

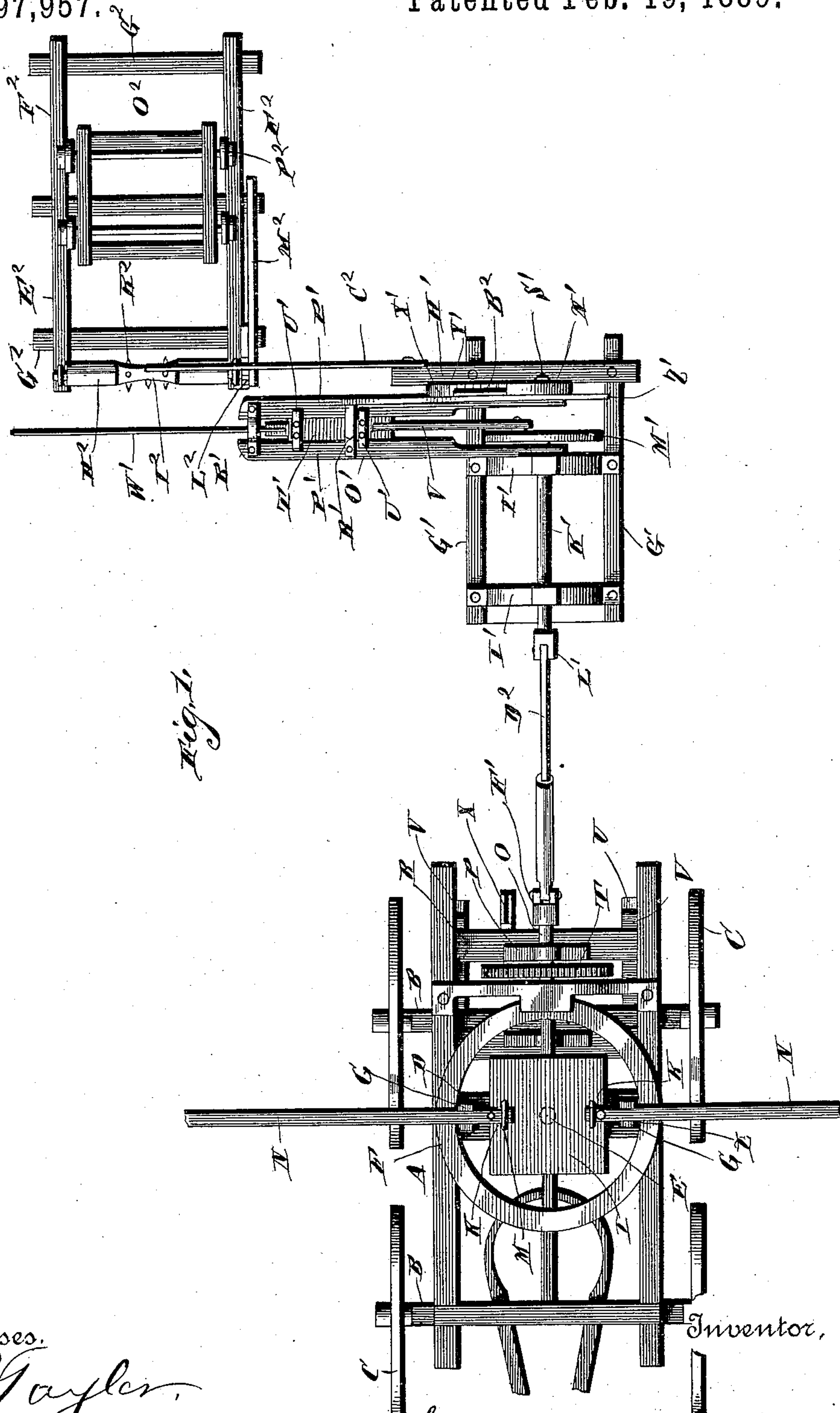
(No Model.)

2 Sheets—Sheet 1.

F. M. AYLWARD.
FIRE WOOD DRAG SAW.

No. 397,957.

Patented Feb. 19, 1889.



Witnesses.

