

the cushion is composed. In order to provide for sufficient ventilation, while at the same time affording sufficient protection, the felt cushion is provided with notches or perforations, which permit the circulation of air in the space between the face and the lenses.

The main defense in this case is anticipation, and the patent chiefly relied upon is the Genese patent, of March 18, 1884, which is substantially the same as the Lake English patent, No. 5,086, of the same date. The Genese patent is for a "flexible air-tight eye guard." The specification declares that the object of the invention "is to provide an eye guard for firemen and employes of metal working and chemical manufacturers, which shall be practically impervious to smoke, the fumes of acids, or to noxious vapors of all kinds, as well as an effectual protection against flying particles of metal, grit, or finely divided matter floating in the atmosphere." In the Genese device the lenses are held in a metallic frame, composed of thin plates of flexible material, such as lead or copper, and a rubber cushion extends around the periphery of the metal frame. The purpose of the Genese patent is to produce an air-tight cover for the eyes. It has neither the flexibility, lightness, nor the ventilation of the Lamb patent, nor was it designed for the same specific purpose; and, although the Lake specification describes a form of the Genese device in which air may be admitted into the space between the guard and the eyes, yet it is clear that this mode of ventilation is radically different from the notches and perforations of the Lamb patent.

While the range of invention in the Lamb patent is somewhat narrow, in view of what was old, yet, in my opinion, it was a patentable improvement over what previously existed. The device was new and useful, and its utility is shown by the large demand for this form of eye shield. Upon the question of infringement it is apparent that the defendant's eye shield is substantially identical with that described in the Lamb patent. A decree may be entered for the complainants.

MITCHELL v. EWART MANUF'G CO.

(Circuit Court of Appeals, Third Circuit. June 1, 1897.)

No. 17, March Term, 1897.

PATENTS—CONSTRUCTION OF CLAIMS—INFRINGEMENT—CHAIN CABLES.

The Dodge patent, No. 264,139, for an improvement in driving chains, consisting in inserting between the links of an ordinary chain cable metal blocks of such conformation as to seat the adjacent end portions of the enchaind links laterally in grooved channels, in planes transverse to each other on its exterior, so as to prevent twisting of the cable, is for a meritorious invention, and is entitled to a liberal construction; and its three claims are infringed by the Mitchell device, which, though different in appearance, and seemingly different in construction, yet appropriates the substance of the invention. 78 Fed. 485, affirmed.

Appeal from the Circuit Court of the United States for the Eastern District of Pennsylvania.

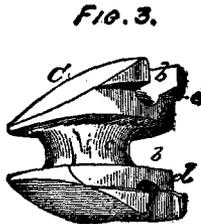
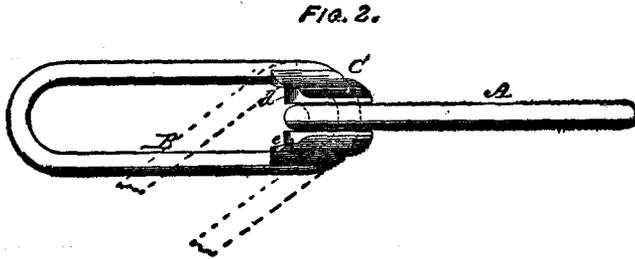
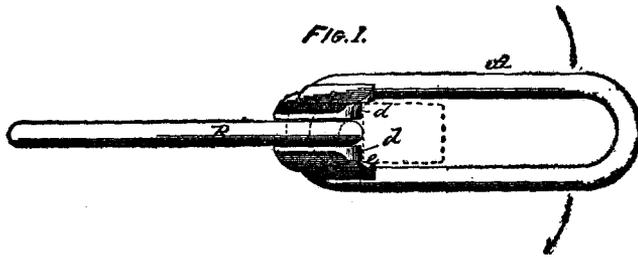
Francis T. Chambers, for appellant.

Charles Howson, for appellee.

Before ACHESON, Circuit Judge, and BUTLER and BUFFINGTON, District Judges.

BUFFINGTON, District Judge. The bill in this case was filed in the circuit court of the United States for the Eastern district of Pennsylvania by the Ewart Manufacturing Company against James H. Mitchell to enjoin the alleged infringement of the claims of letters patent No. 264,139, issued September 12, 1882, to James M. Dodge, for an improvement in chain cables. That court was of opinion Mitchell's device did so infringe, and decreed an injunction. 78 Fed. 485. The respondent appealed from such decree, and the case is before us for review.

