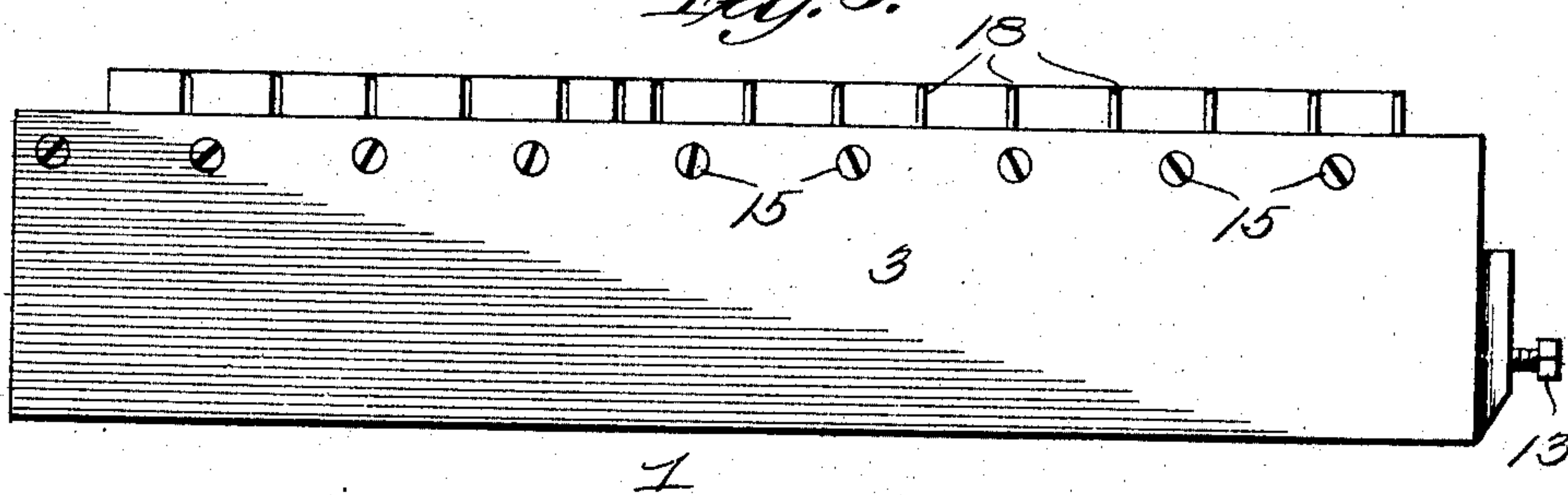
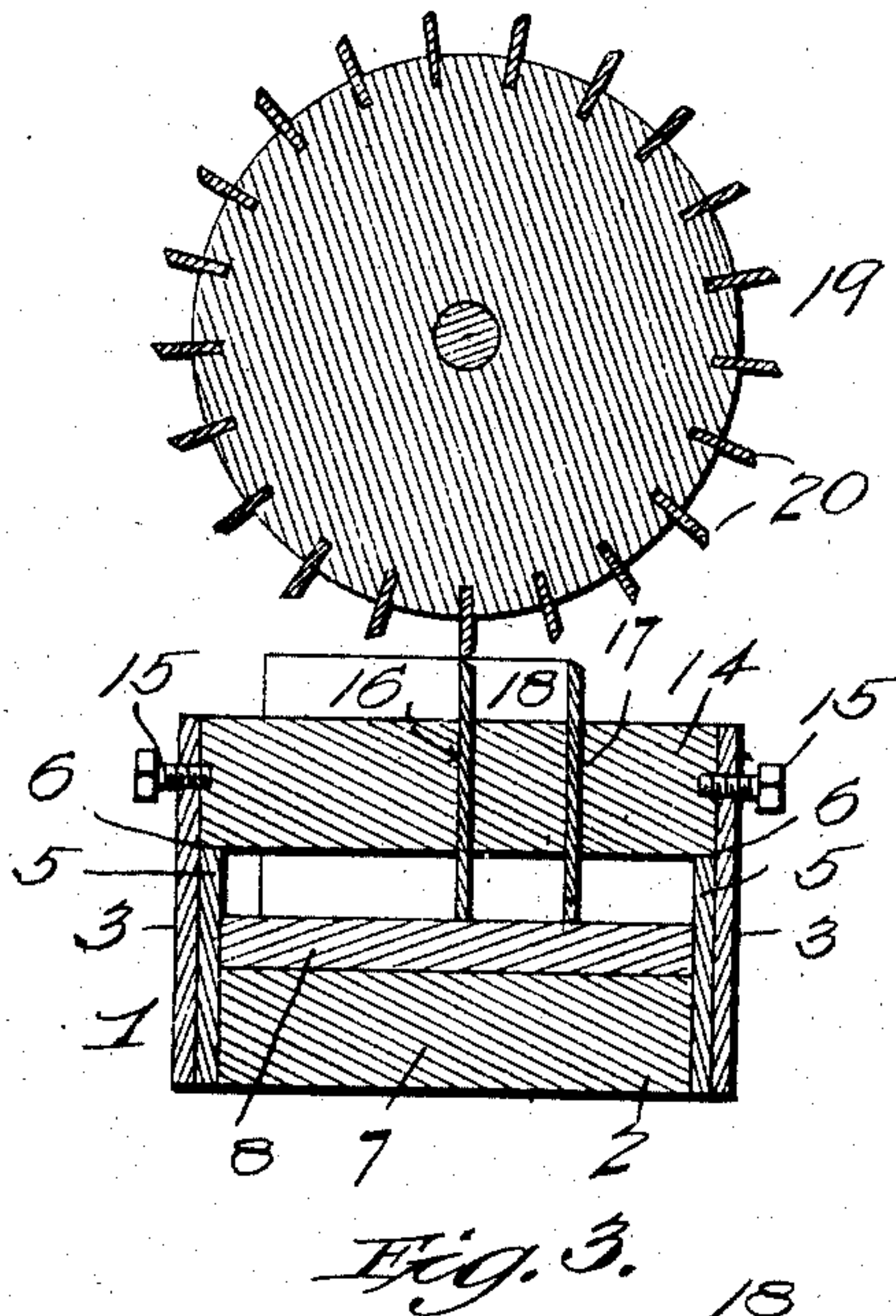
