(No Model.) 2 Sheets—Sheet 1.

W. S. JOHNSTON.

ROTARY BRAKE.

No. 407,665. Patented July 23, 1889.

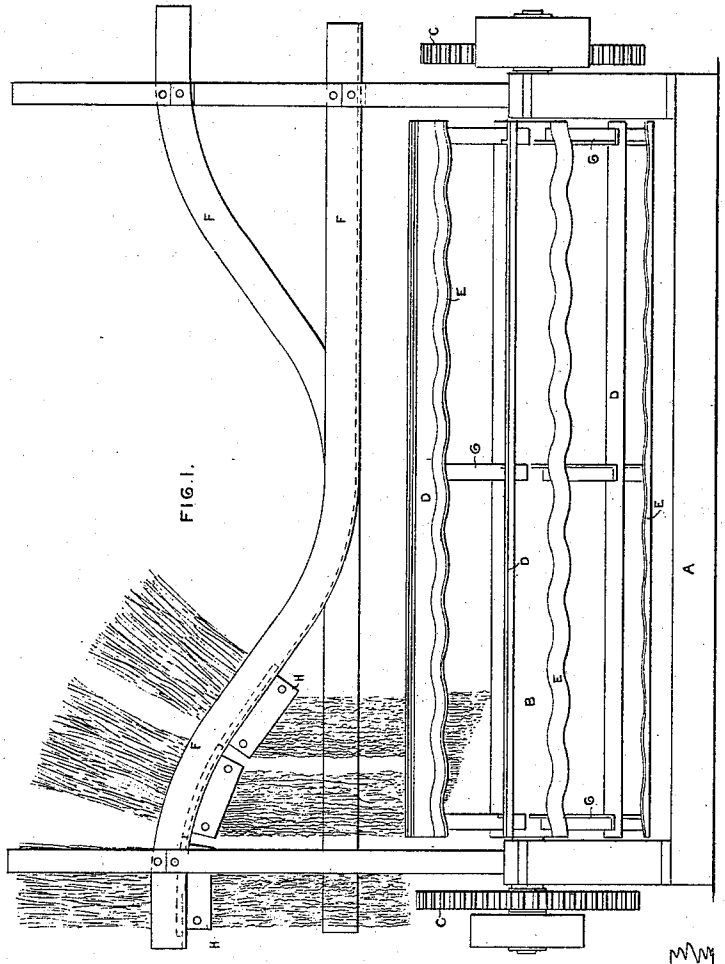


FIG. 1.

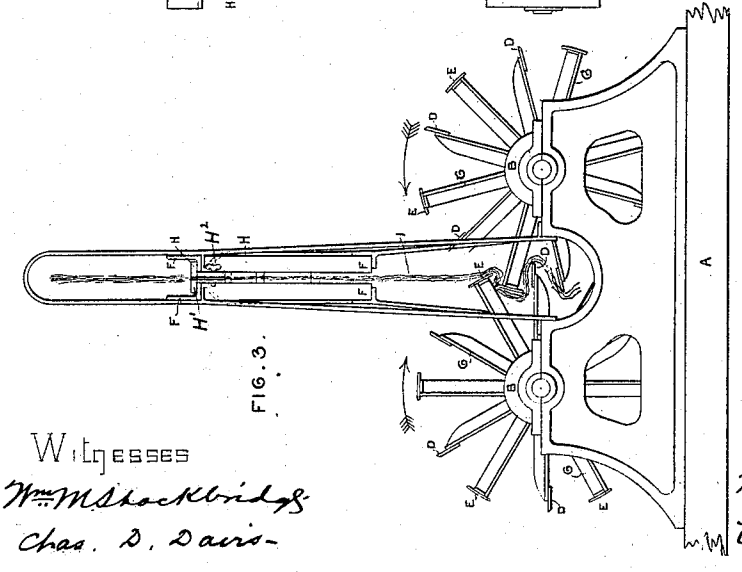


FIG. 3.

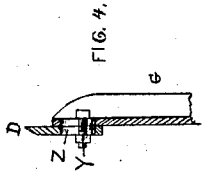


FIG. 4.

Witnesses
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Chas. D. Davis.

