

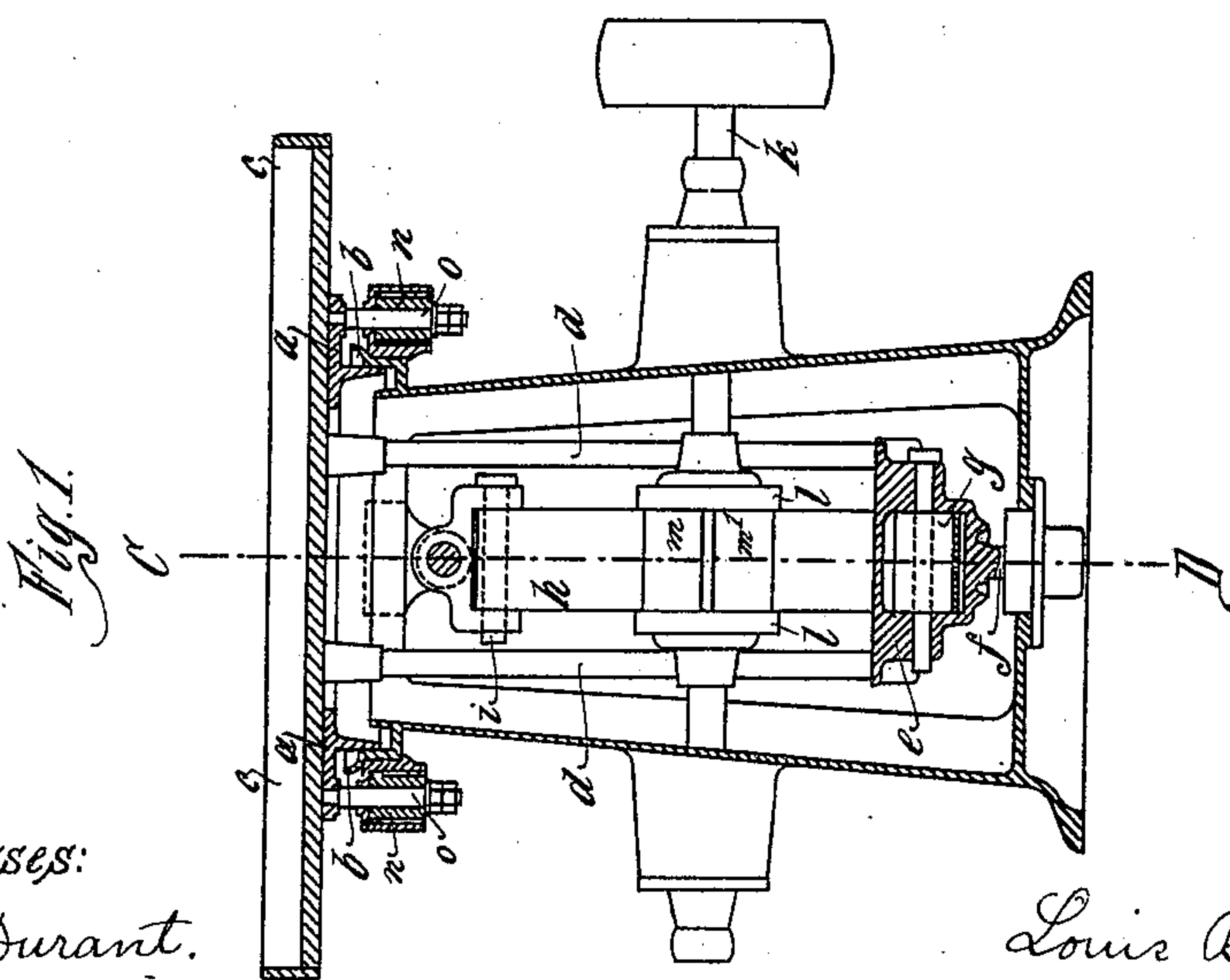
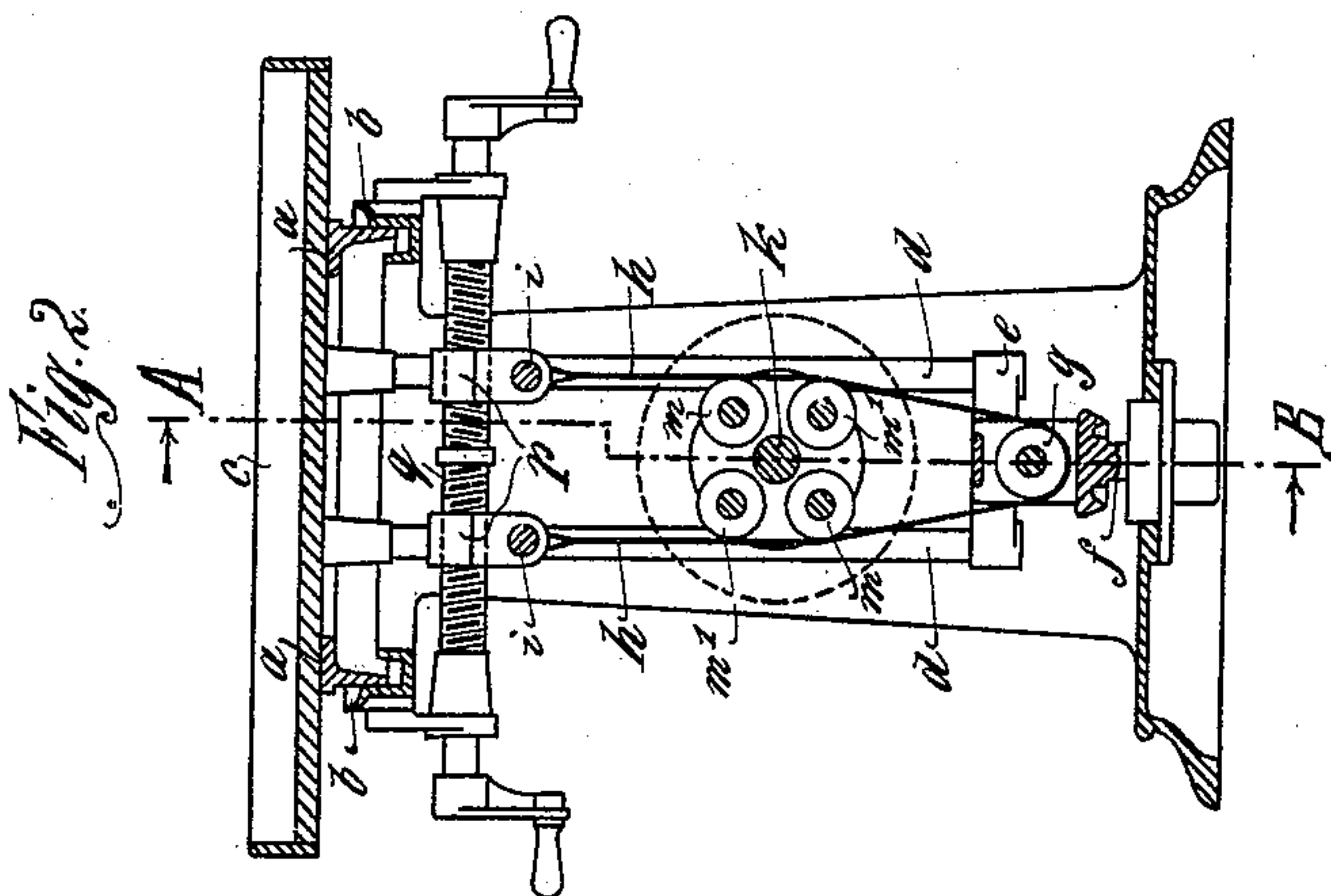
