

are frozen. In 1880 Mr. D. W. Davis obtained a patent (226390) for packing fish and finely-crushed ice in a barrel and freezing the same solid, the fish being so stowed as not to come in contact with one another.

In Boston, New York, and other cities entire buildings of three to five stories or floors are now made into fish-freezers and cold storage for fish. The most common method of producing the cold air requisite for freezing is by the use of ice and salt in metallic chambers or large tubes, which pass perpendicularly through the freezing-room. The freezing-room is provided with double walls interlined with some non-conductor. The fish are either hung on hooks or spread on shelves until frozen, when they are removed to the cold storage-rooms and kept for months, if need be, before marketing.

WASHINGTON, D. C., *March 27, 1886.*

**136.—A LIST OF THE BLANK FORMS, CIRCULARS, AND MINOR PUBLICATIONS OF THE UNITED STATES FISH COMMISSION, FROM AUGUST 1, 1884, TO MARCH 1, 1887.\***

**By CHARLES W. SCUDDER.**

501. Blank book for record of salmon and alewives taken. 8 columns. August 6, 1884. 1 folio, 17 by 20.5 cm. Bound. 12 folios.

502. Blank requesting Smithsonian Institution to forward Fish Commission publications to parties named. August 8, 1884. 1 p. 9.5 by 17 cm.

503. Blank for inclosing vouchers for certification. September 9, 1884. 1p. 20 by 26 cm.

504. Blank for compiling the names of carp applicants by Congressional districts. 7 columns. Reprint of No. 320. October 20, 1884. 2 pp. 20 by 25 cm.

505. Blank for sworn certificate of traveling expenses. October 30, 1884. 1 p. 16.5 by 20 cm.

506. Blank book for liabilities of the U. S. Commission of Fish and Fisheries. 7 columns per folio. November 4, 1884. 1 p., 20 by 25 cm. Bound. 28 pages.

507. Blank book for record of temperatures and soundings for the steamer Albatross. 16 items. 5 columns. November 7, 1884. 1 p., 11 by 24 cm. Bound. 100 pages.

508. Blank for return for directory of Fish Commission employees. 8 items. December 5, 1884. 1 p. 20 by 25 cm.

509. Blank book for quarterly balance of property of the U. S. Fish Commission. 12 items. 24 columns. December 2, 1884. 1 p. 20 by 31 cm.

510. Blank for memorandum to Professor Baird for approval. December 17, 1884. 1 p. 20 by 25 cm.

511. Blank label to attach to Fish Commission publications. December 30, 1884. 1 p. 7.5 by 14 cm.

512. Blank book for articles on hand at close of quarter. 22 columns. January 1, 1885. 1 p., 33 by 45 cm. Bound. 300 pages.

513. Post-card referring applicants for Fish Commission Bulletin to their members of Congress. January 6, 1885. 1 p., and penalty notice on reverse. 7.5 by 13 cm.

514. Letter heading "Laboratory of the U. S. Commission of Fish and Fisheries, Washington, D. C." December 30, 1884. 1 p. 20 by 25 cm.

\* This is a continuation of the list in Fish Commission Bulletin, Vol. IV, p. 397.