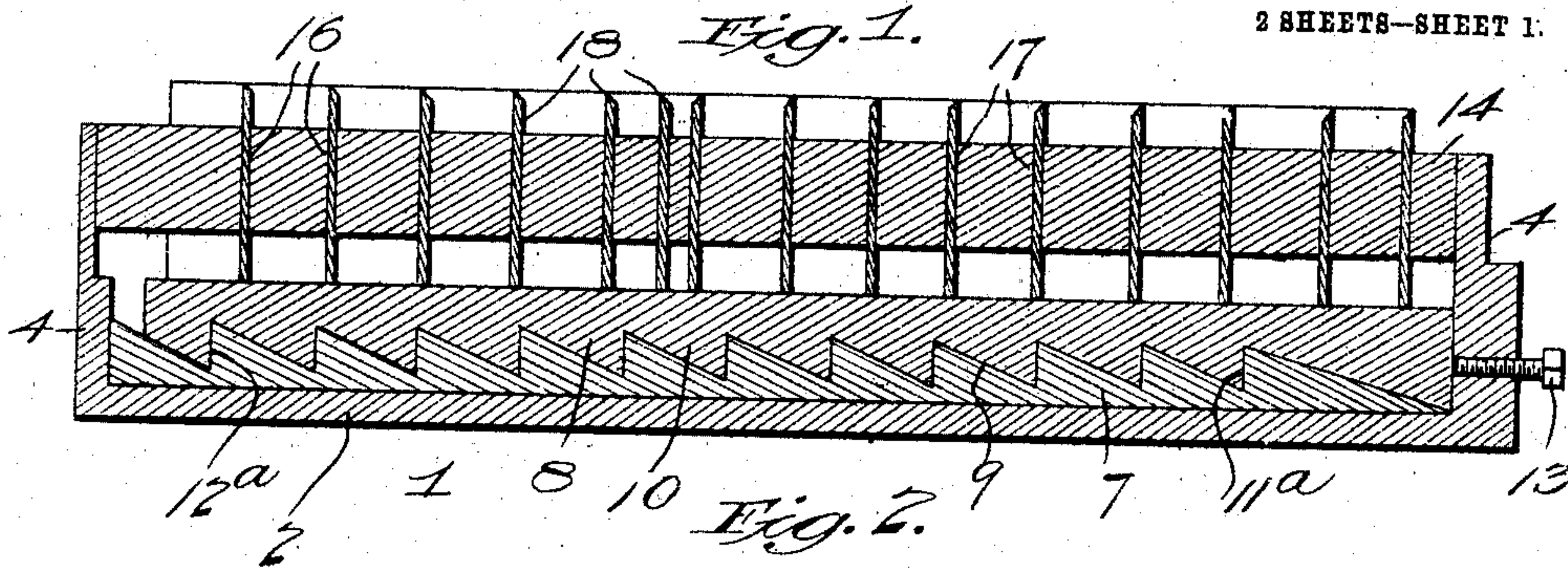


