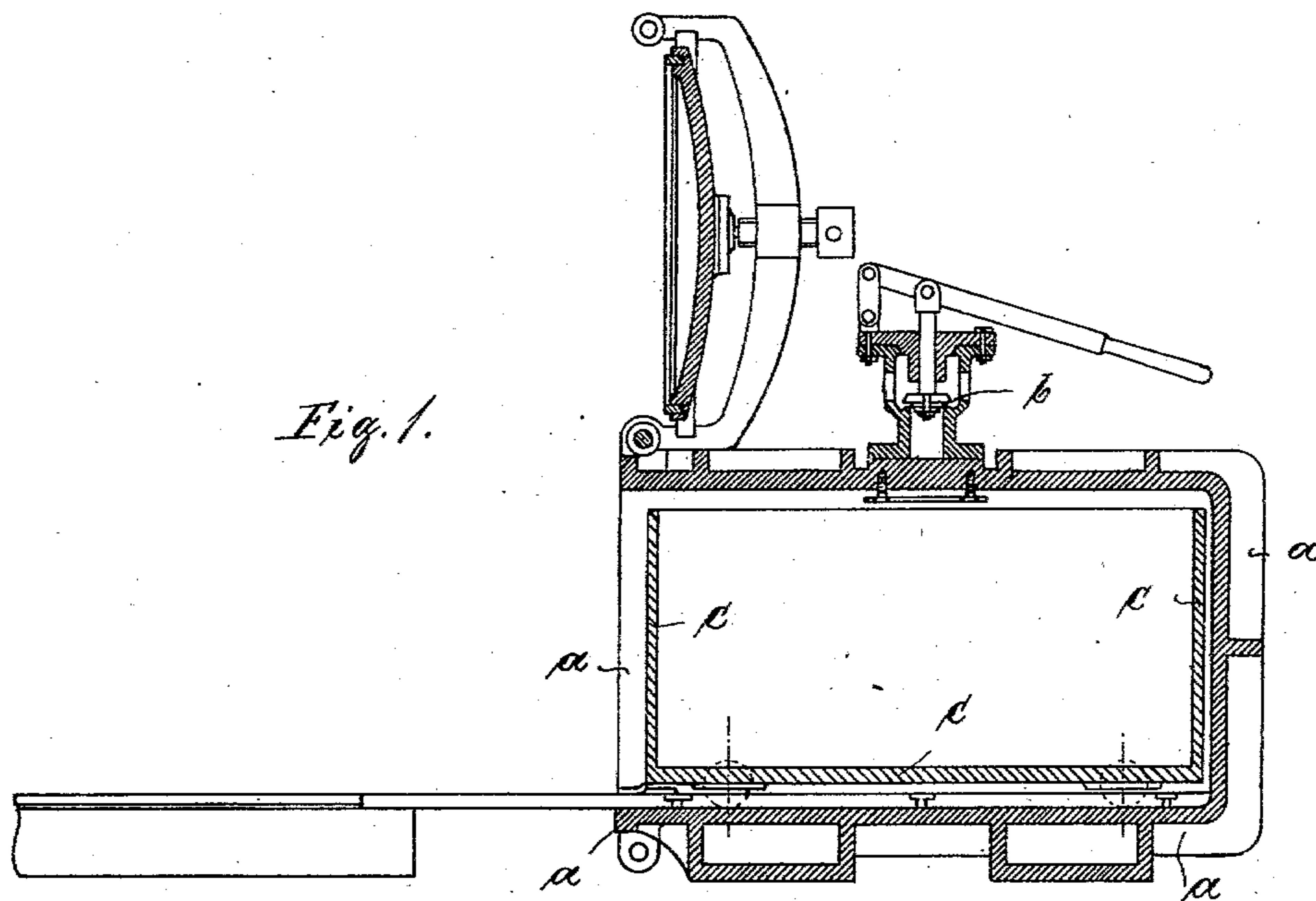
A. WULTZE.

PROCESS OF PACKING POWDERY SUBSTANCES.

