

A. G. Bill,

Flax Brake.

No. 94,177.

Patented Aug 31. 1869.

Fig. 1.

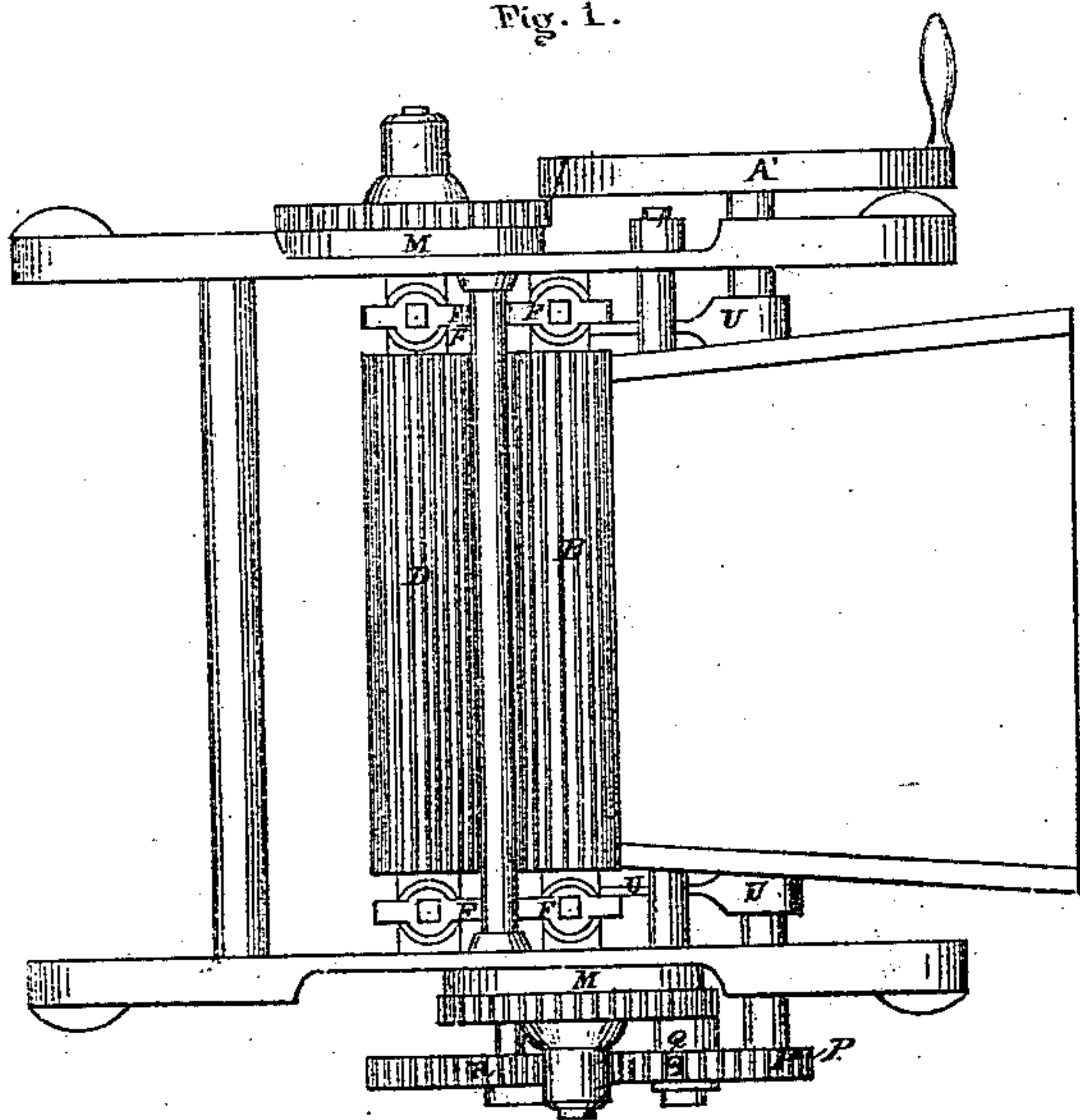


Fig. 3.

