J. W. R. VON TRAUBENBERG.

ROTARY PRESS.

APPLICATION FILED DEC. 31, 1909.

970,575.

Patented Sept. 20, 1910.

3 SHEETS—SHEET 1.

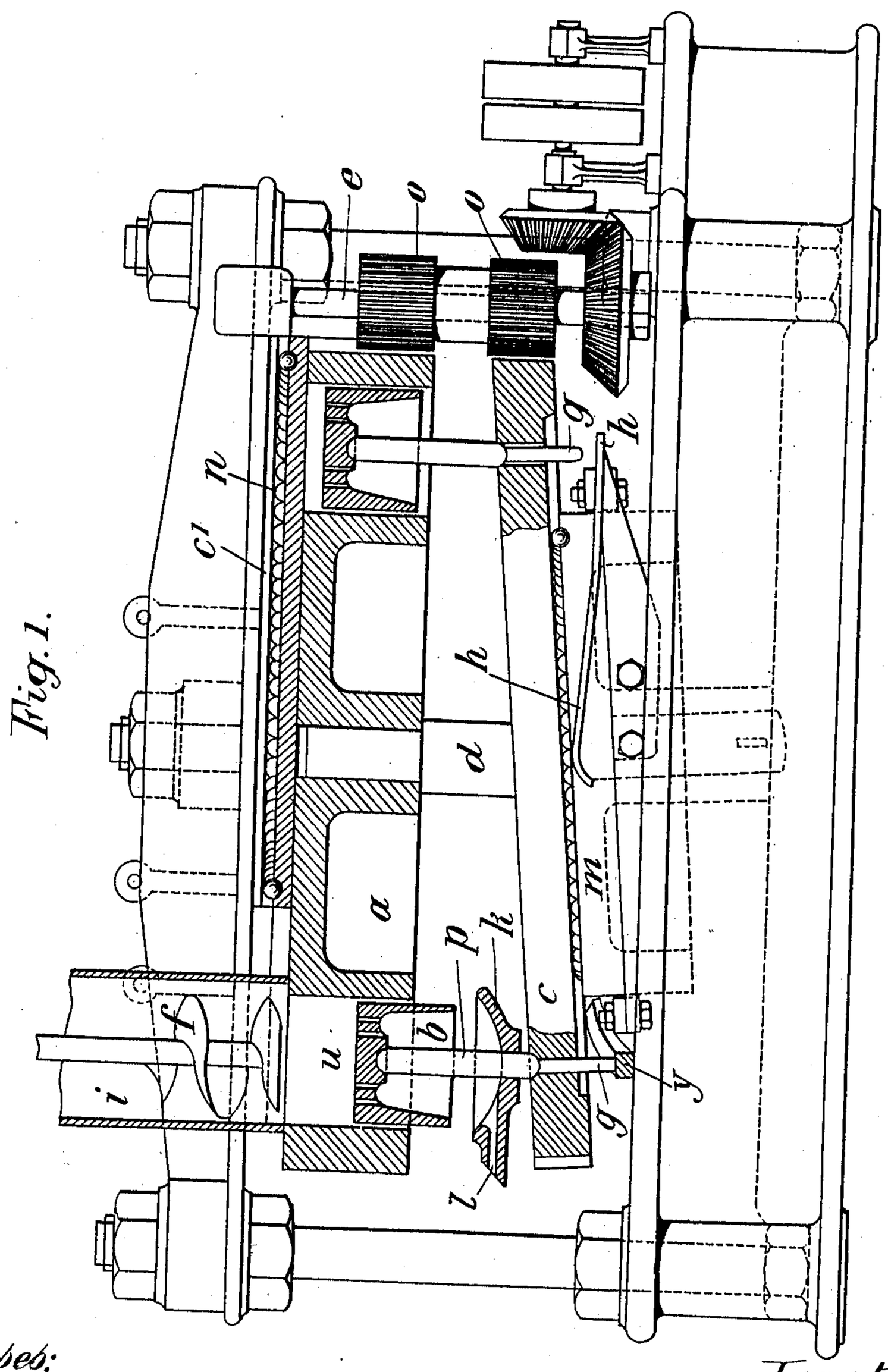


Fig. 1.

Witnesses:
L. C. Barkley
Wm. Leech

Inventor.
Johann Woldemar Rausch von Traubenberg.
by Hanks. Auseman Attorney.

J. W. R. VON TRAUBENBERG.

ROTARY PRESS.