515. Blank for disbursing agent's report to the chief of the property division of articles paid for. 6 columns. January 24, 1885. 1 p. 21 by 27 cm.
516. Circular notice regarding telegraph messages of the U. S. Fish Commission, and giving rates of pay for communications by telegraph. February 6, 1885. 1 p. 8 by 14.5 cm.
517. Envelope for U. S. Commission of Fish and Fisheries, without penalty notice, for foreign use. February 10, 1885. 1 p. 8.5 by 15 cm.
518. Record of ocean temperatures. Blank for recording time, temperatures, winds, weather, and movements of fish. 20 columns. June 29, 1885. 1 p. 35.5 by 43 cm.
519. Circular letter asking persons to file receipt for carp. Reprint of No. 422. February 28, 1885. 1 p. 8 by 13.5 cm.
520. Circular letter asking for receipt for Fish Commission publications. March 28, 1885. 1 p. 14 by 16.5 cm.
521. Blank for ordering pamphlet publications sent to persons named in letters. April 1, 1885. 1 p. 11 by 15 cm.
522. Blank for double fish-egg ticket. 9 items. April 6, 1885. 1 p. 13 by 13 cm.
523. Post-card, daily report of eggs taken and fish on hand. 6 items. 5 columns. April 22, 1885. 1 p., with return address and penalty notice on reverse. 7.5 by 13 cm.
524. Blank for balance-sheet of property records. 7 columns. April 17, 1885. 1 p. 20.5 by 35 cm.
525. Circular letter transmitting accounts upon vouchers and instructions concerning signatures. Reprint of No. 460. May 7, 1885. 1 p. 8.5 by 20 cm.
526. Blank label for Albatross medical department. May 13, 1885. 1 p. 4 by 6.5 cm.
527. Blank for sub-voucher. To accompany No. 555. May 21, 1885. 1 p. 8.5 by 20 cm.
528. Serip heading "U. S. Commission of Fish and Fisheries." Note size. June 28, 1885. 1 p. 12.5 by 20 cm.
529. Blank book for abstract of disbursements by H. A. Gill, disbursing agent of the U. S. Fish Commission. 6 columns. June 20, 1885. 1 p., 25 by 37.5 cm. Bound. 80 pages.
530. Blank for abstract of disbursements by H. A. Gill, disbursing agent of the U. S. Fish Commission. 7 columns. June 20, 1885. 1 p. 20 by 32 cm.
531. Check-list of 1,000 numbers. 9 columns. July 15, 1885. 1 p. 21 by 35 cm.
532. Return envelope, "William A. Wilcox, agent U. S. Commission of Fish and Fisheries," with penalty notice attached. July 5, 1885. 1 p. 7.5 by 19.5 cm.
533. Circular letter to goldfish applicants, stating that they will be supplied as soon as practicable, and that due notice of shipment will be sent. Hektograph. November 10, 1884. 1 p., and penalty notice on the reverse. 7.5 by 13 cm.
534. Blank for order for carp. Hektograph. November 10, 1884. 1 p., and penalty notice on the reverse. 7.5 by 13 cm.
535. Circular letter to carp applicants inclosing an order for carp. Hektograph. November 10, 1884. 1 p. 20 by 25 cm.
536. Circular letter offering salmon trout, brook trout, California trout, and whitefish ova. Hektograph. December 2, 1884. 1 p. 20 by 25 cm.
537. Blank for compiling data of the condition of the Chesapeake Bay oyster-beds from material collected by a diver. 20 items. Hektograph. December 13, 1884. 1 p. 20 by 31 cm.
538. Circular letter giving classification and rates of compensation for employees in the messenger service of the U. S. Fish Commission. Hektograph. December 15, 1884. 1 p. 20 by 32 cm.
539. Circular letter giving the names of employees assigned to duty and their position in the messenger service of the U. S. Fish Commission. Hektograph. December 20, 1884. 1 p. 20 by 32 cm.

540. Circular letter to employees in the messenger service of the U. S. Fish Commission inclosing and calling attention to Nos. 533 and 539. Hektograph. December 24, 1884. 1 p. 19 by 24 cm.

541. Circular letter forwarding diploma awarded at the London Fisheries Exhibition. March 11, 1885. 1 p. 20 by 25 cm.

542. Blank for receipt of diploma of London Fisheries Exhibition. March 11, 1885. 1 p. 10 by 22 cm.

543. Circular letter of invitation to visit the Central Hatching Station of the U. S. Fish Commission. May 23, 1885. 1 p. 20 by 26 cm.

544. Circular letter asking fishermen to fill out blank No. 545, inclosed. July 1, 1885. 1 p. 21.5 by 28 cm.

545. Blank for reporting the quantity of mackerel taken, where taken, number of empty barrels purchased in the Provinces, value of vessel, &c. 26 items. July 1, 1885. 1 p. 21.5 by 28 cm.

546. Blank book for record of applications for miscellaneous fishes. 5 columns per folio. October 10, 1885. 1 p., 26 by 38 cm. Bound. 250 folios.

547. Blank book for record of applications for goldfish and golden ides. 10 columns per folio. October 10, 1885. 1 p., 26 by 38 cm. Bound. 250 folios.

548. Blank book for record of application for shad. 9 columns per folio. October 10, 1885. 1 p., 26 by 38 cm. Bound. 250 folios.

549. Blank book for record of applications for whitefish. 9 columns per folio. October 10, 1885. 1 p., 26 by 38 cm. Bound. 250 folios.

550. Blank book for record of applications for trout. 10 columns per folio. October 10, 1885. 1 p., 26 by 38 cm. Bound. 250 folios.

551. Blank book for record of applications for salmon. 10 columns per folio. October 10, 1885. 1 p., 26 by 38 cm. Bound. 250 folios.

