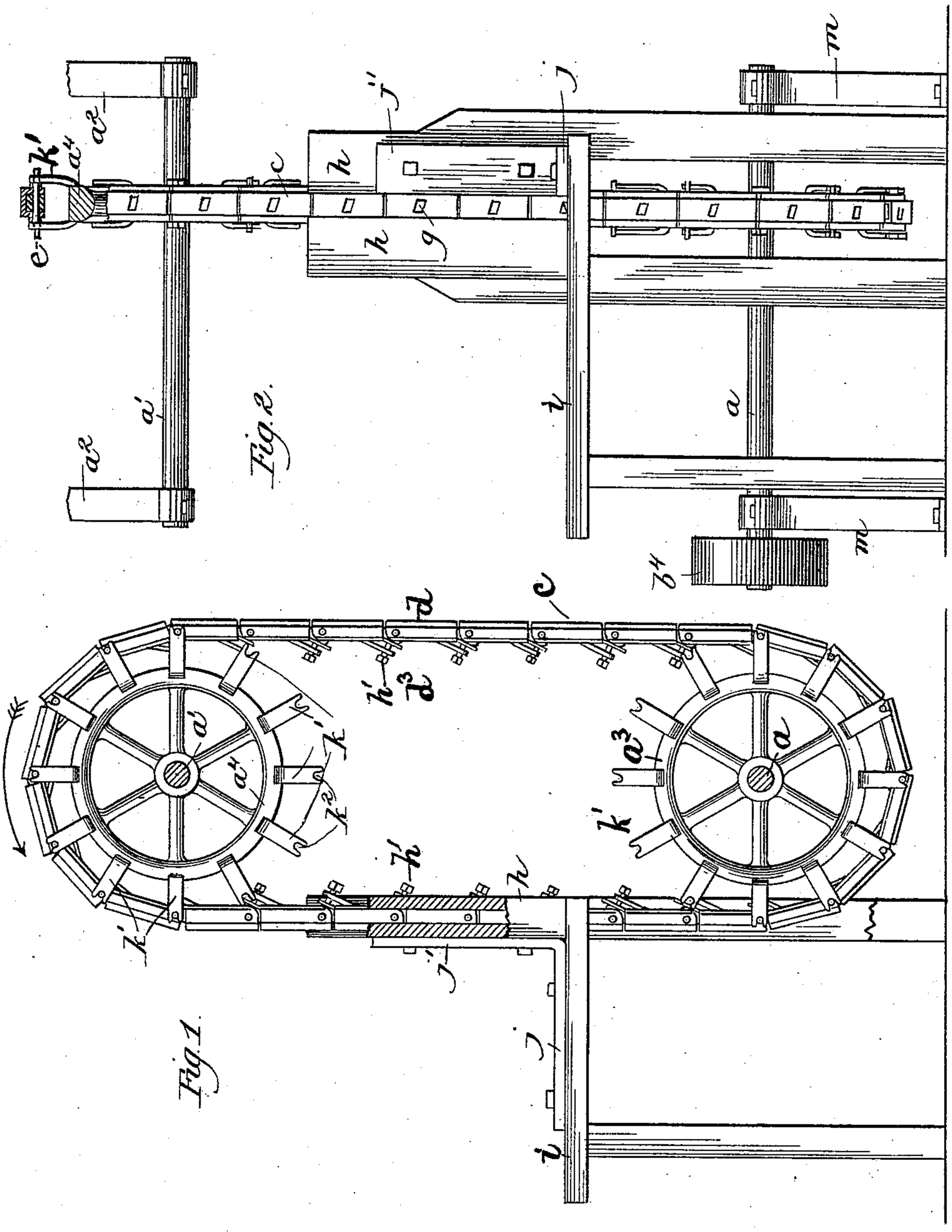
(No Model.) 2 Sheets—Sheet 1.

E. ARZT.

BOX ENDING MACHINE.

No. 414,747. Patented Nov. 12, 1889.