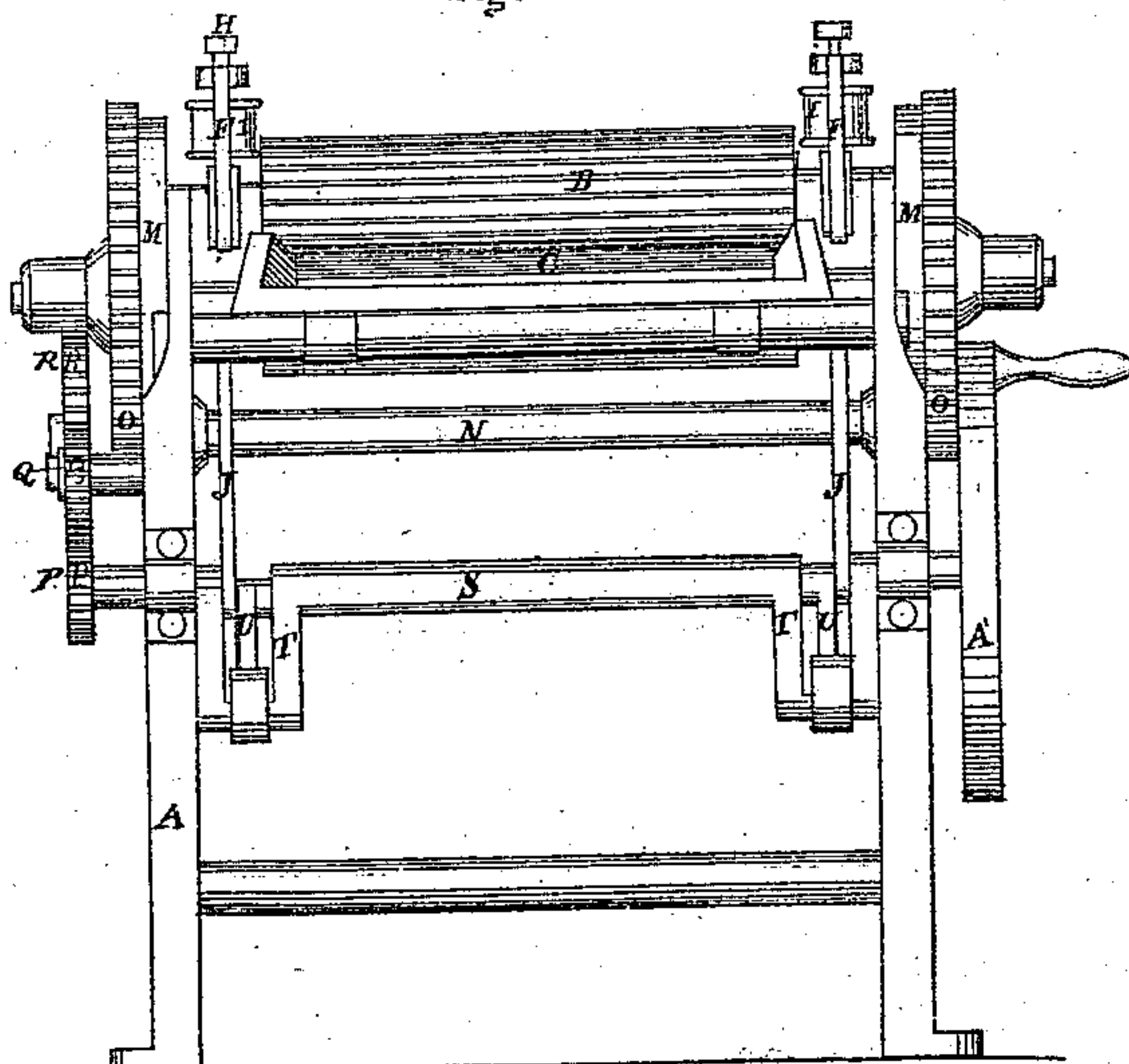


Fig. 2.