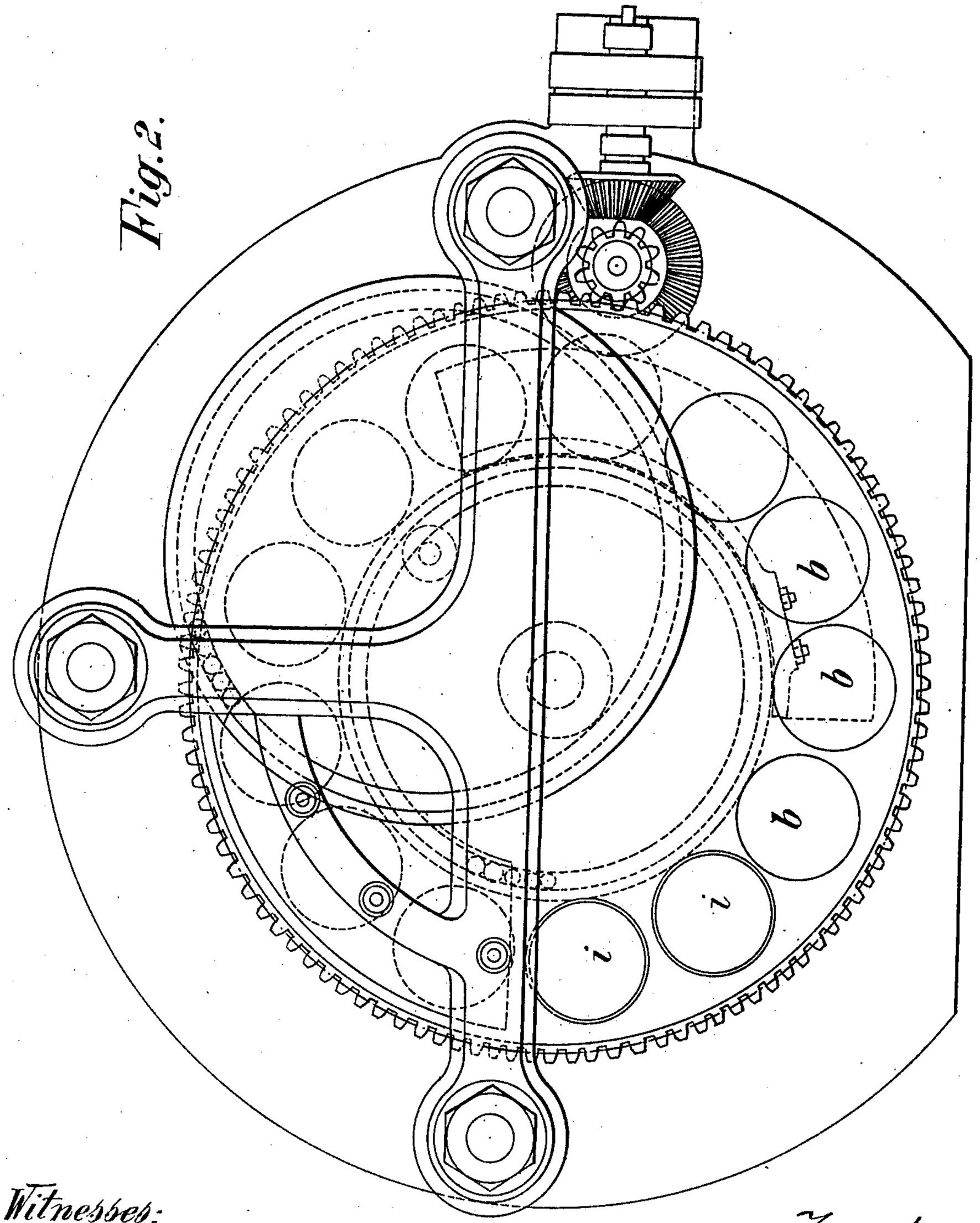
APPLICATION FILED DEC. 31, 1909.

970,575.

Patented Sept. 20, 1910.

3 SHEETS—SHEET 2.

Fig. 2.



Witnesses:
L. C. Barkley.
A. W. Leech

Inventor:
Johann Woldemar Raübsch von Traubenberg.
by Starks. Auseman
Attorney.

J. W. R. VON TRAUBENBERG.

ROTARY PRESS.

