

It is true that the waste of a little oil is immaterial compared with a hot box, but aside from the waste, oil has many disagreeable features when unconfined; a barrel of it, poured on a box in which the oil hole is full of dirt, will do very little good, while a drop, put in a clean hole, will be all that is required.

In an ordinarily constructed bearing, a few drops of oil is all that can possibly be effectively utilized at any one time, and if more is applied it must either run through, only partially used, or else run off unused. It is as essential to the well-being of a bearing that the used oil shall have a chance to get away as it is that the new oil should be applied, and therein lies a serious weakness in most "self-oiling" devices.

Probably the ideal oiler for bearings is the chain, or ring, oiler, provided the reservoir is deep enough to allow ample space for the sediment below the chain or ring, and provided that it is attended to and the sediment drained off each time it is filled.

It is also essential that any oiling device should be accessible, so that one may be able to see, at any time, just how it is working; for reasons entirely beyond the ken of any operator, two boxes working under what appear to be exactly the same conditions, may act very differently in the matter of oil consumption.

The writer has two bearings in mind, one of which, according to all rules and theories, ought to require a great deal of oil and attention, but which has never asked for oil yet, and to all appearances would run indefinitely without it, while the other, which, according to theory and ordinary practice ought to run with very little oil, requires constant attention and never runs satisfactorily.

Whatever the oiling device, it is essential that any bearing should be kept under constant surveillance, and no device can be made which will take the place of or eliminate the need of care. One proprietor, who thought it better to waste a little oil than to have a hot box, used, every time he entered the shop, to take a gallon can of oil and dope every box within his reach, with the result that the boxes generally ran cool, though the "oil bath" didn't always have exactly the same effect on the employees. The loose pulleys, however, were mostly beyond the "old man's" can, and were all out of commission.

A loose pulley, for all its malodorous reputation, generally doesn't require as much oil as the bearing alongside it, but the difficulty lies in getting the oil to the right place at the right time, because of the fact that oil put in the oilhole tends to be thrown out immediately, rather than to run in and spread on the bearing, as in ordinary boxes. The ideal way to oil a loose pulley is through the center of the shaft. A device for doing it in this way was patented some twenty years ago, but was found impracticable by reason of the expense and difficulty of applying it; so, though it did the work to perfection, it was never much used.

A great many "self-oiling" loose pulleys are made with an oil reservoir in the hub, and all, so far as is known to the writer, work satisfactorily except for the fact that the hole connecting the oil chamber with the bearing is difficult of access and liable to become clogged before one is aware of it, while the spent oil is thrown out into the reservoir and used over and over, there being generally no convenient way of getting it out, the net result being that some day they will act like that once celebrated clock—"stop short, never to go again." A loose pulley which is a close fit, if it runs dry, will often "set" on the shaft as suddenly as though some one had shot a key into it. Any one who has had this happen just when he was setting the knives on a molder, for instance, is

likely to look to his loose pulleys thereafter—or take up some line of business not requiring the full complement of fingers.

Any device calculated to keep a bearing lubricated for a great length of time is apt to lead to neglect, and so induce the very trouble it is intended to avoid. The most important factor in any oiling device is accessibility.

BELT LACES.

Hardly a month goes by but you see some man making fun of the "shoestring" method of "bootleg," or some other form of simple lacing. Just what forms of lace they mean by shoestring and bootleg lace is not as clear to me as I would have it, but if they refer to the simple form of lacing, I want to say that while I do not use them myself as a rule, still there are certain points in favor of these methods of lacing that should not be overlooked.

Some time in the earlier days of belting, when they had a lot of belting tests at some institution, there was also included incidentally a series of tests on lacing and various other forms of belt joints which brought out some peculiar facts. One of these was that a simple form of lacing—that is, a form that would leave the lace string free to slip through the holes in the belt and adjust itself so that the strain would come evenly all over the joint—made the highest record in pulling tests. The explanation for this is found in the fact that in the various complicated and lock-stitch laces the lacing would not pull through and adjust itself to get the strain even all across, and as a consequence some of the strands would break earlier than with the simple form of lacing. Some of your older readers can probably recall some of these tests and their records, and, if they can, you will find some interesting data on the relative strength of belt lacings, and also find that test records are practically in favor of the simple forms of lacing.

Theoretically, therefore, and considering the one point of strength, the simple lacing is best for the belt. Just as the simple life for man looks best from a theoretical standpoint, but when you come to put belts into service and apply the tests of practice, the result is materially altered. Let us say, for example, that we have two laces in operation, one of the simple form that shows up best under a pulling test and another with interwoven or locked stitches. By and by there will come a time when the strands of these laces will wear through and break, and when this happens to the simple lace it is only a matter of seconds until your belt is in two, while in that one where the stitches are locked or interwoven the belt may be run for a number of days yet before showing an inclination to come in two. It is for this reason that I prefer the more complicated lace. It does not cause as many stops in the middle of the day, to make repairs; in fact, if given anything like the proper attention, it need hardly ever cause a shut-down, as it can be attended to at the end of the day's work, while if it were one of those simple laces that unravel instantly when a strand is broken, it means a shut-down the instant you get warning your lace is giving way.

While having this preference, however, I do not feel like condemning, unheard, or making fun of the simple forms of lacing, because they have certain points of advantage, and should be given credit on this score, even though we may prefer to use some other form for special reasons. I want to call attention to this matter because I think there is more in the subject of laces than some of the technical writers think there is. It should be fairly studied from all sides, and the various points of advantage and disadvantage found in the different laces also studied in connection with the special work required of the belt.