Witnesses:
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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

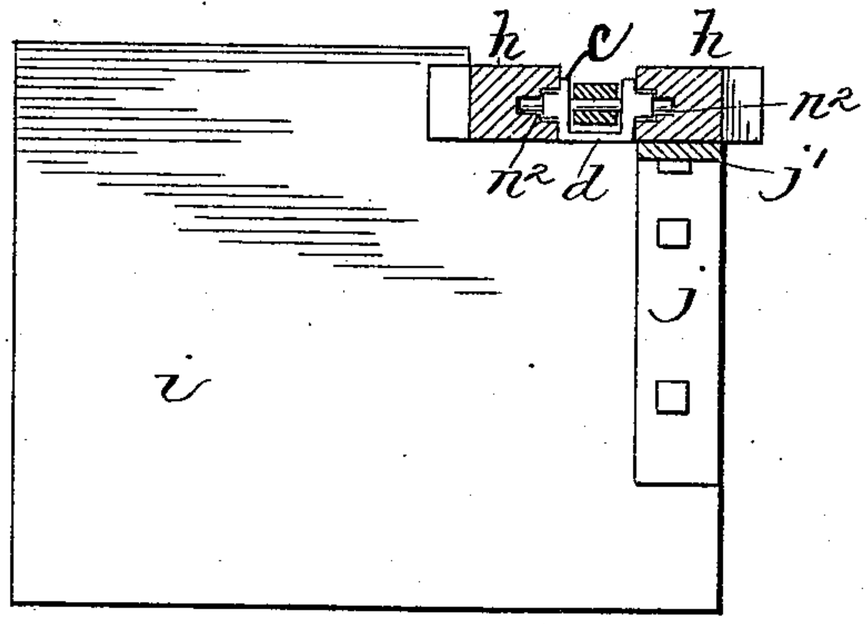


Fig. 4

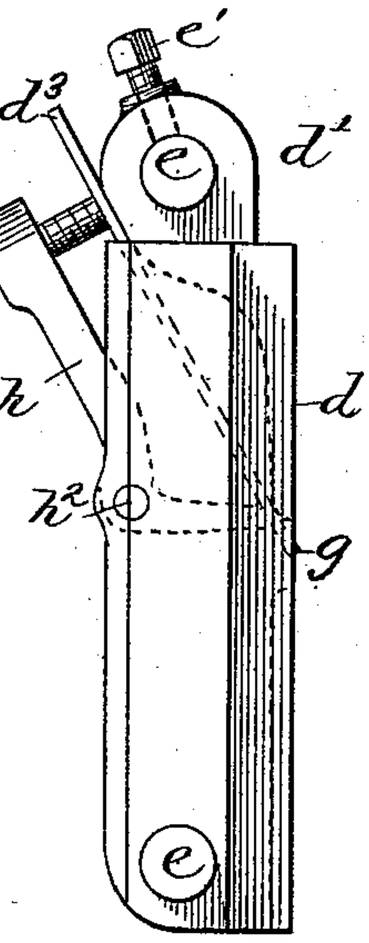


Fig. 5.