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 BED PLATE FOR BEATING ENGINES.
 APPLICATION FILED NOV. 23, 1907.

907,220.

Patented Dec. 22, 1908.

2 SHEETS—SHEET 1.



Witnesses

T. L. M. ...
H. Joseph ...

Inventors

Fred H. Bither
and Wilmer J. Crandall

By

J. Lushane

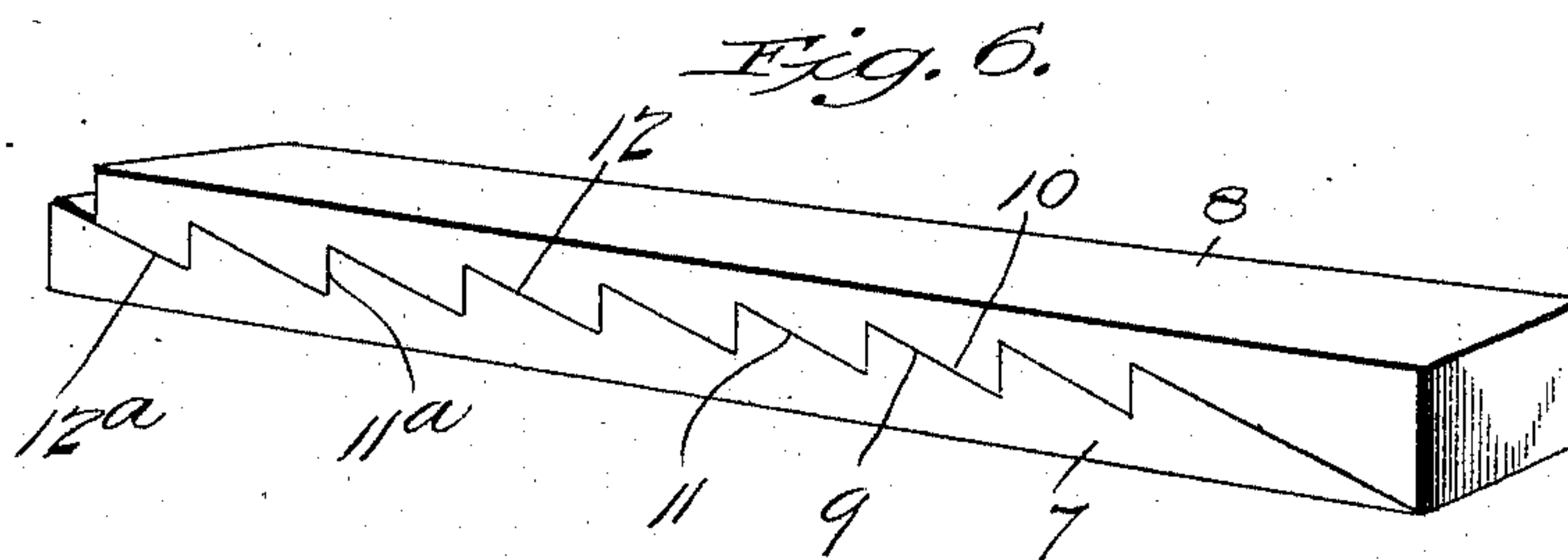
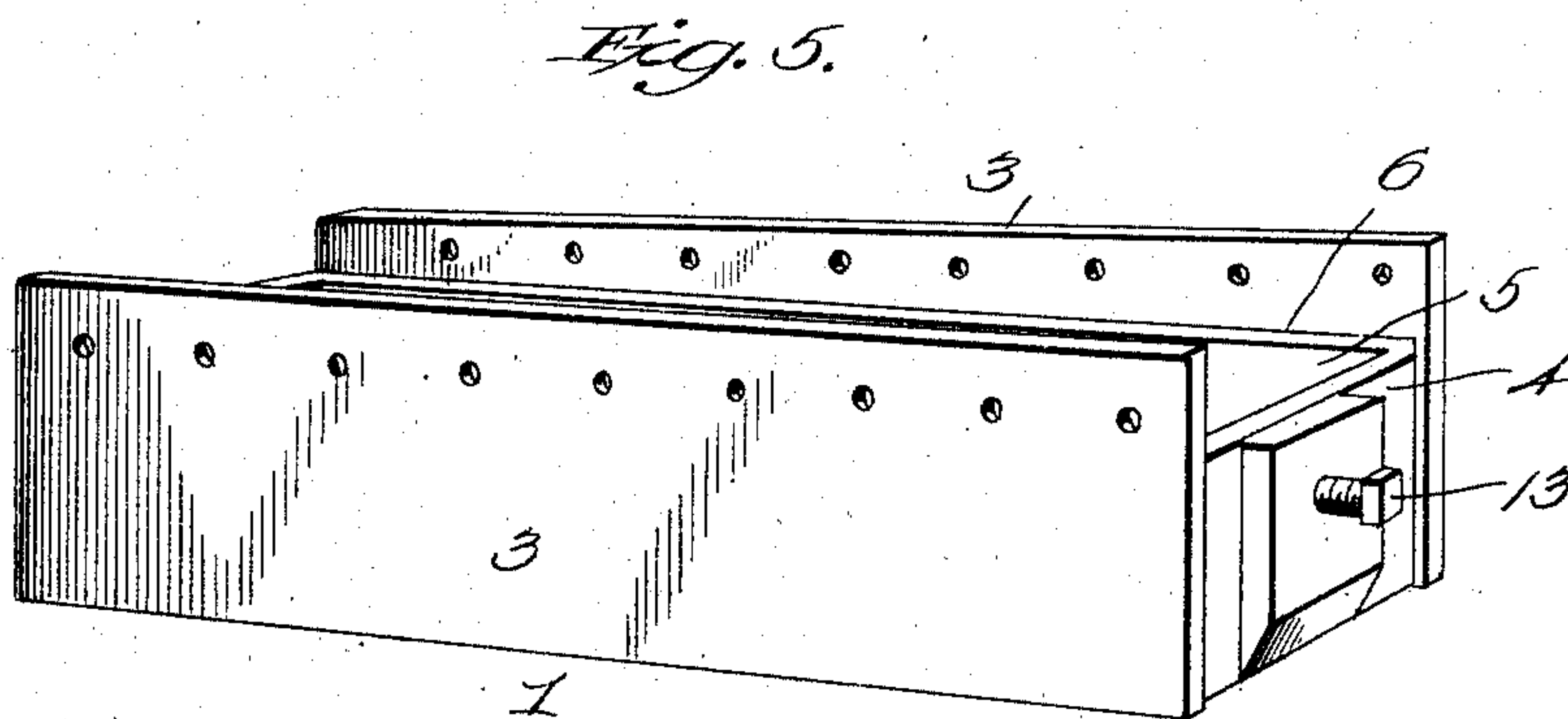
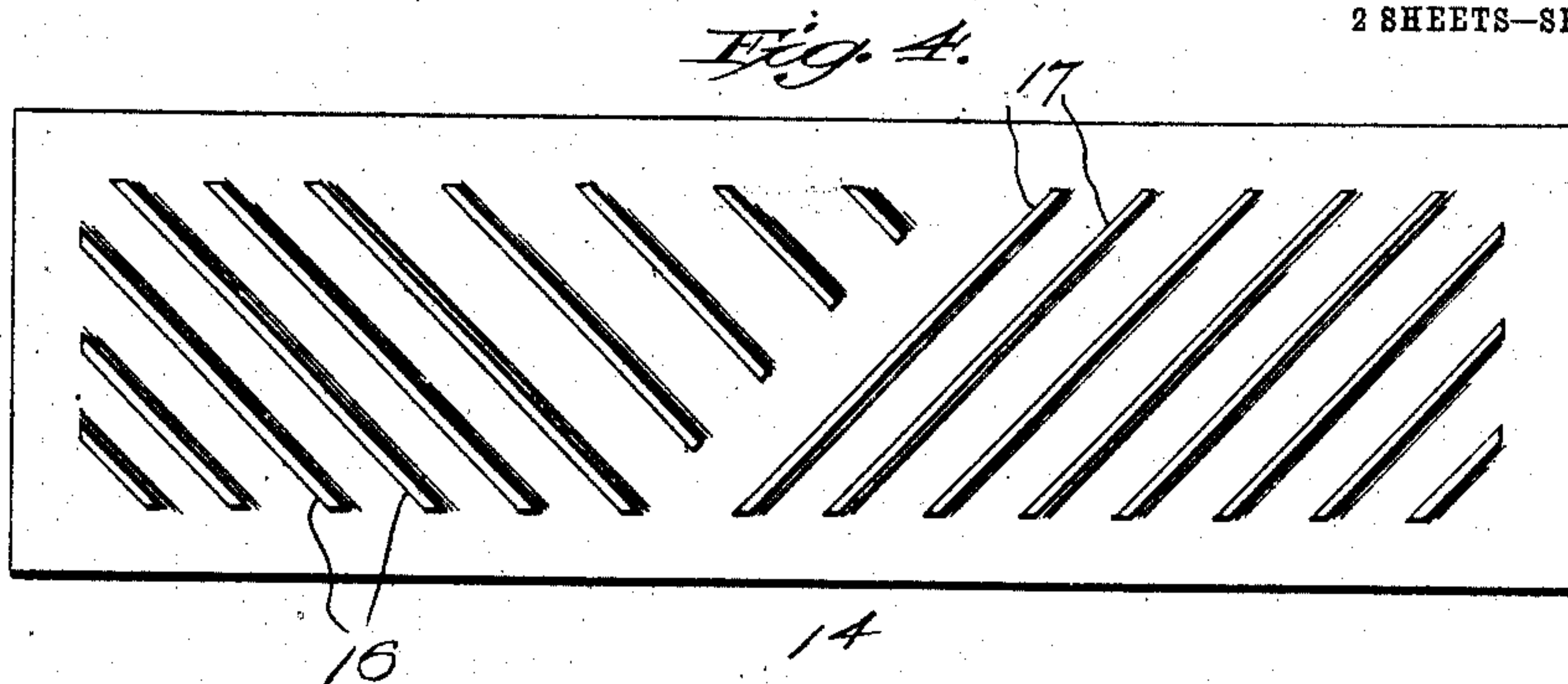
their Attorney