Inventor
William S. Johnston,
by V. D. Stockbridge
Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

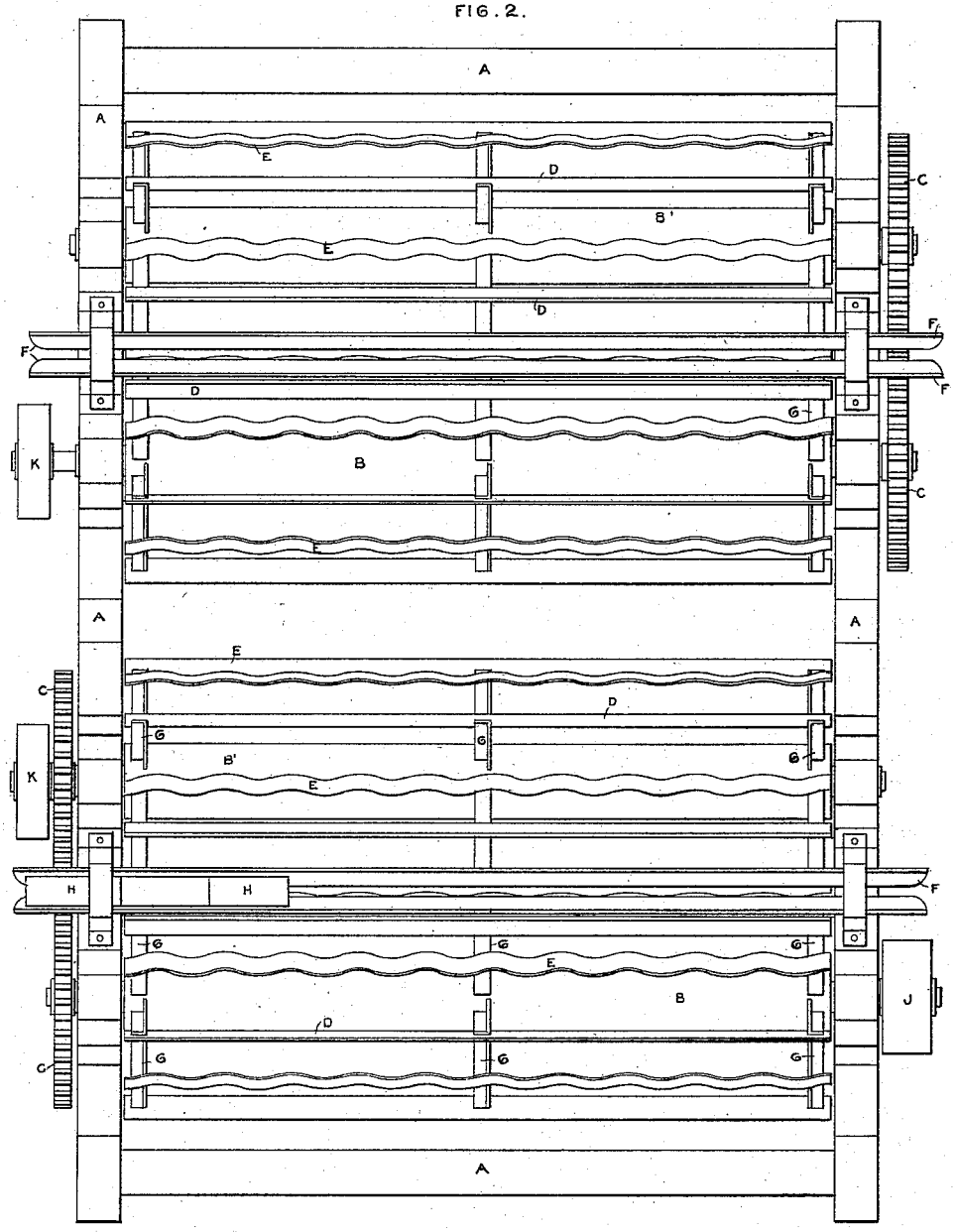
(No Model.) 2 Sheets—Sheet 2.

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FIG. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM SIBBALD JOHNSTON, OF NEWTOWNARDS, COUNTY OF DOWN, IRELAND.

ROTARY BRAKE.

SPECIFICATION forming part of Letters Patent No. 407,665, dated July 23, 1889.

Application filed November 2, 1887. Serial No. 254,057. (No model.) Patented in England May 14, 1887, No. 7,050, and in Germany October 25, 1887, No. 43,480.

To all whom it may concern:

Be it known that I, WILLIAM SIBBALD JOHNSTON, bleacher, a subject of the Queen of Great Britain, residing at Newtownards, in the county of Down, Ireland, have invented certain new and useful Improvements in Rotary Brakes, of which the following is a specification, the said invention having been patented to me in Great Britain May 14, 1887, No. 7,050, and in Germany October 25, 1887, No. 43,480.