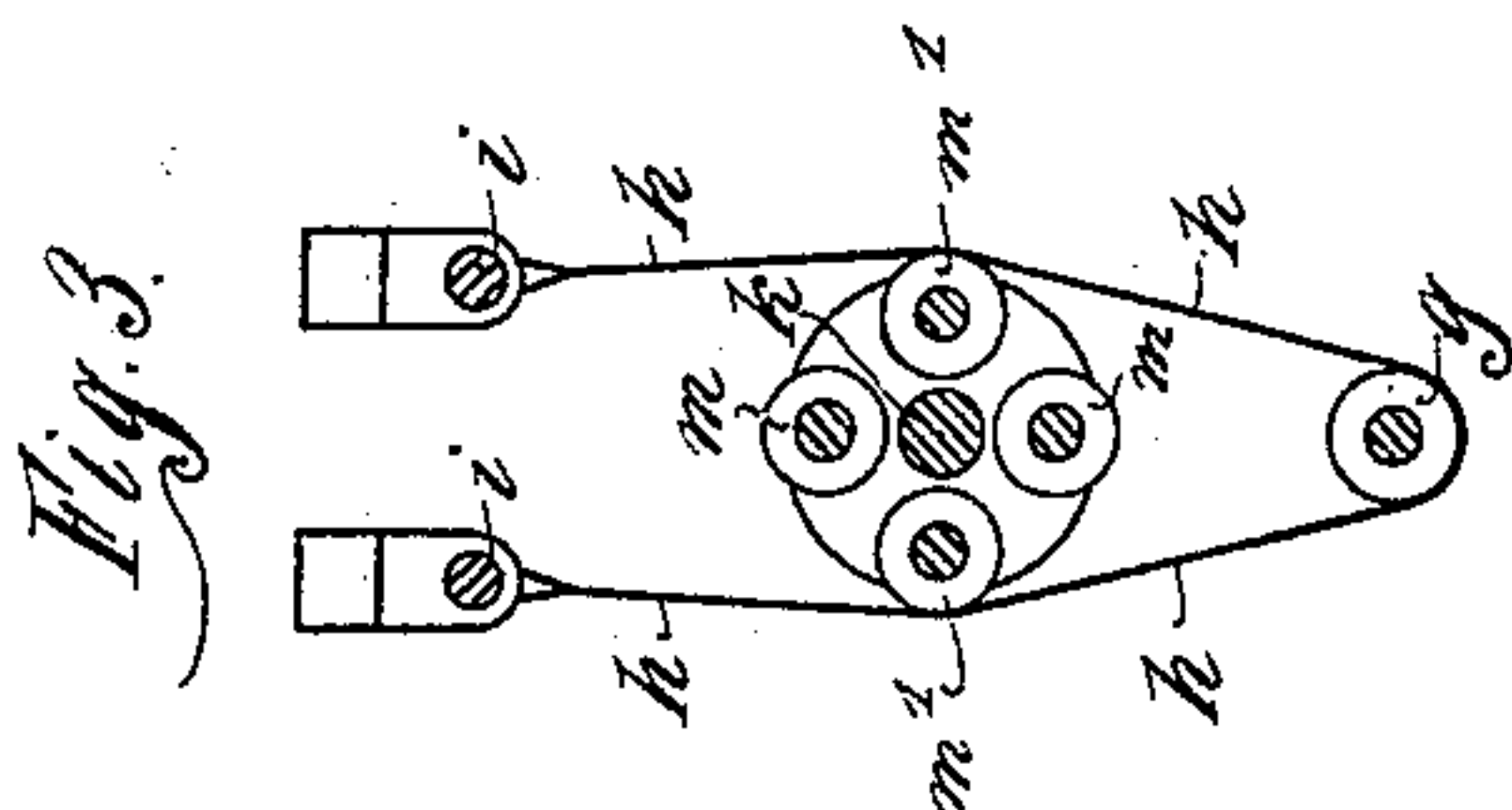
No. 644,253.

