No. 734,936. PATENTED JULY 28, 1903.

A. PARRES.

MACHINE FOR EXTRACTING FIBER FROM LEAVES.

APPLICATION FILED JAN. 22, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

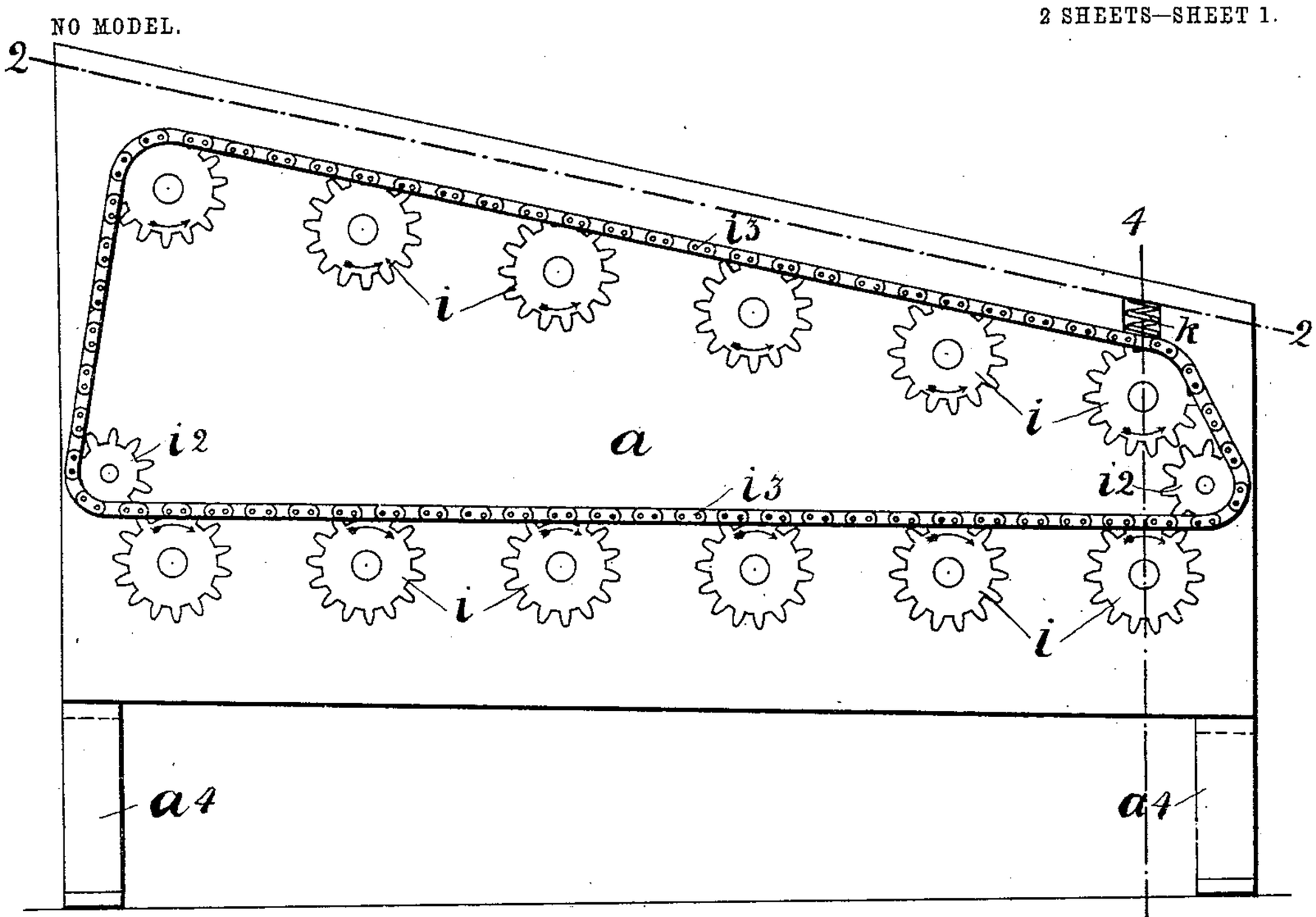

Fig. 1.

