

No. 675,567.

Patented June 4, 1901.

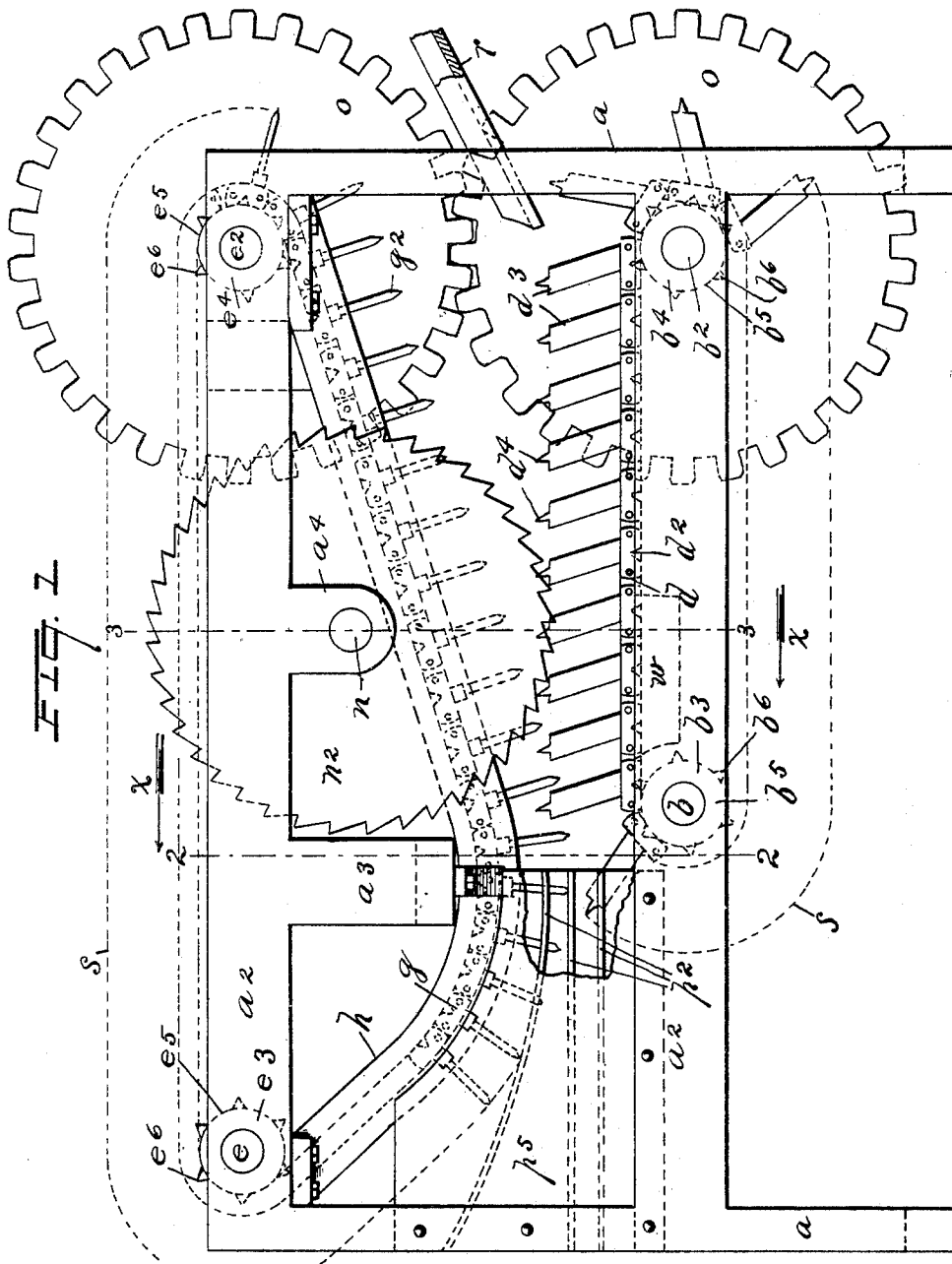
D. LEVIN.

KINDLING WOOD CUTTING MACHINE.