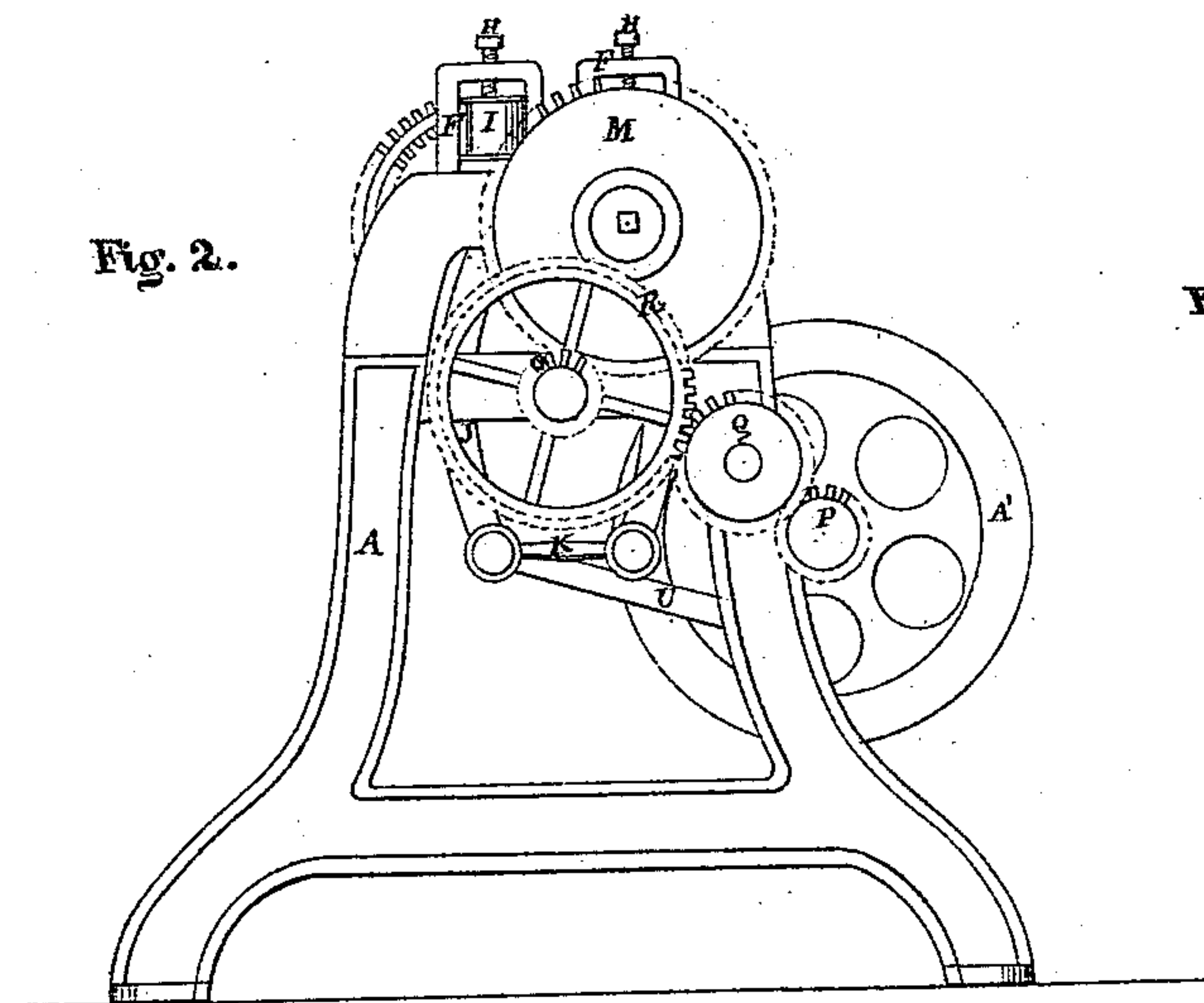


Fig. 4.