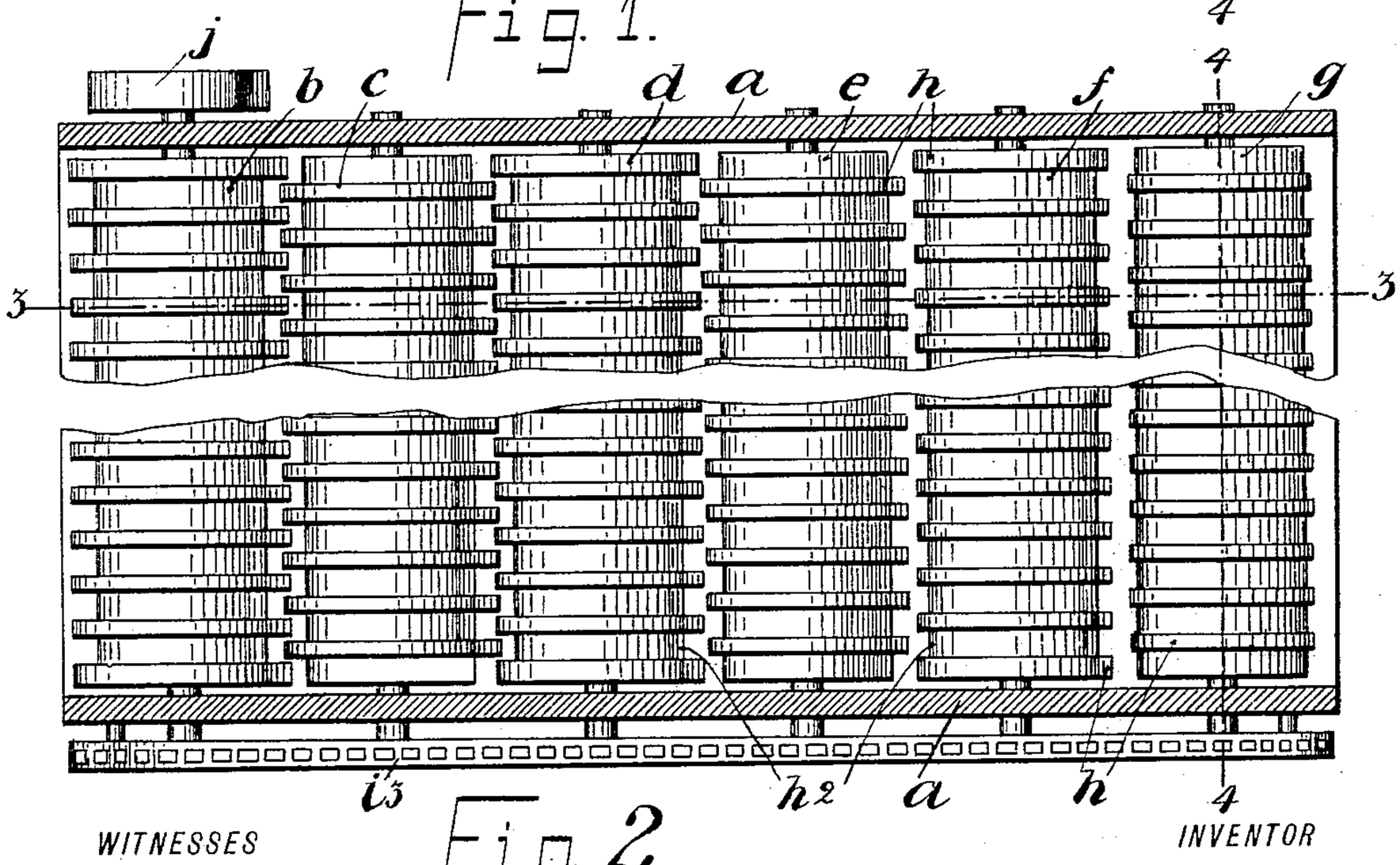

Fig. 2.