Patented Feb. 27, 1900.

L. B. LEHMANN.
APPARATUS FOR MAKING CHOCOLATE.

(Application filed Oct. 7, 1899.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE

LOUIS BERNHARD LEHMANN, OF DRESDEN-LOBTAU, GERMANY.

APPARATUS FOR MAKING CHOCOLATE.

SPECIFICATION forming part of Letters Patent No. 644,253, dated February 27, 1900.

Application filed October 7, 1899. Serial No. 732,958. (No model.)

To all whom it may concern:

Be it known that I, LOUIS BERNHARD LEHMANN, a subject of the King of Saxony, residing at Dresden-Lobtau, Saxony, Empire of Germany, have invented certain new and useful Improvements in or Relating to Apparatus for Use in Making Chocolate and the Like, (for which I have made application for Letters Patent in Great Britain under No. 18,683, dated the 15th day of September, 1899; in Germany under L. 13,561 IV/53, dated September 11, 1899, and in France under No. 280,608, dated September 15, 1899,) of which the following is a specification.

This invention relates to apparatus for use in making chocolate and the like, and refers to means for shaking or vibrating the tables upon which the goods are placed.

The concussion-tables hitherto used in the manufacture of chocolate are all, in spite of the many attempts at improvement, exceedingly noisy and subject to rapid wear and tear owing to the hard concussions following each other in rapid succession, from which the rapidly-operating shaft which receives the shocks also suffers.

The present invention relates to a table during the use of which the noise is considerably diminished, while the operating-shaft is so arranged that its speed may be greatly reduced, while the shaft itself is not exposed to one-sided shocks, by which means a greater duration is secured for the machine, owing to the improved gearing avoiding the frequent concussion of metal parts. The gearing consists of a belt or flexible connection in the form of a loop suspended at two fixed points and connected to the plate of the table and a shaft rotating within the loop, with a cam device, such as rollers, arranged around it, by means of which the said loop is alternately extended or pressed outward, owing to which the table is alternately raised and lowered.