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2 SHEETS—SHEET 2.



Witnesses
T. L. Mochan
H. J. J. J. Doyle

Inventors
Fred H. Bither,
and Wilmer J. Crandall,
By J. D. D. D. D.
their Attorney

UNITED STATES PATENT OFFICE.

FRED H. BITHER AND WILMER J. CRANDALL, OF NILES, MICHIGAN.

BED-PLATE FOR BEATING-ENGINES.

No. 907,220.

Specification of Letters Patent.

Patented Dec. 22, 1908.

Application filed November 23, 1907. Serial No. 403,496.

To all whom it may concern:

Be it known that we, FRED H. BITHER and WILMER J. CRANDALL, citizens of the United States, residing at Niles, in the county of Berrien and State of Michigan, have invented certain new and useful Improvements in Bed-Plates for Beating-Engines, of which the following is a specification.

The present invention consists in improvements in pulp making machines, and has special relation to the cutter plates used in connection with what is known as "beating engines" in which a novel form of mounting for the knives is provided to permit of various degrees of adjustment thereof, and also to provide a ready means for the replacement of any of the knives by a new one should any of them become damaged.

Another important object of the invention is in the manner in which the knives are arranged relatively to the drum, whereby a shearing effect is had upon the knives to make them self-sharpening.

With the above and many other objects in view, the invention contemplates the provision of a casing in which is mounted two members of a cooperating adjusting device, a supporting base for the knives mounted in said casing above said adjusting members and being provided with a plurality of knife-receiving slots, and a plurality of knives adapted to extend through said slots and have their lower portions resting on said adjusting members.