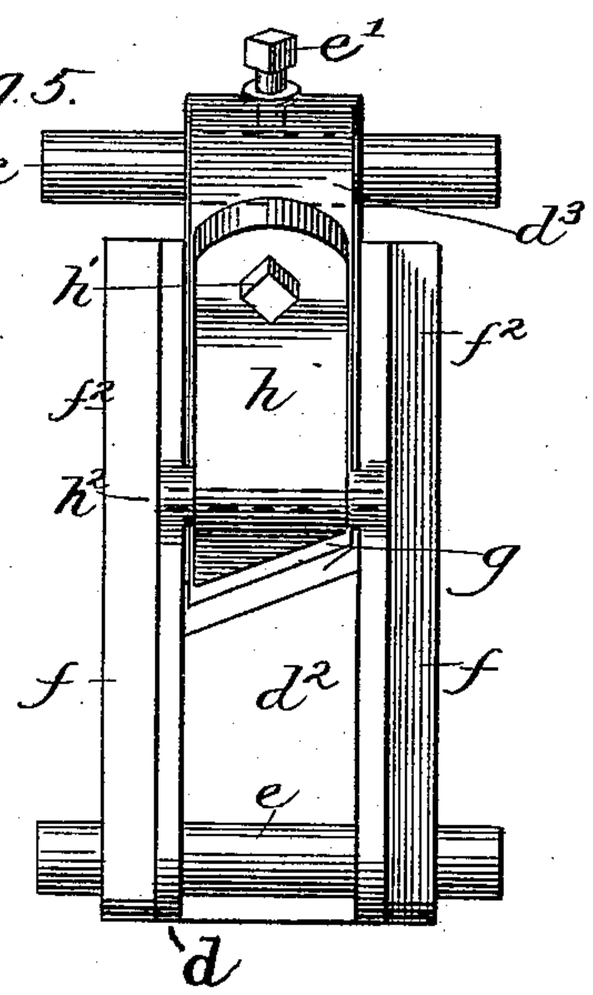
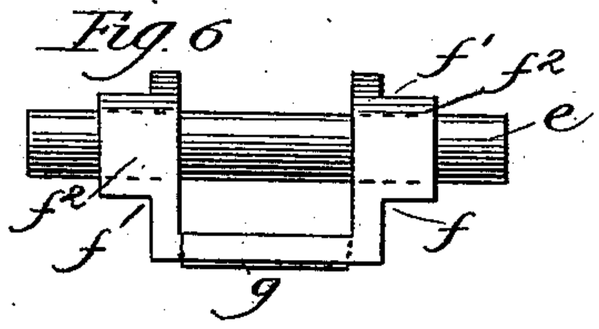


Fig. 6



Witnesses:
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UNITED STATES PATENT OFFICE.

EDWARD ARZT, OF CHICAGO, ILLINOIS.

BOX-ENDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 414,747, dated November 12, 1889.

Application filed March 11, 1889. Serial No. 302,792. (No model.)

To all whom it may concern:

Be it known that I, EDWARD ARZT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Box-Ending Machines, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 shows my improved box-blocking machine in side elevation, the rear guide being shown in section, of which a little more than one-half its upper part is shown in section and broken off from the part shown entire. Fig. 2 shows the same device in front view with a part of the upper wheel in section and the chain broken and cut away. Fig. 3 shows the table of my said device in plan view, also a part of the chain in end view. Fig. 4 shows in side elevation one of the links of the said chain. Fig. 5 shows the same in plan view as seen from the inner side of the endless chain. Fig. 6 shows an end view of the lower or forward end of one of said links.

Like letters of reference denote like parts.

The object of my invention is to construct a box-blocking machine by means of which the ends of packing-boxes and like structures may be cut down or trimmed flushed with the heads or ends of the box, and to attain said end I construct my new and improved device in substantially the following manner.

