

No. 883,729.

PATENTED APR. 7, 1908.

J. A. MERRETT.
CYLINDER DRYING MACHINE.
APPLICATION FILED JAN. 25, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

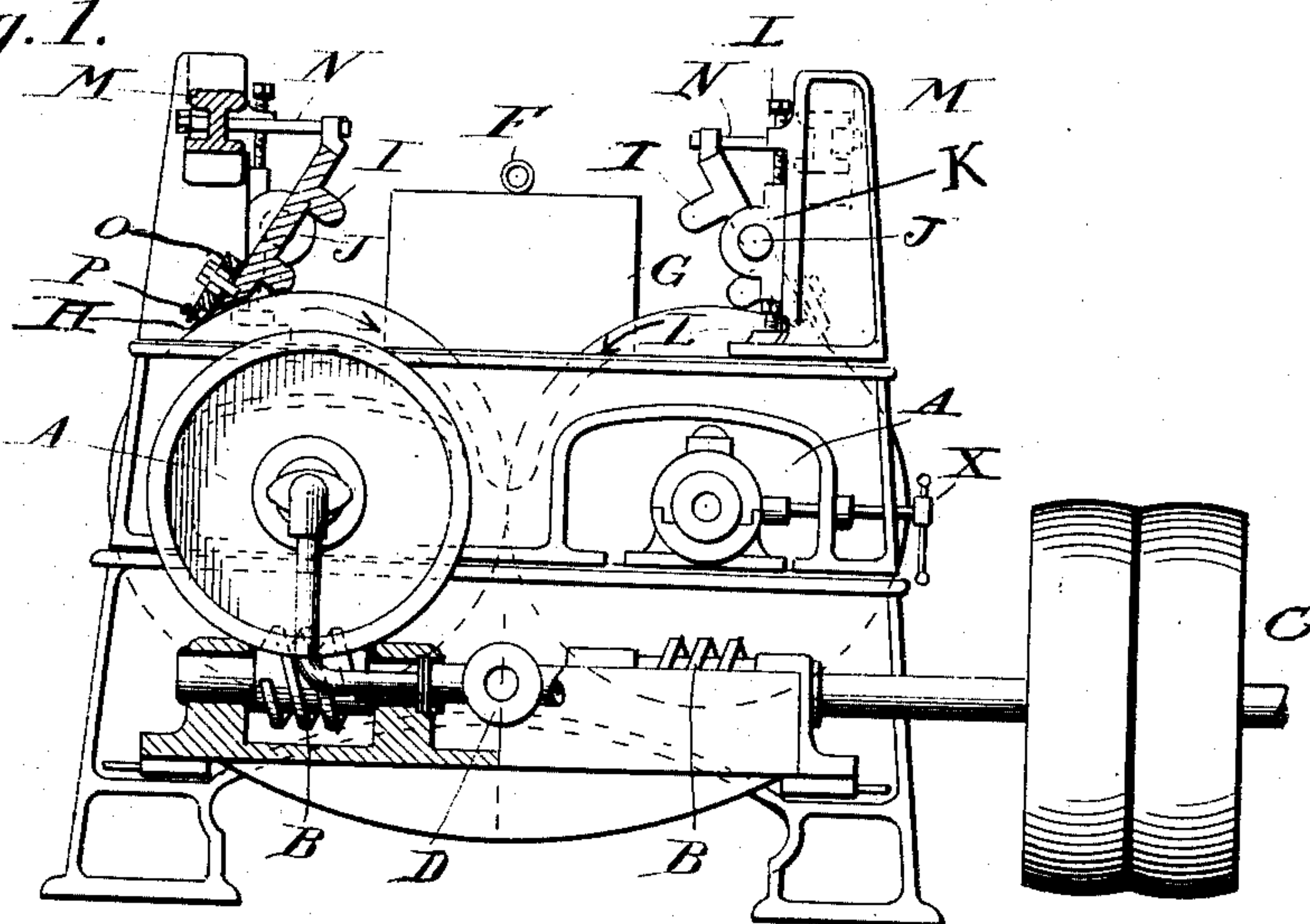
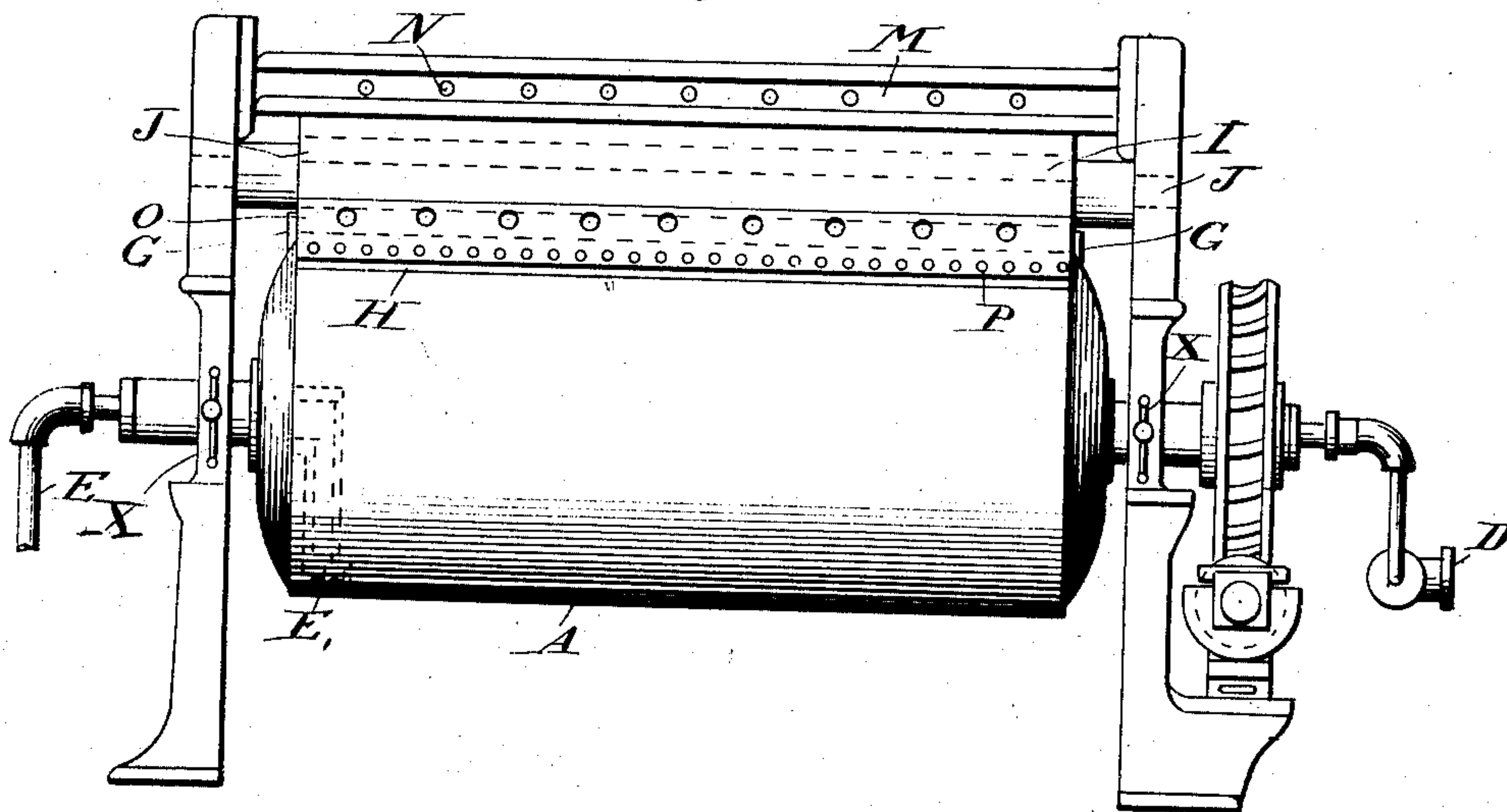