WITNESSES

Eric Tidestrom

F. A. Stewart.

INVENTOR

Alberto Parres

BY Edgar Tate & Co

ATTORNEYS

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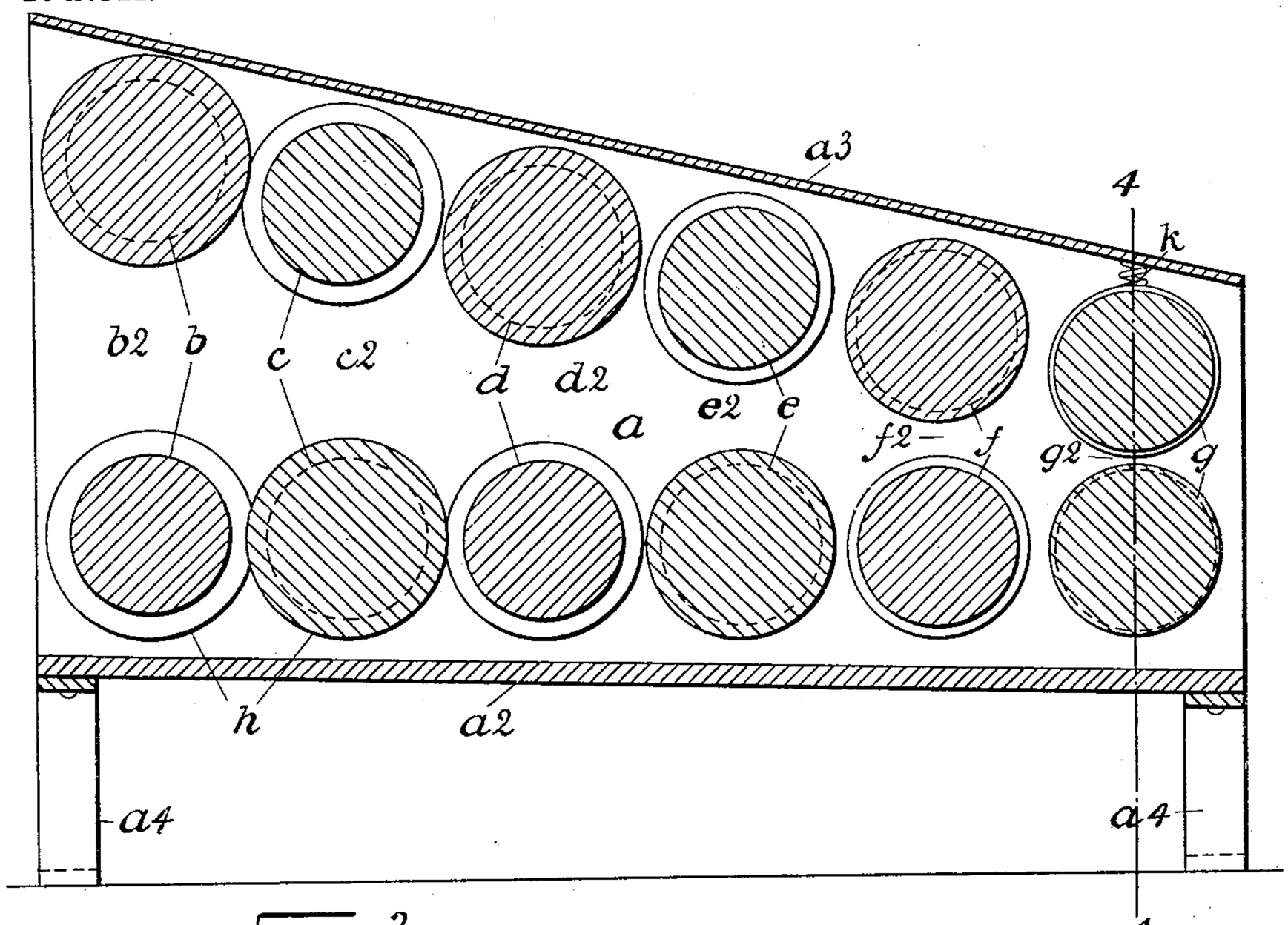

Fig. 3.

