

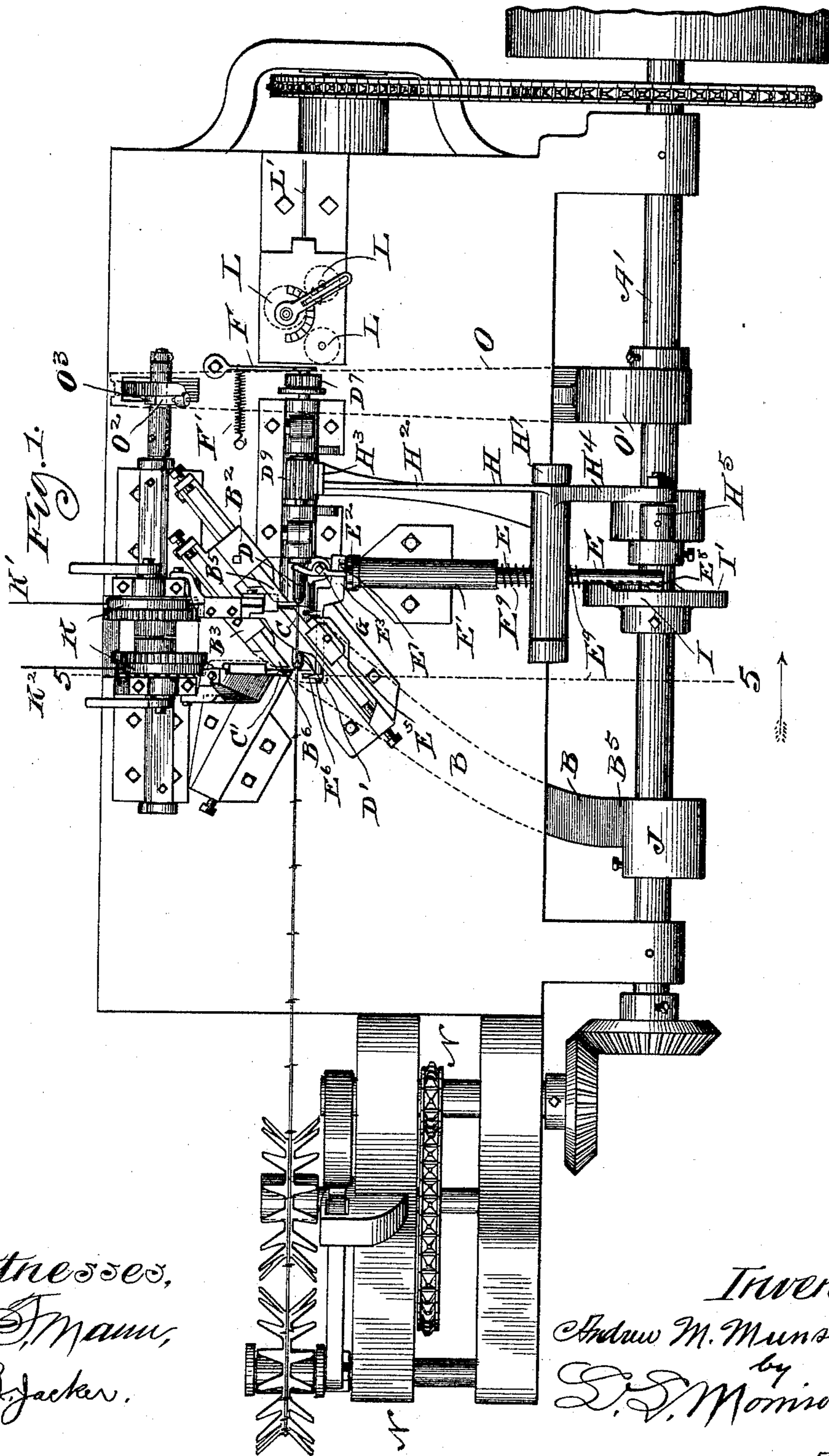
(No Model.)