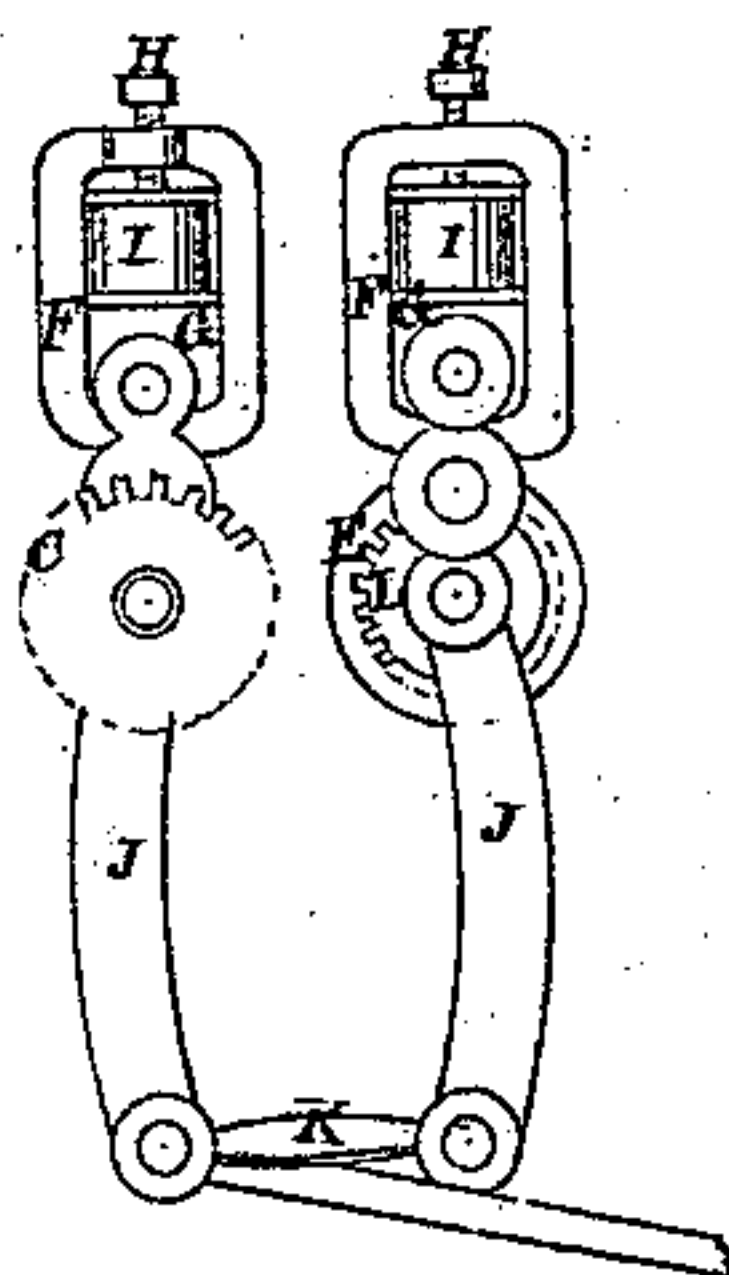
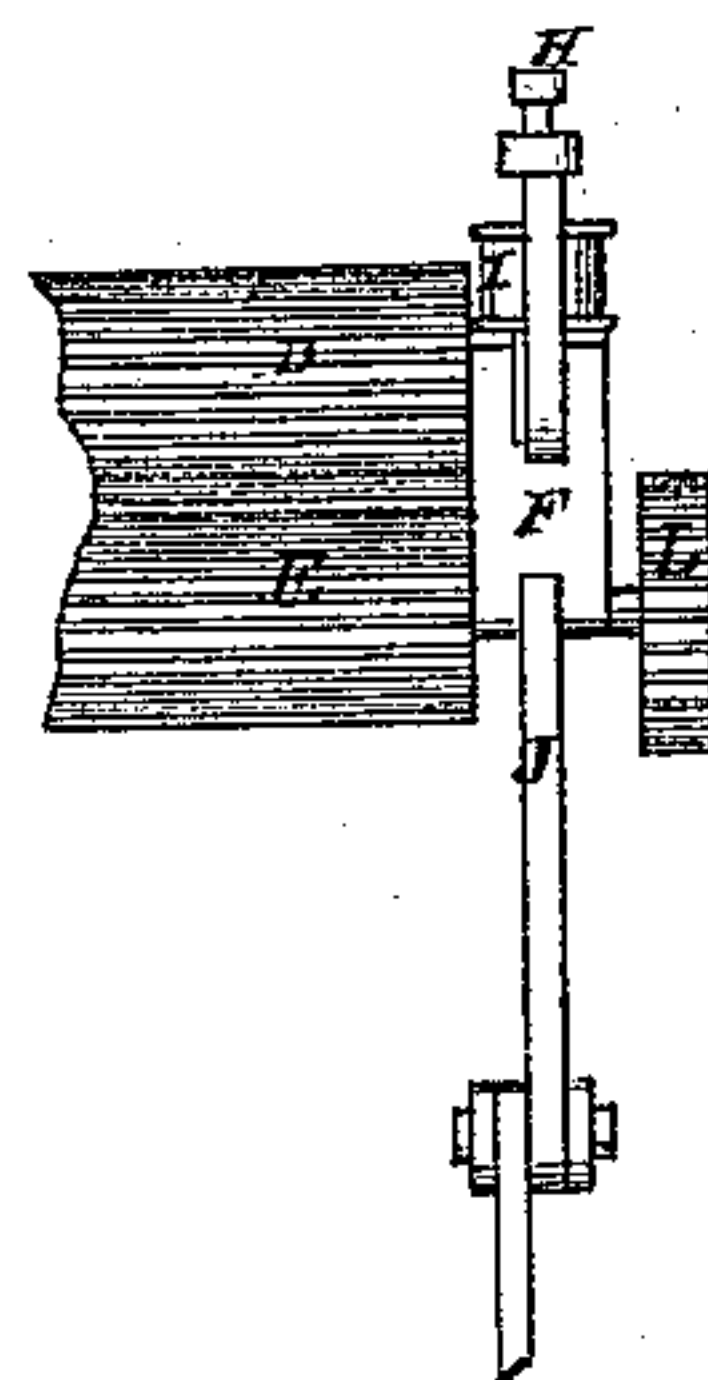


Fig. 5.