C. L. Taylor,
J. Warner

Inventor,

By his Attorneys Francis M. Aylward

C. H. Snow

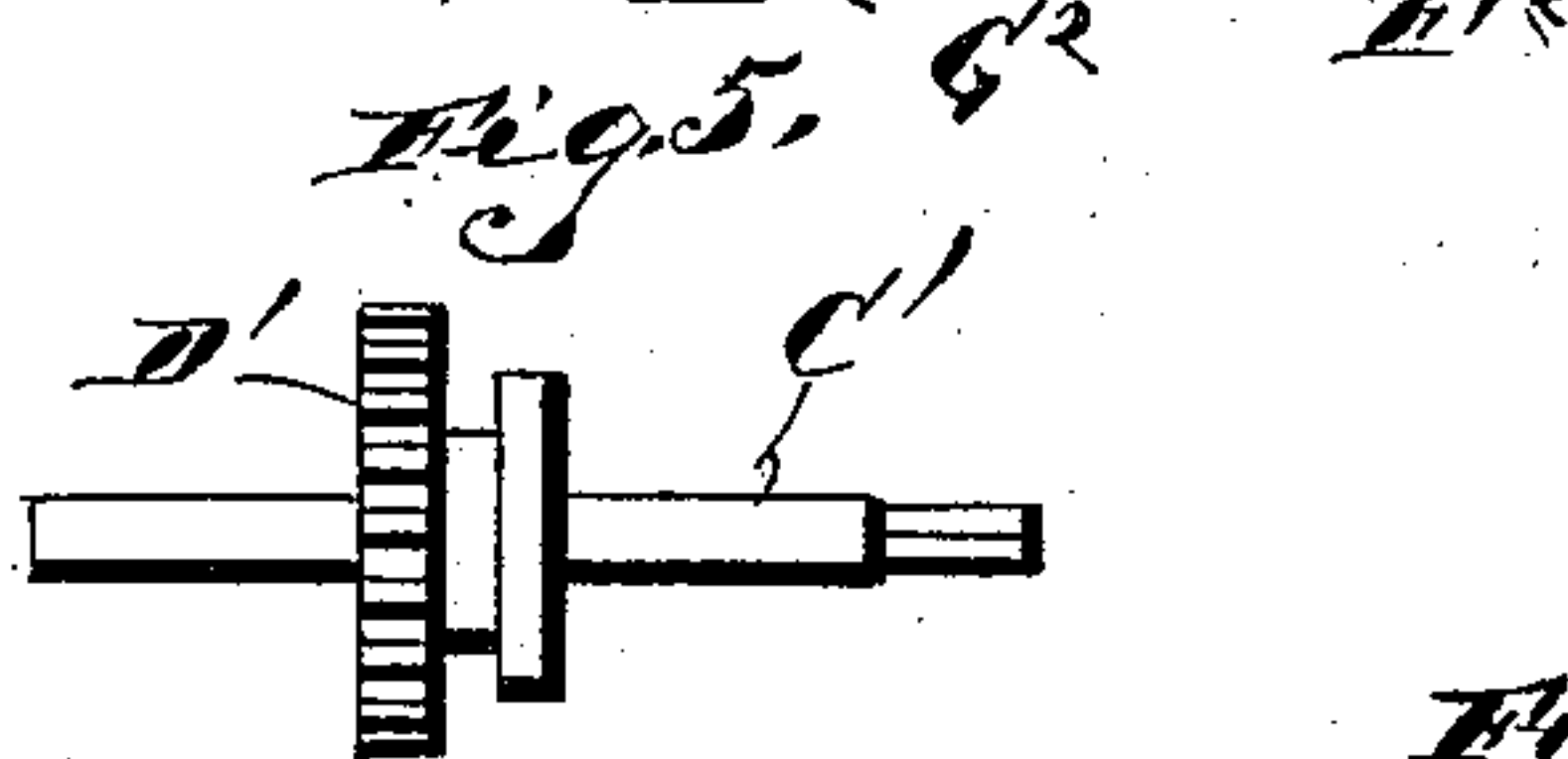