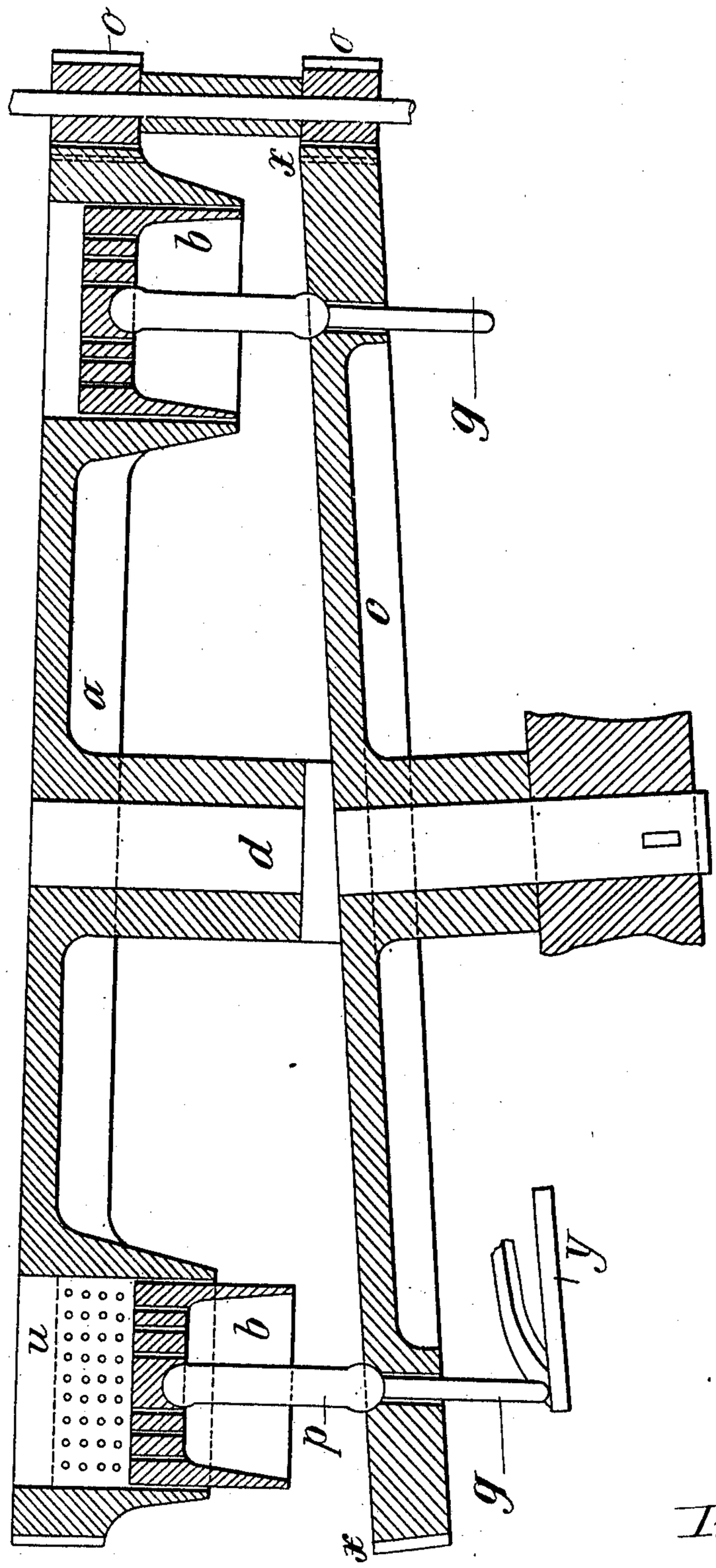
APPLICATION FILED DEC. 31, 1909.

970,575.

Patented Sept. 20, 1910.

3 SHEETS—SHEET 3.

Fig. 3.



Witnesses:
L. C. Barkley.
amSerich

Inventor:
Johann Woldemar Rausch von Traubenberg.
by Staats. Auneman Attorney.

UNITED STATES PATENT OFFICE.

JOHANN WOLDEMAR RAUSCH VON TRAUBENBERG, OF REVAL, RUSSIA.

ROTARY PRESS.

970,575. Specification of Letters Patent. **Patented Sept. 20, 1910.**

Application filed December 31, 1909. Serial No. 535,828.

To all whom it may concern:

Be it known that I, JOHANN WOLDEMAR RAUSCH VON TRAUBENBERG, a subject of the Russian Emperor, and resident of Reval, Russia, have invented certain new and useful Improvements in Rotary Presses, of which the following is a specification.

This invention relates to a new method for pressing various materials by means of two disks the planes of which are inclined with reference to each other and rotate simultaneously in the same direction and with the same speed, the object of the invention being to provide a press comprising the said pressing disks.

In the accompanying drawings: Figure 1 shows a longitudinal section of a press constructed according to the principles of the present invention. Fig. 2 is a top plan view of said press; Fig. 3 shows at a somewhat enlarged scale the cross section of the two disks.