Witnesses,
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A. G. BILL, OF CUYAHOGA FALLS, OHIO.

Letters Patent No. 94,177, dated August 31, 1869.

IMPROVEMENT IN FLAX-BRAKES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, A. G. BILL, of Cuyahoga Falls, in the county of Summit, and State of Ohio, have invented certain new and useful Improvements in Flax-Brakes; and I do hereby declare that the following is a full and complete description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view of the machine.

Figure 2, a side elevation.

Figure 3, a front elevation.

Figures 4 and 5, detached sections.

Like letters of reference refer to like parts in the several views presented.

The nature of this invention relates to a flax-brake, consisting of an arrangement of revolving vibratory rollers, so constructed and operated that the boon, or woody substance of the flax, is thoroughly broken up, without doing violence to the harl or fibre of the plant, thereby facilitating the preparation of the flax for spinning, &c.

In the frame A, fig. 2, are hung two pairs of fluted rollers, B C and D E, figs. 3 and 5.

The upper rollers B D, fig. 1, are journaled in vibratory hangers F, above the axial line of vibration, in movable blocks G, whereby they can be brought in close relation to the lower rollers C E, by means of the adjusting-screws H.

Between the lower end of said screws and the block is interposed spring I.

The lower rollers C E are connected to the hangers by the upper end of the arms J, in which they are journaled, and whereby the two pairs of rollers are connected to each other by the links K, and oscillated, as and for a purpose hereinafter shown.

To one end of each of the lower rollers, as it projects through the arms J, is keyed a pinion-wheel, L, fig. 5.

Said pinion is made to engage the wheel M, fig. 1, as an inside gearing, and whereby the said rollers are made to revolve, as will hereinafter be described.

N, fig. 3, is a shaft, journaled in the frame, on each end of which is keyed a pinion, O, made to engage the outer rim of the wheels M, whereby said wheels receive motion from the pinion P, through the intervention of the transfer-wheels Q R, fig. 2.

The pinion P is keyed to the crank-shaft S.

To said cranks T are connected the arms J, by the links U, whereby a vibratory movement is given to the rollers for a purpose hereinafter described.

Having thus described the construction and arrangement of the machine, the practical operation of the same is as follows, viz:

On turning the shaft S, by means of the hand-wheel A, it will be obvious that an oscillating movement will be given to the rollers by means of the cranks, as the pivotal line of vibration is between the upper and lower rollers; thus, as the two upper rollers move forward at the same time that the two lower rollers are moving backward, this reverse action of

the upper and lower rollers causes a reversion of the rotary movement of the lower rollers for about one-half the distance that they had made in their revolution.

This retrogressive movement of the rollers is produced by the pinion L, engaged on the inside of the wheels M, which, as the lower rollers move by virtue of their continued vibratory action, the pinions are also carried forward at the same time, and, being geared in the wheels M, produce this retrogressive movement aforesaid.

The wheels M continue to revolve uninterruptedly, and on the backward stroke of the vibration of the rollers, they receive from the wheels M and pinions L a continuation of their rotary progressive movement, and thus continue in their co-operative and combined action.

Thus, as the lower rollers, in their vibratory action, move toward the rear end of the machine, and the upper ones toward the front, all the rollers rotate progressively and simultaneously; and so, when the lower rollers swing forward and the upper ones backward, all the rollers rotate retrogressively about one-half the distance that they may have made in their progressive rotary movement.

By this peculiar combination of movement, it will be obvious that the flax, on passing into the rollers, is broken between the companion rollers in front, by their progressive revolutionary movement, and, before leaving them, is a second time subjected to their action, by their retrogressive movement, and receives a similar treatment from the rear rollers at the same time.

The dust and shives are shaken from the flax by the vibration of the rollers.

By this means the stubborn, woody parts of the flax are completely broken up, so that the fibrous parts, or harl, can be separated therefrom easily, and with much facility.

As the movements of the rollers are simultaneous and harmonious in their directions, there can be no straining exerted upon the filaments of the flax; hence they are not broken up into short pieces, and thrown away with the waste.

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

1. The rollers B C and D E, when arranged in relation to each other, and operating conjointly, in the manner as and for the purpose set forth.

2. The pivoted hangers F and springs I, in combination with the rollers B C and D E, when constructed and arranged to operate in relation to each other, substantially as and for the purpose set forth.

3. The pinions L and wheels M, in combination with the rollers B C and D E, in the manner substantially as described, and for the purpose specified.

A. G. BILL.

Witnesses:

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