In the accompanying drawings, Figure 1 is a sectional elevation, on the line A B, Fig. 2, of an apparatus illustrating this invention. Fig. 2 is a sectional end elevation on the line C D, Fig. 1; and Fig. 3, a detail view of the belt-expanding device.

The table or support *c*, supported on the frame *a*, guided in the frame *b*, is connected by means of vertical bars *d* with a block or

plate *e*, guided in bars *f* at the bottom of the frame of the machine, in which block a roller *g* is arranged. A belt *h* or other flexible connection passes around this roller, forming a U-shaped loop, the ends of the belt being connected to pins *i* or other supports. Within the loop rotates the operating-shaft *k*, provided with a pair of disks *l* or collars, between which are revolubly mounted, say, two pairs of rollers *m m'*, the two rollers diametrically opposite to each other forming an operative pair. When the shaft *k* rotates in either direction, the pairs of rollers become alternatively operative by pressing out the sides of the loop formed by the belt, (compare Fig. 3 with Fig. 2,) such extension of the belt being of course followed by a corresponding shortening of the loop and raising of the block *e*, thereby causing the table *c* to be raised. Each pair of rollers exerts its maximum effect whenever the plane of the two roller-shafts is horizontal, Fig. 3. As this plane moves around the loop becomes contracted, allowing the table to fall until the next pair of rollers becomes effective. In Fig. 2 the table is represented as occupying its lowest position. When two such pairs of rollers are employed, each pair becomes effective twice in every complete revolution of the operating-shaft. A shaft revolving at a speed of two hundred revolutions will produce eight hundred lifts of the table.

The quickness of the lowering of the table may be increased by means of india-rubber rings *n* or by springs acting in a similar manner, which are compressed by rods *o*, connected with the plate whenever the table is raised, the reaction of which increases the speed of the descent.

The pins *i*, from which the belt is suspended, may be provided with nuts or screw-threaded blocks *p*, running on a spindle *q*, provided with right and left hand screw-threads. In proportion as these blocks are moved farther apart the loop becomes more extended, and consequently shorter, and owing to this the lift of the table becomes less. This can be carried so far that the upward movement of the table becomes equal to zero, so that the operation of the apparatus can be suspended without any necessity of stopping the rotation of the shaft.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a machine for producing reciprocatory movements of a table or support, the combination of the belt or flexible connection, connected at one end to a fixed support, and at the other to the table-support, and a rotary cam device for deflecting the belt; substantially as described.
2. In a machine for producing reciprocatory movements of a table or support, the combination of a belt or flexible connection in the form of a loop suspended at two fixed points and connected to the table-support, of a rotary cam device within the loop, whereby the loop is alternately extended or pressed outward, and the table alternately raised and lowered; substantially as described.
3. In a machine for producing the reciprocatory movement of a table or support, the combination of a belt or flexible band in the form of a loop, the ends of which are attached to fixed supports, a block resting on the loop, connections between the table and block and a rotary cam device within the loop, whereby said loop is intermittently pressed outward, and the table thereby intermittently raised and lowered; substantially as described.
4. In a machine for producing reciprocatory movement of a table or support, the combination of the belt or flexible band in the form of a loop, the ends of which are attached to fixed supports, the block resting in the loop, the rods connected to the table and block and the rotary cam device located within the loop, consisting of the disks carrying the pairs of

rollers, the rollers diametrically opposite each other forming an operative pair; substantially as and for the purpose set forth.

5. In a machine for producing reciprocatory movements of a table or support, the combination of the flexible band or belt in the form of a loop, the ends of the loop rigidly connected to supports, a block resting in the loop of the belt, connections between said block and table, a rotary cam device for intermittently pressing said loop outward, and means for regulating the length of the loop to vary the extent of the reciprocation of the table or support; substantially as described.

6. In a machine for producing reciprocatory movements of a table or support, the combination of the flexible band or belt in the form of a loop, the screw-threaded blocks to which the ends of the band are secured, the block resting in the loop of the band, connections between said block and table, the rotary cam device for intermittently pressing the loop outward, and the spindle provided with the oppositely-screw-threaded portions on which run the blocks carrying the ends of the band whereby by turning the spindle the distance between the ends of the loops may be regulated to vary the length of the loop; substantially as and for the purpose set forth.

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

LOUIS BERNHARD LEHMANN.

Witnesses:

C. J. HUGO DUMMER,
PAUL CARL VERBEEK.