6 Sheets—Sheet 1.

A. M. MUNSON.
BARBING MACHINE.

No. 495,464.

Patented Apr. 11, 1893.



Witnesses,
J. J. Mann,
R. J. Jackson.

Inventor,
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by
S. S. Morrison.
Att'y.

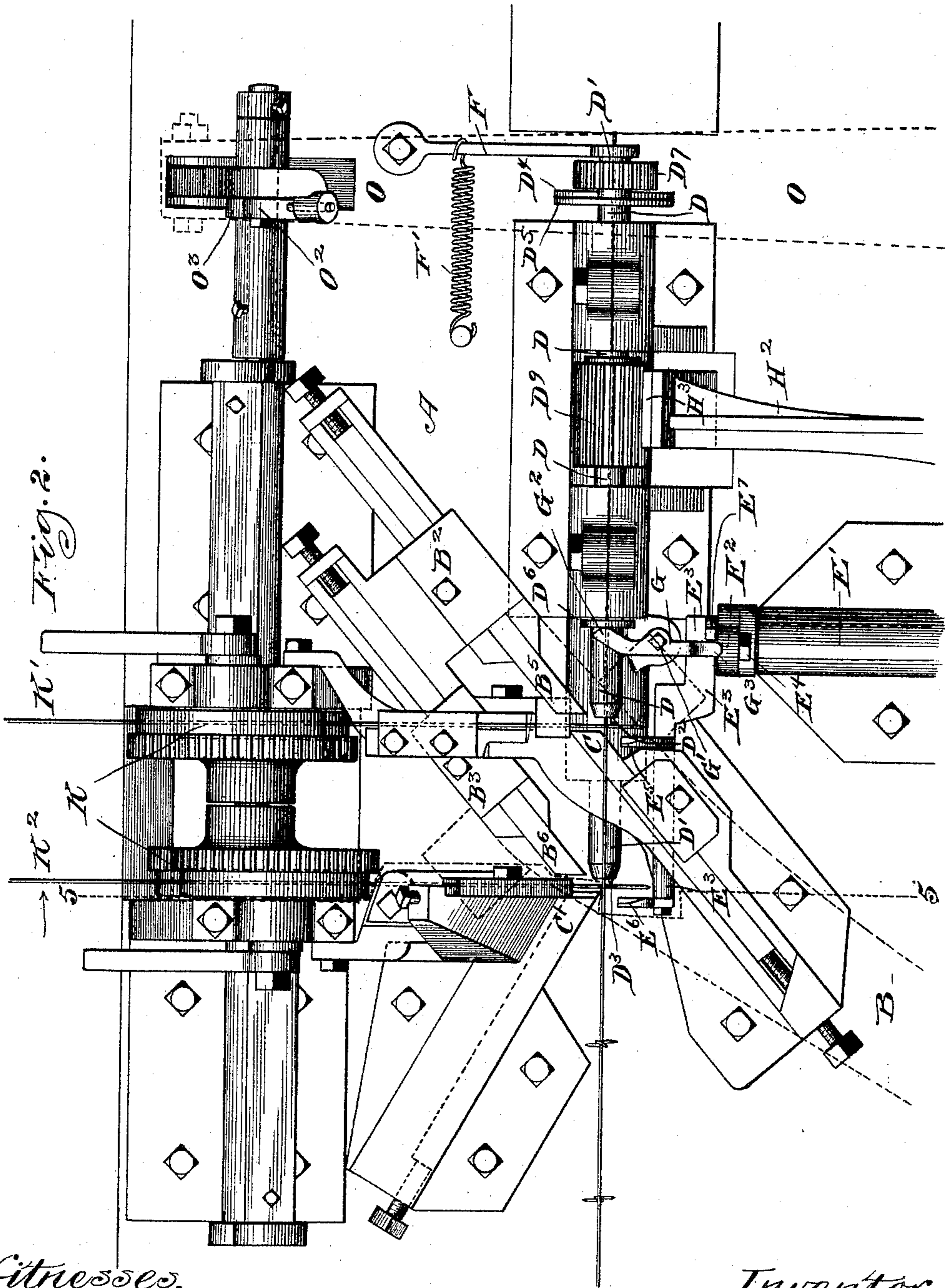
(No Model.)