Fig. 2.



Witnesses:

Reptimer Blood
N. Moseowitz

Inventor:

John A. Merrett
per James R. Hatmaker
his Attorney

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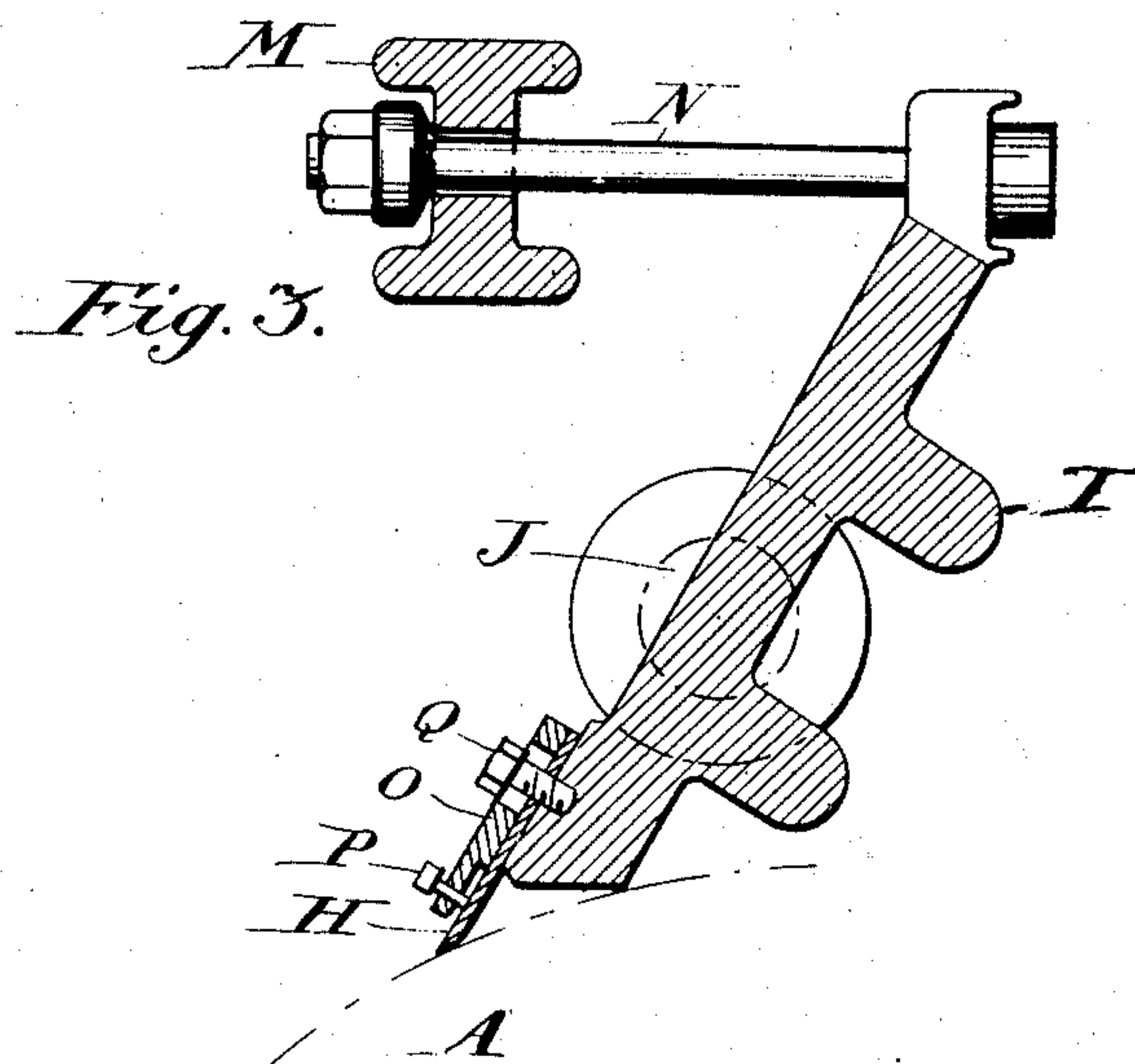
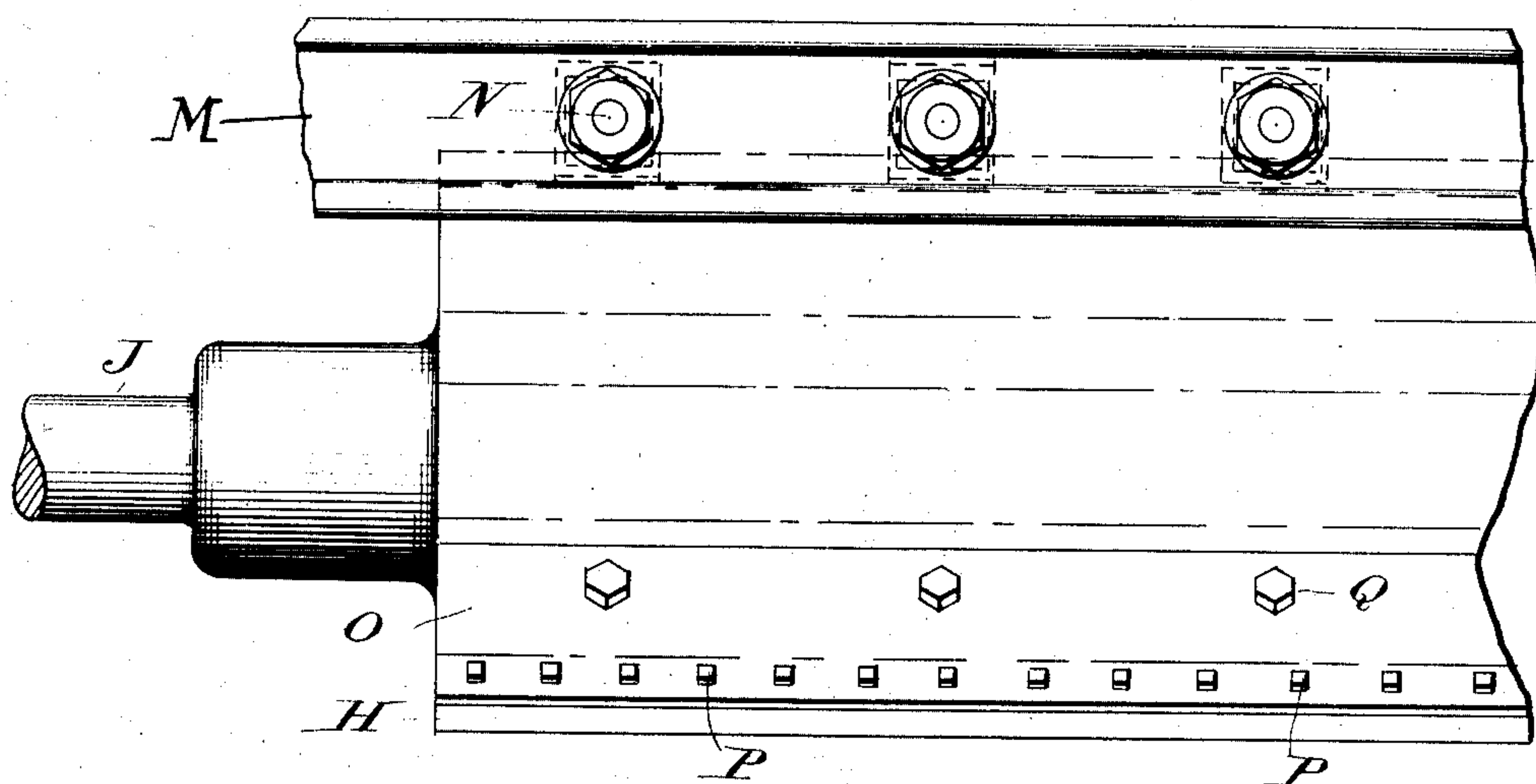


