(No Model.) 4 Sheets—Sheet 1.

G. W. PRATT & J. P. HANSON.

LOG LOADING MACHINE.

No. 400,790. Patented Apr. 2, 1889.

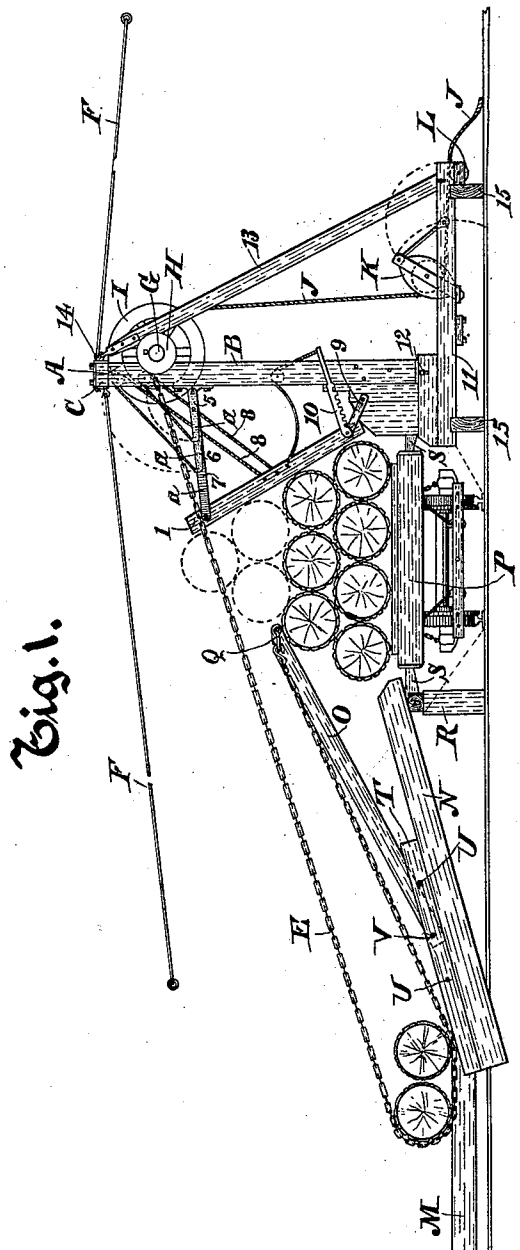


Fig. 1.

Witnesses.

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4 Sheets—Sheet 2.

G. W. PRATT & J. P. HANSON.

LOG LOADING MACHINE.

