

(No Model.)

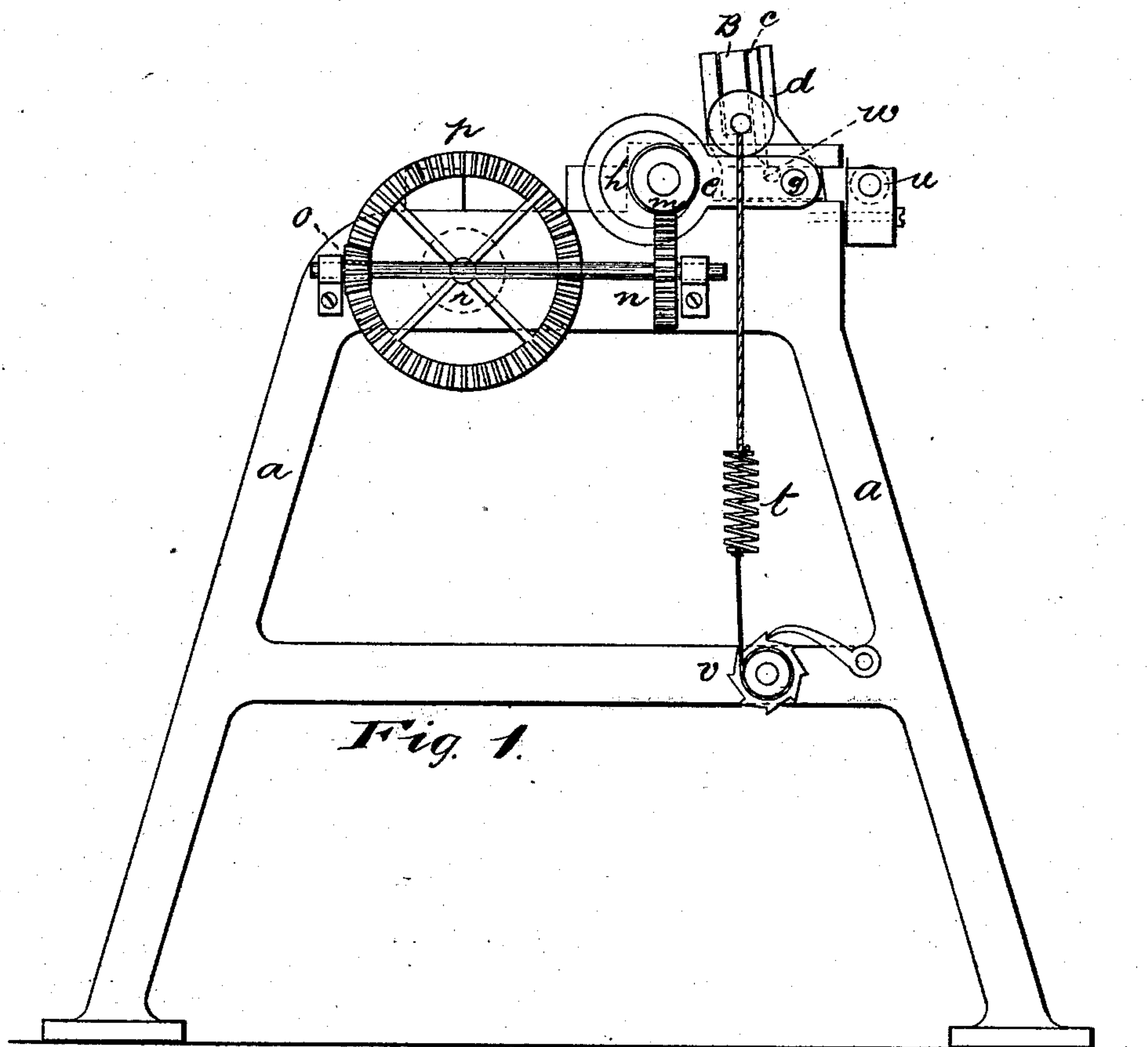
3 Sheets—Sheet 1.

W. T. BROWNE.

MANUFACTURE OF SURGICAL LINT.

No. 282,264.

Patented July 31. 1883.



Attest:
J. F. Campbell.
Chas. P. Herr.

Inventor:
William T. Browne,
by Drake & Co., Attys.