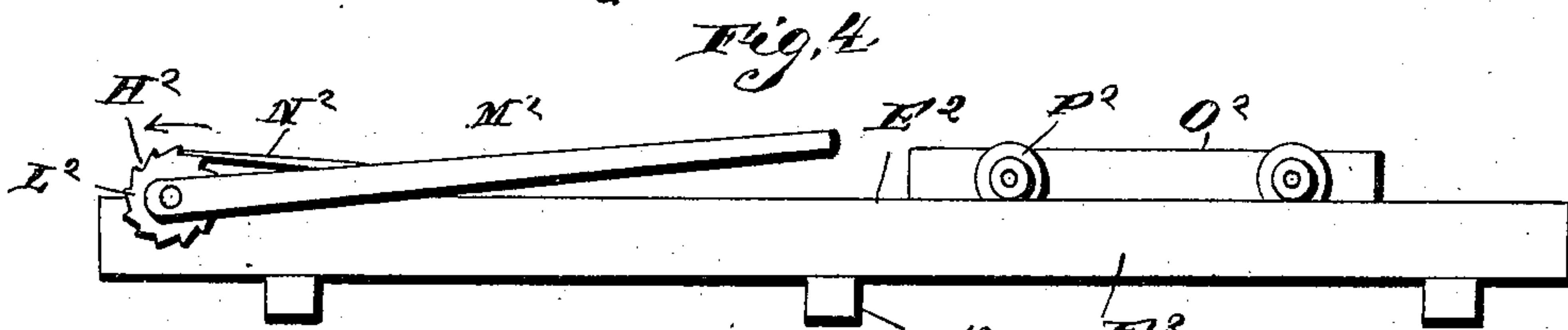
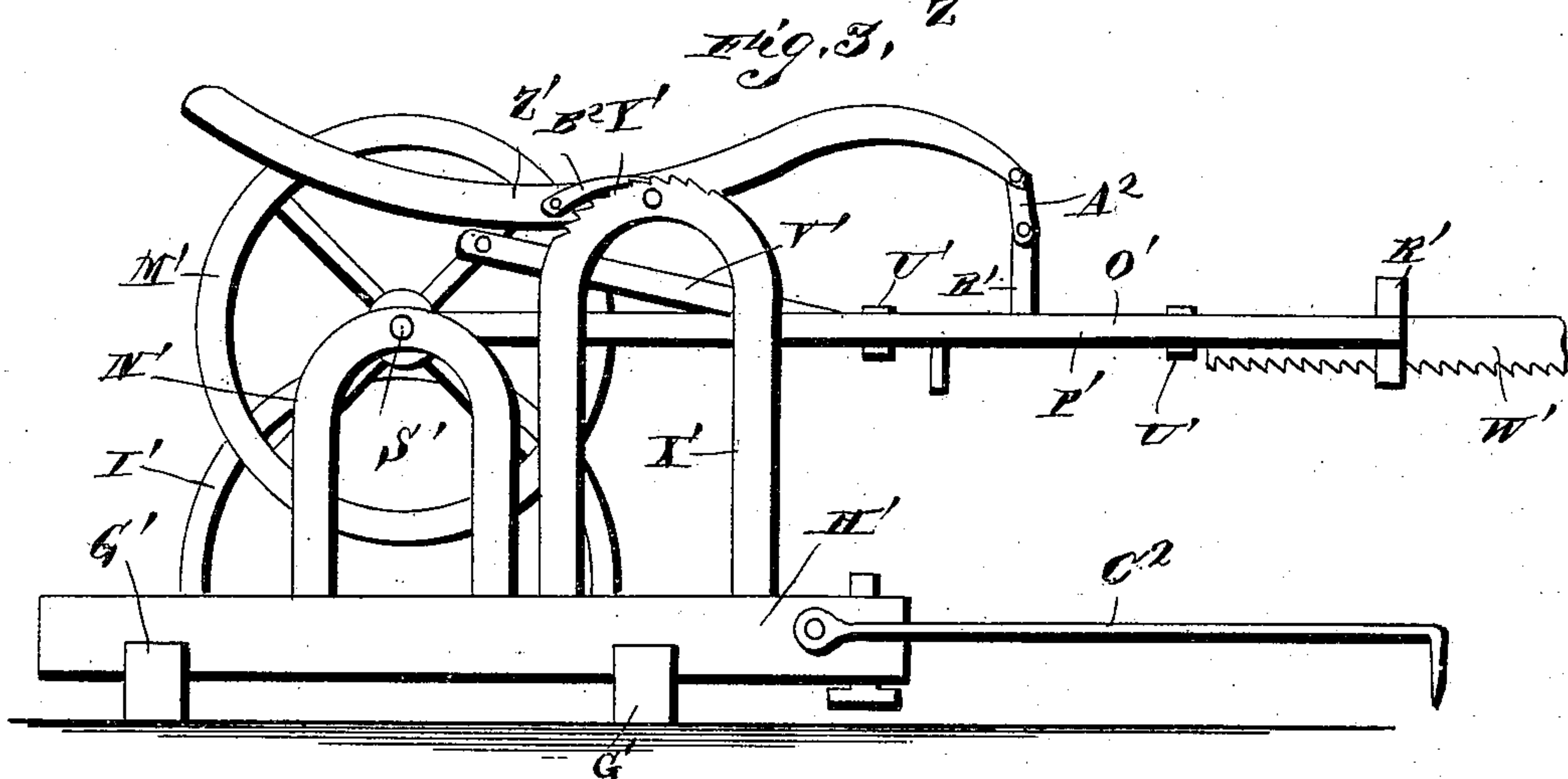