(Application filed Sept. 22, 1900.)

(No Model.)

3 Sheets—Sheet 1.



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Fig 2

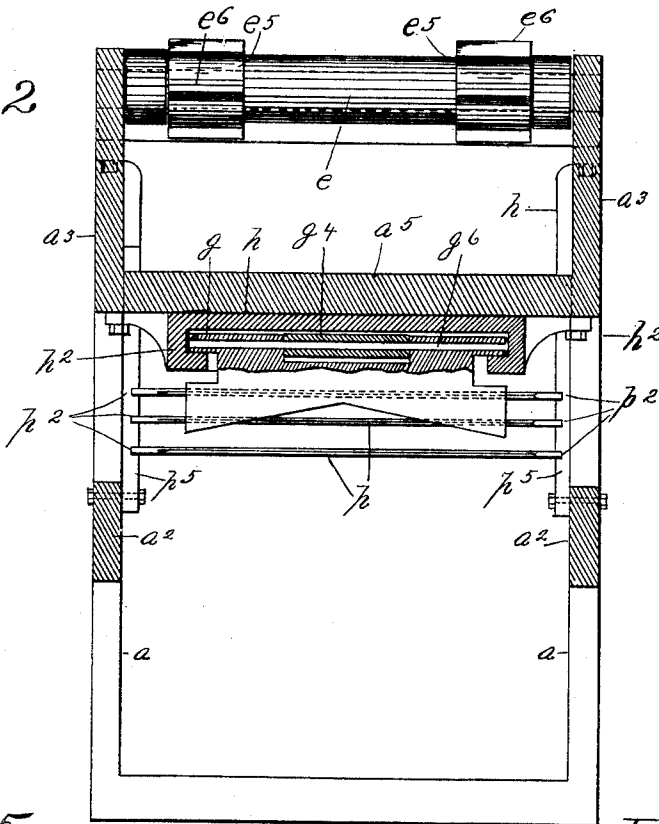


Fig 5

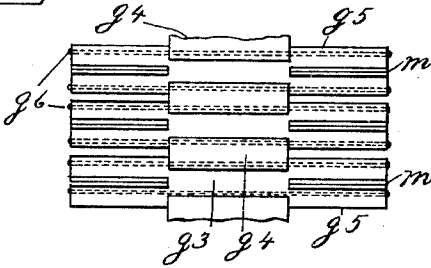
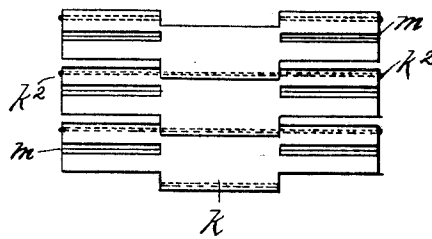


Fig 6



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FIG 3

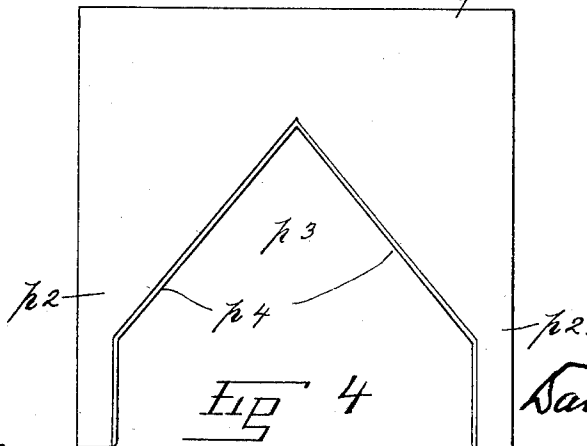
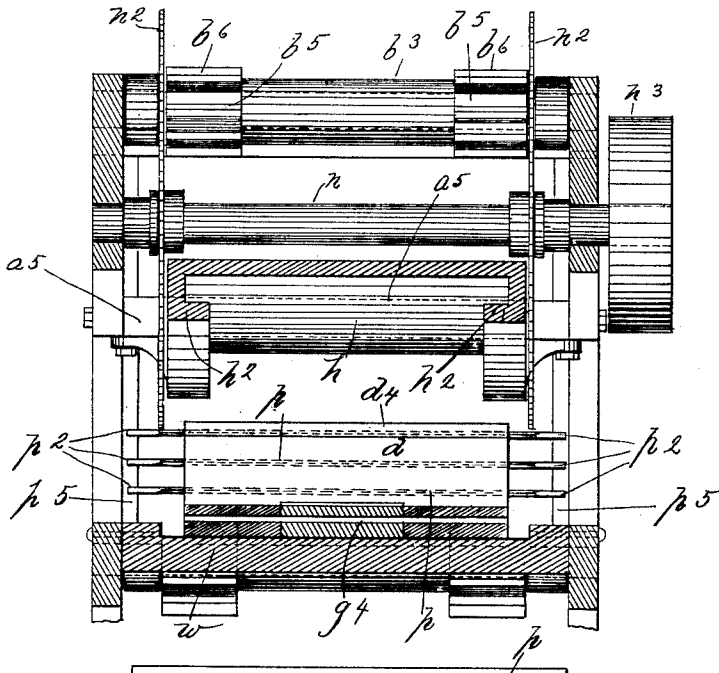