In our judgment, the device shown by Dodge's patent was novel in character, disclosed an invention of very decided merit, and was a substantial advance over mechanical constructions theretofore used in the art to which it appertained, and the claims of the patent should have such a construction as will give the patentee the full benefit of the advance which he has contributed to the mechanical arts, and claimed. A brief reference to such patent will disclose the substantial character of the invention. It pertains to that large and growing branch of appliances for carrying material in hoists, elevators, and kindred devices by means of bins placed on drive chains which are engaged and impelled by teeth on moving sprocket wheels. The ordinary form of such drive chain may be illustrated in a general way—though not in detail—by the chains used on bicycles. By the peculiar conformation of such chains they are not liable to twist, and so, when used in connection with hoists, elevators, and the like, are desirable, since the bins or conveyors will preserve their horizontal position, and so retain their loads. Their construction, however, was relatively expensive. Chain cables were also used as drive chains, and, while desirable as being the simplest, strongest, and most inexpensive in construction, they were open to three serious objections: First, the wear of the links was all centered on a single bearing point at the link extremities; secondly, the ends and sides of the links were subjected to the wear of the sprocket teeth; and, lastly, the liability of the chain to twist. Such twisting overturned the bins, and misplaced the link relatively to interlocking with the sprocket teeth. These serious objections prevented the satisfactory use of linked chains for drive-chain purposes. They were all recognized in the patent in suit, and were designedly overcome by Dodge in a device, the simplicity and effectiveness of which are striking. He took the ordinary chain cable of commerce, with its simple construction, and, by the insertion of a new intermediate bearing, not only retained its flexibility, but imparted to it, when used as a drive chain, the nontorsional characteristics of the more cumbersome, expensive, but efficient type of the drive chain of the old art. This was done by employing a cast-metal block (preferably of malleable iron) of such conformation that it seated the adjacent end portions of the two enchaind links laterally in grooved channels, in planes transverse to each other on its exterior.



The result was an action of a possible scope akin to that of a universal joint so far as flexibility was concerned, but adapted for use in the more restricted sphere of a drive chain where flexibility in one direction alone was needed. This block secured the nontorsional limitation, afforded a pintle-like link bearing about equal in width to the space opening of the links, and allowed the sprocket tooth's engagement on the larger block surface instead of the link end and side. The use of such an intervening block, apart from the points we have mentioned, was desirable because it could be made of a material or of a quality of metal better adapted to withstand the wear and friction of the sprocket teeth than the material of chain cables, and also because the difference between its material and that of the link made the wear of the latter less than against a substance similar to itself, which was the case when the links bore on each other. As illustrating its use and function as a drive chain, the patentee says:

"The adjacent ends of the links are held, it will be seen, in a given relationship laterally with each other and with the interposed block, so that there cannot possibly occur to the cable (while under tension or in working condition) any of that twisting of the cable (or that oscillation of the links about an axial line coincident with a line running lengthwise through the center of the cable) which is inevitable in chain cables in which the links are articulated one

directly on the other, as usual prior to my invention, and the chain with its block is necessarily retained in a given and proper relationship with the peripheral devices of the wheel on which it is run. This perfect avoidance of any such twisting of the cable and retention of the working parts of the chain and wheel in proper relationship enable me to use the cable with perfect success for all sorts of elevator or conveyor purposes, since the chain is thus rendered capable of carrying and maintaining always in perfect line and proper position any buckets, flights, or attachments which may be applied to it. * * * The precise form of block shown, as well as that of the links illustrated, may, of course, be departed from without departing from my invention so long as the blocks and links are made and combined so as to effect the essential results explained."

Upon this device claims were allowed as follows:

"(1) In a chain cable, the combination, with the links of blocks interposed between the adjacent end portions of the links, the said blocks being adapted to afford bearing or working surfaces for the actions of the engaging devices of a chain wheel, substantially as set forth. (2) In combination with the links of a chain cable, blocks interposed between the adjacent ends of the links, and provided with grooves which afford pintle-like bearings for the said link ends, substantially as set forth. (3) In combination with two enchained links, a block having grooves arranged transversely to each other, and operating to prevent any twisting movement of said links relatively, substantially as set forth."

The device has gone into very extensive use.

We now turn to the alleged infringement of Mitchell. In it we find a chain of which the alternate links are of the ordinary forged semicircular end type. With these links are alternately enchained closed links with rectangular ends. They are of peculiar construction. Each end of the link is formed of a separate cast cross-bar having perforated ears at each end, which perforations increase in size at the exterior face so as to form seats, respectively, for nuts and hexagonal bolt heads. A central semicircular groove on the cross-bar seats the enchained forged link, and possesses the double function of forming with such link a pintle-like bearing and securing a nontorsional relation between them. At the same time the seating of the forged link in the groove removes such link from engagement and wear with the sprocket tooth, which bears wholly on the metal cross end. The links' sides are bars provided at one end with hexagonal heads and at the other with screw threads. These are passed through the end holes of the cross-bars, and secured by nuts, which latter, as well as the hexagonal heads, seat themselves as the chain is tightened in the corresponding depressions in the outer face of the cross-bars. This construction permits separation of the chain at any desired point, and readjustment, where wear on the bearings has lengthened the links, and carried them out of proper relation to the sprocket teeth. Does such structure embody the Dodge invention? A separation of it into its component elements, and an analysis of its function, will, to our mind, answer the question. Eliminating from present consideration the groove in the cross-bar of the rectangular links, respondent's structure is (without it) in substance and function a chain cable. It is a cable made of iron links, for the rectangular connections enchaining with and coupling the two forged links are none the less links because of their rectangular shape. It is a cable composed of alternate square and rounded

links. Considered with reference to use as a drive chain, it has the desirable capacity in such a use of articulation, but the fatal one of twisting. The first quality is preserved, and the second is prevented, by the use of what, in connection with the peculiar conformation of the chain used, is a substantial equivalent of the Dodge grooved block. It will be noted that in the ordinary drive chain, vertical articulation alone is necessary. In other words, in using a chain cable as a drive chain, the block might be soldered to or made integral with the end of the horizontal link, and a single vertical groove in engagement with the vertical link would produce the desired function of a drive chain. Such a construction the respondent's expert has, with a candor which does credit to his fairness, conceded would infringe the first and third claims of the patent. His language is:

"I understand the chain—'Complainant's Exhibit Modified Chain'—to be composed of enchainèd wrought iron links and interposed cast bearing blocks like the links and blocks of the Dodge chain, but with the difference that in this modified chain each block is rigidly secured in the end of one of the wrought-iron links by casting babbit metal between the block and the end of the link, so that the block is rigidly held with reference to one link, and the adjacent link can turn in the groove of the block; the chain being thus made flexible only on one plane. I understand that chain to be a modified cable chain, as each link of the chain is that of the cable chain, and the links are enchainèd with each other as they are in cable chains, because, if the blocks were removed from this modified chain, a complete cable chain would be left. In my opinion, this chain would be within the first claim of the patent, as it appears to comply with every requirement expressed in that claim. I do not think it would be within the second claim, because each block is only provided with one groove, which affords a pintle-like bearing for one of the link ends, while the chain, as I understand it, calls for blocks provided with grooves which afford pintle-like bearings for the link ends. The block in this modified chain has grooves which are arranged transversely to each other, and which hold the two enchainèd links between which the block is arranged at right angles to each other, and so prevent any twisting movement of the links relatively; and it seems to me, therefore, that the chain would comply with the requirement of the third claim, although one of the grooves has been rendered inoperative with respect to that function of the groove of the patent which consists in affording a pintle-like bearing for the link end which rests in the groove. I do not think that this difference, simply, should take the chain outside of the third claim of the patent."

While the respondent's device is different in appearance, of seemingly different construction, and manufactured in a different way, yet when we go beneath these surface variations, and measure it by the test of functional purpose and operation, we find it is in substance, purpose, and operation the same mechanism. Where the block is soldered to the horizontal link end, that link, as an articulating member, has ceased to exist, and simply serves as an additional band or brace to support the block. If the link was cut off, and the block braced and restrained from horizontal articulation by nuts screwed to the ends of the side bars of the link the same mechanical effect would be produced. It follows, therefore, that the nuts of the Mitchell device, in connection with the perforations of the vertically grooved end bar or block and the side bars of the link are, in a chain cable, used as a drive chain identical in functional purpose with the solid positive connection of a horizontal block and groove. Such being the case,—and we see no escape from the step

by step process of reasoning by which this conclusion is reached,—we think infringement is shown. While the appellant has avoided a mere servile copy of form, he has appropriated the substance of the Dodge invention. That in doing so he has rendered inoperative the function on one groove will not suffice to relieve him from the charge of infringement. Every element of the first claim is found in his structure. He uses the elements of the second, modified in form to suit the peculiar conformation of his rectangular links, but identical in functional effects, to secure the pintle-like bearings, and those of the third to gain the nontorsional relation between the links. He gets the same result, which Dodge first showed, by substantially the same means, and in substantially the same way. We are of opinion the court below reached a just and proper conclusion, and its decree should be affirmed.

NATIONAL FOLDING BOX & PAPER CO. v. STECHER LITHOGRAPHIC CO. et al.

(Circuit Court of Appeals, Second Circuit. May 26, 1897.)

1. PATENTS—INVENTION—PAPER-BOX MACHINES.

In a machine for forming paper-box blanks there is no invention in changing the counter-die by merely substituting a firm piece of paper having creases to receive the creasing rules of the die, on the face of the platen, for semi-soft sheets of paper packing, which were so yielding as to spread out and break, making rounded or uncertain creases in the blanks, and often tearing the material. 77 Fed. 828, affirmed.

2. SAME.

The Munson patent, No. 259,416, for improvements in the manufacture of paper boxes, is void for want of patentable invention over the prior Shelton patent, No. 133,423. 77 Fed. 828, affirmed.

This appeal is from a decree of the circuit court for the Northern district of New York which dismissed the appellant's bill in equity for an alleged infringement of letters patent No. 259,416, dated June 13, 1882, and issued to Edward B. Munson and Harvey S. Munson for an improvement in the manufacture of paper boxes.

Walter D. Edmonds, for complainant.

Frederick F. Church, for defendants.

Before WALLACE, LACOMBE, and SHIPMAN, Circuit Judges.

SHIPMAN, Circuit Judge. The record in this case is a voluminous one, but the important points in issue are contained in a narrow compass. The flat sheets or "blanks" of paper or cardboard from which paper boxes are made are cut by dies upon the lines which form the boundary edges and lapping parts, and are indented or creased by dies upon the other lines upon which the folding or bending of the sides of the box are to be made. The difficulty which was practically experienced was the tendency of the creasing dies to be inaccurate, and not to create an even bend, or to weaken the material upon the folding lines. The improvement is described in the specification as follows: