

(No Model.)

J. FOULDS, Jr.
PROCESS OF SPLITTING MICA.

No. 518,237.

Patented Apr. 17, 1894.

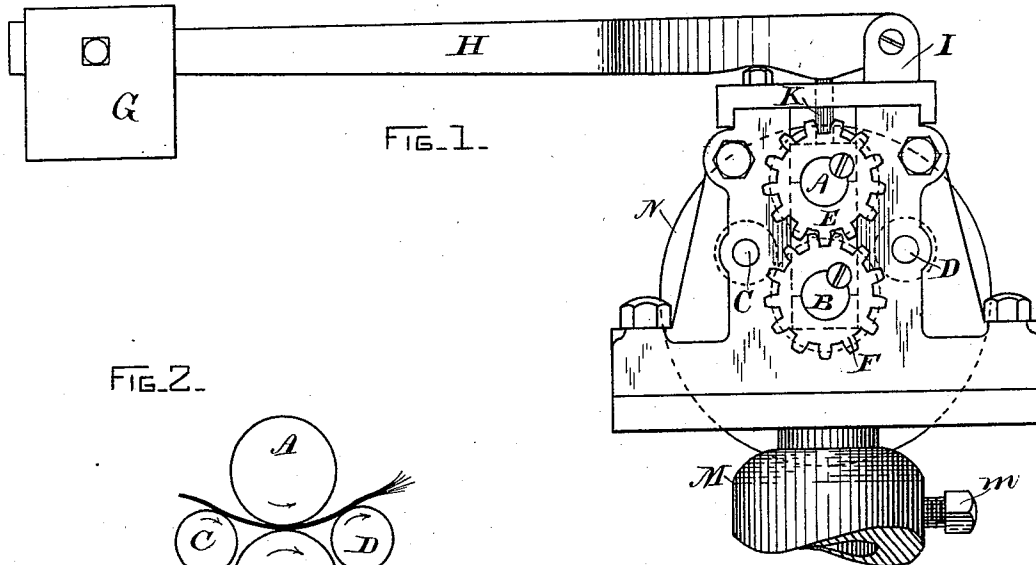


FIG. 2.

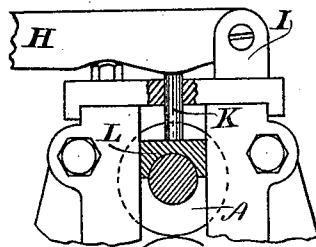
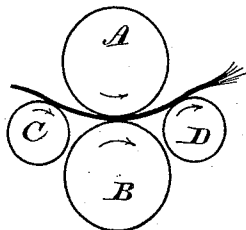
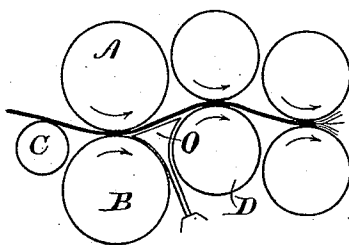


FIG. 3.

FIG. 4.



WITNESSES.

Alec F. Macdonald.

A. C. Cline

INVENTOR.

John Foulds, Jr.

by Bently & Shugart
Atty.

UNITED STATES PATENT OFFICE.

JOHN FOULDS, JR., OF LYNN, ASSIGNOR TO THE GENERAL ELECTRIC COMPANY, OF BOSTON, MASSACHUSETTS.

PROCESS OF SPLITTING MICA.

SPECIFICATION forming part of Letters Patent No. 518,237, dated April 17, 1894.

Application filed January 28, 1893. Serial No. 460,022. (No model.)

To all whom it may concern:

Be it known that I, JOHN FOULDS, Jr., a citizen of the United States, residing at Lynn, county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Processes of Splitting Mica, of which the following is a specification.

The use of mica as an insulating substance in electrical apparatus has greatly increased within the past few years owing to its peculiar natural properties as regards flexibility and incombustibility, and its high insulating qualities for electric currents. Large amounts of it are now used in insulating the commutators of electrical machines and in insulating the wires of electrical machines from the cores upon which they are wound. Such insulation, however, requires that the mica be split up in quite thin leaves or laminæ and these leaves are then cemented together with their edges overlapping to form insulations of the proper shape and suitable thickness.

The splitting of mica, so far as I am aware, has hitherto been accomplished by knives. I have found that the bending of a sheet back and forth so disturbs the superposed laminæ that they may be split along their natural lines of cleavage with great facility, and that it is in fact possible by governing the amount of this bending action to split the mica into smaller sheets of quite uniform thickness. I have also found that this bending action can be most successfully effected by machinery, and my invention therefore consists in a process of splitting mica.

In the drawings, Figure 1 shows an end elevation of a machine for carrying out my process. Fig. 2 illustrates the action of the rolls. Fig. 3 is a sectional detail of the upper roll bearing, and Fig. 4 shows a modified arrangement of the rolls.

The machine consists of two large rolls of metal held in contact with each other by a weight or spring pressure. Upon one or both sides of these rolls are deflecting guides, such as rolls, which may be of smaller diameter, and are offset or out of line with respect to the first rolls whereby any flat object passed through the larger rolls is bent, so that if this object is composed of superposed laminæ, such as mica there is a tendency to movement of the laminæ upon each side due to this bending action, which makes

it possible to separate them very easily by hand after having been passed through the rolls one or more times.

The machine is of simple construction as shown in Fig. 1, and consists of rolls A B, C D assembled in the relation shown more clearly in Fig. 2, the rolls A B being connected together by suitable gearing E F, and the first being pressed upon the second by a weight G adjustable along an arm H to vary the pressure, the arm being fulcrumed in the standard I rising from the frame of the machine, and bearing on a pin K resting on the top bearing L of the upper roll A, as shown in Fig. 3. The weight G can be placed at various positions on the arm H in accordance with the thickness of the original mica sheets or the pressure required for any given work.

The machine may, if desired, have a socket M with set screws *m* for mounting it upon a suitable stand. One of the rolls is provided with a driving pulley N.

Instead of passing the mica sheet a number of times through a single pair of rolls, as indicated in Fig. 2, it might be passed through a series of rolls disposed in offset relation by pairs, as shown in Fig. 4, and be thus bent in opposite directions as many times as may be required to produce the initial separation of the thin laminæ of which the sheet is composed. To insure the proper passage of the mica sheet through the rolls and prevent its catching endwise any suitable deflecting guide, such as O, may be placed so as to receive the mica after it has passed through the rolls and divert it so that it may be engaged by the next set of rolls of the series. Only one of such guides is shown, but it will be understood that as many would be employed as might be found necessary. This guide, O, however, may in some cases be omitted entirely.

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

The process of splitting mica which consists in subjecting it to the action of bending rolls, substantially as described.

In testimony whereof I have hereunto set my hand this 26th day of January, 1893.

JOHN FOULDS, JR.

Witnesses:

JOHN W. GIBBONEY,
BENJAMIN B. HULL.