This invention relates especially to the scutching or cleaning of flax or hemp preparatory to manufacture, but is also applicable to other like fibrous plants. Its object is to provide a machine with which the breaking and cleaning may be effected at the same time, and one that may be manufactured at comparatively small cost.

Referring to the annexed drawings, Figure 1 is a side elevation of a machine constructed in accordance with this invention; Fig. 2, a plan of same, and Fig. 3 an end elevation of one section thereof. Fig. 4 is a sectional view showing means of attaching the blades.

In the drawings, A is the base or frame-work of the machine; B B′, two pairs of revolving beaters geared together by wheels C and working in conjunction. Each beater is armed with a series of blades or bars D and E, preferably of steel. The blades D are in the shape of straight flat bars having angular or beveled edges, as shown in Fig. 4 of the drawings. The said bars are arranged radially, with their flat faces in line with the arms to which they are secured. The blades E are serpentine in shape. These blades E are secured to the ends of the arms which carry them at right angles or tangentially to said arms, as shown in Fig. 3 of the drawings. In the drawings the beaters B B′ are shown to have each six of each variety of blades D and E; but any other convenient number may be employed. The beaters are placed together so that the blades in one overlap the corresponding blades in the opposite beater.

Blades D and E are preferably of steel and attached to three series of angle-iron arms G, preferably laid in the mold when the boss is cast, and the latter cast around their jagged ends in a manner well known to iron-founders. They can, however, if desirable, be bolted or screwed to the boss. The blades may be secured to the arms in any suitable manner, but are preferably fastened to the arms G by bolts Y, passing through the slots Z, as shown in Fig. 4. The beaters are placed, as shown, so that when revolving the blades overlap one another, but do not touch the periphery of the opposite cylinder.

F F are inclined ways placed above the beaters about midway between their centers. They are preferably curved, as shown—that is, having a decided inclination at the beginning of their course and gradually merging toward a horizontal, so that the independent flax-clamps will slide by gravity down the steep incline and push those in front along to bring the fiber within the range of the beaters.

H H are clamps, of any convenient shape or form, in which the flax straw I can be securely held, and with a T or other head, which will easily move down the slide F. These clamps consist of flanged plates H′, secured together and to their work by means of set-screws H^2, as shown in end elevation, Fig. 3.

The machine may be made with any required number of sets or pairs of beaters, and they may be arranged so that the slide for each alternate pair shall be inclined in the opposite direction, as shown. When arranged thus, the fiber after it has been first scutched at one end can be reclamped and passed to the second set of beaters without having to carry it from one side of the machine to the other; or it may be passed onto a second machine placed alongside the first.

The dry flax straw to be operated upon is securely clamped at one end or about the middle by the clamps or holders H H, which are placed on the top of the slide with the ends of the fiber hanging downward.

J is the driving-pulley, and K K the pulleys for driving the return-machine from the other.

The mode of action is as follows: The flax being hung in position on the clamps H and the machinery being in motion, the clamps are pushed forward, their weight going down the incline carrying them on and propelling

forward those in front. The attendant has therefore only to adjust the clamps to the flax to start them and the attendant at the other end to remove them and readjust the clamp, so that the other end of the flax shall be scutched, and start them on the return-machine rails F. The blades D and E break the the hard woody portions, which are effectually cleared away by the corrugated or wavy blades E. One half of the length of the fiber is thus cleaned in its passage through the first machine, and, the clamp or holder being removed to the other end of the fiber, the other half is cleaned in the return-machine.

The action of the beaters upon the fiber in addition to breaking and scutching materially improves its spinning quality by removing the outer skin or gummy substance of the plant.

I claim as my invention—

1. In a machine for breaking, scutching, or cleaning flax, &c., two beaters whose circles of rotation intersect, each provided with alternating radial and tangential blades, in combination with ways and traveling clamps to guide and bring the fiber within the range of such beaters, substantially as described.

2. In a machine for breaking, scutching, and cleaning flax, &c., a pair of beaters whose circles of rotation intersect, provided with alternating radial and tangential blades, the latter having wavy or fluted edges, substantially as described.

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

WILLIAM SIBBALD JOHNSTON.

Witnesses:
F. B. SIMMS,
GEORGE KNOX.