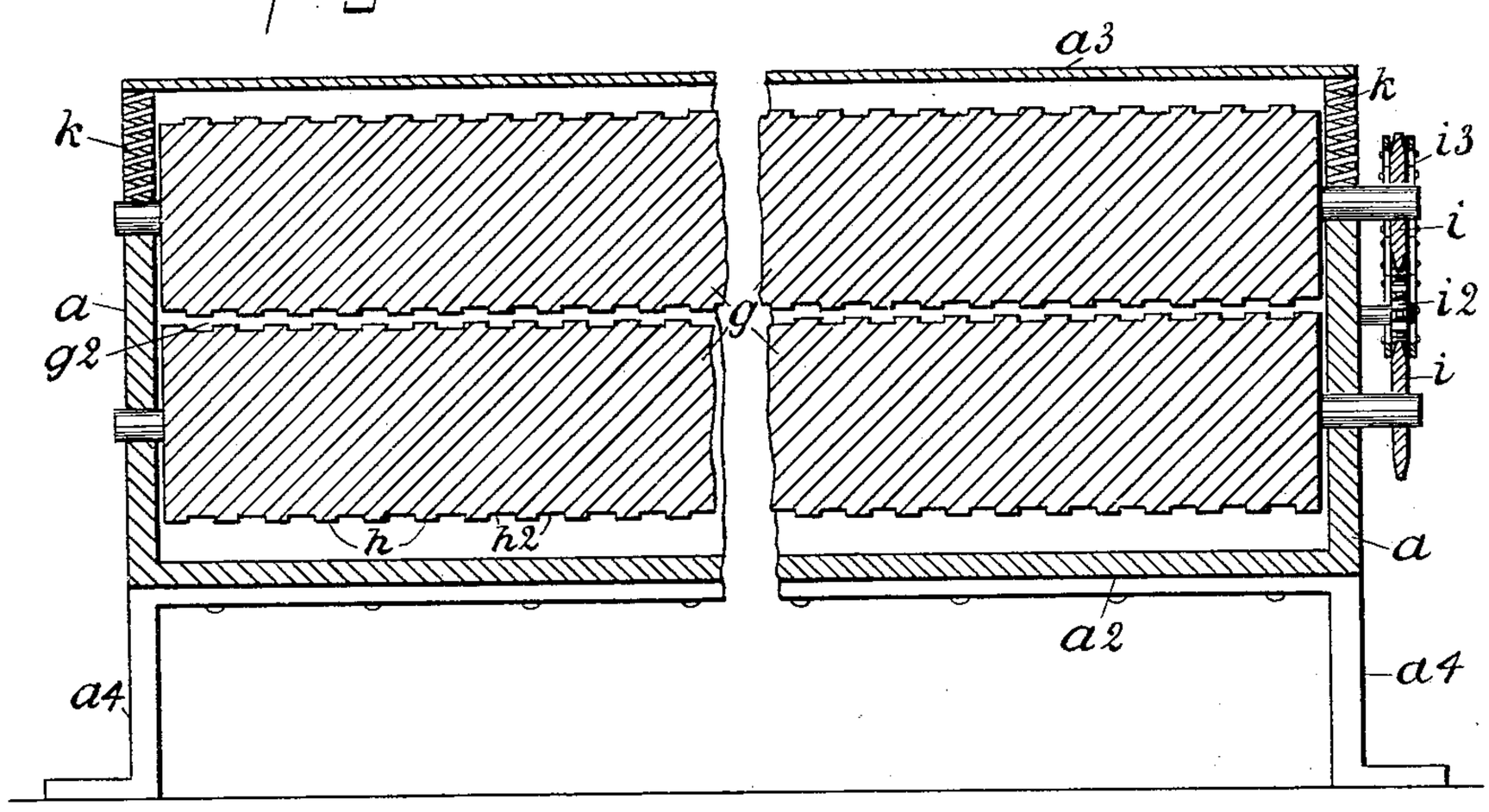

Fig. 4.

WITNESSES

F. A. Stewart

C. E. McBreamy

INVENTOR

Alberto Parres

BY Edgar Tate & Co

ATTORNEYS

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UNITED STATES PATENT OFFICE.

ALBERTO PARRES, OF MEXICO, MEXICO.

MACHINE FOR EXTRACTING FIBER FROM LEAVES.

SPECIFICATION forming part of Letters Patent No. 734,936, dated July 28, 1903.

Application filed January 22, 1903. Serial No. 140,081. (No model.)

To all whom it may concern:

Be it known that I, ALBERTO PARRES, a citizen of the Republic of Mexico, residing at Mexico city, in the Republic of Mexico, have invented certain new and useful Improvements in Machines for Extracting Fiber from Leaves, of which the following is a specification, such as will enable those skilled in the art to which the invention appertains to make and use the same.

The object of this invention is to provide an improved machine for extracting fiber from leaves, a further object being to provide a machine of the class and for the purpose specified which is particularly designed for use in extracting or separating the fiber from the leaves of what is known as the "maguey-plant," and especially the species known as the "pulque" maguey-plant. The leaves of the pulque maguey-plant are very large, thick, and "fleshy" and contain a valuable fiber, which may be worked into various forms and manufactured into various articles of commerce; and the chief object of this invention is to provide a machine which will separate the fiber from the body of the leaf in such a manner that the fiber will not be cut, broken, or otherwise materially injured.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a side view of a machine embodying my invention; Fig. 2, a plan view thereof; Fig. 3, a longitudinal section on the line 3 3 of Fig. 2, and Fig. 4 a transverse section on the line 4 4 of Fig. 2.