6 Sheets—Sheet 2.

A. M. MUNSON.
BARBING MACHINE.

No. 495,464.

Patented Apr. 11, 1893.



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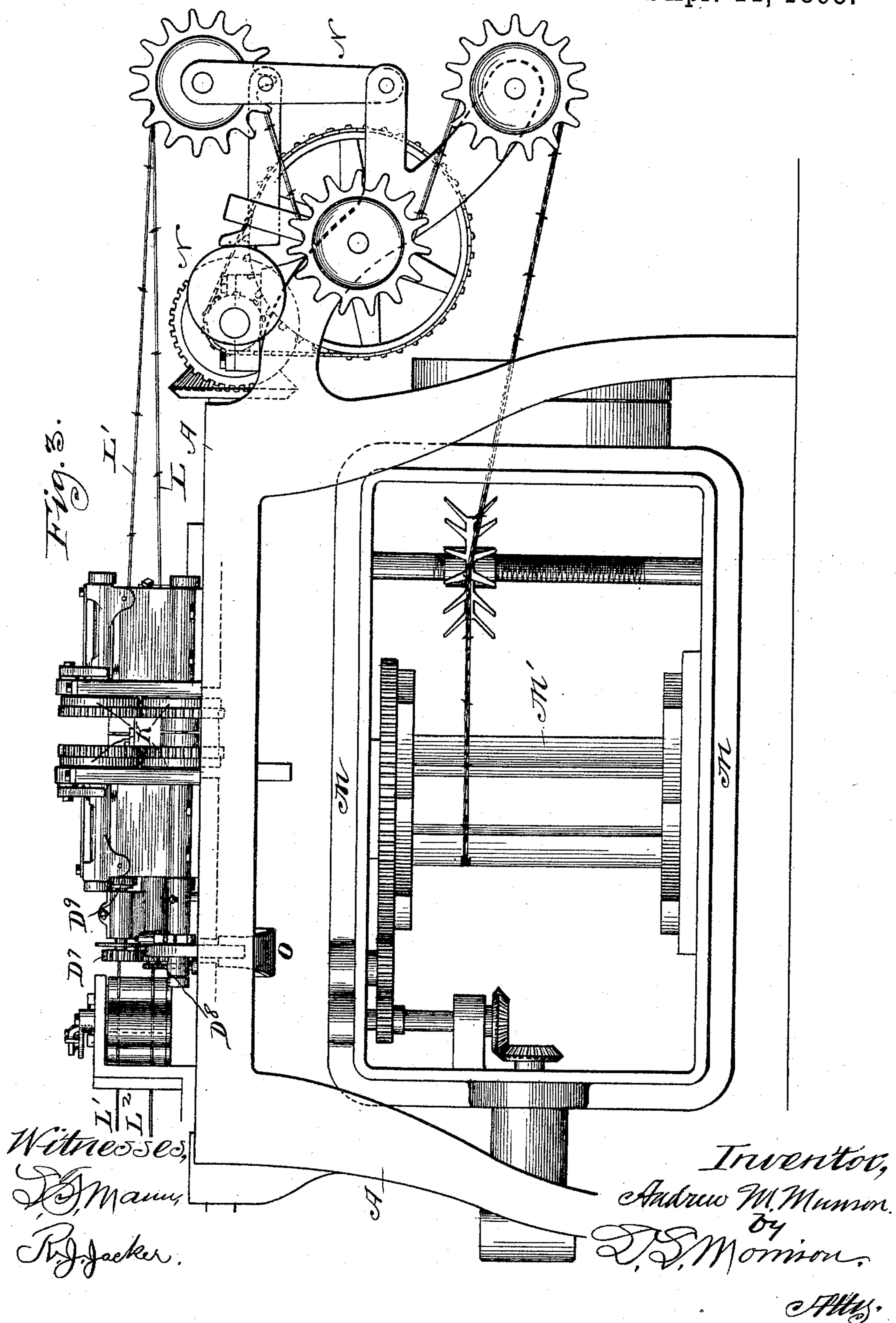