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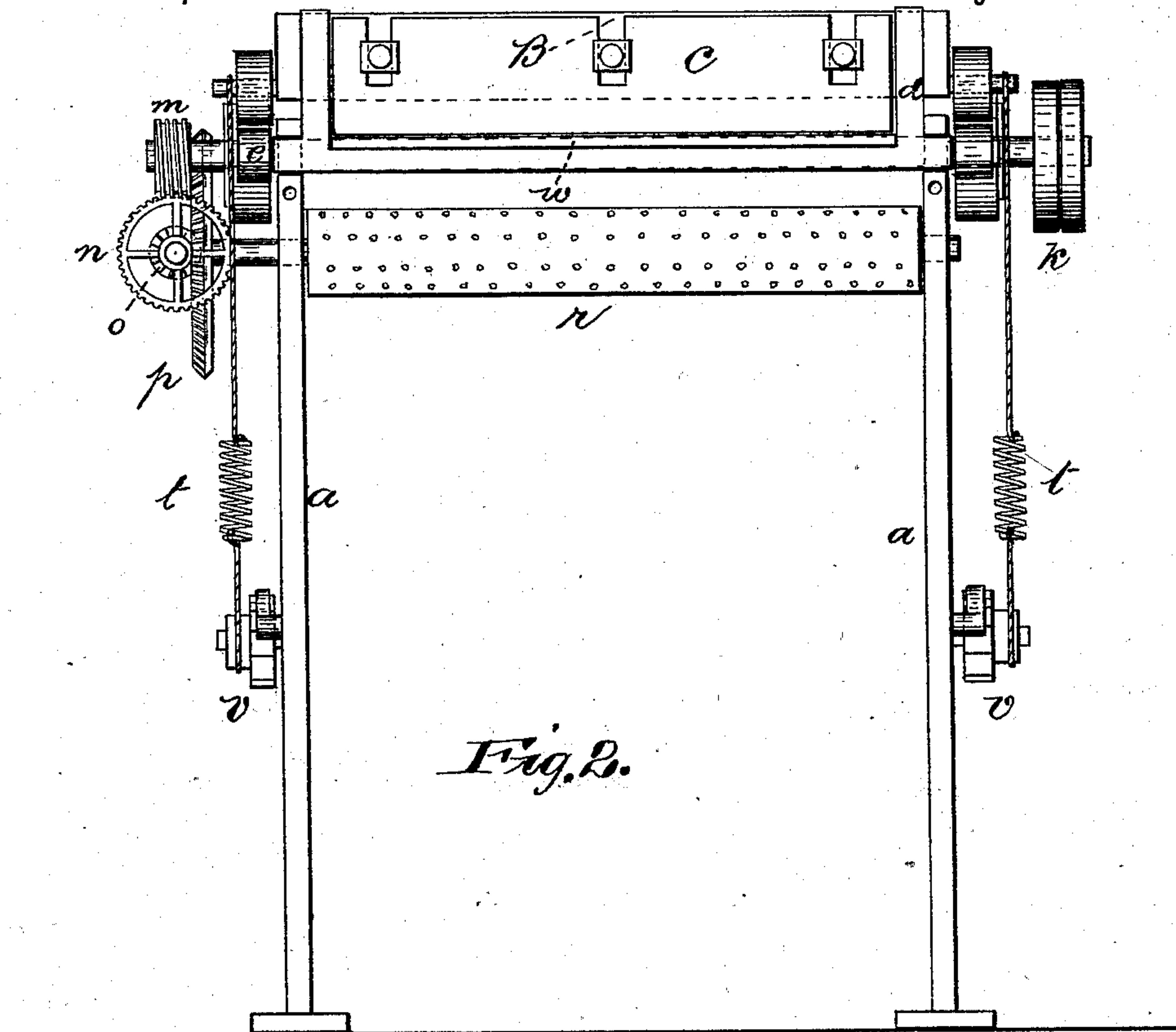


Fig. 4.