FIG 4

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UNITED STATES PATENT OFFICE.

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KINDLING-WOOD-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 675,567, dated June 4, 1901.

Application filed September 22, 1900. Serial No. 30,743. (No model.)

To all whom it may concern:

Be it known that I, DAVID LEVIN, a subject of the Czar of Russia, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Kindling - Wood - Cutting Machines, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to means for cutting kindling-wood; and one object thereof is to provide an improved machine of this class by means of which kindling-wood may be sawed or cut into desired lengths and also split longitudinally into small pieces, a further object being to provide a machine for the purpose specified which is simple in construction and operation and comparatively inexpensive; and with these and other objects in view the invention consists in the construction, combination, and arrangement of parts herein-after described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by the same reference characters in each of the views, and in which—

Figure 1 is a side elevation of my improved kindling-wood-cutting machine; Fig. 2, a partial section on the line 2 2 of Fig. 1; Fig. 3, a partial section on the line 3 3 of Fig. 1; Fig. 4, a plan view of a cutter-blade which I employ; Fig. 5, a back plan view of a part of a drive-chain which I employ; and Fig. 6, a view similar to Fig. 5, showing a modification of said chain.

In the practice of my invention I provide a machine for the purpose specified comprising a frame composed of corner-posts a , connected by horizontal side bars a^2 and suitable cross-bars, (not shown,) and the top side bars are provided with depending members a^3 and a^4 , the first of which are arranged nearer to the rear end of the machine than the latter.

Mounted in the lower portion of the frame are two shafts b and b^2 , said shafts being preferably arranged in the same horizontal plane and the shaft b^2 being at the front end of the machine. These shafts are provided respectively with rollers b^3 and b^4 , and these

rollers are exactly the same in construction. The roller b^3 is shown in full lines in Fig. 3, and both of said rollers are shown in dotted lines in Fig. 1. Each of these rollers is provided at the end thereof with an enlarged head b^5 , having longitudinal ribs or teeth b^6 , and mounted thereon is a drive-chain d , composed of separate links d^2 , each of which is provided on its outer side with a projecting member d^3 , which is arranged transversely of the body of the link and provided with a tooth or teeth d^4 , and the projecting members d^3 of the drive-chain d are so formed on said links that they project backwardly slightly on the upper reach of said chain as said chain turns on the rollers b^3 and b^4 .

Mounted in the top portion of the main frame of the machine are two shafts e and e^2 , on which are placed rollers e^3 and e^4 , the roller e^3 being shown in full lines in Fig. 2 and both of said rollers being shown in dotted lines in Fig. 1, and these rollers are exactly the same as the rollers b^3 and b^4 , and each is provided with an enlarged end head e^5 , having longitudinal teeth or ribs e^6 , and mounted thereon is a drive-chain g , composed of separate links of the same form and construction as the drive-chain d , and the links of this chain are provided on their outer sides with projecting blades g^2 , arranged at right angles thereto, and one of which is shown in Fig. 2.