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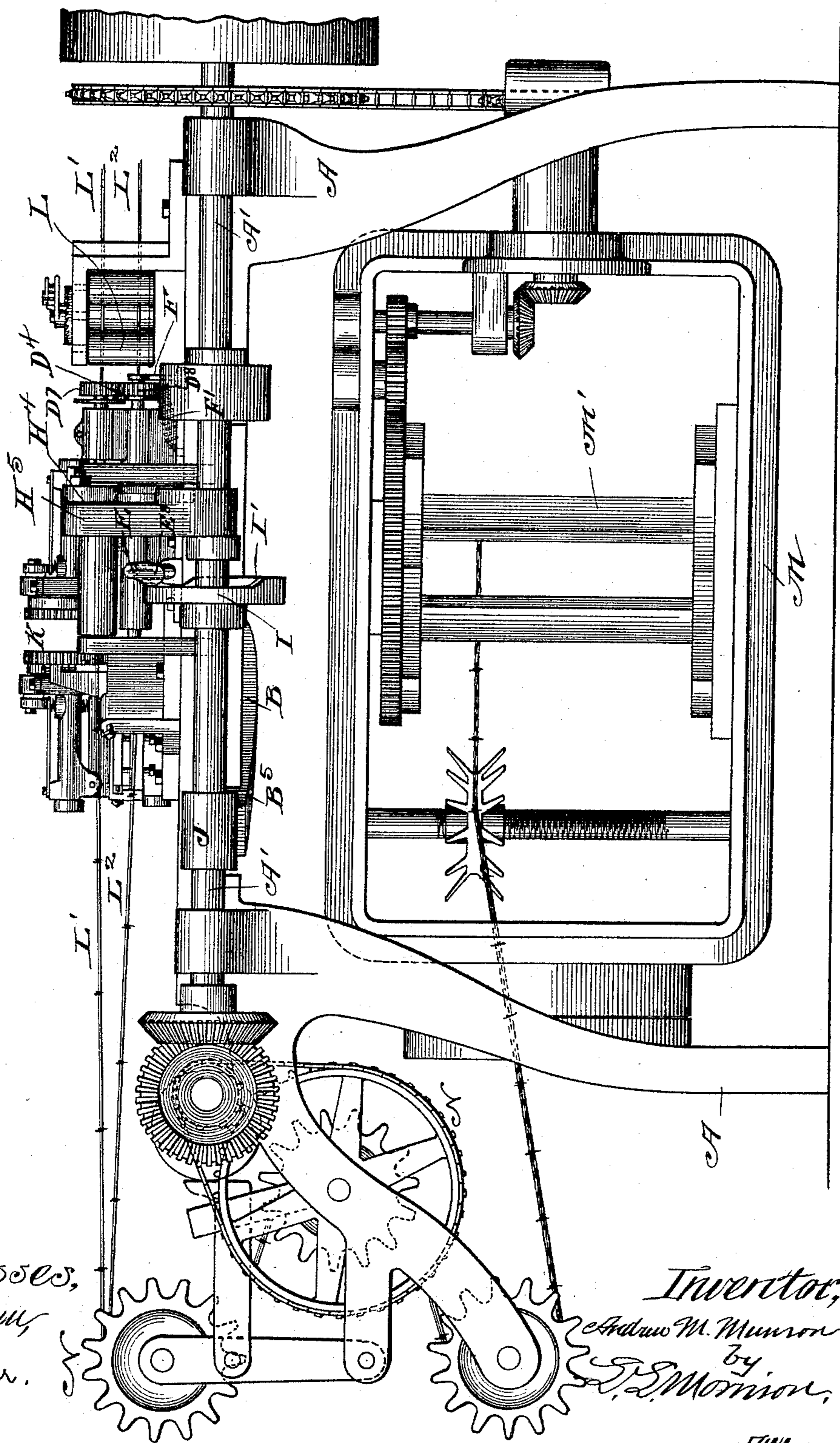
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A. M. MUNSON.
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Fig. 4.