Upon two parallel shafts a a', preferably placed vertically above each other, are mounted two sprocket-wheels a^3 a^4. The sprockets k' of said wheels are Y-shaped or notched in the direction of the plane of the wheel, as clearly shown in Fig. 2, so as to form arms projecting laterally and equidistantly from the plane of the wheel, and in the ends of each of said arms forming said sprockets are cut Y-shaped notches k^2, open from the ends of said sprockets, as clearly shown at k^2 in Fig. 1. Said sprockets are, with their notches k^2, equidistantly spaced on the circumference of the said wheels, and said notches k^2 are widened at their upper ends, so as to readily receive the ends of the pins e, which connect the various links d of the chain c. Said pins e project beyond the sides of the chain or links d, so as to form the bearings which rest in said notches k^2. The links d of said chain are of special construction, and form in their main features, when completed, a plane which operates upon the box-ends in about the same manner as an ordinary hand-plane is used to do the same work. The body of said link or plane consists of a bottom having two sides which form an open channel d^2 through the link, which is closed at the rear end thereof with a plug d', which is rounded off at its upper end and provided with a hole adapted to receive the pin e, which is held by a set-screw e'. There is also a hole through the sides at the front end of said link adapted to receive a like pin e. When said links are connected together, the plug d' is placed in the front end of said channel d^2 and a pin e passed through said holes, so as to connect the links together. At or near the longitudinal center of the bottom of said channel d^2 is an opening through said bottom, through which passes a plane-iron d^3, which in this case is shown with its cutting-edge g in an inclined position across the channel. This position of the edge is preferred, because it operates more perfectly. The said iron d^3 is adjustably held in its place by means of a lever h, pivoted on a pin h^2, passing through the walls of the link. The lower end of said lever presses upon the iron near its cutting-edge by means of a screw h', passed through the upper end of said lever, of which its end presses upon the upper end of said iron. By this means the said iron can be readily, quickly, and securely adjusted and removed. The side walls of said link d are provided with two large channels f in each of their sides below the pin e and two smaller channels f' above the pin e, as shown in Fig. 6. Through the forming of said channels in the side walls there is left a projecting piece f^2 on each of the sides.

When the chain with its wheels and other parts which were heretofore described are completed, they are mounted in a suitable frame or the axles a a' are held in posts m and hangers a^2, as shown in Fig. 2, and are then ready to receive motion in the direction indicated by the arrow by means of a pulley b^4, driven by a belt from any suitable power. On the cutting side of said belt, which moves downward, is placed a table i, and upon it are placed guides h h, in which are cut vertical

grooves n^2, through which pass the ends of the pins e and the projecting piece f^2 of the planes or links d. By means of this said construction the operating part of the belt c in its downward course is provided with a firm and true guide for the cutting-edges g. Upon said table i is also placed an abutting-piece j, against which the sides of the boxes rest when fed to the machine. There is also a vertical piece j' bolted against one of the posts m directly over the said piece j upon the table i, which further aids in serving a like purpose as the part j. Upon said table and against the stops $j\,j'$ are then placed the sides of the boxes and pushed up against the rapidly-moving cutting-edges g, which then trim or cut the ends of the boxes smoothly down to the ends or head-pieces of the same.

The Y-shaped sprockets and pins e are here shown as the most convenient construction; but it is clear that they may be dispensed with and the straight links of the chain carried in a pentagonal channel formed in the periphery of the wheel or any like device to accomplish that end.

The table to hold the boxes to be trimmed, also, is not an indispensible thing, as the boxes may be held by hand directly against the cutting-edges of the endless chain.

What I claim is—

1. In a box-blocking machine, a chain-link provided with a plane-iron whereof the cutting-edge is inclined at an angle to a transverse plane through it, in combination with a table and a grooved guide for the plane provided with a guide or stop j', substantially as specified.

2. In a box-blocking machine, two pulleys with an endless chain of which the links are connected by a single pin passing through the sides of one link and in the other link through a fixed block d, held between the sides of said link, and said links provided with flanges on their sides, and a plane-iron, in combination with slotted guides for said links and a guide or stop j', and a table, substantially as specified.

3. A box-blocking machine consisting of two sprocket-wheels on shafts, the sprockets on said wheels consisting of laterally-projecting arms which are notched at their outer ends, in combination with an endless chain carried on said sprockets, the links of said chain being provided with plane-irons and united by pins the ends of which project from the sides of said chain and play into the open notches on the ends of said arms, guides to prevent lateral motion to said chain-links, and a table to support the work, substantially as specified.

4. In a box-blocking machine, two pulleys carrying an endless chain formed of links provided with plane-irons and flanged sides, and whereof said links are united by a pin passing through their ends, in combination with guides for said links and a guide or stop j' parallel to said guides for the link, and a table, substantially as specified.

EDWARD ARZT.

Witnesses:
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