The lower ends of the depending members a^3 of the main frame are connected by a transverse bar a^5 , and connected therewith and with the top portion of the frame is a downwardly-directed curved track or way h , having downwardly and inwardly directed side flanges h^2 , which form a guide for the drive-chain g , and the rear portion of this track or way approximately approaches the roller b^3 , so that the projecting members d^3 of the drive-chain d interengage with the blades g^2 of the drive-chain g .

The drive-chains d and g are both preferably made as shown in Fig. 5, and each consists of separate links g^3 and intermediate blocks g^4 , and the links g^3 are provided with enlarged ends g^5 , between which the blocks g^4 fit, and the links and blocks are connected by pins g^6 . In Fig. 6 I have shown a modification of these chains, which comprises separate links l , connected by pins l^2 , and in each

form of construction the ends of the links are provided with grooves m , which receive the transverse teeth or ribs b^6 and e^6 on the rollers b^3 and b^4 and the rollers e^3 and e^4 , and by means of which the desired motion is given to said chains.

Mounted midway of the frame of the machine in the depending members a^4 is a shaft n , provided adjacent to each end and within the sides of the main frame with a saw n^2 , and said shaft is also provided at one end with a power wheel or pulley n^3 , and in practice the saws n^2 are driven by any desired motor:

The shafts b^2 and e^2 are each provided with a gear-wheel o , and these gear-wheels intermesh, and said shafts are driven by any suitable power through a power wheel or pulley, (not shown,) in practice connected with one of said shafts.

Mounted in the lower rear end of the machine and horizontally thereof are blades p , a plan view of one of which is given in Fig. 4, and the front end of these blades is cut out to form side arms p^2 and a V-shaped recess p^3 , the sides of which are provided with cutting edges p^4 , as are also the inner edges of the arms p^2 . The blades p are arranged midway between the drive-chains d and g , and the blades g^2 in the operation of the machine pass between the arms p^2 of said blades, as do also the projecting members d^3 of the chain d .

Arranged at the front of the machine is a chute or inclined table r , down and over which the wood is fed into the machine, and the operation will be readily understood from the foregoing description, when taken in connection with the accompanying drawings, and the following statement thereof.

As hereinbefore stated, the shafts b^2 and e^2 are driven by any desired means and the saws n^2 are driven by independent power, and the wood as it is fed into the machine is carried backwardly by the projecting jaws or members d^3 of the chains d and is cut the desired length by the saws n^2 . It will be understood that the chains d and g move in the direction of the arrows x , and as the wood is carried backwardly to be operated on by the saws both of the said chains are also moved and the blades g^2 of the chain g also engage with the wood and force it backwardly in the direction of the blades p . In this operation the blades g^2 of the chain g split the wood, divide it into small sticks or pieces, and said sticks or pieces are carried backwardly horizontally of the machine and forced between the arms p^2 of the blades p , and as said sticks or pieces are successively fed backwardly the blades g^2 and the jaws or members d^3 of the chains g and d , respectively, force said sticks or pieces continuously backward, and the V-shaped sides p^4 of the blades p again engage with said sticks or pieces and again split or divide them, after which they are forced backwardly by the following pieces or sticks of wood and out of the machine.

The blades p are held in place by supports

p^5 , secured to the main frame, as shown in Figs. 2 and 3, or by any other suitable means, and I also in practice secure within the main frame a transverse support w , as shown in Fig. 3, over which the upper reach of the drive-chain d passes, the object of this construction being to provide a secure support for this chain at this point, so as to prevent the depression thereof occasioned by the wood as it passes thereover.

The edges of the blades g^2 of the links of the chain g are preferably formed V-shaped, as shown in Fig. 2; but these blades may be given any desired shape, as may also the projecting members or jaws d^3 of the chain d . The chains d and g are not shown in full, but are indicated by the dotted lines s , and the ends of the links of the chain g fit in the sides of the track or way h , as shown in Fig. 2, and securely hold said chain in proper position during the operation thereof.