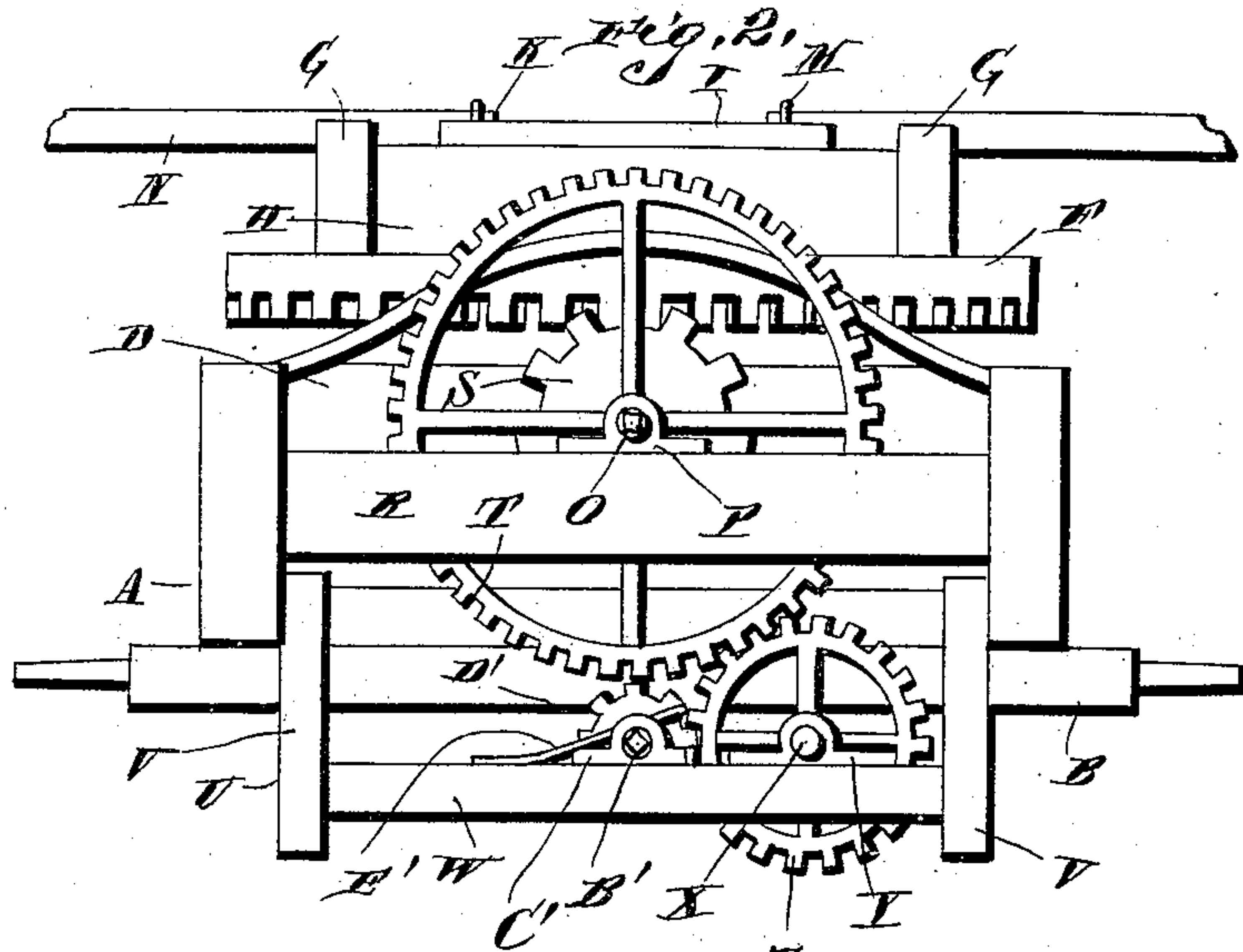
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UNITED STATES PATENT OFFICE.