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Fig. 2

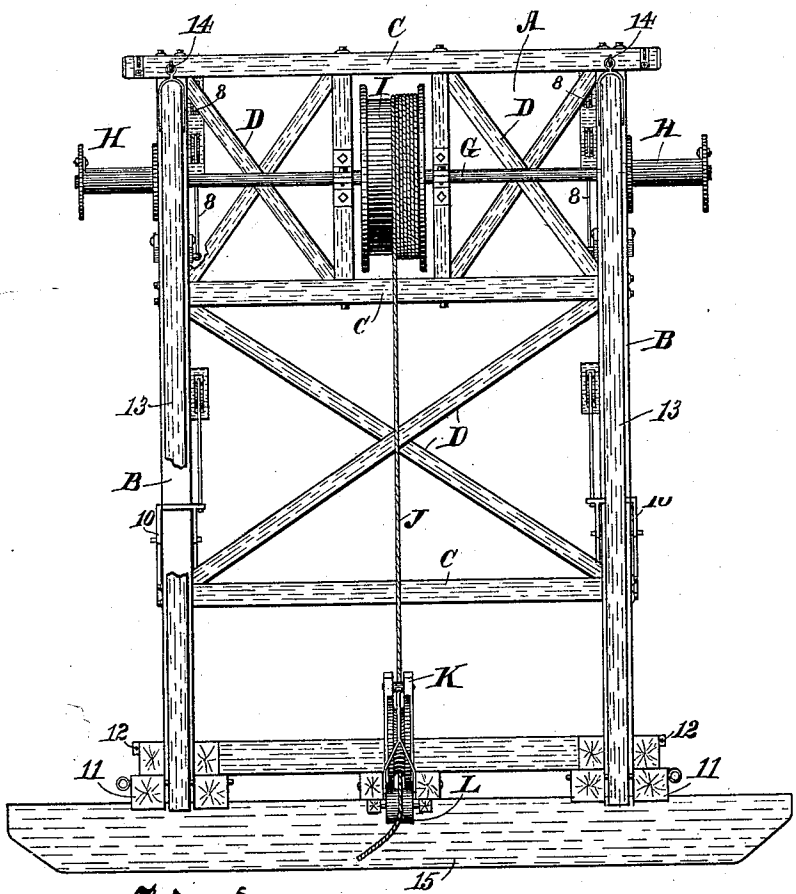


Fig. 3.

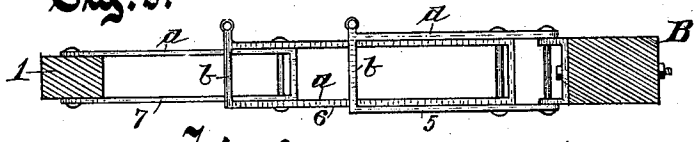
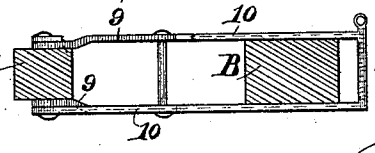


Fig. 4.



Witnesses.

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(No Model.) 4 Sheets—Sheet 3.

G. W. PRATT & J. P. HANSON.

LOG LOADING MACHINE.

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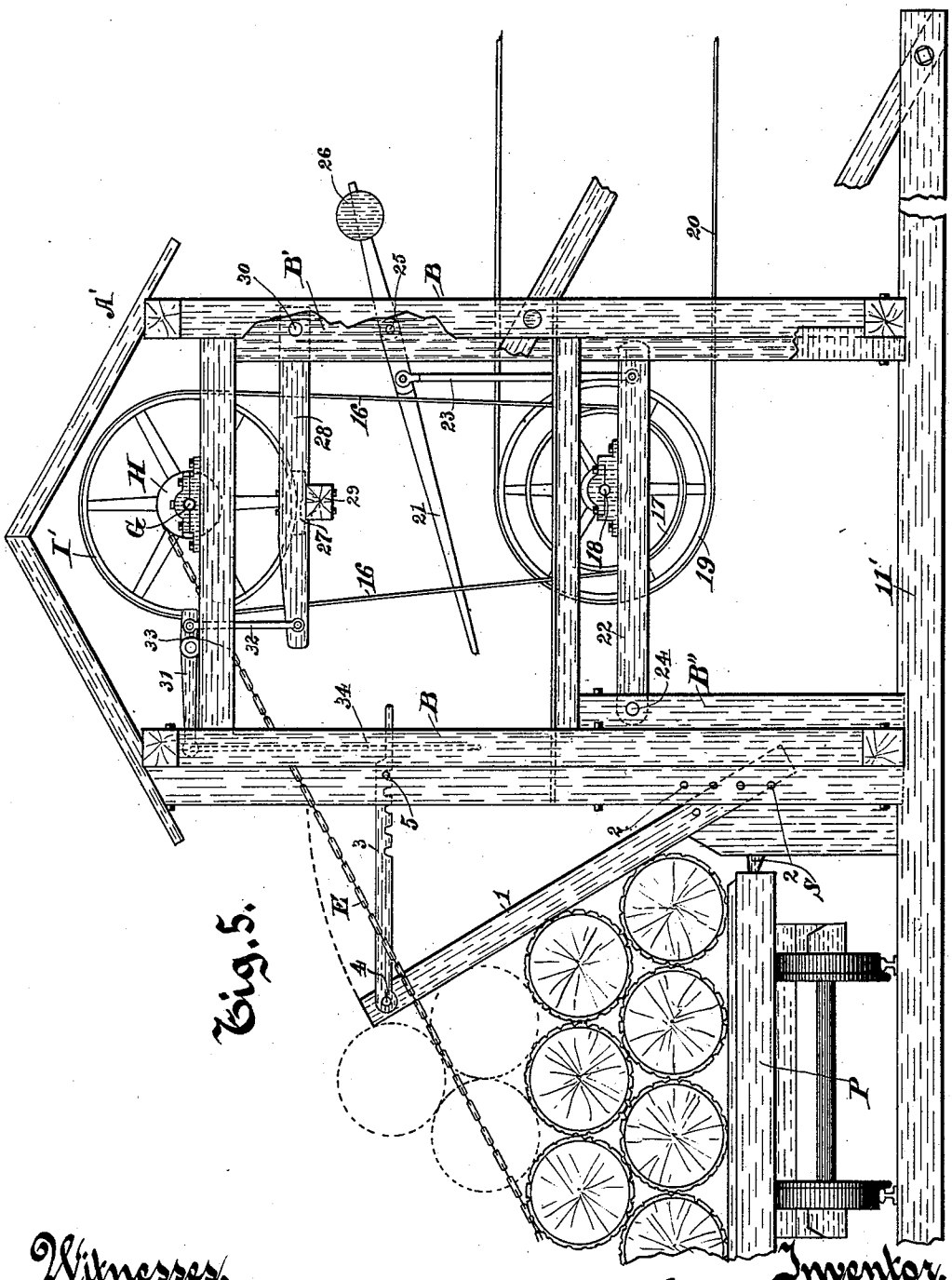