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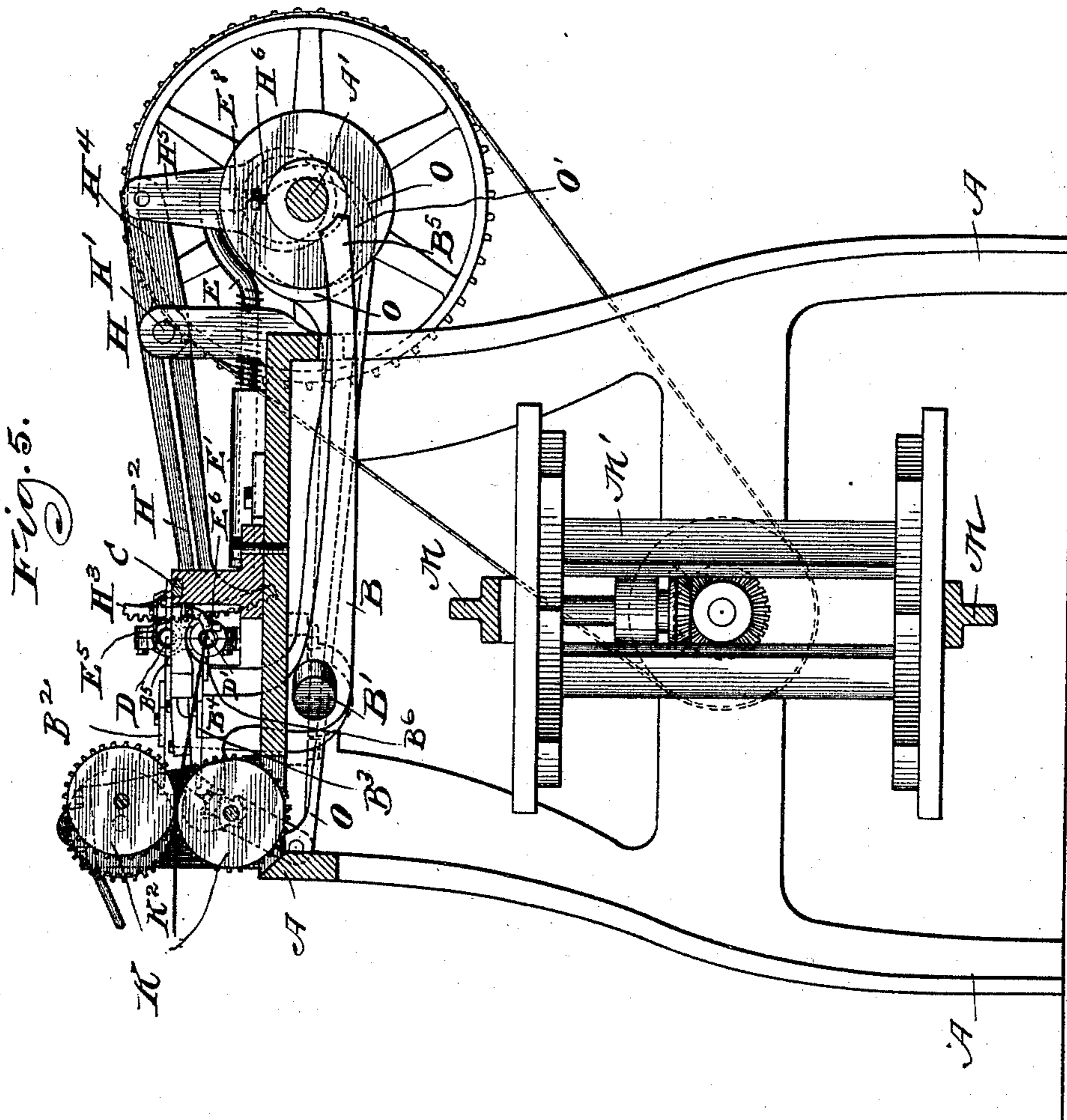
(No Model.)