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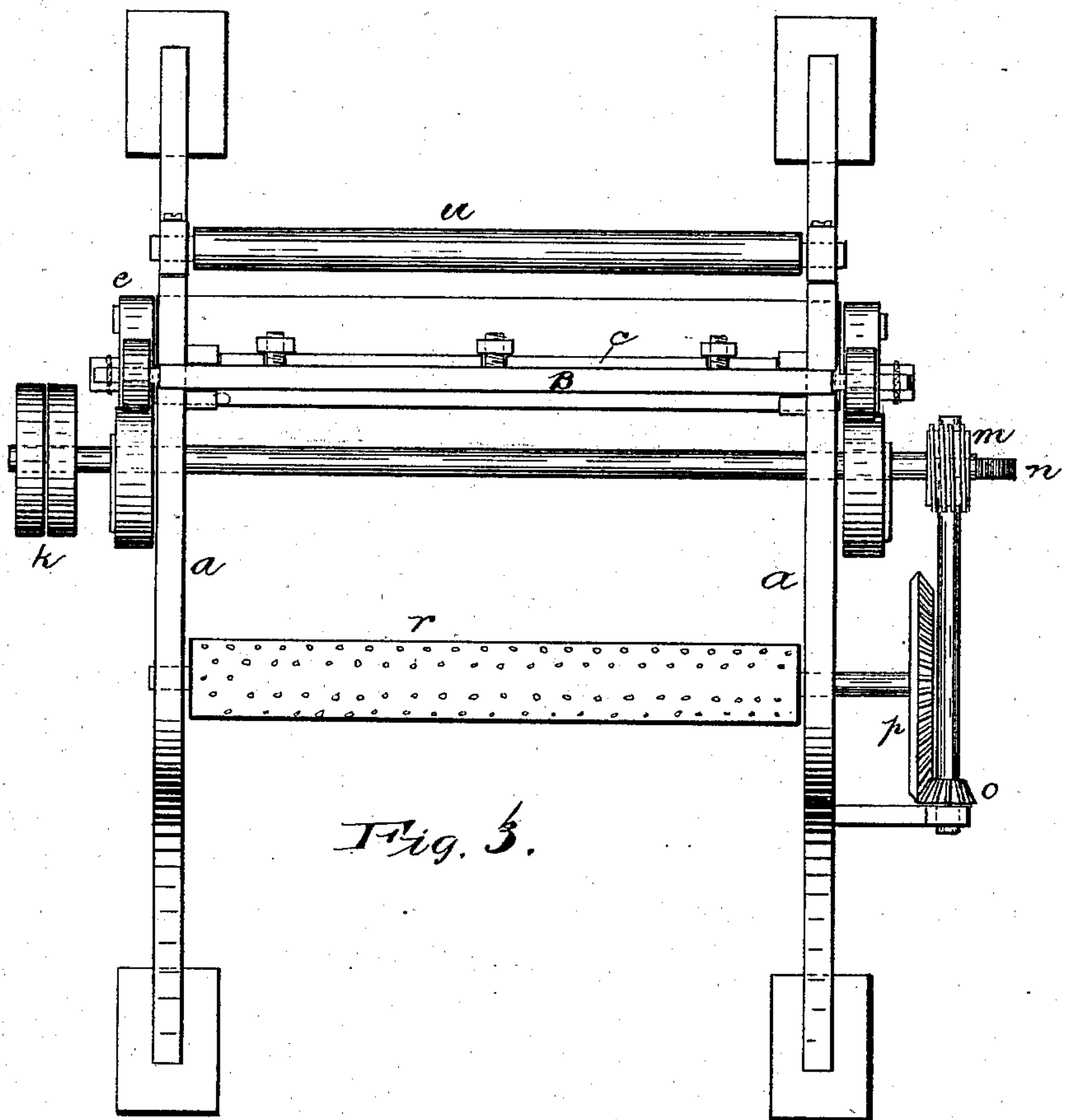


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM T. BROWNE, OF ORANGE, NEW JERSEY.

MANUFACTURE OF SURGICAL LINT.

SPECIFICATION forming part of Letters Patent No. 282,264, dated July 31, 1883.

Application filed June 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. BROWNE, a subject of the Queen of Great Britain, and residing in Orange, Essex county, New Jersey, have
5 invented certain new and useful Improvements in the Process of and Machines for the Manufacture of Surgical Lint; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will
10 enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

15 The object of this invention is to more perfectly and quickly manufacture absorbent lint from any textile fabric, either of linen, cotton, or other fiber, for surgical or other purposes.

It consists in the arrangements and combinations of parts and in the process hereinafter set forth, and finally embodied in the claims.

Referring to the accompanying drawings, in which similar letters of reference indicate like parts in each of the figures, Figure 1, Sheet 1,
25 is a side elevation, and Fig. 2, Sheet 2, is a rear elevation, of my improved device. Fig. 3, Sheet 3, is a plan of the same; and Fig. 4 is a detail sectional view of a cushion forming a part thereof.

30 In said device, *a* is a frame, constructed of iron or other suitable material, upon which is arranged and secured the hereinafter-described mechanism.

B is a knife bar, frame, or carrier, to which
35 a knife, *c*, is secured by screws or otherwise, which knife-carrier is arranged in or on a carriage, *d*, having a horizontal movement on the frame *a*. The said knife-carrier is arranged in or on the carriage *d* in slotted bearings,
40 whereby the former is allowed a vertical movement independent of the movement of the carriage, as well as a horizontal movement with the carriage. Upon said carriage are fulcrumed levers *e e*, as at *g g*, which levers are
45 actuated by eccentrics *h h*, the ends of said levers with which said eccentrics engage having both vertical and horizontal movements, while the fulcrumal ends have horizontal movements alone, with the carriage *d*. Upon
50 said levers *e e* rest directly or indirectly, and

at points between the fulcrumal and opposite ends thereof, the extremities of the knife-carrier, whereby the latter is given with the knife thereon the double movement before mentioned.