Although I have shown but two sets of drive-chains and two corresponding sets of rollers and two saws, it will be apparent that any desired number of sets of drive-chains and rollers and a corresponding number of saws may be arranged in a single frame, so as to increase the capacity of the machine, without departing from the spirit of my invention or sacrificing its advantages, the only object in this connection being to so arrange said separate sets of drive-chains, rollers, and saws that the operation of each set and the construction thereof will be substantially the same as that herein shown and described, and it will also be apparent that in practice the machine may be made of any desired width in order that sticks of wood of the usual or any desired length may be fed thereinto.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A machine for cutting kindling-wood, comprising a frame, a drive-chain mounted horizontally in the bottom thereof, another drive-chain mounted horizontally in the top thereof, and provided with a downwardly-curved track or way around which the lower reach of said chain passes, the links of said chains being each provided with projecting members which are adapted to feed the wood through the machine, and which interengage and split the wood, and saws mounted in the opposite sides of the machine and adapted to cut the wood in suitable lengths, substantially as shown and described.

2. A machine of the class described, comprising a frame having drive-chains mounted horizontally thereof in the top and lower portion thereof, the upper drive-chain being provided with a downwardly-directed track or way over which the lower reach of said chain passes, the links of the lower chain being provided with projecting jaws or members, and the links of the upper chain with projecting blades, said chains being geared in connection, and saws mounted in the opposite sides

of the frame, substantially as shown and described.

3. A machine of the class described, comprising a frame having drive-chains mounted horizontally thereof in the top and lower portion thereof, the upper drive-chain being provided with a downwardly-directed track or way over which the lower reach of said chain passes, the links of the lower chain being provided with projecting jaws or members, and the links of the upper chain with projecting blades, said chains being geared in connection, and saws mounted in the opposite sides of the frame, said frame being also provided in the rear portion thereof with a horizontal blade arranged approximately between said chains, the inner end thereof being provided with a V-shaped recess and projecting side arms, substantially as shown and described.

4. A machine of the class described, comprising a frame having drive-chains mounted horizontally thereof in the top and lower portion thereof, the upper drive-chain being provided with a downwardly-directed track or way over which the lower reach of said chain passes, the links of the lower chain being provided with projecting jaws or members, and the links of the upper chain with projecting blades, said chains being geared in connection, and saws mounted in the opposite sides of the frame, said frame being also provided in the rear portion thereof with horizontal blades arranged approximately between said chains, the inner ends thereof being provided with V-shaped recesses and projecting side arms, and said frame being also provided at the front thereof with a table or chute, substantially as shown and described.

5. A machine of the class described, comprising a frame, a pair of rollers mounted in the top thereof at the front and rear ends, another pair of rollers mounted in the bottom portion thereof, one at the front and one rearwardly of the middle portion of the frame, drive-chains mounted on each of said pairs

of rollers, the upper drive-chain being provided with a downwardly-directed track or way over which the lower reach of said chains pass, the links of said chains being each provided with projecting members, the projecting members on the upper chain forming blades, and said rollers being each provided with longitudinal ribs or teeth, and the links of said chains with corresponding grooves, means for operating said chains, and saws mounted in the opposite sides of said frame, substantially as shown and described.

6. A machine of the class described, comprising a frame, a pair of rollers mounted in the top thereof at the front or rear ends, another pair of rollers mounted in the bottom portion thereof, one at the front and one rearwardly of the middle portion of the frame, drive-chains mounted on each of said pairs of rollers, the upper drive-chain being provided with a downwardly-directed track or way over which the lower reach of said chains pass, the links of said chains being each provided with projecting members, the projecting members on the upper chain forming blades, and said rollers being each provided with longitudinal ribs or teeth, and the links of said chains with corresponding grooves, means for operating said chains, saws mounted in the opposite sides of said frames, and a horizontal blade mounted in the lower rear portion of the frame and projecting approximately between said chains; said blades being provided at their front ends with a V-shaped recess and side arms having cutting edges, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 21st day of September, 1900.

DAVID LEVIN.

Witnesses:

C. C. OLSEN,
F. A. STEWART.