FRANCIS M. AYLWARD, OF MEMPHIS, MISSOURI.

FIRE-WOOD DRAG-SAW.

SPECIFICATION forming part of Letters Patent No. 397,957, dated February 19, 1889.

Application filed August 7, 1888. Serial No. 282,121. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS M. AYLWARD, a citizen of the United States, residing at Memphis, in the county of Scotland and State of Missouri, have invented a new and useful Improvement in Fire-Wood Drag-Saws, of which the following is a specification.

My invention relates to an improvement in fire-wood drag-saws; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

My invention further consists in a horse-power motor and coupling devices adapted to connect the same to the driving-shaft of the drag-saw, whereby the latter may be operated; and my invention further consists in a supporting-frame and carriage for feeding the logs to the saw.

In the accompanying drawings, Figure 1 is a top plan view of my improved horse-power motor, drag-saw, and carriage, showing the same arranged in the correct relative position. Fig. 2 is an end elevation of my improved horse-power motor. Fig. 3 is a similar view of my improved drag-saw. Fig. 4 is a side elevation of my improved carriage. Fig. 5 is a detail view.

I will first describe my improved horse-power motor.

A represents a rectangular frame, which is mounted on the running-gear B of a vehicle and provided with supporting-wheels C, which are journaled on the spindles of the axles, and by means of which the motor may be drawn from place to place. A transverse beam, D, connects the sides of frame A at the center of the same, and is provided at its center with a vertical spindle or bolt, E, on which is journaled a horizontal driving-wheel, F. The latter has crown-teeth on its lower side and is provided at diametrically-opposite points with keepers G.

H represents a bridge-beam, which is supported on the center of the driving-wheel and has its ends secured in the keepers. On the upper side of said bridge, at the center of the same, is secured a square plate or block, I, which is provided on opposite sides with rectangular recesses K, which align with recesses

L in the upper ends of the keepers. Yokes M are arranged transversely over the said recesses.

N represents a pair of sweep-levers, which have their inner ends inserted in the recesses K and bearing under the yokes M, and said sweep-levers are also fitted in the recesses L of the keepers G and are bolted on the ends of the bridge H.

I have hereinbefore shown and described two of these sweep-levers; but one only may be employed, or the number of the sweep-levers may be increased according to the number of horses it is proposed to use to operate the motor. The outer ends of the sweep-levers are provided with singletrees, to which the traces of the draft-animals may be attached in the usual manner.

O represents a longitudinal shaft, which is journaled in bearings P, that are secured on the pair of parallel transverse beams R, that are arranged near one end of the frame A. Rigidly secured to this shaft is a pinion, S, which meshes with the wheel F and a spur-wheel, T.

U represents a frame, which is secured to and depends from the inner or rear end of frame A and is arranged below the beams R. Said frame comprises a pair of yokes or brackets, V, and a pair of parallel beams, W, which connect the same.

X represents a shaft, which is journaled in bearings Y on the beams W, is parallel with the shaft O, and has a spur-wheel, Z, which meshes with the wheel T. To the rearward-projecting end of the said shaft O is secured a knuckle or socket.

B' represents a shaft, which is parallel with shaft X, in proximity thereto, and is journaled in bearings C' on the beams W. Feathered on this shaft is a pinion, D', which is adapted to engage the wheel Z. A lever, E', is pivoted to one of the beams W and engages an annular groove in the hub of pinion D', whereby the latter may be thrown into or out of engagement with the wheel Z. The rear end of the shaft B' is squared and adapted to fit a squared longitudinal opening in a sleeve or socket, F'.

I will now proceed to describe my improved drag-saw.

G' represents a pair of parallel sills, which are connected at one end by a transverse beam, H'.

I' represents a pair of curved brackets or yokes, which connect the sills D', and in which is journaled a longitudinal shaft, K'. To the outer end of the said shaft is secured a knuckle, L', and to the inner end thereof is secured a crank-wheel and fly-wheel, M'.

N' represents a U-shaped standard or yoke, which is secured to the beam H' and has its upper end arranged in line with the shaft K'.

O' represents a guide-frame, which comprises a pair of parallel bars, P', connected at their outer ends and at a suitable distance from their outer ends by means of keepers or loops R'. The inner ends of the bars P' are hinged or pivoted loosely on the shaft K' and on a spindle, S', that projects from the inner side of standard N', at the upper end thereof.

T' represents a cross-head, which is arranged and guided between the bars P' and has transverse straps or plates U' on its upper and lower sides, the ends of which bear against the upper and lower sides of bars P', and thereby serve to guide the cross-head between the said bars. To the inner end of the said cross-head is pivoted a pitman, V', and the inner end of the said pitman is pivoted on the wrist-pin of the wheel M', whereby when the shaft K' is rotated the cross-head will be caused to reciprocate in the frame O', as will be readily understood.