Fig. 5.

Witnesses.
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(No Model.) 4 Sheets—Sheet 4.

G. W. PRATT & J. P. HANSON.

LOG LOADING MACHINE.

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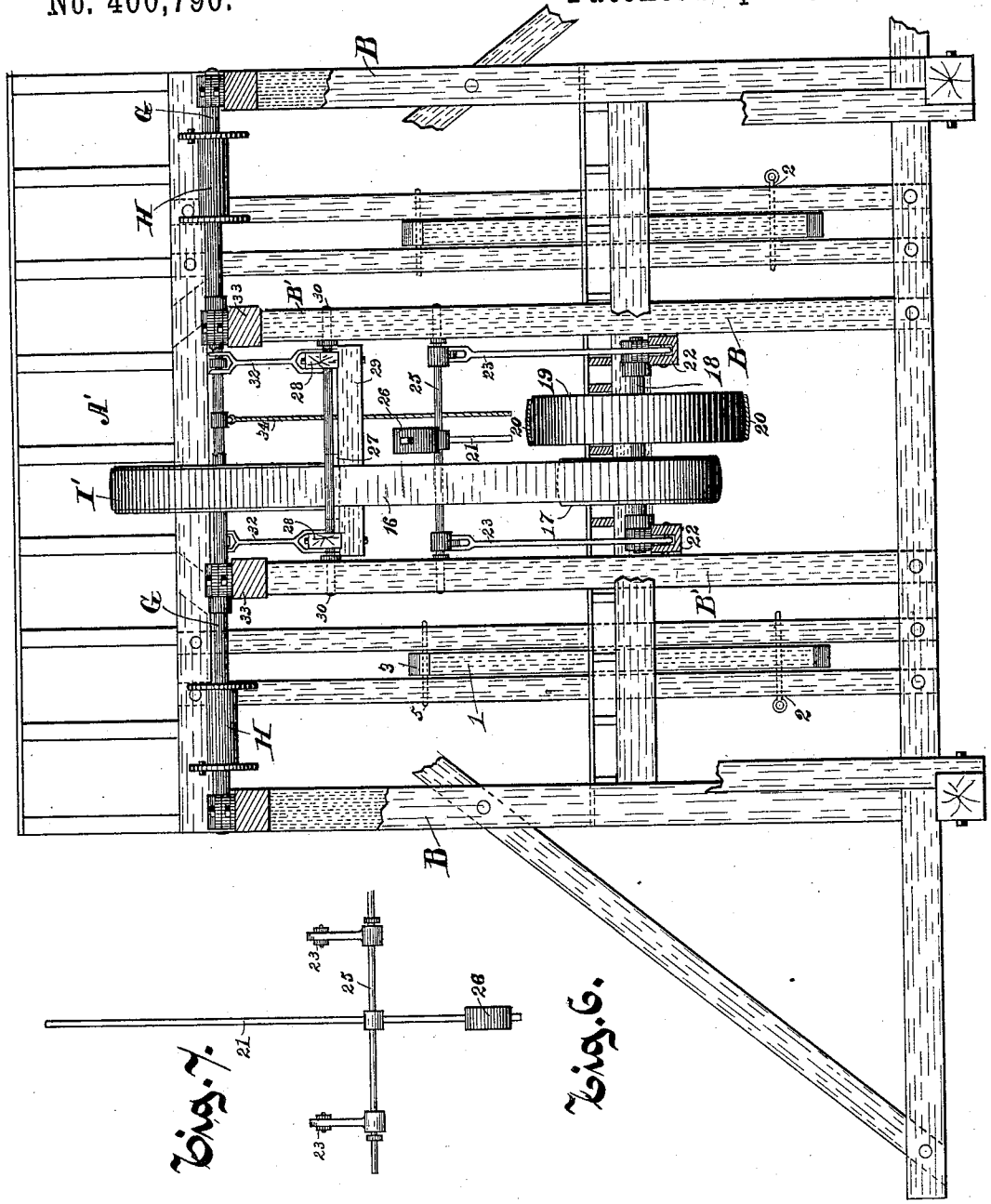