552. Blank book for record of requisitions. 7 columns per folio. October 10, 1885. 1 p., 19 by 25 cm. Bound. 250 pages.

553. Blank book for record of vouchers. 6 columns per folio. October 10, 1885. 1 p., 19 by 25 cm. Bound. 250 pages.

554. Blank card for memorandum of accounts with U. S. Fish Commission employees. Period covered, when paid, amount, and compensation. October 27, 1885. 1 p. 10.5 by 17 cm.

555. Blank for voucher. Account of expenses of propagation of food-fishes, 1886. November 19, 1885. 1 p., and filing blank on reverse. 20 by 25 cm.

556. Blank for State fish commissioners to fill. 8 questions. Hektograph. November 10, 1885. 1 p. 20 by 31 cm.

557. Circular letter inclosing carp application. Revise of No. 463. November 24, 1885. 1 p. 13 by 20 cm.

558. Return envelope. Prof. Spencer F. Baird, Sea Fisheries Investigation, 1885, with penalty notice attached. November 24, 1885. 1 p. 10 by 22 cm.

559. Circular letter to carp applicants calling attention to misleading statements in newspapers regarding fish-culture. November 30, 1885. 1 p. 10 by 22 cm.

560. Circular letter announcing the sending of "The Fishery Industries of the United States." Hektograph. February 15, 1886. 1 p. 20 by 25 cm.

561. Plotting blank for temperature chart of air temperature, surface temperature, and bottom temperature; with blanks for name of station and observer. December 19, 1885. 1 p. 27 by 60 cm.

562. Post-card to applicants for "The Fishery Industries of the United States," referring them to the Public Printer. January 4, 1886. 1 p. 7.5 by 13 cm.

563. Blank label to attach to Fish Commission publications, with penalty notice. January 4, 1886. 1 p. 10 by 17.5 cm.

564. Blank for acknowledging receipt of letter, and announcing carp literature as sent to party named. January 15, 1886. 1 p. 20 by 25 cm.

565. Blank slip for attaching to accounts certifying that mileage charged was made under orders and at personal expense. January 18, 1886. 1 p. 7.5 by 20 cm.

566. Circular notice regarding telegraph messages of the U. S. Fish Commission, and giving rates of pay for communications by telegraph. January 16, 1886. 1 p. 8 by 14 cm.

567. Circular letter relating to the sea fisheries for 1885, and questions as to quantity of mackerel, halibut, cod, herring, and other fish sold fresh and dry-salted. February 9, 1886. 1 p., 21 by 27.5 cm. 4 pages.

568. Circular letter relating to the Great Lakes fisheries, and questions as to the kind of apparatus used and quantity of fish taken. August 15, 1885. 1 p. 21 by 27.5 cm.

569. Post-card notice of transfer of fish or eggs. Return address and penalty notice on reverse. March 3, 1886. 1 p. 7.5 by 13 cm.

570. Circular letter relating to the Great Lakes fisheries, and questions as to the kind of apparatus used and quantity of fish taken. Revise of No. 568. January 27, 1886. 1 p. 21 by 34.5 cm.

571. Blank for owners of fisheries of the Great Lakes to fill: Names of persons employed, number and kinds of boats, number and kinds of nets, quantity and value of fish. To accompany No. 568. August 15, 1885. 1 p. 27 by 39.5 cm.

572. Blank for property return. 7 columns. Hektograph. June 15, 1885. 1 p. 20 by 31 cm.

573. Circular illustrating the development of the Spanish mackerel. Thirteen figures and explanations. Hektograph. June 2, 1885. 2 pp. 20.5 by 33 cm.

574. Invitation for proposals for filling inside of retaining-wall at Wood's Holl Station. Hektograph. April 10, 1885. 1 p. 20 by 31.5 cm.

575. Post-card announcing supply of carp pamphlets exhausted, and that a copy will be forwarded as soon as received from the printer. Hektograph. November 18, 1885. 1 p., and penalty notice on reverse. 7.5 by 13 cm.

576. Post-card to goldfish applicants stating that the stock is exhausted, and that they will be supplied next fall. Hektograph. April 15, 1885. 1 p., and penalty notice on reverse. 7.5 by 13 cm.

577. Circular letter to goldfish applicants stating that the general distribution is completed, and that they will be supplied at next fall distribution. Hektograph. April 15, 1885.

578. Circular letter announcing that Charles G. Atkins will forward eggs of land-locked salmon. Hektograph. February 8, 1886. 1 p. 19 by 24.5 cm.