In the practice of my invention I provide a strong and substantial frame of any preferred construction, but which, as shown in the drawings, consists of side members a, a bottom a^2, and a top a^3; but said top is not essential, and the bottom may also be dispensed with, and the frame in the form of construction shown is supported by legs a^4. Within the main frame are arranged a plurality of pairs of rollers, the rollers of each pair being arranged one above another, and in the form of construction shown six pairs of these rollers are employed and are designated by the reference characters b, c, d, e, f, and g, and for the purpose of this description the left-hand end of the frame will be designated as the front end of the machine and the left-hand pair of rollers will be designated as the first pair. The rollers of the first pair are separated vertically by a space b^2 of from three to six inches in depth, and the rollers of the other pair are correspondingly separated by spaces c^2, d^2, e^2, f^2, and g^2, and these spaces decrease in depth from the front end to the rear end of the machine, this decrease being gradual and so that the space g^2 between the rollers of the rear pair is from one-quarter to one-half inch in depth. The rollers of each pair are also provided with annular ribs or projections h, whereby corresponding annular spaces h^2 are formed, and these ribs or projections and spaces are alternately arranged on the rollers of each pair, so that the ribs or projections on one roller of each pair will extend in the same vertical plane as the annular spaces on the other roller of said pair. The ribs or projections h on the roller of the first pair are about one-half inch in depth, as are also the corresponding annular spaces, and the depth of said ribs or projections on the rollers of each successive pair decrease gradually from the first pair to the last pair, and said ribs or projections and annular spaces are of very slight depth on the last pair, and may be entirely dispensed with on this pair of rollers, if desired. The rollers of each pair at one side of the machine are provided with sprocket-wheels i, and at each end of the machine is placed an independent sprocket-wheel i^2, and a drive-chain i^3 is placed over the sprocket-wheels of the upper rollers of each pair and around the independent wheels i^2 and over the sprocket-wheel i of the lower rollers of each pair, as clearly shown in Fig. 1. One of the rollers of the first pair is also provided at one end with a power-wheel j and by means of which any suitable motor may be geared in connection with the machine, so as to drive all the rollers, and it will be understood that by using the chain i in the manner described the rollers of each pair will be turned in opposite directions or as indicated by the arrows in Fig. 1. My invention, however, is not limited in any way to the method of gearing the rollers in con-

nection, herein shown and described, and any suitable gearing may be employed for this purpose.

In practice the leaves of the plant to be treated are fed into the front end of the machine and gradually pass backwardly therethrough, and in this operation the fleshy part of the plant is compressed and mangled more or less, and this compression increases toward the rear end of the machine, and by the time the leaf emerges from the rear end of the machine all the watery and fleshy substances are extracted therefrom, and nothing remains but the fiber, together with more or less broken and discolored material, which may be easily removed from the fiber by thoroughly washing the latter in any suitable device or apparatus.

In the accompanying drawings the bottom of the frame is horizontal; but in practice it would probably be preferable to slightly incline the same and backwardly, so that the watery substance from the leaf or leaves would run out at the rear end and drop into any suitable receptacle prepared for it; but it will be apparent that the position of the machine or any inclination that may be given thereto forms no part of this invention.

In the accompanying drawings the separate pairs of rollers are placed quite close together, as is indicated in Fig. 2; but the space between the separate pairs of rollers may be regulated as desired; but I prefer to place said pairs of rollers in close proximity, so that the leaf or leaves passing between the rollers of each pair will be positively fed from one pair of rollers to the other. My invention is also not limited to the number of pairs of rollers employed, and said rollers may be of any desired length, and any desired number or quantity of leaves may be passed through the machine. I also preferably place over the trunnions of the upper roller in the last pair, as shown in Fig. 4, springs *k*, which will permit of a slight spring action for the bearings of this roller, and each of the other rollers may be so provided, if desired. The last pair of rollers is intended principally for the purpose of squeezing out the last of the juicy or watery substances from the fiber and to project the fiber from the machine in a continuous sheet, and the rollers of the last pair are therefore provided with very shallow ribs or projections, which may be entirely omitted, if desired, and in practice the surfaces of these rollers may, if desired, be perfectly smooth.

My improved machine for the purpose specified is simple in construction and operation and comparatively inexpensive, and changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a machine of the class described, a frame; a plurality of pairs of rollers mounted therein; the rollers of each pair being placed one above the other, and the spaces between the rollers of each pair decreasing gradually from one end of the machine to the other; and means for turning the rollers of each pair in opposite directions; the rollers of each pair being also provided with annular ribs or projections forming corresponding annular spaces, and the annular ribs or projections and spaces on one roller being arranged alternately with reference to those of the corresponding roller, the depth of the ribs or projections and said spaces also decreasing from one end of the frame to the other, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 20th day of January, 1903.

ALBERTO PARRES.

Witnesses:
J. C. LARSEN,
T. A. STEWART.