Fig. 4.



Witnesses:
Neptune Mord
M. Molcowitz.

Inventor:
John A. Merrett
per *James R. Hatmaker*
his Attorney

UNITED STATES PATENT OFFICE.

JOHN A. MERRETT, OF LONDON, ENGLAND, ASSIGNOR TO JAMES ROBINSON HATMAKER,
OF PARIS, FRANCE.

CYLINDER DRYING-MACHINE.

No. 883,729.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed January 25, 1904. Serial No. 223,637.

To all whom it may concern:

Be it known that I, JOHN ALFRED MERRETT, a citizen of Great Britain, residing at Bowes Park, London, England, have invented a certain new and useful Improvement in Cylinder Drying-Machines, of which the following is a specification.

My invention has particular reference to machines composed of one or more revoluble heated cylinders upon which liquid materials are distributed in a layer or film for the purpose of evaporating their contained water and it consists in improved means for removing such layers or films of materials from such cylinders as they revolve.

I have found that the known "doctor" or stripping knives employed on paper-making and similar machines are not efficacious for satisfactorily removing from revolving cylinders very thin layers or films of materials that are easily injured by over-heating (such as milk) and which consequently must be quickly and entirely removed when exposed upon cylinders that are highly heated.

My improvements consist in new constructions or arrangements of means for readily adjusting and holding at any desired angle a more or less elastic knife, throughout its entire length, in such close contact with a smooth revolving cylinder that materials exposed upon such cylinder are not able to pass under such knife but are completely removed thereby.