Fig. 7.

Fig. 6.

Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE W. PRATT AND JAMES P. HANSON, OF OSHKOSH, WISCONSIN.

LOG-LOADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 400,790, dated April 2, 1889.

Application filed April 23, 1888. Serial No. 271,550. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. PRATT and JAMES P. HANSON, of the city of Oshkosh, in the county of Winnebago and State of Wisconsin, have invented new and useful Improvements in Log-Loading Machines; and we do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in devices for elevating and loading logs.

The construction of our invention is explained by reference to the accompanying drawings, in which—

Figure 1 represents a side view of a portable form of our log-loading device in connection with a railway-car upon which logs are being loaded. Fig. 2 represents an end view of the loader shown in Fig. 1. Figs. 3 and 4 are details representing one form of device for adjusting the log-stop and changing its inclination to conform to the shape of the pile of logs that are being loaded upon a car. Fig. 5 represents a side view of a modified form of our loader as preferably constructed when made stationary. Fig. 6 represents an end view of the device shown in Fig. 5. Fig. 7 is a detail.

Like parts are represented by the same reference-letters throughout the several views.

A, Figs. 1 and 2, is an upright or vertical frame, which consists of standards B B, cross-bars C C C, and braces D D D, all of which are rigidly bolted together.

The frame A is of sufficient height to give the required inclination to the log-loading chains E E for drawing the logs upward and forward to the load, and it is retained in place by brace-rods F F. Near the upper end of the frame A is a pulley-shaft, G, which extends across the rear end of the frame past the supporting-standards B B, and is provided at each end with spools H H, for the reception of the log-rolling chains E E, and at its center with a pulley, I, to which the motive power for loading the logs is applied. A rope, J, is wound around the pulley I and extends downward and is carried beneath the pulley of the tackle-block K, and from thence rearward above and upon the pulley L, and is adapted to be operated by horse or similar power. The upper ends of the chains E are secured to the spools H in such a manner that as the rope J is drawn rearward and said pulley-shaft G is rotated the chain will be wound around and upon said spools H as the rope J is being unwound from said pulley I, whereby the logs around which said chains E have been secured are drawn forward upon the supporting-ways M M and skids N N and O O. The car P is located between the skids and the vertical frame in such a manner that as the logs are drawn forward by the chains they are deposited thereby upon the car. The lower or free end of the chains E are secured to the ends of the skids O O by clevises Q Q in such a manner that as the logs are drawn forward over the ends of the skids O the clevis will be drawn upward and forward by the chains E as the logs pass over the ends of the skids, whereby the logs are thrown entirely free from the ends of the skids upon the carriage or logs which have been loaded.

The skids N are adapted to rest at one end upon the ground and their opposite ends are supported upon posts R on a line with or slightly above the platform of the car, so that the logs as they are drawn forward thereon will readily roll therefrom upon the car.