A. M. MUNSON.
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6 Sheets—Sheet 5.

No. 495,464.

Patented Apr. 11, 1893.



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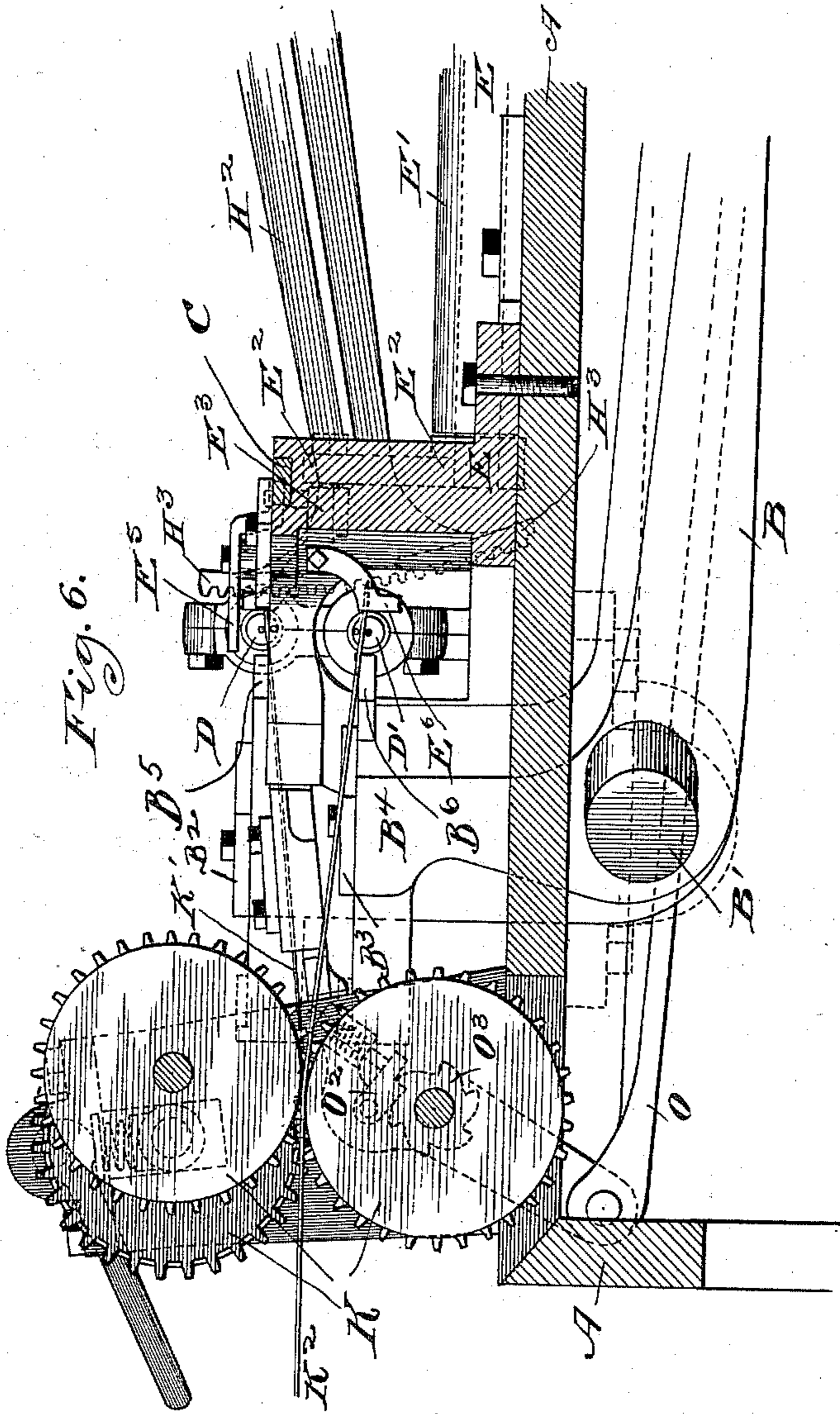
(No Model.)