(Application filed Nov. 13, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:  
Arthur Schenk  
Emil Haysen

Inventor:  
Adolf Wultze  
by *Hubert Meyer*  
Attorney

No. 704,728.

Patented July 15, 1902.

A. WULTZE.

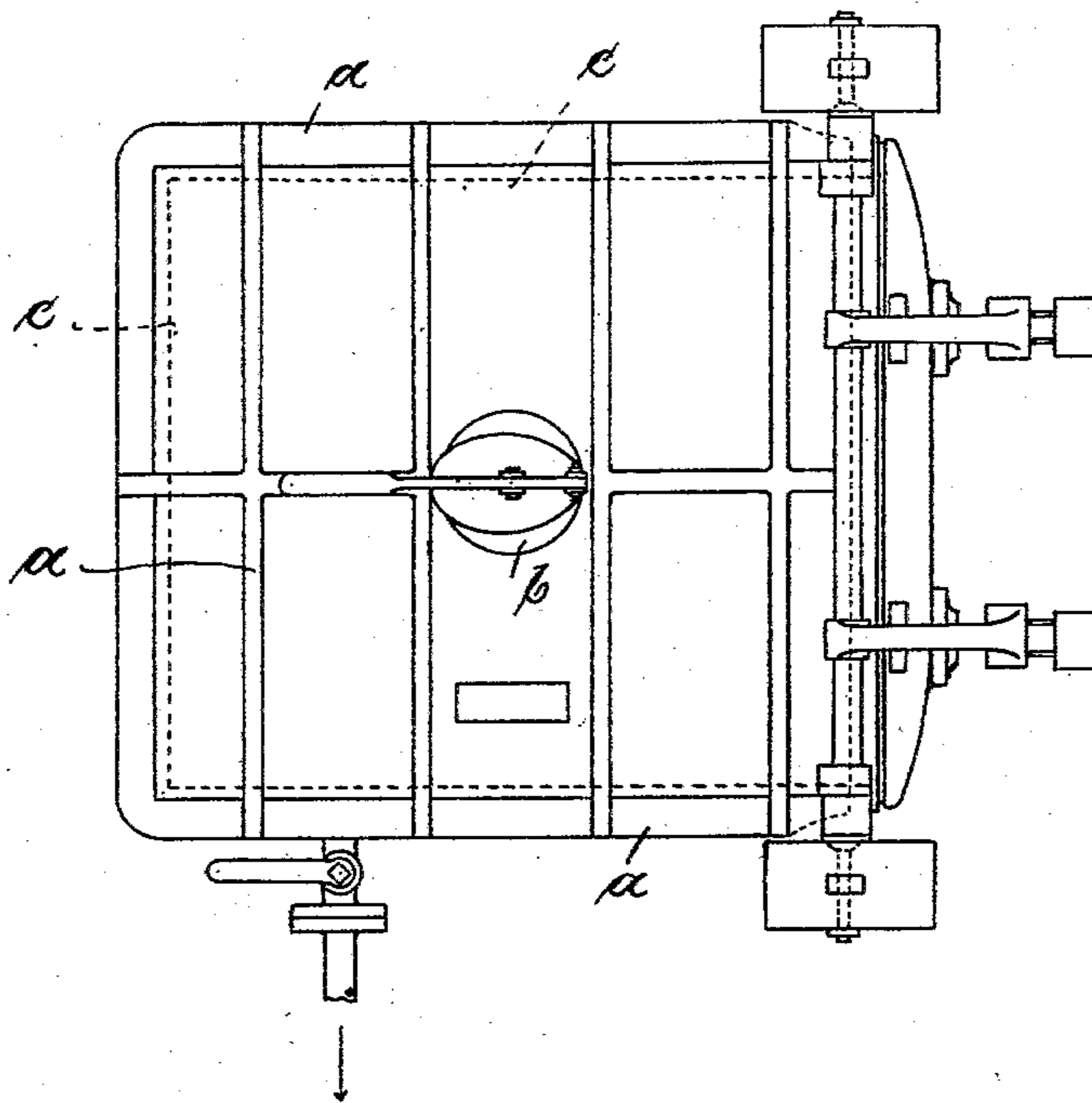
PROCESS OF PACKING POWDERY SUBSTANCES.