To give stability to the car as it is being loaded, we have provided braces S S, which are interposed, respectively, between the platform of car and a stationary bearing, substantially as shown in Fig. 1. The lower ends of the skids O are provided with supporting-ways T, formed upon the upper surface of the skids N, and said ways T are provided with a series of apertures, U U, for the reception of a bolt or pin, V. The lower ends of the skids O are also provided with apertures for the reception of the pin V, corresponding with the apertures U, whereby said skids O may be adjusted higher or lower upon the inclined skids N, as may be required to conform to the height of the load upon which the logs are being rolled. The log-stops consist of heavy bars 1 1, which are connected at their lower ends by pivotal attachments with the pulley-supporting frame, and are connected at their

upper ends to said frame by a series of swinging levers, 5 6 7. The levers 5 are pivoted to the frame A. The levers 6 are in turn pivoted to the levers 5, and the levers 7 are pivoted at one end to the levers 6 and at their other ends to the stops 1. The construction and arrangement of said levers 5 6 7 are shown in Fig. 3, each lever being formed of two parallel bars, *a a*, and cross-bars *b b*, and are adapted to overlap one upon another, as shown in Fig. 3.

8 8 are cords which are respectively attached at one of their ends to the free or swinging ends of the levers 5 and 6, and their other ends are suspended from pulleys affixed to the frame of the machine in a convenient position to be reached by the operator, whereby by drawing upon said cords the free ends of said levers 5 and 6, or either of them, may be drawn up from the horizontal to the vertical position, as indicated by dotted lines in Fig. 1, whereby it is obvious that the upper ends of said stops may be adjusted at the desired angle. The lower ends of said stops are connected with the frame A by links or plates 9, and such ends are adjusted nearer to or farther from the vertical frame A by the ratchet-levers 10. The levers 10 are pivoted to the lower ends of said stop-bars and the teeth of the ratchet engage upon pins affixed to said frame.

A modified form of device for holding and adjusting the log-stops is shown in Figs. 5 and 6, in which the levers 3 are pivoted to the stops by pins 4, and the teeth of the ratchet-levers 3 engage upon pins 5, which protrude from the sides of the frame. Thus the angle of the bars 1 may be changed to conform to the arrangement of the logs upon the load, so that the first log of each series will be stopped at the point desired.

In the portable form of our log-loader shown in Figs. 1 and 2 the frame A′ is supported upon the horizontal base-timbers 11′ by pivotal bolts 12 12, upon which, when it is desired to move the loader, they are adapted to be folded in line with the base 11′. The frame-supporting brace-bars 13 13 are pivoted at their lower ends to the horizontal timbers 11′, and are connected at their upper ends with the upper end of said frame A by links 14. The brace-rods F F, previously referred to, also assist in holding the loader in a rigid position when in use. The frame A′ is provided with runners 15 15, which are secured beneath it to the horizontal timbers 11′, upon which the loader may be drawn, as required, from place to place. When using a horse for operating the log-loader, the logs may be stopped at any desired point by stopping the horse.

In the modified stationary form of log-loader shown in Figs. 5 and 6 we have illustrated the mechanism for operating the same from an engine or other motive power, from which motion is communicated by a band and pulley, in which case motion is communicated to the pulley I′ from the motive power by belt 16, pulley 17, shaft 18, pulley 19, and belt 20. When operating this form of loader, the belt 20 and pulleys 17 and 19 are kept in a continuous motion, and motion is communicated therefrom to the pulley I′, and from thence to the chains E, as mentioned, by the belt 16. When, however, it is desirous to stop the chains E, the belt 16 is so slackened as to permit the pulley 17 to rotate without communicating any motion therefrom, whereby the pulley I′ and mechanism communicating therefrom to the logs are permitted to remain at rest, and when desirous to start the chains E the belt 16 is so tightened as to again communicate motion from the pulley 17 through it to the pulley I′. Thus it is obvious that by increasing or diminishing the tension of the belt 16 the movement of the chains may be controlled at the will of the operator without stopping the motive power. The tension of the belt 16 is controlled by the lever 21, which lever is pivoted by bolt 25 to the standard B′, and is connected to the free end of the pulley-supporting bar 22 by the connecting-links 23. The opposite end of the bar 22 is pivoted to the frame B″ by pin 24. Thus it will be obvious that by pressing downward upon the lever 21 the free end of the pulley-supporting bar 22 will be forced downward, carrying with it pulleys 17 and 19, whereby the belt 16 is tightened, so as to communicate motion from the pulley 17 to the pulley I′. When, however, the lever 21 is released from the hand of the operator, the same is thrown upward by the gravity of the counterpoise 26, which is supported upon the short arm of the lever 21, whereby the pulley-supporting bar 22, with the pulleys thereon, is drawn upward and the belt 16 is slackened, so as to cease communicating motion to the pulley I′, whereby the chains E are permitted to remain at rest.