Freely mounted on the bent shaft *d*, Fig. 3, are two disks *a* and *c* so that the surface of disk *c* is inclined with reference to the surface of disk *a*. The bent shaft *d* is secured by means of a key to the framework of the press and remains stationary while the two disks are adapted to rotate freely on the shaft *d*. If disk *a* is rotated each point of its surface is moved horizontally in its plane, while the position of the same point remains always the same without any change in the vertical direction. If the lower disk *c* is rotated the position of each point of its surface changes not only in the horizontal direction but also in the vertical direction so that this point is removed from the surface of the upper disk *a*, and then approaches this surface. For instance the point *x* of the surface of the lower disk is found to be at the maximum distance from the surface of the disk *a;* if the disk *c* is rotated 180 degrees, the point *x* comes gradually nearer the surface of the disk *a* and the opposite side gradually recedes to the maximum distance from the surface of the disk *a*.

The pressing mechanism of the press is constructed according to the principle above described and which forms the basis of the present invention. The two disks of the pressing apparatus are rotated in the same direction and with the same speed by means of two pinions *o* carried by the same vertical shaft. The disk *a* is provided with the molds *u* in which move the pressure pistons *b* engaged on members *p* which during the work of the machine push the pistons upward. The pistons as well as the molds in which they are reciprocated, are provided with small holes allowing the escape of the water which is pressed out of the material treated. The Figs. 1 and 2 of the drawing show the rotary press ready for work and constructed according to the above described principle.

As shown by the accompanying drawing, the bent shaft *d* is secured at its lower end by means of a wedge to the body of the apparatus, while its upper part may also be secured to a beam which is rigidly and securely carried at the top of small lateral columns or on bolts secured to the lower body. The disk *c'* which rotates on its shaft serves to close the molds and to prevent the mass to be pressed escaping from the mold *u* during a certain space of time that is to say as long as the pressing operation is carried on. During this time the pressing operation is effectively carried out, as the mass to be pressed is tightly held between the piston *b* and the disk *c'*.

In order to reduce the friction between the disk *a* and the opposite disk which is secured to the upper beam, balls *n* are inserted between said disks. As soon as the mass to be pressed leaves the zone of action of disk *c'*, that is to say when the opening of the mold *u* is disengaged the mass is automatically pushed out of the mold, as the post *q* then engages the incline *h* which causes it to rise higher and higher and with it the member *p* and the piston *b* until the mass to be pressed will finally be pressed out of the mold. At this time and as the incline *h* ends the post *q* as well as the member *p* and the piston *b* again are allowed to fall back into their lower position. The press is also provided with a transportable incline *y* which may be secured to the body of the press in a more or less elevated position. This incline has for its object to control the amount of the material filling the molds, and this owing to its length which is about $\frac{1}{8}$ of its circumference and owing to its coöperation with the post *q*. If the said incline is placed at a lower level than ordinarily, the amount of material introduced into the molds is larger; if on the contrary it is at a higher level than its ordinary one, the molds are filled with less material than when the incline occupies its normal posi-

tion. Now, as the final consistency of the material to be pressed depends upon the amount of material subjected to the treatment in the press, it results therefrom that the said incline *y* controls the consistency of the materials after the pressing operation. As a matter of fact, if there was a greater amount of material introduced into the mold, the consistency of the molded and pressed material will be greater and on the contrary, if there was less material in the molds the consistency of the molded and pressed material will be less.

The material to be pressed is brought to the opening *u* by the cylinder *i* through the instrumentality of the screw *f*.

k designates the cup which is intended to collect the water or the other liquid escaping from the mass when the latter is pressed. *l* are openings allowing the water to flow out of the cups *k*. In order to reduce friction balls are inserted between the disk *c* and the body *m*. The construction can still be modified in that the shaft *d* can be formed of two parts inclined with reference to each other; in this case the disk *a* would rotate on one of the shafts and the disk *c* on the other.