W' represents a crosscut-saw, which has its inner end pivoted to the outer end of the cross-head T' and is guided in the outer loop or keeper, R'.

Secured to the beam H', near the outer end thereof, is an inverted-U-shaped standard, X', which is provided at its upper rounded end with a series of notches, Y'. A sigmoidal-shaped lever, Z', is fulcrumed to the upper end of said standard and has one end connected by a link, A², to the inner loop, R'.

B² represents a dog, which is pivoted to the said lever and is adapted to engage the notches Y', so as to secure the guide-frame O' of the cross-head in any desired position. A rod, C², is pivoted to the beam H', near the outer end of the latter, and has its outer end turned downward at right angles and sharpened, and thereby adapted to be driven into a log, so as to steady the saw-frame when the saw is operated. A coupling-shaft, D², has its ends inserted in the knuckle on shaft K' and in the tubular sleeve on shaft B', and thereby the rotary motion of the latter may be communicated to the saw-shaft K', so as to set the saw in motion.

It will be understood from the foregoing description and by reference to Fig. 2 of the drawings that the shaft B', owing to the fact that its pinion C' is of much less diameter than the wheel Z, with which it is engaged, is rotated at great speed when the motor is in

operation and the pinion is in gear with wheel Z, and hence when the saw-shaft is coupled to the shaft B', as before stated, the saw will be operated at a high rate of speed.

In sawing large logs it is desirable to reduce the speed of the saw to enable the same to be more easily operated, and in order to accomplish this the sleeve is removed from the shaft B', secured on shaft X, so as to enable the saw-shaft to be coupled to said shaft X, and the pinion C' is moved out of engagement with the wheel D.

I will now proceed to describe my improved carriage for feeding the logs to the saw.

E² represents a frame, which comprises a pair of parallel longitudinal beams, F², and a series of transverse beams, G², which connect the same.

H² represents a cylindrical roller, which has its spindles journaled in bearings at one end of the beams F², and said roller is provided at its center with an annular concave depression, I², and is provided further with projecting radial spurs K².

L² represents a ratchet-wheel, which is rigidly secured to one of the spindles of the roller, and M² represents a lever, which is pivoted on the said spindle on the outer side of the ratchet-wheel, and is provided with a spring-dog, N², adapted to engage the ratchet-wheel, whereby the roller may be rotated in the direction indicated by the arrow in Fig. 4, for the purpose to be hereinafter stated.

O² represents a truck, which is provided with flanged wheels P², that travel on the beams F², the latter thereby constituting a track for the truck. The frame E² is arranged parallel with the saw-frame and at a suitable distance therefrom and at one side of the same, and the log to be sawed is placed so that one end thereof rests upon the truck when the latter is at the outer end of frame E², and the opposite end of the log rests on the roller H². By rotating the roller as before described the radial spurs thereof come into engagement with the under side of the log, and thereby move the same in a longitudinal direction across the path of the saw, and the weight of the log on the truck causes the same to also move longitudinally on the frame E² until one end of the log projects the required distance beyond the saw. The rod C² is then secured to the log, as before described, the motor is set in operation, so as to operate the saw, and the operator, by grasping the lever Z', lowers the frame O' and causes the reciprocating saw W' to engage and saw through the log. As soon as the saw has passed through the log, the frame is raised so as to clear the saw of the log. The rod C² is disengaged from the latter and the log again moved a suitable distance, as before described, and again sawed, and so on until the log has been sawed into as many lengths as may be desired.

Having thus described my invention, I claim—

1. The combination, in a drag-saw, of the supporting-frame having the brackets or standards, the shaft K', journaled therein and having the crank-wheel, the frame O', having
5 one end pivoted in line with the axle of shaft K', the cross-head guided in the said frame, the pitman connecting the cross-head to the crank-wheel, the saw attached to the cross-head, the bracket X', having ratchet-teeth Y',
10 the lever fulcrumed to the said bracket, the link A², connecting the lever to the free end of frame O', and the pawl B², pivoted to the lever and engaging the teeth Y', for the purpose set forth, substantially as described.
15 2. The drag-saw having the driving-shaft

K', provided with the knuckle L', and the coupling-shaft D², secured to the knuckle L' and having the sleeve or socket F', said sleeve or socket F' being designed to be coupled to the end of either shaft of a horse-power, so as to
20 run the drag-saw at a greater or less speed, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FRANCIS M. AYLWARD.

Witnesses:

GEO. H. LAWTON, Jr.,
N. A. LUDWICK.