To prevent the logs from rolling down the inclined ways or skids by their own gravity as the tension of the belt 16 is slackened, a friction-brake, 27, is provided, which is thrown in contact with the periphery of the pulley I′, whereby said pulley is held in a stationary position and the logs retained at any point desired upon the ways. The friction bearing or brake 27 is centrally supported by the levers 28 upon the cross-bar 29. The levers 28 are pivoted at one end to the standards B′ upon the pin 30, and their opposite ends are connected with an operating-lever, 31, by connecting-links 32. The lever 31 is pivoted upon bar 33, and its long arm is provided with an operating-cord, 34, which extends downward in a convenient position to be controlled by the operator. By drawing downward upon the cord 34 the brake-bearing 27 is thrown in contact with the pulley I′, whereby its movement is controlled. When the cord 34 is released, said brake 27 is thrown out of contact with the pulley I′ by the gravity of its supporting parts.

Having thus described our invention, what

we claim as new, and desire to secure by Letters Patent, is—

1. In a log-loading machine, the combination, with the vertical frame, the thereto-attached log-loading chains, and the mechanism for winding and operating the said chains, of one or more log-stops adjustably connected to said frame and adjustable bars for moving and retaining said stops at any desired angle for stopping the logs parallel to each other when being elevated and loaded by the action of said chains, substantially as and for the purpose specified.

2. In a log-loading machine, the combination of a frame mounted upon a supporting-base and provided with retaining-braces, horizontal rotating shaft G, secured in journal-bearings at the upper end of said frame, a driving-pulley rigidly affixed centrally upon said shaft G and provided with an encircling cable communicating with the moving power, chain-retaining spools H H, affixed to the respective ends of said shaft G, two chains, E, secured, respectively, at one end to the respective spools H H and at their other ends to the ends of the movable log-supporting skids O, stationary skids N, provided with retaining-ways for the reception of the lower ends of said movable skids O, and two log stops or bars, 1, adjustably connected at their respective ends to the vertical frame A and adapted to stop the logs in their proper places as they are being loaded or piled together, substantially as and for the purpose specified.

3. A log-loading machine comprising a vertically-arranged frame, A, pivoted at its lower end upon a movable base, 11, base 11, base-supporting runners 15 15, frame-supporting braces 13, pivoted at their lower ends to said base 11 and connected at their upper ends to the upper end of said frame, horizontally-arranged shaft G, secured in journal-bearings at the upper end of said frame A, driving-pulley I, rigidly affixed to said shaft G, cable J, encircling said pulley I and communicating therefrom with the moving power, chain-retaining spools H H, affixed to the respective ends of said shaft G, and two chains, E, secured, respectively, at one end to said spools H and at the other end to the log-supporting skids O, all substantially as and for the purpose specified.

4. In a log-loading machine, the combination, with the vertical frame provided with mechanism for operating the log-loading chains E, of the log stops or bars 1, adjustably connected at their lower ends with said frame, ratchet-bars 3, pivoted at one end to the upper ends of said stops 1, and ratchet-engaging pins or stops 5, upon which the teeth of said ratchet-levers are adapted to engage as said log-stops are adjusted, substantially as and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE W. PRATT.
JAMES P. HANSON.

Witnesses:
GEORGE HELTON,
JOHN W. HUME.