The press constructed according to the principles of the present invention has the great advantage to allow the manufacture on a large scale of the work of the press, a large number of the molds can be subjected simultaneously to the action of the pressure. The pressing action is carried out in each mold only during a certain part of the movement of the piston. The upward movement of the piston is produced during the time the disk rotates half a revolution and the descending movement also takes place during half a revolution of the disk and is produced by the weight of the piston itself during the latter part of the movement of the disk. Thus the material to be pressed moves through half a revolution of the disk and undergoes a slow and progressive compression. The disk being provided with a certain number of molds, the exact number of which depends upon the dimensions of the disk, the filling of the molds and the pressing of the material take place in an uninterrupted manner and each fraction of the revolution of the disk which is equal to the distance between two neighboring molds, furnishes pressed material. If we admit that the time necessary for performing the movement on the distance between a mold and its neighboring one, is always the same, the duration of the pressing depends upon the number of molds contained in the disk and upon the diameter of the disk *a*. The construction of the press may be such that the press will be able to perform the pressing of certain raw materials even without the aid of pistons by the simple rotative inclination of the disks which in this case are not provided with molds.

Having now fully described my said invention what I claim and desire to secure by Letters Patent, is:—

1. In a rotary press, the combination with a stationary bent shaft, of two disks rotatably mounted thereon, the surface of the lower disk being inclined to that of the upper disk, means for rotating the said disks, the upper disk provided with a plurality of molds, a piston in each of the molds, means for closing the top of the molds for a part of the travel of said upper disk, and means for automatically exerting pressure on said pistons.

2. In a rotary press, the combination with a stationary bent shaft, of two disks rotatably mounted thereon, the surface of the lower disk being inclined to that of the upper disk, means for rotating the said disks, the upper disk provided with a plurality of molds near the circumference thereof, a plate covering a part of the top side of said upper disk adapted to close the molds while they are passing thereunder, and means for automatically exerting pressure on said pistons.

3. In a rotary press, the combination with a stationary bent shaft, of two disks rotatably mounted thereon, the surface of the lower disk being inclined to that of the upper disk, means for rotating the said disks, the upper disk provided with a plurality of molds near its circumference, a piston in each of the molds, perforations in each of said molds and in each of said pistons to permit the escape of the liquid pressed out of the material, cups for collecting the liquid, a plate covering a part of the top side of said upper disk adapted to close the molds while they are passing thereunder, and a member connecting each of the pistons with the lower disk whereby pressure is exerted on said pistons.

4. In a rotary press, the combination with a stationary bent shaft, of two disks rotatably mounted thereon, the surface of the lower disk being inclined to that of the upper disk, means for rotating the said disks, the upper disk provided with a plurality of molds near its circumference, a piston in each of the molds, perforations in each of said molds and in each of said pistons to permit the escape of the liquid pressed out of the material, cups for collecting the liquid, a plate covering a part of the top side of said upper disk adapted to close the molds while they are passing thereunder, a member connecting each of the pistons with the lower disk whereby pressure is exerted on said pistons, an incline located below the lower disk, the lower disk provided with apertures in alinement with each of said members, and posts in the apertures adapted

to engage said incline to push the compressed material out of said molds.

5. In a rotary press, the combination with a stationary bent shaft, of two disks rotatably mounted thereon, the surface of the lower disk being inclined to that of the upper disk, means for rotating the said disks, the upper disk provided with a plurality of molds near its circumference, a piston in each of the molds, perforations in each of said molds and in each of said pistons to permit the escape of the liquid pressed out of the material, cups for collecting the liquid, a plate covering a part of the top side of said upper disk adapted to close the molds while they are passing thereunder, a member connecting each of the pistons with the lower disk whereby pressure is exerted on said pistons, an incline located below the lower disk, the lower disk provided with apertures in alinement with each of said members, posts in the apertures adapted to engage said incline to push the compressed material out of the said molds, and a second incline below the lower disk adapted to be engaged by said posts to control the amount of material introduced into said molds.

6. In a rotary press, the combination with a stationary bent shaft, of two disks rotatably mounted thereon, the surface of the lower disk being inclined to that of the upper disk, means for rotating the said disks, the upper disk provided with a plurality of molds near its circumference, a piston in each of the molds, perforations in each of said molds and in each of said pistons to permit the escape of the liquid pressed out of the material, cups for collecting the liquid, a plate covering a part of the top side of said upper disk adapted to close the molds while they are passing thereunder, a member connecting each of the pistons with the lower disk whereby pressure is exerted on said pistons, an incline located below the lower disk, the lower disk provided with apertures in alinement with each of said members, posts in the apertures adapted to engage said incline to push the compressed material out of the said molds, a second incline below the lower disk adapted to be engaged by said posts to control the amount of material introduced into said molds, a cylinder stationed above the upper disk, and a screw operating in the cylinder adapted to convey the material to the molds.

In testimony whereof I have hereunto set my hand in presence of two witnesses.

JOHANN WOLDEMAR RAUSCH VON TRAUBENBERG.

Witnesses:
ERNST ROTERMANN,
ETÀRGRE.