(Application filed Nov. 13, 1900.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 3.



Witnesses:  
Arthur Scholz.  
Emil Thayer.

Inventor:  
Adolf Wultze  
by *Heinrich*  
Attorney

# UNITED STATES PATENT OFFICE.

ADOLPH WULTZE, OF CHARLOTTENBURG, GERMANY.

## PROCESS OF PACKING POWDERY SUBSTANCES.

SPECIFICATION forming part of Letters Patent No. 704,728, dated July 15, 1902.

Application filed November 13, 1900. Serial No. 36,391. (No specimens.)

*To all whom it may concern:*

Be it known that I, ADOLPH WULTZE, a subject of the King of Prussia, German Emperor, and a resident of 8 Salz Ufer, Charlottenburg, near Berlin, Kingdom of Prussia, German Empire, have invented an Improved Process of Packing Powdery Substances, of which the following is an exact specification.

In packing up powdery substances great difficulties arise, as well known, because the little grains of the powdery mass do not set tightly upon each other, but inclose more or less air between them. In consequence hereof much space would be wasted when the packing up would be executed without a previous special treatment. It has therefore been tried to withdraw the air from the substances by means of an air-pump and afterward compress the substance by means of a press. This process is, however, very expensive on account of not only an air-pump, but also a press, being necessary for carrying the same into effect, which press necessitates a great power. In order to do away with this disadvantage, I provide my new process by means of which it is attained, that the arrangement of a special press for compressing the substance is entirely unnecessary.

In order to make my invention more clear, I will proceed to describe the same at the hand of the accompanying drawings, in which an apparatus is shown which may serve for carrying my process into effect.

Figure 1 is a vertical section of this apparatus in an open position. Fig. 2 is a front view of the same in a closed position. Fig. 3 is a top view of the same in closed position.

*a* is a receiver, one side wall of which can be taken off or is hinged to the same, as shown in the drawings. Fig. 1 shows this side wall turned up. In this position a box *c*, filled with the substance to be compressed, is brought into the receiver *a*. Hereafter the side wall is closed, as shown in Figs. 2 and 3 of the drawings. To the receiver *a* a pipe is connected, which leads to an air-pump, as may be seen in Fig. 3, so that the receiver *a* can be pumped out. By rarefying the air in the receiver the air inclosed between the little

grains of the powdery substance contained in the box *c* will naturally also be rarefied. As soon as a vacuum is created in the receiver *a* the walling movement will cease. Hereafter the connection of the receiver with the air-pump is cut off by means of a valve situated in the connection-pipe. In order to be able to recognize whether the air within the receiver *a* is sufficiently rarefied, a manometer may be connected to the same. After the connection of the receiver with the air-pump is cut off a valve *b*, connecting the receiver with the outer atmosphere, is opened, so that the substance contained in the box *c* is suddenly exposed to the pressure of the outer atmosphere. As the air inclosed between the molecules or little grains of the mass is rarefied, these molecules or grains will be pressed tightly upon each other by the atmospheric pressure.

It will be understood that the arrangement of the box *c* is not absolutely necessary, as the substance to be compressed can be brought directly into the receiver *a*.

It is evident that the powdery mass which in the beginning of the process has filled the receptacle to the very top would not fill the same after the compression, so that if not paper bags or sacks but receptacles with stiff walls are employed the process would have to be repeated several times in order to completely fill the receptacle.

Having thus fully described the nature of this invention, what I desire to secure by Letters Patent of the United States is—

A process for packing powdery substances, consisting in rarefying the air held among the particles of the substances and then exposing the same to the atmospheric pressure, substantially as described and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ADOLPH WULTZE.

Witnesses:

WOLDEMAR HAUPT,  
HENRY HASPER.