The mechanism involved in the present invention for accomplishing the above objects is susceptible of many and various modifications, but a preferred embodiment thereof is shown in the accompanying drawings, wherein—

Figure 1 is a longitudinal sectional view of a cutter retaining casing showing the application of the present invention. Fig. 2 is a cross section view, showing the invention as in use beneath a beating drum, and serving to illustrate the shearing effect the blades of the drum and knives of the cutter plate have upon one another. Fig. 3 is a side elevation of the casing, showing the cutting edges of the knives projecting beyond the top plane thereof, and also indicating in dotted lines the arrangement of the adjusting wedges. Fig. 4 is a plan view of the cutter plate showing the arrangement of the knives carried thereby. Fig.

5 is a perspective view of the casing. Fig. 6 is a similar view of the adjusting wedges.

Referring to said drawings, wherein like characters of reference designate corresponding parts, 1 designates a casing for the entire mechanism, which is of rectangular shape and consists of a bottom 2, sides 3—3, and ends 4. The ends are of less height than the sides and are so arranged that their outer sides will be substantially flush with the outer edges of said sides.

The two side members 3—3 of the casing each carry on their interior surfaces a member 5, which are of the same width as the ends of the casing, and which may be cast integral therewith, to provide an interior frame the sides of which are inclosed by the outer sides 3—3 of the casing. This arrangement of interior frame provides a supporting ledge 6, the function of which will be presently explained.

Within the casing 1, and resting on the bottom thereof is a knife adjusting mechanism comprising two wedges 7 and 8, which are mounted one upon the other and each of which have their contacting face provided with steps 9—10, forming inclined bearing surfaces 11—12, and stops 11^a—12^a, which permits of said members, when in their normal, or unadjusted position, to lie in a closely nested condition, as shown in Fig. 1 of the drawings. The lower member 7 is of a size to allow of its being snugly fitted within the casing, and when in its operative position is held stationary therein. The upper member 8 may be moved longitudinally on said lower member by means of an adjusting screw 13 which passes through one end of the casing and engages with the end of said member 8.

A cutter plate 14 is seated upon the supporting ledge 6 within the casing, and is held in such position by means of the fastening screws 15 which pass through the sides of the casing and engage with the edges thereof. Said cutter plate has formed therein two series of knife slots 16—17, which are arranged at different angles, and are of a size to permit of the knives 18 being passed therethrough. As shown more clearly in Fig. 1 of the drawings, the knives 18, when in their operative position, have their lower ends resting on and supported by the top surface of the adjusting wedge member 8, and their upper cutting edges projected

beyond the plane of the top surface of the cutter plate.

In Fig. 2 of the drawings a conventional form of beating drum 19 has been shown, comprising a drum proper carrying the projecting radial blades 20.

From the foregoing description it will be understood that by turning the adjusting screw in one direction will impart a longitudinal movement to the upper wedge member 8, causing its inclined horizontal stepped portion to ride up the similarly formed portion of the lower wedge member 7. This movement results in a vertical movement of the knives within their slots to bring their cutting edges closer to the blades of the beating drum. An opposite movement of the screw retracts the wedge member 8, and results in lowering the cutting edges of the knives. Each of said movements of the member 8 is limited, the rising one by means of its end abutting against the end of the casing, and the lowering movement by means of the stops 11" and 12" abutting.

To permit of the knives being freely adjustable by the movements of the wedge member 8, their slots are formed slightly larger than the knives. This also allows of the knives being readily removed and re-

placed by new ones when such change is necessary or desirable.

As shown more clearly in Fig. 4 of the drawings, the knives are arranged in two series in the cutter plate, and extend diagonally across the intermediate portion thereof, and each series extend in opposite diagonals. This arrangement causes the revolving blades of the beating drum to have a shearing engagement with each series of knives, which results in a sharpening of the knives.

Claim:—

A bed plate for beating engines comprising a casing, internal side pieces forming supporting ledges, a cutter plate resting on said ledges, and provided with diagonally arranged slots, said slots being arranged in a plurality of series of different angles of inclination, knives mounted in said slots, and means for adjusting said knives, said adjusting means being located below said cutter plate and between said side pieces.

In testimony whereof we affix our signatures, in presence of two witnesses.

FRED H. BITHER.

WILMER J. CRANDALL.

Witnesses:

J. DU SHANE,

A. L. DU SHANE.