

from which the hold slipped on steam power being applied.

In a few instances the foot held fast and the rock could not be started with such lifting strains as could safely be used probably up to three tons. The indications of the bar are by no means clear or satisfying. As a whole, however, they lead to the belief that upper bar is of rock with practically no small loose stuff upon it, but having masses, some of solid and some of detached rock which project above the general surface and are the measure of the difference between the average bottom level found by sounding and the clear navigable depth found by sweeping with the horizontal bar.

The grips as already described have four feet breadth of opening and have gripping power sufficient to hold fast on a stone with parallel sides if of ordinary roughness. They were first used with two fingers on one arm and only one on the other, so as to give easy penetration into interstices of rock, and they were afterwards fitted with two fingers on one arm and three on the other so as to more easily scatch small stones. They were rigged so that they could be placed where desired in spite of current, and either held rigidly upright or allowed to suit themselves to the bottom, and so they could be opened at pleasure or closed with force while held hard on the bottom.

They were tried in these different conditions in some twenty-three different places on upper bar, and nothing whatever could be picked up. Generally they scratched over the bottom and got no hold. In a few instances they caught an imperfect hold and let go before much lifting strain was exerted. In two instances they got a better grip and held till the lifting strain reached three or more tons and then lost hold. It does not follow from this that there is nothing on the bottom which could not be grasped and lifted by a pair of four foot grips, but it shows that loose pieces of rock within their compass are so few that in about one hundred trials they got hold of none. Time did not permit of the grips being used elsewhere than on upper bar. On island shoal the bottom was examined with the steel bar and the indications were that its character is substantially the same as that of the upper bar, except that it is rougher and that in the spaces and holes between the masses of rock small loose stones are frequently felt. The composition of the bottom was not particularly examined in other parts of the channel, and the behaviour of the sounding rods and sweeping bar and the appearance of the cross sections indicate that it is all rough and rocky. Careful observations were made of the velocities and directions of the currents in different parts of the channel when the river was at about low water stage in 1891, and the results are shown on an accompanying chart.

Yours respectfully,
(Sgd.) JOHN KENNEDY, C.E.

I may say to the hon. minister that there is a report from a straight, honourable, disinterested man, after these men in charge have had an opportunity of examining the channel and making two reports, which are entirely opposed to what Mr. Kennedy has reported. However, after this had been investigated in this way an arrangement was made, as I understand, with the Gilberts that they were to clear out this channel and see that it was 17 feet in depth, and

Mr. REID (Grenville).

the government were to pay them so much per day for doing this work, but the Gilberts were not to be paid for taking out any rock they could find that was solid. So far as I can learn, they were paid for every day they were there, and they never gave the government to understand that there was any solid rock found. I protested against the work on this channel being proceeded with when I came to this House, I protested against these men being allowed to leave the channel in that condition, and I protested against the arrangement made by them that they were to take out what they would only admit was loose rock. I never can believe that the department made an arrangement under which they were to pay them by the day, and pay them such an enormous amount. The people there could not believe that any government would pay \$425 a day for a dredge, a tug and a couple of scows. Statements have been made that it required special plant to do this work. The plant that these parties had consisted of a good tug and good scows, but the whole important part of that plant was a dredge, and that dredge is simply an ordinary small dredge. It is an old dredge. The whole plant to-day is not worth \$15,000, and why the government would think of paying \$425 a day for it is something I cannot understand. Of course, I believe that it has been pressed upon the government that there was this great danger, and that the Gilberts had a very expensive plant. If the hon. minister will take a look at that plant, I am sure he would not put it at any ordinary work. It has been there since a year ago last fall, and while every other dredge is busy the Gilberts cannot get any work for it that would pay the company, because the dredge, as I am informed, is not fit to do any work. Let us see what the government pay other parties for dredging plant. I find that in 1902, according to the Auditor General's Report, the government paid Mr. McAuliffe for dredging work at Trenton, done by a small dredge similar to that of the Gilberts, a tug and scows, \$8 an hour, or \$80 a day for ten hours, or \$96 a day for twelve hours. W. E. Phin, for dredging at Toronto harbour, from June 3 to October 23, received \$8 an hour, making \$80 a day of ten hours, or \$96 a day for twelve hours. I understand that 12 hours was supposed to constitute a day for the Gilbert Dredging Company. The Lake Erie and Detroit River Railway Company received for the services of the dredge 'Lockerbie,' from November 10 to December 2, 14 days, \$100, and for 6 days \$50. They also received for the use of the tug 'Vic' \$9 a day for 20 days. Bowman & Company, of Port Elgin, received for the services of the dredge 'Hackett' \$8 an hour, or \$80 a day of ten hours. The Owen Sound Dredging Company received for the services of dredge 'No. 9' and plant, from May 13 to August 27, \$8 an hour, or \$80 a day of ten hours. The Owen Sound