6 Sheets—Sheet 6.

A. M. MUNSON.
BARBING MACHINE.

No. 495,464.

Patented Apr. 11, 1893.



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UNITED STATES PATENT OFFICE.

ANDREW M. MUNSON, OF ROCKFORD, ILLINOIS, ASSIGNOR OF ONE-HALF TO
THE MUNSON MANUFACTURING COMPANY, OF ILLINOIS.

BARBING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 495,464, dated April 11, 1893.

Application filed December 28, 1892. Serial No. 456,602. (No model.)

To all whom it may concern:

Be it known that I, ANDREW M. MUNSON, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Barb-ing-Machines, of which the following is a specification.

The principal objects of my invention are, the production of barbing machines that will alternately barb the strands of barbed wire in the process of manufacturing and that will also have about double the producing capacity of barbing machines now in use.

The invention consists of certain new and useful features of construction and combinations of parts hereinafter described and specifically pointed out in the claims.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a top plan view of a barbing machine embodying my improvement. Fig. 2 is a like view of the same enlarged and giving more in detail certain parts shown in Fig. 1. Figs. 3 and 4 are opposite side elevations of the machine. Fig. 5 is a vertical section, at the dotted line 5—5 in Figs. 1 and 2 of parts there shown. Fig. 6 is an enlarged view in detail of parts shown in Fig. 5.

Like letters of reference indicate corresponding parts throughout the several views.

A is the machine frame.

A' is the main shaft of the machine.

B is the knife-head actuating-lever, mounted between its ends on the bearing B', so as to be capable of free oscillation thereon in the usual manner.

B² B³ are reciprocatory knife-heads integral or rigidly connected with the shorter arm B⁴ of the lever B. The head B³ is located out of line with, preferably below, and in advance of the head B².

B⁵ B⁶ are reciprocatory barb-knives secured into their heads B² B³ in the usual or any suitable manner.

C C' are stationary barb-knives suitably mounted on the top of the machine frame and with reference to co-operating with the knives B⁵ B⁶.

D D' are tubular wrapping-spindles mounted in suitable bearings and in such relative position as to coact with the barbing-knives.

The wrapping-spindles D D' also have slight simultaneous longitudinally reciprocatory motions in addition to being rotatable, for a purpose to be fully described hereinafter.

D² D³ are barb-wrappers projecting from the free ends of the wrapping-spindles D D' in the usual manner.

D⁴ is a collar fast to the wrapping-spindle D', Figs. 2 and 4.

D⁵ D⁶ Fig. 2 are collars fast to the wrapping-spindle D—the former engaging longitudinally with the collar D⁴ on the wrapping-spindle D'. The wrapping-spindles D D' are also rotatably connected by means of the pinions D⁷ D⁸.

D⁹ is a pinion mounted on the wrapping-spindle D.

E is a rock-shaft mounted horizontally in the bearing E'.

E² is a crank projecting upwardly from the rock-shaft E.

E³ is a head secured to the upper portion of the crank E² by means of a bolt E⁴ Fig. 2.

E⁵ E⁶ are presser-fingers rigidly connected with the head E³.

E⁷, Fig. 2, is a lug projecting upwardly from the head E³.

E⁸ is a crank projecting downwardly from the opposite end of the rock-shaft E.

F is a lever, pivot-jointed at its lower end to the machine frame A, and connected somewhat loosely at its upper end with the end of the wrapping-spindle D'.

F' is a spring, which, acting upon the lever F, actuates the wrapping-spindles D D' in the direction of the knives C C'.

G, Fig. 2, is a lever, mounted on the pivot G' and having engagement through one arm G² thereof with the collar D⁶ on the wrapping-spindle D and through the other arm G³ with the lug E⁷ on the top of the head E³. The office of the lever G is to actuate the wrapping-spindles D D' in a direction opposite to that just noted.