In a suitable position parallel with the face of the smooth drying cylinder of a machine of the class in question, I arrange a strong back-plate to serve as a support for the stripping knife. This back-plate is pivoted at either end of the machine so as to have a limited amount of angular motion towards and from the cylinder. The pivots are carried in bearings which can be raised or lowered for the purpose of thereby altering the distance between the centers about which the back-plate rocks and the centers about which the cylinder revolves. The stripping knife is attached to this back-plate by means of screws or otherwise in any convenient manner and is so arranged that its sharp edge comes into contact with the cylinder for the purpose of stripping the film or layer of materials therefrom.

To hold the stripping knife in working position a strong bar is mounted parallel with the back-plate in the frame of the machine

and an adjustable connection is made between this bar with a solid arm or web projecting from the back-plate by means of screw-bolts.

To bring and keep the sharp edge of the stripping knife, throughout its entire length, in close and perfect contact with the drying cylinder and also to give rigidity to the knife, a cover-plate, furnished at short intervals with adjustable set-screws which bear upon the outer surface of the knife near its stripping edge, is placed upon the knife and attached to the back-plate by screws or otherwise. By adjusting these set-screws the knife edge can be kept in close contact with the cylinder at all points.

In order that my invention may be more easily understood I will describe a drying machine fitted therewith, by the aid of the accompanying drawings in which

Figure I shows an end view (partly in section) of a twin-cylinder drier; Fig. II a side view; Fig. III a section of the knife, back-plate, etc., and Fig. IV a front view of these last.

The same letters of reference indicate the same parts in all the figures.

The drying cylinders A A are revolved in the direction indicated by the arrows by the worms B B driven by pulley C. The bearings of one cylinder are movable by the screws X X, so the space between the cylinders may be regulated. Steam for heating the cylinders is introduced at the opening D, and the condensed water is taken out at the opposite end of the cylinders by the pipe E, which is connected with a lifting arrangement or siphon indicated by E'. The liquid materials or solutions to be dried, introduced between the cylinders (as by a pipe F) are prevented from running out at the ends by suitable stops G G placed at the ends of the cylinders. The cylinders being slightly separated in operation the material to be dried passes between them and is carried upon each cylinder in a thin layer or film until it reaches the stripping knife H.

My constructions or improved means for fixing and holding the knife at any desired angle and for keeping the stripping edge throughout its entire length in close contact with the cylinder are shown in Figs. I and II in position on the machine and in Figs. III and IV separately on a larger scale. The back-plate I, movable on the pivots J J (car-

ried in bearings K K capable of being raised or lowered by the screws L L) and connected with the rigid bar M by the adjustable bolts N N, carries the stripping knife H with its cover-plate O fitted with adjustable set-screws P P. The cover-plate O and the stripping knife H are attached to the back-plate by screws Q Q. By these means the general position of the knife with relation to the face of the cylinder can be easily adjusted and maintained and the stripping edge of the knife can be kept at all points in close contact with the cylinder so as to allow no material to pass under it.

Although my improvements are especially desirable in connection with cylinder machines employed for drying materials easily injured by heat it is to be understood that they may be used on cylinder machines employed for other purposes such as for cooling lard, etc.

What I claim is:

1. In a stripping device for cylinder machines, means for holding in working position the stripping-knife carried by a pivoted back-plate, the said means consisting of a rigid bar fixed parallel with the back-plate and above its axis and adjustable bolts connecting the upper arm of the said back-plate with the said bar, substantially as described.

2. In a stripping device for cylinder ma-

chines, an adjustable back-plate fitted with an elastic stripping-knife and with a cover-plate for the said knife furnished at short intervals with adjustable set-screws bearing upon the outer edge of the knife near its stripping edge to bring the said edge of the stripping-knife, throughout its entire length, in close contact with the cylinder, substantially as described.

3. A stripping device for cylinder drying machines, the said device consisting of a combination of an adjustable back-plate pivoted in end bearings and fitted at its lower edge with an elastic stripping-knife and with a cover plate for the said knife furnished at short intervals with adjustable set-screws bearing upon the outer surface of the knife near its stripping edge to bring the said edge of the stripping-knife throughout its entire length in close contact with the cylinder, and of a rigid bar fixed parallel with the back-plate and above its axis, and of adjustable bolts connecting the upper arm of the said back-plate with the said bar to hold the knife carried by the back-plate in working position, substantially as described.

JOHN A. MERRETT.

In presence of—

JAMES R. HATMAKER,
F. P. HATHAWAY.