579. Circular letter acknowledging the receipt of application for trout and stating that arrangements should be made to receive the fish at the fish station. Hektograph. December 15, 1885. 1 p. 19 by 24.5 cm.

580. Circular letter to State commissioners offering lake trout and whitefish. Hektograph. November 19, 1885. 1 p. 19 by 24.5 cm.

581. Circular letter to carp applicants in Canada advising them to wait for fish till fall distribution. Hektograph. January 8, 1886. 1 p. 19 by 24.5 cm.

582. Circular letter inviting bids for grading at the carp ponds. Hektograph. May 20, 1885. 1 p. 19 by 24.5 cm.

583. Circular letter to collectors of customs asking for list of fishing-vessels. Cyclostyle. February 17, 1886. 1 p. 20 by 25 cm.

584. Circular letter to the Commissioner of the Bureau of Navigation, Treasury Department, transmitting Nos. 585 and 586. Cyclostyle. February 17, 1886. 1 p. 20 by 25 cm.

585. Circular letter to collectors of customs, announcing that statements of fishing-vessels received are satisfactory. Cyclostyle. February 17, 1886. 1 p. 20 by 25 cm.

586. Circular letter to collectors of customs, inclosing incomplete statements of fishing-vessels for completion. Cyclostyle. February 17, 1886. 1 p. 20 by 25 cm.

587. Blank book for statement of expenditures at Fish Commission stations. 14 columns per folio. March 28, 1886. 1 p., 28 by 44 cm. Bound. 50 pages.

588. Circular letter relating to information asked on the sea fisheries, to accompany No. 567. January 25, 1886. 2 pp. 21 by 27 cm.

589. Blank book: The United States in account with Herbert A. Gill. 9 columns per folio. April 17, 1886. 1 p. 26 by 35.5 cm.
590. Blank slip for certificate that immediate delivery of articles was necessary. April 21, 1886. 1 p. 7.5 by 20 cm.
591. Label for packages to "Prof. S. F. Baird, Wood's Holl, Mass.," with penalty clause attached. July 17, 1886. 1 p. 4 by 13.5 cm.
592. Blank for shipping articles for U. S. Fish Commission vessels. 17 columns. September 6, 1886. 1 p. 45 by 53 cm.
593. Official envelope, "U. S. Commission of Fish and Fisheries, steamer Albatross," with penalty notice attached. November 2, 1886. 1 p. 8.5 by 15 cm.
594. Official envelope, "U. S. Commission of Fish and Fisheries, steamer Albatross," with penalty notice attached. November 2, 1886. 1 p. 10 by 23 cm.
595. Circular letter transmitting check with blank for receipt for check attached. November 17, 1886. 1 p. 20 by 25 cm.
596. Blank for description of ponds. 38 questions. November 20, 1886. 4 pp. 21 by 35 cm.
597. Blank for request for transportation, with blank certified receipt. Stub attached for 10 entries. Series B. November 23, 1886. 1 p., 16 by 31 cm. 10 volumes, 100 pages each.
598. Letter-head, "U. S. Commission of Fish and Fisheries, steamer Albatross." November 24, 1886. 1 p. 19 by 24 cm.
599. Circular letter to Congressmen calling attention to their indorsement on an unauthorized carp blank issued by the U. S. Fish Co. November 24, 1886. 1 p. 20 by 25 cm.
600. Circular letter to owners and masters of fishing vessels transmitting No. 601. Cyclostyle. November 30, 1886. 2 pp. 19 by 24 cm.
601. Blank for "Statistics of New England Vessel Fisheries, 1886." November 30, 1886. 2 pp. 21 by 27 cm.
602. Circular letter and blank relating to "Statistics of the Mackerel, Cod, and other Fisheries for 1886." November 10, 1886. 4 pp. 21 by 28 cm.
603. Blank for requisition of articles or labor, with "Instructions" on the reverse. Revise of No. 465. January 18, 1887. 2 pp. 20 by 24.5 cm.
604. Label for trout eggs, giving instructions for their care. February 8, 1887. 1 p. 18 by 25 cm.
605. Circular letter and questions relating to mackerel and the mackerel fisheries. 25 questions. February 28, 1887. 4 pp. 21 by 27.5 cm.
606. Return envelope, "U. S. Fish Commission, Washington, D. C.," with penalty notice attached. February 28, 1887. 1 p. 10 by 22 cm.

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