H is an oscillatory lever mounted between its ends upon the bearing H'; the arm H² of the lever being provided with a segment-gear H³ meshing with the pinion D⁹ on the wrapping-spindle D and the arm H⁴ thereof connecting with the lever H⁵, which is mounted on an eccentric H⁶, which in turn is mount-

ed on and operated by the main shaft A' of the machine.

I is a cam mounted on the main shaft A'.

The free end of the crank E⁸ of the rock-shaft E is held in engagement with the face of the cam I by means of the spring E⁹.

J is an eccentric for operating the knife-head actuating-lever B and is also mounted on the main shaft A'. The end B⁵ of the lever B is held in continuous engagement with the eccentric J by means of a spring (not shown).

K are combined devices for feeding the barbing-wires K' K² into the machine.

L are rolls for regulating the tension of the strand-wires L' L².

M is a twister provided with a reel M'.

N are combined devices for delivering the strand-wires L' L² to the twister M after they have been barbed.

O is an oscillatory lever mounted on an eccentric O', which is mounted on the main-shaft A'. The function of the lever O is to drive the pawl O² and ratchet O³ which operate the parts K.

The parts K L M N and O are all old and well known in this class of machines, and it is not thought to be either desirable or necessary to describe the same or their functions in detail, in order to fully disclose my invention.

To operate my improved machine: The strand-wires L' L² are fed in through the interior of the wrapping-spindles D D', and the barbing-wires K' K² are provided, in the usual manner. Just before the barbs are applied to the strand-wires L' L² the presser-fingers E⁵ E⁶ are caused to engage with the free ends of the barbing wires K' K²—by means of the cam I operating on the rock-shaft E and its connections—and press them firmly against the points of the spindles D D', whereupon the wrappers D² D³ engage with the same and wrap them simultaneously and tightly around the strand-wires L' L². The barbing-wires K' K² are then simultaneously cut by means of the knives B⁵ and B⁶ operating against the stationary parts C and C'. The barbs are placed on the strand-wires L' L² at twice the usual distance apart. They are then twisted together to form the completed wire. Obviously the result of this mode of barbing wire is to double the producing capac-

ity of the machine and also to alternate the barbs on the strand-wires, thereby making the latter equal in length and thus distributing the strain uniformly thereon when the wire is in use.

If long barbs are to be applied to the strands, the lever G may be dispensed with, but if short barbs are desired it must be employed, and its function is to withdraw the wrapping-spindles D D' from the barbs in order to allow the knives B⁵ B⁶ to recede, after severing the barbs, without coming in contact with and thereby injuring the wrapping-spindles D D' or their barb-wrappers D² D³.

I claim—

1. In a barbing machine, in combination, the knife-head actuating-lever, the reciprocatory knife-heads integral or rigidly connected with the knife-head actuating-lever, the reciprocatory barb-knives secured into the reciprocatory knife-heads, the stationary barb-knives adapted to cooperate with the reciprocatory barb-knives, and a suitable frame-work and bearings operatively connecting all of said parts together, substantially as and for the purpose specified.

2. In a barbing machine, in combination, a suitable frame, a knife-head actuating-lever so mounted thereon between its ends as to be capable of free oscillation, the reciprocatory knife-heads integral or rigidly connected with the shorter arm of said lever, one of said heads being located out of line with and preferably below and in advance of the other head, the reciprocatory barb-knives secured into said heads, the stationary barb-knives mounted on said frame with reference to cooperating with said reciprocatory barb-knives, and the wrapping-spindles mounted in such positions as to coact with said barbing-knives, substantially as and for the purpose specified.

3. In a barbing machine, in combination, the machine frame, the wrapping-spindles mounted thereon, the presser-fingers, the rock-shaft provided with the upwardly and the downwardly projecting cranks, and suitable connections and means of operating all of said parts, substantially as and for the purpose specified.

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