The shaft upon which the eccentrics work is
55 actuated by any suitable device, but preferably by the pulleys *k*. Upon said shaft is also arranged a worm, *m*, actuated by the worm-wheel *n*, by which and the angle gear-wheels
60 *o* and *p* motion is transmitted to a friction-roll, *r*, which feeds the cloth or fabric to the knife *c*.

An elastic spring, *t*, or springs formed of metal or other elastic material, is arranged, in
65 connection with the knife-carrier, to regulate the pressure of the knife upon the fabric from which the lint is manufactured, to adapt said knife to any peculiarities in said fabric. A proper device—such as the ratchet-and-pawl
70 attachment *v*—is provided to increase or diminish the tension of the springs.

Beneath the knife, and co-operating therewith in the linting process, is arranged a cushion or bed, *w*, to give a uniform bearing for the
75 scraping or abrading edge of the said knife. The fabric passes between said knife and bed, as will be well understood. Said bed is formed of rubber or other substance, or a substance covered with rubber or other elastic material,
80 or—and this I prefer because of its peculiar adaptability—a tube or jacket of rubber or other non-porous material filled with water or other fluid. After passing from the linting-knife, where the woven nature of the fabric is
85 to a great extent broken up and changed into what is known as “surgeon’s lint,” the sheet passes over a roll, *u*, from which it passes to the floor, or to a receptacle for it, and from
90 thence it is packed for the market.

The feed-roller may be a frictional device or otherwise.

The operation of the machine and the process of converting the fabric are substantially as follows: The cloth is placed in rolls or folds at
95 the front of the machine, with the weft-threads or “shute” parallel with the feed-roller. The goods being properly arranged in the machine, and motion being given to the latter by the pulleys *k*, arranged on the main shaft, the said
100

goods pass beneath the knives while said knives are operating to lint the same. The eccentrics cause the knife to rise and travel toward the feed, then to fall into engagement with the cloth, the springs adding pressure to said knife, and to move backward, giving an abrading or scraping action, thus producing a "pile," or a soft absorbent body known as "lint." The knife, in its said passage backward or from the friction-roll, withdraws the weft-threads from the cloth, carrying them through the warp a short distance—say half an inch—and at the same time scraping the warp, although not entirely severing the thread, and closely packing the fiber from said warp with the withdrawn weft at backward end of the course or movement of the knife, and thus forming the soft and absorbent fabric before mentioned.

It is evident that equivalent mechanical elements may be employed to produce the results herein set forth, and therefore I do not wish to be understood as limiting myself to the exact construction herein set forth.

Having thus described my invention, what I claim is—

1. The process of converting woven fabric into a sheet of lint—to wit, of withdrawing the weft-threads through the warp, and at the same time scraping or abrading said warp and packing the abraded fiber—or loose fiber resulting from the scraping process—with said weft and the remaining warp, substantially as herein set forth.

2. In combination, a linting-knife having a compound reciprocating movement, and an elastic cushion arranged to co-operate therewith in the linting process, as set forth.

3. A linting-machine having therein a recip-

rocating linting-knife, and a roller adapted to carry the material from which the lint is formed to said knife, substantially as and for the purpose set forth.

4. In a linting-machine, the combination, with a linting-knife, of a cushion composed of a non-porous jacket filled with water or other liquid, substantially as and for the purposes set forth and shown.

5. In a linting-machine, the linting-knife having a combined vertical and horizontal motion and a reciprocating motion, a feeding device, and an elastic cushion, between which and the knife the unlinted fabric passes, said parts being arranged and combined substantially as and for the purposes set forth.

6. In combination, the frame *a*, reciprocating knife having a compound action to lint the fabric, an elastic cushion to co-operate with the knife, the knife-carrier, the carriage *d*, the levers *e*, eccentrics *g*, and a feeding device, all said parts being arranged and operating substantially as and for the purpose set forth.

7. The linting-machine herein shown and described, consisting of the frame *a*, carrier *B*, knife *c*, carriage *d*, levers *e*, eccentric *g*, worm *m*, worm-wheel *n*, angle-gears *o p*, feed-roll *r*, a cushion, *w*, spring *t*, and mechanism to increase or diminish the tension of said spring, all said parts being arranged and combined substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of June, 1883.

WILLIAM T. BROWNE.

Witnesses:

F. F. CAMPBELL,

CHARLES H. PELL.